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11 A 15 DE OUTUBRO

36º CONGRESSO BRASILEIRO DE ENDOCRINOLOGIA E METABOLOGIA

ENDORECIFE2024

A endocrinologia e seu protagonismo nos ciclos da vida

SBEM
Sociedade Brasileira de Endocrinologia e Metabologia

Archives of Endocrinology and Metabolism

OFFICIAL JOURNAL OF THE BRAZILIAN SOCIETY OF ENDOCRINOLOGY AND METABOLISM

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SBEM – Brazilian Society of Endocrinology and Metabolism

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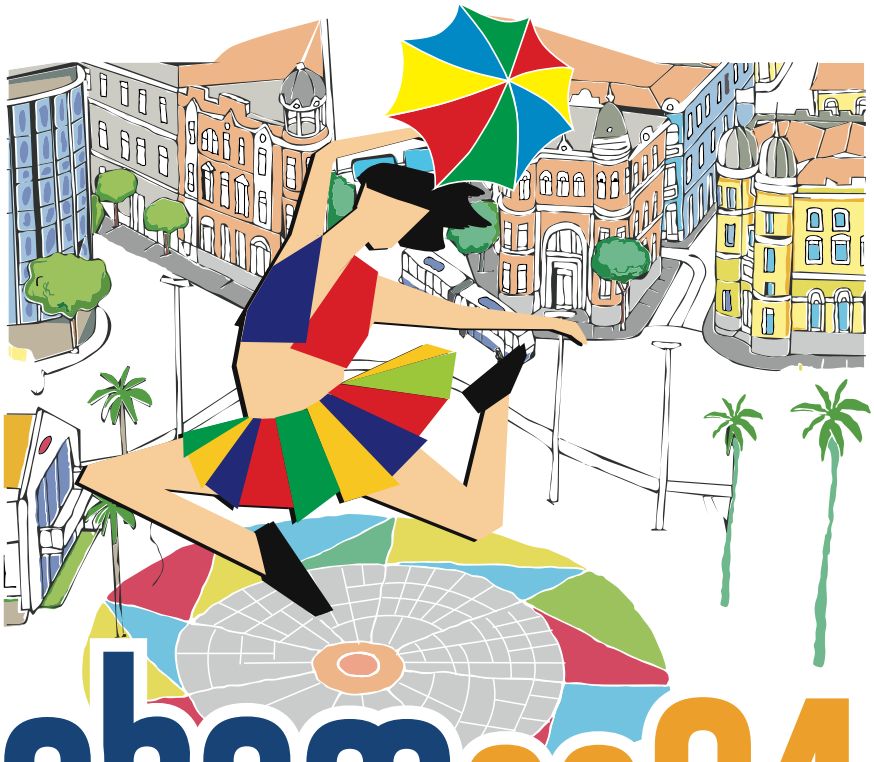

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36º CONGRESSO BRASILEIRO DE ENDOCRINOLOGIA E METABOLOGIA

ENDORECIFE2024

A endocrinologia e seu protagonismo nos ciclos da vida

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Local do CBEM 2024	Centro de Convenções de Pernambuco Endereço: Av. Prof. Andrade Bezerra, 1.051, Salgadinho, Olinda-PE, 53110-680
Alteração no Programa	A Comissão Científica e a Comissão Organizadora reservam-se o direito de realizar quaisquer mudanças necessárias no programa, para atender a razões técnicas e/ou científicas.
Área de Exposição	No Pavilhão de Feiras, acesse a Área de Exposição. Os expositores estão aguardando a sua visita.
Horário da Secretaria	Dias 11, 12, 13 e 14: das 8h às 18h Dia 15: das 8h às 13h
Crachá	É imprescindível a utilização do crachá nas dependências do congresso, com a identificação de prescritor ou não prescritor, de acordo com a categoria da inscrição.
Horário do guarda-volumes	Dias 11, 12, 13 e 14: das 8h às 18h Dia 15: das 8h às 13h
Mídia Desk	Está disponível para todos os participantes da programação científica, durante todos os dias do congresso. Solicitamos que o material audiovisual seja testado com no mínimo 1 hora de antecedência, para evitar possíveis problemas na apresentação.
Certificados	Os certificados de participação, da programação científica guarda-volumes curso somente serão emitidos para os inscritos que efetivamente participaram do congresso. Os certificados de temas livres para os trabalhos expostos serão emitidos por meio do *login*/senha do autor responsável. Para emitir o seu certificado, acesse o *site* https://cbem2024.com.br a partir do dia 5 de novembro.
Achados e Perdidos	Estarão concentrados na Secretaria do evento.

MENSAGEM DO PRESIDENTE

Prezados Congressistas,

É com imensa satisfação que a Sociedade Brasileira de Endocrinologia e Metabologia (SBEM) os recebe no 36º Congresso Brasileiro de Endocrinologia e Metabologia (CBEM 2024), a ser realizado de 11 a 15 de outubro, na vibrante cidade do Recife.

O CBEM, nosso principal evento científico, realizado a cada dois anos, representa um marco na atualização e divulgação da produção científica brasileira na área de Endocrinologia e Metabologia. É um espaço privilegiado para o intercâmbio de conhecimentos, o debate de temas relevantes e o fortalecimento dos laços entre profissionais e pesquisadores de todo o país.

Neste ano, o congresso abordará uma ampla gama de temas, desde os avanços mais recentes em pesquisa básica e clínica até as discussões sobre políticas públicas e o impacto social das doenças endócrinas e metabólicas. Teremos a honra de receber renomados especialistas nacionais e internacionais, que compartilharão suas experiências e perspectivas, enriquecendo ainda mais o nosso debate.

Gostaríamos de expressar nossa profunda gratidão aos palestrantes nacionais e internacionais, que generosamente dedicam seu tempo e conhecimento para enriquecer nosso programa científico.

Agradecemos também às empresas organizadoras e aos patrocinadores, cujo apoio fundamental viabiliza a realização deste evento de grande porte e contribui para o desenvolvimento da Endocrinologia e Metabologia no Brasil.

Nosso reconhecimento à Comissão Executiva, liderada pelo Dr. Fabio Moura, por seu incansável esforço em garantir que todos os participantes sejam recebidos de forma confortável e calorosa. Seu compromisso em proporcionar uma experiência memorável a todos é notável.

Também estendemos nossos sinceros elogios à Comissão Científica, liderada pelo Dr. Neuton Dornelas, por elaborar uma programação científica atual e relevante, que reflete os anseios de atualização científica dos participantes e demonstra a excelência da especialidade no país.

Além da programação científica de alto nível, o CBEM 2024 proporcionará momentos de confraternização e *networking*, permitindo que vocês estabeleçam novas parcerias e fortaleçam os laços já existentes. A cidade do Recife, com sua rica cultura e hospitalidade, será o cenário perfeito para essa experiência única.

Convidamos todos a aproveitarem ao máximo essa oportunidade de aprendizado e crescimento profissional. Que o CBEM 2024 seja um marco em suas carreiras e inspire novas conquistas na busca por uma Endocrinologia e Metabologia cada vez mais avançadas e acessíveis a toda a população brasileira.

Sejam bem-vindos ao CBEM 2024!

Paulo Augusto Carvalho Miranda MD, PhD

Presidente da Sociedade Brasileira de
Endocrinologia e Metabologia – Gestão 2023-2024

MENSAGEM DO PRESIDENTE DA COMISSÃO CIENTÍFICA

"Entre a vida e a morte, existe uma biblioteca. E nela, infindáveis prateleiras."
Matt Haig

Prezados e prezadas colegas,

Este Suplemento dos *Archives of Endocrinology and Metabolism* (AE&M) traz um resumo do Congresso Brasileiro de Endocrinologia e Metabologia (CBEM 2024) a ser realizado em Recife, Pernambuco, entre os dias 11 e 15 de outubro, evento que corresponde à 36ª edição do maior congresso brasileiro da especialidade.

Com o tema central "**A Endocrinologia e seu protagonismo nos ciclos da vida**", a comissão científica pôde elaborar um programa de altíssimo nível que perpassa todo o "caminhar" de uma vida humana, desde as perspectivas da fertilidade em pessoas portadoras de doenças endócrinas, passando por eventuais dificuldades na sala de parto, considerando o impacto do altamente improvável (doenças raras), discussão de políticas públicas de saúde, aprendizado dos mecanismos hormonais de sobrevivência diante das intempéries, até aspectos sociais em tempos digitais e de inteligência artificial, mas, sobretudo, ressaltando a importância das conexões e transformações pessoais na jornada da vida. São vários ciclos dentro de um ciclo.

A paliativação, a espiritualidade e a morte serão temas a serem tratados sob o olhar atento de quem cuida de todas as etapas da vida. Quando o "outono da vida" chegar, a endocrinologia haverá de ter também seu protagonismo: qualificar os dias de vida, trazer esperança e mostrar a importância do legado.

Os temas gerais da especialidade serão tratados com profundidade, permitindo um alto grau de atualização por meio das mais de 400 aulas distribuídas em conferências, encontros com professores, mesas-redondas, simpósios, debates, painéis e *hot topics*, seis cursos de imersão, um curso de capacitação em Densitometria Mineral Óssea, uma das duas áreas de atuação reconhecidas para a endocrinologia e metabologia (a outra é a de Endocrinologia Pediátrica), uma imersão em temas cirúrgicos e de saúde sexual.

Parcerias científicas foram firmadas com diversas outras sociedades médicas nacionais e internacionais, e resultaram na participação de especialistas em endocrinologia e metabologia e todas as suas áreas específicas de conhecimento (representadas por seus 11 departamentos científicos), cardiologistas, clínicos gerais, urologistas, ginecologistas, anestesiologistas, cirurgiões, hepatologistas, nutricionistas, educadores físicos, psiquiatras, teólogos, profissionais da tecnologia da informação, arquitetos, pecuaristas, gestores públicos, evidenciando de fato as diversas conexões e áreas de protagonismo da endocrinologia e metabologia.

A SBEM continua investindo em jovens endocrinologistas e promove mais uma vez o Projeto Preceptoria, que visa acolher os jovens que estão em início de carreira ou que planejam ser endocrinologistas no futuro, atualizá-los e abrir horizontes para eles.

Se Matt Haig citou a existência de uma biblioteca de infindáveis prateleiras, podemos parafrasear e dizer que, no intervalo de um ano, ciclo entre dois grandes congressos da SBEM, houve a produção de 1.206 artigos científicos que foram submetidos (recorde absoluto na história dos congressos brasileiros da especialidade) e que resultaram na aprovação de 883 pôsteres e 36 trabalhos para apresentação oral, mostrando a pujança da produção da comunidade de pesquisadores na especialidade. Os resumos desses trabalhos estão publicados nesta edição dos *Archives*.

Entre os também infindáveis ciclos, existem os do reconhecimento das virtudes e das glórias, representados pela entrega dos Prêmios SBEM a quatro grandes endocrinologistas de carreiras brilhantes e de contribuições excepcionais ao desenvolvimento da especialidade e da Sociedade: Margaret de Castro, Mônica Roberto Gadelha, César Luiz Boguszewski e Alexandre Hohl receberão o reconhecimento público de seus pares.

Também como reconhecimento ao estudo e às publicações científicas, quatro jovens serão premiados: Gabriel Tomáz de Carvalho e Cunha Abreu e Priscila Maria Teixeira Aroucha, que tiveram desempenhos rigorosamente empatados na prova de obtenção do TEEM (Título de Especialista em Endocrinologia e Metabologia – Prêmio Bernardo Léo Wajchemberg), e Cristine Dieter e Cléber Camacho, como autores principais dos dois melhores trabalhos publicados nos AE&M em 2023, respectivamente, na área clínica (Prêmio Waldemar Berardinelli) e na área básica (Prêmio Thales Martins).

Os premiados e homenageados associados Honorários serão os escolhidos durante o congresso em João Pessoa em 2023: Alana Abrantes, Poli Mara Spritzer, João Modesto Filho, Alberto José Santos Ramos, Roberto Salvatori e Nina Rosa Musolino (*in memoriam*) – esta como exemplo de que vida terrena fecha o ciclo, mas o legado fica.

Gerar, resistir, produzir, conectar, aperfeiçoar, preservar, atravessar... e deixar um legado após a jornada. Eis uma síntese da feliz arte de viver.

Que seja um congresso cheio de vida, de conexões, de aperfeiçoamento e de renovação da esperança de um cenário mais ético para todos.

Neuton Dornelas

Presidente da Comissão Científica CBEM 2024

MENSAGEM DO PRESIDENTE DO CBEM 2024

Meus queridos colegas e amigos que vão ler e se deliciar com esta edição suplementar do nosso *Archives of Endocrinology and Metabolism* (AE&M).

É com grande satisfação e sensação de dever cumprido que apresentamos esta edição suplementar, dedicada aos resumos dos trabalhos apresentados durante o nosso congresso, o Congresso Brasileiro de Endocrinologia e Metabologia (CBEM 2024). Nesta 36ª edição, atingimos um número recorde de submissões, algo em torno de 1.100, com aproximadamente 900 trabalhos aprovados, entre os quais 33 foram selecionados para apresentação oral. A grande participação de jovens pesquisadores, incluindo estudantes da graduação, merece ser ressaltada, e aponta para o crescimento contínuo da nossa comunidade científica, afirmando o nosso presente e nos dando grandes esperanças para o futuro. Sem dúvida, a presença de renomados pesquisadores, orientando e servindo como exemplo para os nossos jovens, garantiu a alta qualidade científica dos trabalhos, o que nos enche de orgulho. Os trabalhos apresentados cobrem uma vasta gama de tópicos, tentando contemplar esse universo de conhecimento chamado Endocrinologia e Metabologia, e representam o mais alto nível de rigor e inovação, refletindo o compromisso de nossos membros em avançar o conhecimento em suas respectivas áreas.

Desejamos que este congresso, não só os trabalhos aqui devidamente registrados, mas todas as apresentações e debates que ele promoveu, fortaleça e una ainda mais a nossa SBEM, impulsionando-nos a trilhar nosso caminho de representar a nossa especialidade, sempre pautados pela ética e com respaldo científico, com o foco principal de melhorar a assistência aos nossos pacientes, objetivo principal da sagrada profissão de médico. Que continuemos a crescer juntos, colaborando e compartilhando conhecimentos para o benefício de toda a comunidade.

Fábio Moura

Presidente do CBEM 2024

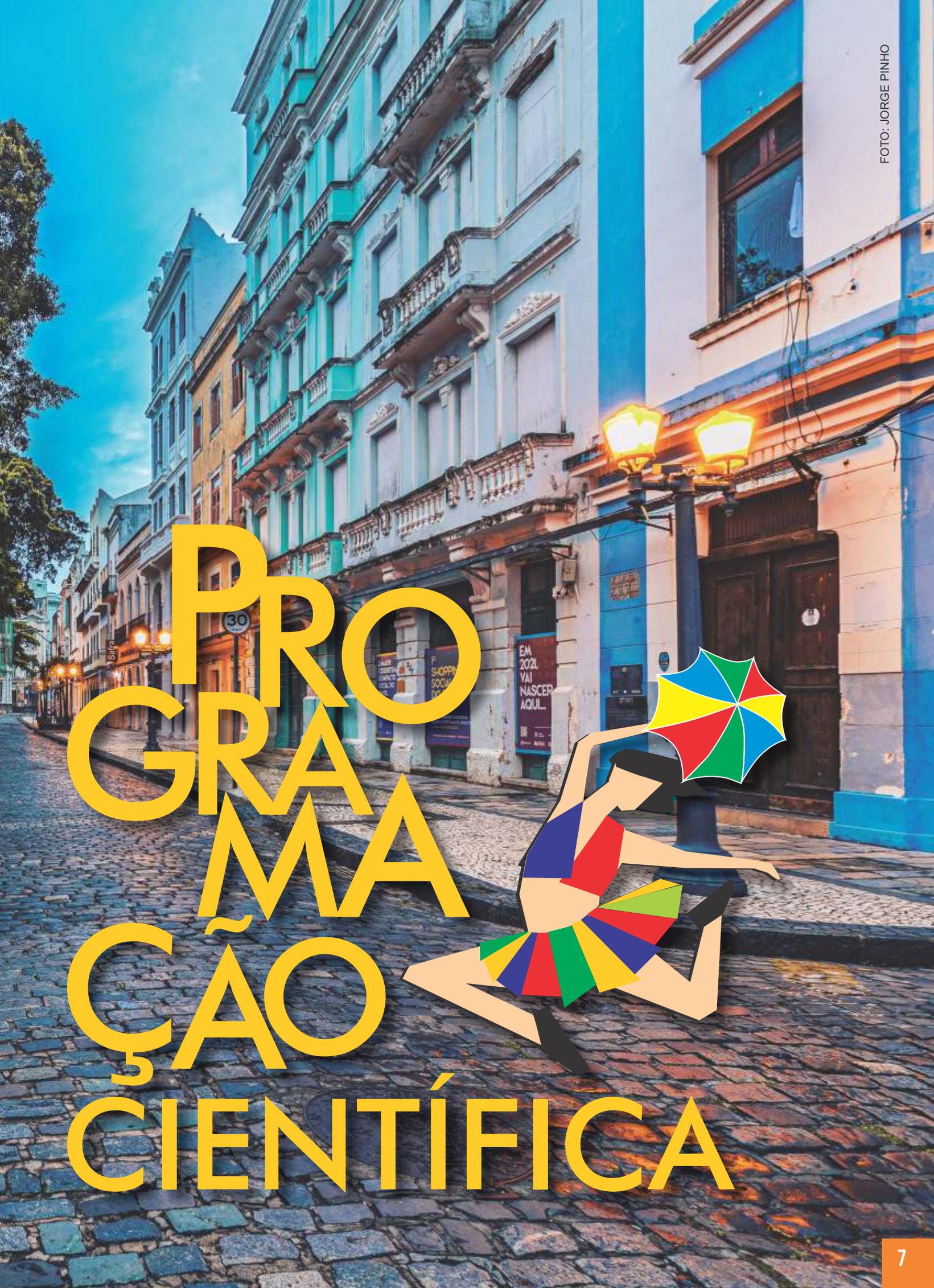

FOTO: JORGE PINHO

PROGRAMAÇÃO CIENTÍFICA

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SEXTA-FEIRA

PROGRAMAÇÃO CIENTÍFICA

	SALA 1	SALA 2	SALA 3	SALA 4
08h30 10h00	Curso de Imersão - **DEFAT THM na prática clínica** Coordenadores: Marcelo Fernando Ronsoni (SC) e Mônica de Oliveira (PE) Temas: • **Diagnóstico e estágios da menopausa** Ruth Clapauch (RJ) • **Exames imprescindíveis na avaliação e seguimento** Thyciara Fontenele (CE) • **Indicações e contraindicações de THM** Mônica de Oliveira (PE)	Curso de Imersão de **Diabetes Como incluir o uso da tecnologia na abordagem dos pacientes com DM do consultório** Coordenadores: Levimar Araújo (MG) e Cristiane Bauermann Leitão (RS) Temas: • **Softwares de sensores** Karla Melo (PB) • **Calculadoras de risco cardiovascular** Wellington Santana (MA) • **Rastreamento para MODY** Milena Teles (CE) • **Calculadora de FIB-4** Joaquim Custódio (BA)	Curso de Imersão de **Endocrinologia do Exercício O que o Endocrinologista precisa saber sobre suplementação alimentar** Coordenadores: Clayton Macedo (RS) e Andrea Fioretti (SP) Módulo 1 Temas: • **Epidemiologia do uso de suplementos alimentares** Fúlvio Tomaselli (SC) • **Que exames laboratoriais são realmente necessários?** Ricardo Oliveira (RJ) • **Avaliação da composição corporal para a tomada de decisão na suplementação** Clayton Macedo (RS)	Curso de Imersão de **Obesidade** Coordenadores: Fábio Trujilho (BA) e Thaisa Trujilho (BA) Temas: • **Mudando o foco de restrição calórica para alimentação saudável** Simone Van de Sande Lee (SC) • **Quais os alvos e quais ferramentas usar para individualizar o tratamento da pessoa com obesidade?** Fábio Trujilho (BA) • **Avaliação e tratamento da obesidade sarcopênica** Cristiane Moulin (DF) • **Discutindo a longo prazo o tratamento da obesidade: manutenção do peso perdido** Thaisa Trujilho (BA)
10h00 10h30	I N T E R V A L O			
10h30 12h00	Curso de Imersão - **DEFAT** **THM na prática clínica** Temas: • **Grandes estudos na THM** Flávia Tinano (SP) • **Esquemas sistêmicos de THM** Dolores Pardini (SP) • **Tratamento da síndrome genitourinária** Karen de Marca Seidel (RJ) • **Tratamento não hormonal** Alexandre Hohl (SC) • **THM: por quanto tempo? Quando suspender?** Poli Mara Spritzer (RS)	Curso de Imersão de **Diabetes** • **Softwares de interpretação de gráficos de bomba de insulina** André Vianna (PR) • **Bioimpedância** Silmara Leite (PR) • **Smartwatches** Márcio Krakauer (SP) • **Contadores de passos** Rodrigo de Azeredo Siqueira (RJ) • **Uso de Excel** Edson Perrotti (AL)	Curso de Imersão de **Endocrinologia do Exercício** Módulo 2 Temas: • **Mecanismo de ação, tipos e marcas, indicações, contraindicações e riscos dos principais suplementos:** **- Whey protein** Andrea Fioretti (SP) **- Creatina** Cristina Schreiber (SC) **- Termogênicos** Cristiano Barcellos (SP)	Curso de Imersão de **Obesidade** • **Papel da composição corporal no tratamento da obesidade** Daniel Lins (PE) • **Obesidade e Exergames uma possibilidade real em um mundo virtual** Hugo Tourinho Filho (SP) • **Intolerância aos análogos de GLP1** Alexander Benchimol (RJ) • **Pacientes com comorbidades psiquiátricas** Adriano Segal (SP) • **Tratamento combinado da obesidade inicial ou no reganho de peso** Fábio Trujilho (BA) • **Estigma Internalizado** Priscilla Gil (RJ)
12h00 13h30	I N T E R V A L O			

PROGRAMAÇÃO CIENTÍFICA

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SALA 5

Curso de Imersão da **Tireoide**
Radiofrequência em Nódulos Tiroidianos

Coordenadores:
Gustavo Caldas (PE),
Cristiane Jeyce Gomes (DF)
e Antônio Rahal (SP)

Temas:
- **Quais nódulos devem ser realizados a PAAF?**
  Rosália Padovani (SP)
- **Como devemos realizar o seguimento de nódulos tireoidianos benignos?**
  Carolina Ferraz (SP)
- **Radioablação e nódulos tireoidanos - nova modalidade terapêutica?**
  Guilherme Martins (SC)
- **Quais as diferentes opções que temos hoje?**
  Gustavo Philippi de Los Santos (SC)

I N T E R V A L O

Curso de Imersão da **Tireoide**

- **Radioablação: o que pode dar errado?**
  Erivelto Volpi (SP)
- **Quais as indicações para o uso da radioablação nos nódulos benignos de tireoide?**
  Cleo Mesa Jr. (PR)
- **Quais as indicações para o uso da radioablação nos nódulos malignos de tireoide?**
  Rafael Scheffel (RS)

SALA 6

Curso de Imersão de **Neuroendocrino e Adrenal**
Abordagem do paciente com massa adrenal ou hipofisária:

Coordenadores: Leandro Kasuki (RJ) e Madson Almeida (SP)

Temas:
- **Casos clínicos**:
  Lucio Vilar (PE)
  e Leonardo Vieira (RJ)
- **O que o endocrinologista precisa saber na avaliação da imagem**

  - Da Região selar
  Nina Ventura Wilner (RJ)
  - Da adrenal
  Fernando Morbeck (SP)

Curso de Imersão de **Neuroendocrino e Adrenal**

Temas:
- **Investigação laboratorial do paciente:**
  - Com massa selar
  Andréa Glezer (SP)
  - Com massa adrenal
  Maria Cândida Fragoso (SP)
- **Fechamento dos Casos Clínicos**

SALA 7

SALA 8

SALA 9

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PROGRAMAÇÃO CIENTÍFICA

	SALA 1	SALA 2	SALA 3	SALA 4
13h30 15h00	Mesa-redonda **A obesidade como fator de risco cardiovascular modificável** Moderadores: Mário Carra (SP) e Ana Paula Tavares (PE) Temas: • **Fisiopatologia da obesidade como fator de risco cardiovascular** Cynthia Valério (RJ) • **Estratégia do tratamento da obesidade como prevenção primária na doença cardiovascular** Walmir Coutinho (RJ) • **Tratamento da obesidade no paciente com doença cardiovascular** Amélio Godoy-Matos (RJ)	Mesa-redonda **Eu vim ao mundo...e foi assim.** Moderadores: Neuton Dornelas (DF) e Nathália Lisboa (MG) Temas: • **Fertilidade nas doenças endócrinas** Berenice Bilharinho (SP) • **A gestante com doenças endócrinas na sala de parto** Alexandre Dubeux (PE) • **O RN com hipoglicemia** Raphael Liberatore (SP)	Curso de Imersão **Endocrinologia do Exercício** Módulo 3 **Suplementação alimentar aplicada à:** • **Osteosarcopenia** Rosana Radominski (PR) • **Diabetes** Renato Redorat (RJ) • **Obesidade** Fúlvio Tomaselli (SC) • **Gestação** Cristina Schreiber (SC) • **Crianças e adolescentes** Mauro Scharf (PR)	Mesa-redonda **Terapia Hormonal da Menopausa e Osteoporose** Moderadores: Dolores Pardini (SP) e Monique Ohe (SP) Temas: • **Posso indicar THM como primeira opção de tratamento em mulheres com alto risco de fratura?** Ruth Clapauch (RJ) • **Associação de THM com outros antirreabsortivos ou osteoformadores no tratamento da osteoporose** Maria Caroline Coelho Amaral (RJ) • **Insuficiência ovariana prematura e saúde óssea** Mayra Macenas Gomes (SP)
15h00 15h30		I N T E R V A L O		
15h30 17h45	Hot topics Moderadores: Mário Carra (SP) e Márcia Farias (PB) Temas: • **O papel do fígado na gênese do Diabetes mellitus** Amélio Godoy-Matos (RJ) • **a-GLP1 e iSGLT-2: juntos ou separados?** Rodrigo Lamounier (MG) • **Qual o papel do escore de cálcio na abordagem do paciente com diabetes?** Domingos Malerbi (SP) • **Metformina na gestação com diabetes: há ainda espaço?** Patrícia Dualib (SP)	**Endocrinologia e Metabologia e Políticas Públicas** **Como melhorar os resultados do tratamento de doenças endócrinas no Brasil otimizando recursos** Moderadores: Ana Karina Sodré (CE) e Karla Melo (PB) Temas: • **Obesidade** Tarissa Beatrice Zanata Petry (SP) • **Diabetes mellitus** Rosane Kupfer (RJ) • **Triagem neonatal ampliada no SUS** Tânia Bachega (SP) • **As doenças raras no âmbito da Endocrinologia e Metabologia: situação atual no país e o que o Ministério da Saúde espera do protagonismo de uma Sociedade Médica** Natan Monsores de Sá (DF)	Curso de Imersão de **Endocrinologia do Exercício** • **Cuidados antidoping** Ricardo Oliveira (RJ) • **Cuidados dietéticos** Heloísa Theodoro (RS) • **Treinamento físico** Marcos Fortes (RJ) • **Vitamina D** Érico Higino de Carvalho (PE) • **Vitamina B** Tatiana Abrão (SP) • **Ácido fólico** Ricardo Oliveira (RJ) • **Boosters de GH** Felipe Gaia (SP) • **Boosters de testosterona** Clayton Macedo (RS)	Hot topics **Saúde sexual** Moderadores: Christyanne Rodrigues (PE) e Edilberto Rocha (PE) Temas: • **Pós Câncer** Ciciliana Rech (RS) • **Desejo sexual hipoativo** Thyciara Fontenele (CE) • **Uso de contraceptivo hormonal** Agostinho Machado Júnior (PE) • **No envelhecimento** Carmita Abdo (SP)
18h00 18h30	Conferência Magna **A endocrinologia e metabologia: Uma jornada de conexões e transformações pessoais no ciclo da vida** Presidente: Neuton Dornelas Gomes (DF) Conferencista: **Luiz Cláudio Castro** (DF)			
18h40	**Abertura do CBEM 2024** Prêmios Bernardo Léo Wajchemberg (1º colocado do TEEM) e de 6 Sócios Honorários			

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SALA 5

Mesa-redonda
Carcinoma diferenciado da tireoide

Moderadores:
Ícaro Sampaio (PE) e
Giulliana Nóbrega (PB)

Temas:
- **Modalidades diagnósticas no Paciente com Câncer de tireoide avançado**
  Rosália Padovani (SP)
- **Terapia alvo já é uma realidade?**
  Rafael Scheffel (RS)
- **Rediferenciação do CA papilífero**
  Helton Ramos (BA)

Hot Topics
Hipotiroidismo

Moderadores:
Flávia Maia (MG)
e Assíria Rolim (PE)

Temas:
- **Causas e tratamento do hipotiroidismo de difícil controle**
  Patrícia Gadelha (PE)
- **O que fazer em pacientes bem controlados mas que persistem com sintomas de hipotiroidismo?**
  Laura Sterian Ward (SP)
- **Terapia combinada: há evidências para dirimir controvérsias?**
  Gustavo Cancela Penna (MG)
- **Dieta da tireoide. Existem evidências?**
  Carolina Ferraz (SP)

SALA 6

Mesa-redonda
Hipertensão no consultório do endocrinologista

Moderadores:
Edgard Pessoa de Mello (PE)
e Flávia Amanda (SP)

Temas:
- **Terapia combinada no tratamento da hipertensão resistente**
  Luiz Bortolotto (SP)
- **Tratamento medicamentoso ou cirúrgico para o hiperaldosteronismo primário: Como escolher?**
  Madson Almeida (SP)
- **Antagonista de espironolactona na doença renal crônica**
  Andrea Pio de Abreu (SP)

Hot Topics
Obesidade: interação da genética com o ambiente

Moderadores:
Alana Abrantes (PB) e
Tanise Balvedi Damas (SC)

Temas:
- **Do alimento ao sentimento: o eixo intestino-cérebro, os alimentos hiperpalatáveis e a alimentação excessiva**
  Henrique Suplicy (PR)
- **Como a genética nos ajuda a entender a obesidade comum?**
  Cristiane Moulin (DF)
- **A Endocrinologia e seu protagonismo na Pecuária – compreendendo os mecanismos hormonais de sobrevivência**
  Valéria Guimarães (DF)
- **As regras de rotulagem e publicidade de alimentos no Brasil**
  Maria Edna Melo (SP)

SALA 7

Mesa-redonda
Acromegalia

Moderadores:
Daniella Rego (PE) e
Roseneide Torres (PB)

Temas:
- **Armadilhas no Diagnóstico Laboratorial**
  Luciana Naves (DF)
- **Tratamento Medicamentoso: o que temos hoje?**
  Raquel Jallad (SP)
- **Tratamento Medicamentoso: Perspectivas**
  Leandro Kasuki (SP)

Hot topics

Moderadores:
Juliana Maia (PE) e Maria
José Coutinho (PE)

Temas:
- **Incluindo a Lp(a) nos escores de risco. Como fica a acurácia?**
  Joaquim Custódio (BA)
- **Perda de peso e redução de risco cardiovascular. Como fica o risco residual?**
  Cynthia Valério (RJ)
- **Efeito a longo prazo do Volanesorsen na Quilomicronemia familiar monogênica. Insights do estudo EAMS**
  Josivan Lima (RN)
- **Conexão doença vascular e demência. O impacto da APOE**
  Márcio Lauria (MG)

SALA 8

Mesa-redonda
Saúde dos indivíduos transgêneros

Moderadores:
Fernanda de Azevedo
Correa (Sua) e
Ana Carolina Thé (PE)

Temas:
- **Vulnerabilidade e passabilidade social**
  Erik Trovão (PE)
- **O que muda após os 50 anos**
  Karen de Marca Seidel (RJ)
- **Saúde mental**
  Amanda Athayde (RJ)

Hot topics

Moderadores:
Fernando Gondim (PE) e
Wellington Santana (MA)

Temas:
- **Uso de android APS em crianças menores de 7 anos**
  Edson Perrotti (AL)
- **Tratamento da doença renal diabética: finerenona, iSGLT2 ou ambos?**
  João Roberto Sá (SP)
- **Impacto dos novos medicamentos na evolução da retinopatia**
  Solange Travassos (RJ)

Prêmio AE&M
Waldemar Berardinelli
Polymorphisms in TIE2 and ANGPT-1 genes are associated with protection against diabetic retinopathy in a Brazilian population
Cristine Dieter

SALA 9

14h00-16h00
Reunião do Conselho
Editorial AE&M

I N T E R V A L O

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PROGRAMAÇÃO CIENTÍFICA

	SALA 1	SALA 2	SALA 3	SALA 4
08h30 09h20	Encontro com os Professores **Esteroides Anabolizantes: quando o uso está preconizado** Professores: • **Testosterona** Marcelo Fernando Ronsoni (SC) • **Outros Esteroides** • **Anabolizantes** Clayton Macedo (RS)	Encontro com os Professores **Cetoacidose diabética - novos critérios diagnósticos e condutas para tratamento e acompanhamento** Professores: Wellington Santana (MA) e Rodrigo de Azeredo Siqueira (RJ)	Conferência Prêmio SBEM Luiz César Póvoa **Uma jornada ao longo do Ciclo da Vida: numerosas as manhãs de verão...** Presidente: Paulo Augusto Miranda (MG) Apresentador: Sonir Antonini (SP) Premiada: Margaret de Castro (SP)	Encontro com os Professores **Transtornos de compulsão alimentar: do diagnóstico ao tratamento** Professores: Alexander Benchimol (RJ) e Taki Cordás (SP)
09h30 10h00	Conferência **Na era da manipulação (de drogas, de dados e de fatos), qual o impacto da pseudociência na Endocrinologia?** Presidente: Adriana Forti (CE) Conferencista: **Alexandre Hohl** (SC)	Conferência **Nódulo tiroidiano: já chegamos a um consenso?** Presidente: Cristina Bandeira (PE) Conferencista: **Ana Luiza Maia** (RS)	Conferência **Atualização na avaliação e tratamento do hiperparatireoidismo primário e hipoparatireoidismo** Presidente: Francisco Bandeira (PE) Conferencista: **John Bilezikian** (USA)	Conferência **Tratamento da obesidade como "inovação do ano em ciência": momento de vencer a resistência e o estigma** Presidente: Márcio Mancini (SP) Conferencista: **Bruno Halpern** (SP)
10h00 10h30		I N T E R V A L O		
10h30 12h00	Mesa Redonda **Implantes hormonais** Moderadores: Annelise Meneguesso (PB) e Diana Viegas (BA) Temas: • **Entendendo a regulamentação** Annelise Meneguesso (PB) • **Farmacocinética e farmacodinâmica - existem dados?** Maria Celeste Osório (RS) • **Parto, amor, fidelidade e felicidade - Ocitocina: uso ético, estético e patético** Juliana Drummond (MG)	Mesa Redonda **Gestação e tireoide: diagnóstico e conduta nas desordens tiroidianas na gravidez** Moderadores: Alana Abrantes (PB) e Bruna Costi (PE) Temas: • **Hipotiroidismo e gestação** Patrícia Teixeira (RJ) • **Hipertiroidismo e gestação** Suemi Marui (SP) • **Tireoide e infertilidade: qual o papel dos anticorpos?** Gustavo Caldas (PE)	Hot topics **O impacto do altamente improvável - situações especiais na Pediatria** Moderadores: Ana Carla Neves (PE) e Maria Juliana Arruda (PE) Temas: • **A deficiência dos hormônios hipofisários e sua associação com síndromes genéticas. A importância do olhar clínico do endocrinologista** Fernanda de Azevedo Correa (Suiça) • **Eixo GF-IGF1 em pacientes no espectro autista** Margaret Boguszewski (PR) • **Desfecho Neurocognitivo e qualidade de vida em pacientes com síndrome de Turner** Eveline Gadelha (CE) • **Formas sindrômicas de puberdade precoce central e distúrbios do neurodesenvolvimento** Ana Canton (SP)	Mesa-redonda **Desafios do tratamento sequencial na osteoporose:** Moderadores: Renata Simes (PE) e Narriane Chaves (PB) Temas: • **Posso prescrever osteoformador após tratamento prolongado com denosumabe?** Catarina d'Alva (CE) • **Qual a eficácia do osteoformador após bisfosfonatos ou antirreabsortivos menos potentes?** Érico Higino de Carvalho (PE) • **Qual antirreabsortivo indicar após o tratamento com osteoformador?** Marta Sarquis (MG)
12h10 13h00	INTERVALO	Simpósio **CSL VIFOR**	Visita aos pôsteres	Simpósio **NOVONORDISK**
13h10 14h00			Simpósio **BOHERINGER LILLY**	Intervalo

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SALA 5	SALA 6	SALA 7	SALA 8	SALA 9
Encontro com os Professores **Novas diretrizes para o diagnóstico de osteoporose e estratificação do risco de fratura: FRAX, Densitometria óssea, TBS e REMS** Professores: Mayra Macenas Gomes (SP) e Ângela Leal (SE)	Encontro com os Professores **Câncer de Tireoide em Crianças** Professores: Paulo Alonso G. Alves Júnior (RJ) e Bárbara Gomes (PE)	Encontro com os Professores **Apneia do sono: diagnóstico e tratamento e relações com doenças endocrinológicas** Professores: Rodrigo Pedrosa (PE) e Cristina Façanha (CE)	Encontro com os Professores **Casos difíceis em Dislipidemia** Professores: Márcio Lauria (MG) e Maria Helane Gurgel (CE)	
Conferência **Processo de decisão de tratamento com GH em crianças e adolescentes com baixa estatura Idiopática** Presidente: Fabiano Sandrini (SC) Conferencista: **Margaret Boguszewski** (PR)	Conferência **Atualização dos guidelines ESC e SBD na abordagem do risco cardiovascular no paciente com diabetes** Presidente: João Eduardo Salles (SP) Conferencista: **Marcello Bertoluci** (RS)			
	I N T E R V A L O			
Mesa-redonda **Como mudar os rumos no tratamento da Dislipidemia** Moderadores: Wallace Miranda (PI) e Thas Gelenske (PE) Temas: • **Intolerância a estatinas - como abordar** Joana Dantas (RJ) • **Terapia não farmacológica da hipercolesterolemia: papel do exercício físico, dietas, fitoterápicos** Ricardo Oliveira (RJ) • **Quando desprescrever terapia hipolipemiante** Andrei Sposito (SP)	Mesa-redonda **Redes sociais e obesidade** Moderadores: Marise Lima (PE) e Karoline Medeiros (PE) Temas: • **Rede social como fator de risco para transtornos alimentares** Priscilla Gil (RJ) • **Como lidar de forma ética e respeitosa com a obesidade nas redes sociais** Jorge Eduardo da Silva Soares (RJ) • **A voz do paciente: entre a expectativa e a realidade** Rodrigo Lamounier (MG)	Mesa-redonda **Desafios no manejo do paciente com insuficiência adrenal** Moderadores: João Modesto Filho (PB) e Mauricio Lopes (PE) Temas: • **Cortisol basal baixo: o que fazer?** Leonardo Vieira (RJ) • **Como otimizar o tratamento da insuficiência adrenal?** Maria Cândida Fragoso (SP) • **Qualidade de vida e mortalidade na insuficiência adrenal** Mauro Czepielewski (RS)	Mesa-redonda **Inteligência artificial na Neuroendocrinologia** Moderadores: Márcia Farias (PB) e Lúcia Helena Nóbrega (RN) Temas: • **Inteligência artificial como preditora de resposta ao tratamento na acromegalia** Luiz Eduardo Wildemberg (RJ) • **Alterações metabólicas no prolactinoma** Luciana Naves (DF) • **Papel da inteligência artificial na predição de recidiva dos adenomas não funcionantes** Paula Elias (SP)	
Visita aos pôsteres	Visita aos pôsteres	Visita aos pôsteres	12h10 -14h00 **Projeto Preceptoria**	
Simpósio **ASTRAZENECA**				**Sociedade de Cirurgia Endócrina** 13h30 - Abertura Manuel Domingos Gonçalves (RJ) Presidente da SBEC

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PROGRAMAÇÃO CIENTÍFICA

	SALA 1	SALA 2	SALA 3	SALA 4
14h00 15h30	14h00-15h30 Conferência **Potenciais mecanismos de ação dos medicamentos à base de NuSH (hormônios estimulados por nutrientes)** Presidente: Daniel Lins (PE) Conferencista: **Bruno Geloneze** (SP)	Simpósio Moderadores: Ana Amélia Hoff (SP) e Flávia Maia (MG) Temas: • **Tumores neuroendócrinos gastroenteropancreáticos (GEP-NETs): novos horizontes do diagnóstico ao tratamento** Ana Rosa Quidute (CE) • **Síndromes genéticas de predisposição para neoplasias endócrinas** Delmar Muniz (SP) • **Manejo do Carcinoma medular da tireoide hereditário** Ana Luiza Maia (RS)	Mesa-redonda **Desafios no diagnóstico do Hiperparatireoidismo primário** Moderadores: João Lindolfo Borges (DF) e Arthur Inojosa (PE) Temas: • **Hiperparatireoidismo primário normocalcêmico ou hiperparatireoidismo secundário** John Bilezikian (USA) • **Métodos localizatórios: quais e quando solicitar** Francisco Bandeira (PE) • **Quando o estudo genético pode auxiliar** Monique Ohe (SP)	14h00 – 14h20 **Prêmio SBEM** Antônio Barros de Ulhôa Cintra Apresentador: Henrique Suplicy (PR) Premiado: César Luiz Boguszewski (PR) 14h30 – 15h20 Encontro com Professores **Manejo do incidentaloma hipofisário** Professores: Manoel Martins (CE) e Heraldo Garmes (SP)
15h30 16h00	INTERVALO	**15h30 – 16h20** **Simpósio** **LILLY**	INTERVALO	**15h30 – 16h20** **Simpósio** **MANTECORP**
16h00 18h00	Hot Topics **Hipogonadismo Funcional** Moderadores: Mônica de Oliveira (PE) e Ana Teresa Melo (PE) Temas: • **Hipogonadismo masculino secundário ao uso de esteroides anabolizantes** Marcelo Fernando Ronsoni (SC) • **Hipogonadismo masculino associado a obesidade (MOSH)** Leticia Gontijo (MG) **Hipogonadismo masculino induzido por exercício físico (EIHC)** Alexis Guedes (BA) • **Hipogonadismo induzido pelo envelhecimento** Alexandre Hohl (SC)	16h30 -18h00 **Endocrinologia através do Cinema** Estrelando Sérgio Maeda (SP) e Erik Trovão (PE)	**Hot Topics** Moderadores: Maria Augusta Zella (PR) e Lunnara Saldanha (PB) Temas: • **Snacks de exercício físico para a saúde metabólica** Rosana Radominski (PR) • **Novas drogas antiobesidade e o músculo: amigos, inimigos ou indiferentes?** Roberto Zagury (RJ) • **Estrógeno no atleta: amigo ou vilão** Felipe Gaia (SP) • **Exercício físico e crescimento: Impacto do treinamento físico no sistema GH-IGF1 em adolescentes** Hugo Tourinho Filho (SP)	**16h30 -18h00** Simpósio **Tratamentos intervencionistas da obesidade** Moderadores: Daniel Lins (PE) e Nara Crispim (PB) Temas: • **Desfechos da cirurgia bariátrica no Brasil: o que mostram os estudos randomizados?** Carlos Schiavon (SP) • **Cirurgia Revisional: Prós e Contras** José Câmara Neto (PE) • **Risco psiquiátrico associado ao tratamento cirúrgico da obesidade** Adriano Segal (SP)

PROGRAMAÇÃO CIENTÍFICA

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SALA 5

14h00-14h30
Conferência
O ano em Menopausa

Presidente: Nair Cristina Almeida (PE)
Conferencista: Dolores Pardini (SP)

14h40-15h00
Prêmio SBEM José Schermann

Apresentador: Fábio Moura (PE)
Premiado: Alexandre Hohl (SC)

Mesa-redonda **Agonistas de GLP1: além do controle glicêmico**
Moderadores: Alberto Ramos (PB) e Alberto Dias (GO)

Temas:
- **Mecanismos de ação dos a-GLP1 na microcirculação** Mateus Dornelles (RS)
- **Temos um novo agente na proteção renal?** Fernando Gerchman (RS)
- **Efeitos na retina – redução rápida da glicemia é realmente deletéria?** Nelson Rassi (GO)

SALA 6

Mesa-redonda
O que você devia ter lido em 2024: Principais artigos publicados em

Moderadores: Márcio Sanctos (PE) e Paula Aragão (PE)

Temas:
- **Diabetes** Fernando Valente (SP)
- **Obesidade** Márcio Mancini (SP)
- **Dislipidemia** Andrei Sposito (SP)

16h20 -18h00
VIGICOM Hormônios – Observatório do mau uso de hormônios

Moderador: Clayton Macedo (RS)

Temas:
- **Na Hepatologia** Vinicius Nunes (BA)
- **Na Cardiologia** Weimar Kunz de Souza (GO)
- **Na Endocrinologia** Luciana Oliveira (SP)
- **Na Psiquiatria** Taki Cordás (SP)

SALA 7

Mesa-redonda
Obesidade na criança e adolescente

Moderadores: Érika Paniago (GO) e Taciana Schuller (PE)

Temas:
- **Obesidade infantil e risco de doenças na vida adulta** Maria Edna Melo (SP)
- **Uso de medicamentos antiobesidade em crianças e adolescentes** Louise Cominato (SP)
- **Consequências ao longo da vida da cirurgia bariátrica em adolescentes** Jacqueline Rizzolli (RS)

Hot topics
Terapia hormonal de afirmação de gênero (THAG) e impacto na saúde:

Moderadores: Karen de Marca Seidel (RJ) e Ana Carolina Thé (PE)

Temas:
- **Tromboembolismo venoso** Ciciliana Rech (RS)
- **Risco cardiovascular** Luciana Mattos Barros Oliveira (BA)
- **Neoplasia** Magnus Dias da Silva (SP)
- **Fertilidade** Eliane Frade (SP)

SALA 8

14h00-14h50
Debate
Devemos investigar hiperaldosteronismo primário em todos os hipertensos?

Juiza: Daniella Rego (PE)

Sim: Madson Almeida (SP)
Não: Claudio Kater (SP)

15h00
Prêmio AE&M
Thales Martins

Área básica
- **Similar hypothyroid and sepsis circulating mRNA expression could be useful as a biomarker in nonthyroidal illness syndrome: a pilot study** Cleber Camacho

Hot topics

Moderadores: Jerônimo Brito (PE) e Ana Carla Neves (PE)

Temas:
- **Diagnóstico etiológico dos distúrbios do desenvolvimento sexual 46 XY** Nathália Lisboa (MG)
- **Micropênis e hipospádia** Guilherme Guaragna (RS)
- **Criptorquidismo** Filipe Tenório (PE)
- **Ginecomastia na criança e no adolescente** Fabiano Sandrini (PR)

SALA 9

13h40 - **Abordagens cirrgicas no tratamento das doenças nodulares da tireoide**

Presidente: Manuel Domingos Gonalves (RJ)
Debatedores: Carolina Ferraz (SP) Evandro Vasconcelos (PR) Lia Roque Assumpão (RJ)

13h50 - **O Tratamento cirrgico do Hipertireoidismo. Impacto na qualidade de vida do paciente** Evandro Vasconcelos (PR)
14h20 - **O papel do patologista na extensão da cirurgia no exame transoperatório** Aderbal G. Bernardes Jr (MG)
14h40 - **A extensão da cirurgia do câncer de tireoide e o US pré operatório pelo cirurgião** Alberto Treiguer (RS) 15h00 - **Discussão**

Novos procedimentos no tratamento dos nódulos/ tumores de tireoide

16h00 - **A radioablação, suas indicações e resultados no nosso meio** Erivelto Volpi (SP)
16h20 - **Acessos alternativos sem cicatriz cervical – indicações e resultados** Leonardo Rangel (RJ) 16h40 - **A tireoidectomia convencional em regime ambulatorial – passos para a sua segurança** Alberto Molinari (RS)
17h - **Discussão entre os debatedores e plateia**

I N T E R V A L O

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PROGRAMAÇÃO CIENTÍFICA

	SALA 1	SALA 2	SALA 3	SALA 4
08h30 09h20	Encontro com os Professores **CA Anaplásico: atualizações** Professores: Ana Amélia Hoff (SP) e Helton Ramos (BA)	Encontro com os Professores **O que todo endocrinologista precisa saber sobre cardiologia** Professores: Wilson Nadruz (SP) e Marcos Magalhães (PE)	Conferência Prêmio SBEM José Dantas de Souza Leite **A precisão da pesquisa que fundamenta a Medicina de precisão** Presidente: Neuton Dornelas Gomes (DF) Apresentador: Leandro Kasuki (RJ) Conferencista: **Mônica Gadelha** (RJ)	Encontro com os Professores **Diabetes tipo 2 do jovem e DM1 no idoso: deu a louca na fisiopatologia?** Professores: Sérgio Atala Dib (SP) e Luciana Schrainer (RS)
09h30 10h00	Conferência **Sarcopenia, inflamação e reganho de peso** Presidente: Lício Velloso (SP) Conferencista: **Clayton Macedo (RS)**	Conferência **Fragilidade óssea no diabetes mellitus** Presidente: Luiz Griz (PE) Conferencista: **Francisco José Albuquerque de Paula** (SP)	Conferência **The Year in Pituitary** Presidente: Manuel Hermínio (SE) Conferencista: **Roberto Salvatori** (EUA)	Conferência **O ano em tireoide** Presidente: Valéria Guimarães (DF) Conferencista: **Laura Sterian Ward** (SP)
10h00 10h30	I N T E R V A L O			
10h30 12h00	Mesa-redonda **Insuficiência ovariana precoce (IOP** Moderadores: Lidiane Moura (RN) e Letícia Carvalho (PE) Temas: • **Como diagnosticar?** Fábio Comin (MG) • **Estrogenioterapia: qual a melhor dose?** Mônica de Oliveira (PE) • **X frágil - estamos avaliando corretamente?** Marcelo Fernando Ronsoni (SC) • **IOP e risco cardiovascular** Ruth Clapauch (RJ)	Painel **Uso prolongado de antirreabsortivos, complicações e Drug Holiday** Apresentador: Leonardo Bandeira (PE) Painelistas: Miguel Madeira (RJ) João Lindolfo Borges (DF) Luiz Griz (PE)	Simpósio **10 years of SBEM/ESE /ES partnership: achievements and challenges for the next decade** Moderadores: César Luiz Boguszewski (PR) e Ana Luiza Maia (RS) Representante: • **SBEM**: Paulo Augusto Miranda (MG) • **Endocrine Society**: John Newell-Price (Inglaterra) • **European Society of Endocrinology**: Jerôme Bertherat (França)	Mesa-redonda Moderadores: Raimundo Sotero (SE) e Ximene Antunes (RJ) Temas: • **Qual o prognóstico cardiometabólico e renal do paciente com MASLD?** Rodrigo Moreira (RJ) • **Nova calculadora de risco AHA** Fábio Trujilho (BA) • **O papel do sobrepeso na doença renal do paciente com diabetes e sem diabetes** Glaucia Carneiro (SP)

PROGRAMAÇÃO CIENTÍFICA

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SALA 5

Encontro com os Professores
Tratamento da obesidade em população com baixa renda

Professores:
Lívia Lugarinho (RJ) e
Nara Nóbrega Crispim (PB)

Conferência
Como o tecido adiposo pode explicar os diferentes fenótipos da obesidade

Presidente:
Bruno Halpern (SP)
Conferencista:
Matthias Blüher (Alemanha)

I N T E R V A L O

Mesa-redonda
Nódulos tiroidianos

Moderadores: Isabel Oliveira (PE) e
Fernando Amaral (PE)

Temas:
- **As diferentes classificações dos nódulos modificam a necessidade de puncionar?**
  Cristiane Jeyce Gomes (DF)
- **Biópsia por agulha fina ou Core Biopsy?**
  Fabiano Callegari (SP)

SALA 6

ABEMSS - Associação Brasileira de Estudos de Medicina e Saúde Sexual

08h30 - Abertura
Gustavo Paul e
Alexandre Hohl (SC)
Presidente de Mesa:
Jarys Borges (PE)

Temas:
08h40 - **Impacto da polifarmácia na função sexual masculina**
Francisco Coutinho
08h50 - **O que fazer na falha do iPDE-5?**
Gustavo Paul
09h00 - **TRT e Câncer da Próstata: Quem, quando e como?**
Filipe Tenório (PE)
09h10 - **O que fazer quando a TRT não melhora a função sexual?**
Marcelo Cabrini

09h20 - **Discussão**

Debatedores:
Alexandre Hohl (SC),
Thiago Negris,
Jorge Mendes e
Semirames Prado

Presidente de mesa:
Bruno Hállan

10h30 - **O impacto da tireoide na sexualidade humana**
Dhianah Santini (RJ)
10h40 - **Fisioterapia para o tratamento de DE e EP: Qual a evidência?**
Alberto Bona
10h50 - **Ponta do iceberg - risco cardiovascular e disfunção erétil**
Felipe Fakhouri
11h00 - **Disfunção sexual por procuração: O impacto na parceria**
Luiz Antônio Santos
11h10 - **Discussão 2**
Debatedores:
Leonardo Seligra (SP),
José Bessa, Eduardo
Miranda e Bárbara Lucena

SALA 7

Encontro com Professor
Hiperandrogenismo: onde estamos com as dosagens laboratoriais e a abordagem terapêutica?

Professor:
Larissa Garcia Gomes (SP)

Mesa-redonda

Moderadores:
Denise Hoare (PE) e
Mariana Santana (PE)

Temas:
- **Dislipidemias primárias - como abordar**
  Márcio Lauria (MG)
- **O uso de imagens para re-estratificar o risco cardiovascular**
  Hermilo Borba Griz (PE)
- **Apo B, Lp (a), BNP, quando e como usar**
  Maria Helane Gurgel (CE)

SALA 8

Encontro com os Professores
Lipodistrofias: das causas genéticas às adquiridas - abordagem prática

Professores:
Paula Freitas (Portugal) e
Josivan Lima (RN)

Simpósio
Adrenal/Pediatria: Desafios no diagnóstico e manejo da hiperplasia adrenal congênita

Moderadores:
Marcela Barbosa (PE) e
Ana Hermínia (PE)

Temas:
- **Triagem neonatal: como estamos?**
  Tânia Bachega (SP)
- **Novas perspectivas de tratamento para a hiperplasia adrenal congênita**
  Flávia Amanda (SP)
- **Diagnóstico e seguimento da forma não clássica da deficiência da 21 - hidroxilase**
  Berenice Bilharinho (SP)

SALA 9

Sociedade de Cirurgia Endócrina

08h30-10h00 - **O tratamento do hiperparatireoidismo primário e outros**

Presidente: Aderbal G. Bernardes Jr (MG)

Debatedores:
Renan Montenegro Jr (CE)
Evandro Vasconcelos (PR)

08h30 - **Manejo do HPT primário sem localização pré-operatória**
Manuel Domingos Gonçalves (RJ)
08h50 - **Manejo do HPT na endocrinopatia múltipla**
Maria Cristina de Araújo Maya (RJ)

09h10 - **A cirurgia ambulatorial do HPT primário: momento atual**
Alberto Molinari (RS)

09h30 - **Discussão entre os debatedores e plateia**

As abordagens cirrgicas das adrenais e dos insulinomas

Presidente: Manoel Domingos Gonalves (RJ)

Debatedores:
Guilherme Alencar (SC)
Alberto Treiger (RS)

10h30 - **Abordagem videolaparoscópica anterior - vantagens e resultados**
José Ricardo Guimarães (RS)
10h50 - **Abordagem retroperitonial posterior - vantagens e resultados** José Gustavo Olijnyk (RS) 11h10 - **Discussão**

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PROGRAMAÇÃO CIENTÍFICA

	SALA 1	SALA 2	SALA 3	SALA 4
12h10 13h00	INTERVALO	INTERVALO	Simpósio **NOVONORDISK**	INTERVALO
13h10 14h00		Simpósio **ABBOTT**	INTERVALO	Simpósio **MERCK**
14h00 15h30	14h00 - 14h30 Confemcia **Metformina, inositol e medicamentos antiobesidade para mulheres com a síndrome dos ovários policísticos: quais são as evidências?** Presidente: Rosangela Meira Rodrigues (PE) Conferencista: **Poli Mara Spritzer** (RS) 14h40 - 15h30 Encontro com Professores: **Reposição hormonal em meninas com hipogonadismo** Professores: Ana Cláudia Latrônico (SP) e Nathália Lisboa (MG)	Simpósio **Efeitos ósseos adversos de terapias hormonais:** Moderadores: Alcina Vinhaes (BA) e Francisco José Albuquerque de Paula (SP) Temas: • **Inibidores de aromatase no tratamento de baixa estatura** Luiz Cláudio Castro (DF) • **Em sobreviventes do câncer de mama** Lívia Marcela (SP) • **Em sobreviventes do câncer de próstata** Ana Amélia Hoff (SP)	14h00 - 14h30 Conferência **Medicina de precisão em lipidologia** Presidente: Márcio Lauria (MG) Conferencista: **Marcello Bertoluci** (RS) 14h30 – 15h00 Debate Moderador: Thaís Gelenske (PE) **Quem é melhor para avaliar risco cardiovascular?** **Apo B** - Joana Dantas (RJ) **LDL** - Josivan Lima (RN)	Mesa-redonda Moderadores: Cristiane Bauermann Leitão (RS) e Rosane Kupfer (RJ) Temas: • **Classificação do Diabetes** Milena Teles (CE) • **Diagnóstico e rastreamento de diabetes** Carlos Negrato (SP) • **Há diferentes tipos de Dm1?** Melanie Rodacki (RJ) • **Obesidade no DM1: qual o impacto e como abordar** Denise Franco (SP)
15h30 16h00	INTERVALO		15h30-16h20 Simpósio **RECORDATI**	
16h00 17h45	Mesa-redonda **Novos tratamentos para obesidade: em direção a maior eficácia** Moderadores: Sebastião Oliveira (PE) e Tarissa Beatrice Zanata Petry (SP) Temas: • **Semaglutida e tirzepatida: desvendando os estudos clínicos** Cintia Cercatto (SP) • **Cada dia uma nova promessa com poliagonista: organizando o raciocínio** Cristiano Barcellos (SP) • **O futuro da cirurgia bariátrica nessa nova era de potentes medicações** Carlos Schiavon (SP)	Hot Topics **Diabetes** Moderadores: Melanie Rodacki (RJ) e Jacqueline Araújo (PE) Temas: • **Diabetes no primeiro ano de vida: quando o diagnóstico etiológico impacta o tratamento** Raphael Liberatore (SP) • DM 1 **diagnosticado em adultos: reconhecer, diferenciar e abordar inicialmente** Lenita Zajdenverg (RJ) • **Tratamento medicamentoso do adolescente com DM2: recomendações atuais e novas drogas em estudo** Daniela Coelho (PE) • **Abordagem de idosos com DM 1 de longa duração** Cristiane Bauermann Leitão (RS)	**16h20-17h45** Hot Topics Moderadores: Renan Montenegro (CE) e Tatiana Chiara (DF) Temas: • **Manejo perioperatório da cirurgia hipofisária** Paula Elias (SP) • **Manejo dos pacientes com prolactinomas gigantes** Lucio Vilar (PE) • **O papel da copeptina no diagnóstico da deficiência de vasopressina (Diabetes Insípido)** Juliana Drummond (MG) • **Deficiência de Vasopressina (Diabetes insípido) em lactentes** Carolina Donaire (SP)	Hot Topics **Inteligência Artificial na Endocrinologia e Metabologia** Moderadores: Mateus Dornelles (RS) e Felipe Gaia (SP) Temas: • **IA** Yves Nogueira (PE) • **IA na obesidade** Walmir Coutinho (RJ) • **IA no Diabetes** Márcio Krakauer (SP)

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SALA 5	SALA 6	SALA 7	SALA 8	SALA 9
I N T E R V A L O				12h10 -14h00 Projeto Preceptoria
I N T E R V A L O			13h00 - Conselho Deliberativo SBEM	
Mesa-redonda Moderadores: Hermelinda Pedrosa (DF) e Raissa Lyra (PE) Temas: • **Remissão de DM2: up date** Ruy Lyra (PE) • **How early using the new glucose-lowering agents** Davide Pereira (Portugal) • **Abordagem do DM2 na gestação** Airton Golbert (RS)	Presidente de mesa: Silvana Melo 14h00 - **Sexualidade na Mulher com Hiperandrogenismo** Mônica de Oliveira (PE) 14h10 - **Efeitos da terapia medicamentosa de perda de peso na função sexual da mulher** Renato Redorat (RJ) 14h20 - **Baixo desejo sexual em mulheres: O que há de novidades?** Carmita Abdo (SP) 14h30 - **Síndrome Genitourinária na Maturidade - Como Manejar?** Mônica Lopes 14h40 - **Discussão 3** Debatedores: Fernanda Grossi, Débora Britto, Anna Carolina Petry e Isabella Frota	Simpósio **Craniofaringioma** Moderadores: Lucio Vilar (PE) e Helg Farias (PE) Temas: • **Aspectos moleculares** Ítalo Mota (CE) • **Aspectos do Tratamento** Margaret de Castro (SP) • **Impacto Metabólico** Heraldo Garmes (SP)	Conselho Deliberativo SBEM	
I N T E R V A L O				
Hot Topics **Dislipidemia em situações especiais - DRC, transplante** Moderadores: Carlos Frederico Lopes (PE) e Joana Dantas (RJ) Temas: • **Dislipidemia na DRC** Lúcia Cordeiro (PE) • **Dislipidemia na infância** Érika Paniago (GO) • **Dislipidemia e HAS** Wilson Nadruz (SP) • **O paciente com risco CV intermediário: o que fazer?** Rodrigo Moreira (RJ)	Presidente de Mesa: Oswaldo Rodrigues 16h00 - **Disfunções sexuais na população LGBTQIA+** André Marquez 16h10 - **Atualidades: parafilias ou novas formas de vivenciar a sexualidade** Michelle Sampaio 16h20 - **Castração hormonal como tratamento dos transtornos parafílicos: um dilema biotico** Gabriel Becher 16h30 - **Discussão 4** Debatedores: Catarina Moraes, João Afif, Henrique Luz e Dimas Antunes 17h00 - **Assembleia** 18h00 - **Encerramento** - Gustavo Paul/Presidente Eleito		Conselho Deliberativo SBEM	**Workshop da Comissão de Diversidade, Equidade e Inclusão** **Como ser um Endocrinologista (ainda mais) inclusivo** Participantes: Fernanda de Azevedo Correa (Suiça) Karen de Marca Seidel (RJ) Amanda de Araújo Laudier (RJ) Jorge Eduardo da Silva Soares (RJ) Luciana Mattos Barros Oliveira (BA) Ana Canton (SP)

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SEGUNDA-FEIRA

PROGRAMAÇÃO CIENTÍFICA

	SALA 1	SALA 2	SALA 3	SALA 4
08h30 09h20	Encontro com Professores **Medicina translacional: o hipotálamo, o tecido adiposo marrom e a microbiota, da bancada para o consultório** Professores: • **Hipotálamo** Lício Velloso (SP) • **Tecido adiposo marrom** Mário Saad (SP)	Encontro com Professores **RED-S (Deficiência Energética Relativa no Esporte) - um olhar sobre casos subclínicos** Professores: Renato Redorat (RJ) e Roberto Zagury (RJ)	Encontro com Professores **Adrenal: Abordagem das massas adrenais bilaterais** Professores: Claudio Kater (SP) e Rafael Buck Giorgi (SP)	Encontro com Professores **Como abordar a obesidade em pacientes que procuram o consultório médico por outras razões, mas que convivem com obesidade** Professores: Mariana Guerra (ES) e Ana Carla Montenegro (PE)
09h30 10h00	Conferência **Diretriz da ABESO e SBEM do tratamento farmacológico da obesidade** Presidente: Simone Van de Sande Lee (SC) Conferencista: **Rodrigo Moreira** (RJ)	Conferência **Vitamina D na prevenção de doenças – Guideline da Endocrine Society 2024** Presidente: Sergio Maeda (SP) Conferencista: **Marise Lazaretti Castro** (SP)	Conferência **Genetics of ACTH-Independent Cushing Syndrome** Presidente: Madson Almeida (SP) Conferencista: **Constantine Stratakis** (EUA)	Conferência **A história de Davi e Golias: o que ela nos ensina sobre ética, misticismo e ciência** Presidente: Cláudio Kater (SP) Conferencista: **César Luiz Boguszewski** (PR)
10h00 10h30	I N T E R V A L O			
10h30 12h00	Mesa Redonda **Definindo alvos na obesidade:** Moderadores: Maria Amazonas (PE) e Thaisa Trujilho (BA) Temas: • **Porcentagem de perda de peso e redução de riscos** Maria de Lourdes de Lima (BA) • **PROMs (medidas de desfechos reportadas pelos pacientes): o que são e como utilizar na prática e em pesquisas** Bruno Halpern (SP) • **O conceito de obesidade controlada pela ótica do paciente** Rodrigo Lamounier (MG)	Mesa Redonda **Sensores de Monitorização Contínua em Fitness** Moderadores: Denise Franco (SP) e Cristina Schreiber (SC) Temas: • **Que substratos poderemos medir?** Mauro Scharf (PR) • **Monitorando pré-diabetes** João Eduardo Salles (SP) • **Monitorando esporte e nutrição em pessoas sem diabetes** Walter Minicucci (SP)	Simpósio **The Cushing's Syndrome Journey: Advances in Diagnosis and Management** Moderadores: Júnia Longo (Alemanha) e Mônica Gadelha (RJ) Temas: • **Genetic screening in Cushing syndrome** Jerôme Bertherat (França) • **Prevention and treatment of thrombotic events in Cushing's syndrome** John Newell-Price (Inglaterra) • **Current algorithm for medical treatment of Cushing's syndrome** Rosário Pivonelo (Itália)	Mesa Redonda **Terapia hormonal de afirmação de gênero: na prática clinica** Moderador: Fábio Comin (MG) Temas: • **Na mulher transgênero** Amanda Athayde (RJ) • **No homem transgênero** Amanda Laudier (RJ) • **Situações especiais: adolescentes, não binários e gênero diverso** Erik Trovão (PE)

PROGRAMAÇÃO CIENTÍFICA

14 | 10
SEGUNDA-FEIRA

SALA 5	SALA 6	SALA 7	SALA 8	SALA 9
Encontro com o Professores **MASLD (metabolic dysfunction associated steatotic liver disease) - identificação e conduta** Professores: João Eduardo Salles (SP) e Fábio Marinho (PE)	Encontro com Professores **Como podemos melhorar o atendimento do indivíduo transgênero nos dias atuais?** Professores: Magnus Dias da Silva (SP) e Luciana Mattos Barros Oliveira (BA)	Encontro com Professores **Avaliação da criança com puberdade precoce** Professores: Sonir Antonini (SP) e Fernanda de Azevedo Correa (Suíça)	Encontro com Professores **Hiperprolactinemia** Professores: Lucio Vilar (PE) e Monike Lourenço (GO)	08h30 - 10h00 **Simpósio de neuropatia e complicações nos pés** Moderadores: Hermelinda Pedrosa (DF) e Ana Carolina Thé (PE) Temas: 08h30-08h50 - **Complicações macrovasculares em diabetes: existe relação com as complicações nos pés?** Hermelinda Pedrosa (DF) 08h55-09h15 - **Complicações microvasculares: qual a sua importância nas úlceras nos pés relacionadas ao diabetes** Geísa Macedo (PE)
Conferência **Glucagon - de vilão a um possível alvo terapêutico no DM** Presidente: Mateus Dornelles (RS) Conferencista: **Levimar Araújo** (MG)	Conferência **Bloqueio puberal em crianças com puberdade normal limítrofe e desfecho estatural** Presidente: Jacqueline Araújo (PE) Conferencista: **Angela Spinola e Castro** (SP)			09h20-09h40 - **Neuropatia diabética dolorosa: diagnóstico e tratamento** Luiz Clemente Rolin (SP) 09h45-10h05 - **Doença vascular periférica em diabetes: como identificar, estratificar o risco e quando encaminhar para o especialista** José Wellington Barros (PE)
I N T E R V A L O				
Painel **A endocrinologia e seu protagonismo na arquitetura e urbanismo - Espaços, segurança e acessibilidade para o combate às doenças endócrino-metabólicas** Coordenadores: Maria Teresa Vázquez (PE) e Paulo Bernardo (PE) Painelistas: Cristiano Barcellos (SP) Walmir Coutinho (RJ) Hugo Tourinho Filho (SP) Roberto Montezuma (PE)	Simpósio **Crescimento** Moderadores: Itairan Terres (SC) e Maria Paula Bandeira (PE) Temas: • **Puberdade, Crescimento e Idade Óssea em crianças obesas** Kettyuscia Oliveira (AM) • **Armadilhas na utilização das ferramentas de previsão de altura final** Everlayny F. Costalonga (ES) • **Ética na prescrição de GH em crianças e adolescentes** Paulo Solberg (RJ)	Simpósio **Atualizações no manejo dos tumores adrenais** Moderadores: Rafael Buck Giorgi (SP) e Milena Caldato (PA) Temas: • **Terapia adjuvante no câncer adrenal: para todos os pacientes?** Maria Cândida Fragoso (SP) • **Medicina de precisão nos feocromocitomas e paragangliomas** Gustavo Fagundes (SP) • **Novos avanços nos tumores adrenais pediátricos** Sonir Antonini (SP)	Debate **Disfunção tiroidiana subclínica** Moderador: Ícaro Sampaio (PE) Temas: • **Tratar** José Sgarbi (SP) • **Não tratar** Célia Nogueira (SP)	10h40- 11h00 - **Fisiopatologia da ulceração em pés de pessoas com diabetes** Maria Lucoveis (SP) 11h00- 11h20 - **Manejo das úlceras nos pés relacionadas ao diabetes** Nilce Botto Dompiere (SP) 11h25- 11h55 - **Discussão e perguntas**

14 | 10
SEGUNDA-FEIRA

PROGRAMAÇÃO CIENTÍFICA

	SALA 1	SALA 2	SALA 3	SALA 4
12h10 13h00	INTERVALO	Simpósio **E.M.S.**	INTERVALO	Simpósio **BESINS**
13h10 14h00		INTERVALO	Simpósio **GSK**	INTERVALO
14h00 15h30	Mesa Redonda **Hipertiroidismo** Moderadores: Alana Abrantes (PB) e Livya Lima (PE) Temas: • **Terapia medicamentosa a longo prazo** Danilo Villagelin (SP) • **Novas moléculas para o tratamento da Doença de Graves?** • Cleo Mesa Jr. (PR) **Iodorradioativo em pacientes com Oftalmopatia de Graves** Adriano Cury (SP)	Simpósio **Apresentação da nova Diretriz Reganho de peso após a cirurgia bariátrica** Moderadores: Maria Amazonas (PE) e Guilherme da Conti (PE) Temas: • **Fisiopatologia** Thaisa Trujilho (BA) • **Investigação** Jacqueline Rizzolli (RS) • **Tratamento clínico** Cintia Cercato (SP)	14h00-14h30 Conferência **Desenvolvimento da resistência à insulina no DM1** Presidente: Moacir de Novaes (PE) Conferencista: **Sérgio Atala Dib** (SP) 14h40-15h30 Debate **Todo paciente com doença renal do diabetes se beneficia com iSGLT-2?** Moderador: Rodrigo Lamounier (MG) **Sim:** Wellington Santana (MA) **Não:** Saulo Cavalcanti (MG)	Mesa Redonda **Como podemos intensificar a mudança de estilo de vida na prática?** Moderadores: Jonathan Nicolas (PE) e Renata Paiva (PE) Temas: • **Modelo transteórico de mudança e entrevista motivacional** Milena Teles (CE) • **Exercício Físico** Cristiano Barcellos (SP) • **Nutrição** Juliana Saldanha (RJ)
15h30 16h00	INTERVALO	15h30-16h20 Simpósio **NESTLÉ**	INTERVALO	
16h00 18h00	Painel Moderadores: Jussana Arruda (PE) e Maíra Viégas (AL) Temas: • **Obesidade extrema: uma entidade clínica diferente?** Márcio Mancini (SP) • **Quando suspeitar de causas genéticas?** Renan Montenegro Jr. (CE) • **Particularidades do tratamento clínico** Luciano Albuquerque (PE) • **Particularidades do tratamento cirúrgico** Carlos Shiavon (SP)	Hot Topics **Dislipidemia e doença cardiovascular** Moderadores: Audes Feitosa (PE) e Luiz Gonzaga (PE) Temas: • **Risco cardiovascular: hora de abandonar as antigas calculadoras?** Weimar Kunz de Sousa (GO) • **Lp (a): como e quando? O que muda na prática clínica?** Marcello Bertoluci (RS) • **USPSTF 2023 recomenda contra o rastreio universal de dislipidemia antes dos 20: como detectar casos de HF?** Fernando Gerchman (RS) • **Dislipidemia em crianças: rastreamento universal?** Fernando Giuffrida (BA)	**16h20-18h00** Mesa Redonda **Endocrinologia Ambiental e Geologia** Moderadores: Elaine Frade (SP) e Caroline Serrano (SP) Temas: • **Lições aprendidas dos desreguladores endócrinos: direções e desafios para o futuro** Maria Tereza Nunes (SP) • **Efeito de disruptores endócrinos no tecido adiposo: o que sabemos até agora?** Matthias Blüher (Alemanha) • **Geologia e Endocrinologia: a arte de usufruir e preservar a casa comum** Luiz Cláudio Castro (DF)	Mesa Redonda **THM em situações especiais** Moderadores: Aleide Tavares (PE) e Karoline Medeiros (PE) Temas: • **Obesidade e DM** Dolores Pardini (SP) • **Doenças reumatológicas** Lucas Marchesan (RS) • **História de enxaqueca** Fábio Comin (MG)

PROGRAMAÇÃO CIENTÍFICA

14 | 10
SEGUNDA-FEIRA

SALA 5	SALA 6	SALA 7	SALA 8	SALA 9
Visita aos pôsteres	Visita aos pôsteres	Visita aos pôsteres	Assembleia Geral SBEM	Projeto Preceptoria
14h00 - 14h30 Conferência **Panorama atual e perspectivas do processo transexualizador no Brasil** Presidente: Poli Mara Spritzer (RS) Conferencista: **Elaine Frade** (SP) 14h30 - 15h30 Debate **Suplementação de cálcio aumenta o risco cardiovascular?** Moderadores: Bárbara Campolina Silva (MG) **Sim** - Sergio Maeda (SP) **Não** - Miguel Madeira (RJ	Mesa Redonda **O que o endocrinologista precisa saber sobre hormônios e neoplasias?** Moderadores: Eponina Régia Coutinho (CE) e Victoria Rodrigues Granja Alencar (PE) Temas: • **Câncer de mama** Felipe Gaia (SP) • **Câncer de ovário** Jurema Telles (PE) • **Câncer de próstata** Leonardo Seligra (SP)	Painel **Incidentaloma adrenal** Moderador: Leonardo Vieira (RJ) Painelistas: Milena Caldato (PA) Guilherme Alencar (SC) José Viana Lima (SP) Rafael Buck Giorgi (SP)	Assembleia Geral SBEM	**Simpósio de neuropatia e complicações nos pés** Workshop: oficina prática Temas: 14h00-14h50 **Neuropatia na prática** Geísa Macedo (PE) e Hermelinda Pedrosa (DF) 15h00-15h50 **Doença vascular periférica: avaliação prática, como fazer ITB, índice dedo-braço, palpação de pulsos** José Wellington Barros (PE)
I N T E R V A L O				
Hot Topics Moderadores: Vanessa Radonsky (SP) e Catarina d'Alva (CE) Temas: • **Doença renal óssea crônica e metabolismo ósseo e mineral** Maria Lúcia Fleiuss de Farias (RJ) • **Saúde óssea na insuficiência adrenal em reposição de glicocorticoides** Leonardo Bandeira (PE) • **Doença óssea após cirurgia bariátrica** Narriane Chaves (PB) • **Precisamos suplementar cálcio, Mg e vit K?** • Dalisbor Marcelo Weber Silva (SC)	Simpósio **Linkando o Exercício Físico aos Mecanismos de Ação de Antidiabéticos** Moderadores: Melanie Rodacki (RJ) e Fábio Trujilho (BA) Temas: • **Metformina e Glitazonas** Mário Saad (SP) • **iSGLT2** Sérgio Vêncio (GO) • **aGLP1 e GIP** Dhianah Santini (RJ)	Hot Topics Moderador: Juliano Zakir (DF) Temas: • **Tumorigênese Hipofisária** Clarissa Martins (MS) • **Non-functioning pituitary adenomas: challenges and pitfalls** Davide Carvalho (Portugal) • **"Soluble Alpha *Klotho*" *em Tumores Hipofisários*** Júnia Longo (Alemanha) • **O envelhecimento e a deficiência de GH** Manuel Hermínio (SE)	Assembleia Geral SBEM	16h00-16h50 **Alívio da carga da pisada (*offloading*) temporário e permanente. Como fazer?** Nilce Boto Dompiere (SP) 17h00-17h50 **Como tratar na prática as lesões pré-úlcerativas** Maria Lucoveis (SP)

15 | 10
TERÇA-FEIRA

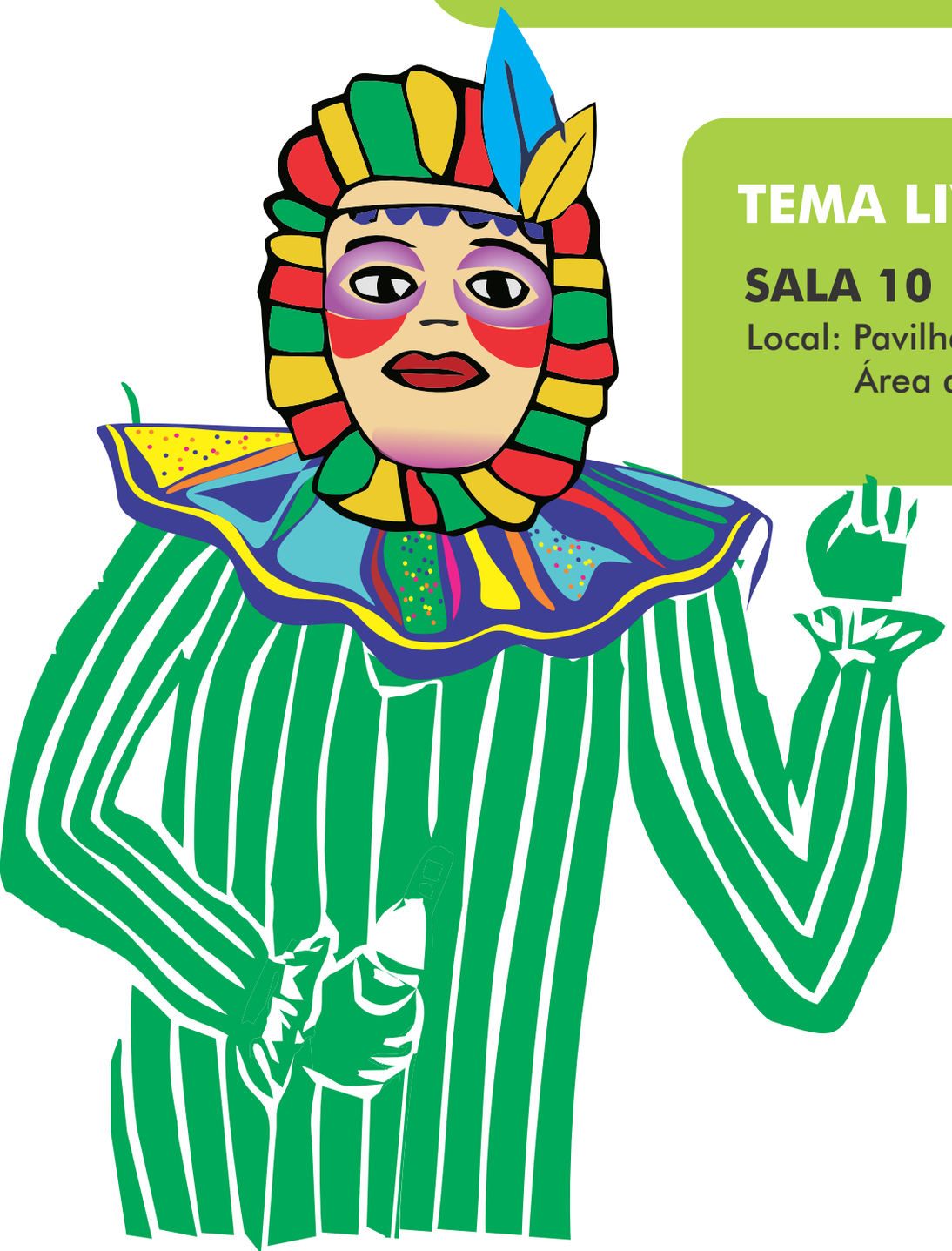
PROGRAMAÇÃO CIENTÍFICA

	SALA 2	SALA 3	SALA 4	SALA 5	SALA 6
08h30 10h00	Simpósio **Tratamento da osteoporose com osteoformadores** Moderadores: Marise Lazaretti Castro (SP) e Érico de Carvalho (PE) Temas: • **Quando indicar e quais as contraindicações** Bárbara Campolina Silva (MG) • **Teriparatida ou romosozumabe?** Francisco Bandeira (PE) • **Posso fazer um segundo ciclo de tratamento?** Maisa Monseff (PR)	Simpósio **Hipogonadismo masculino** Moderadores: Jarys Borges (PE) e Evandro Souza de Lima (PE) Temas: • **Sinais e sintomas clínicos** Letícia Gontijo (MG) • **Avaliação laboratorial** Lucas Marchesan (RS) • **Fertilidade** Alexis Guedes (BA)	Simpósio **Complicações não clássicas da obesidade** Moderadores: Viviane Rosado (PB) e Cynthia Salgado (PE) Temas: • **Obesidade e resposta vacinal - há recomenda-ções específicas?**Reine Chaves (BA) • **Resposta à quimiotera-pia em pessoas com obesidade** Iran Costa (PE) • **Manejo das complica-ções metabólicas dos antirretrovirais** Zoraya de Medeiros Barros (PE)	Simpósio **EndoPed - Adrenal e Puberdade** Moderadores: Viviane Correia Campos (SE) e André Muniz (PE) Temas: • **Adolescente com HAC-21OH não clássica na transição: manter, mudar ou interromper o tratamento?** Larissa Garcia Gomes (SP) • **Puberdade precoce de causa ovariana: diagnósticos diferenciais** Vinicius N. Brito (SP) • **HAC em homens adultos: Tumores de restos adrenais e o que ainda não sabemos.** Adriana Lofrano Alves Porto (DF)	Mesa-redonda **Novos olhares sobre o metabolismo** Moderadores: Giordano Bruno (PE) e Luciano Albuquerque (PE) Temas: • **Síndrome Metabólica e MASLD** Amélio Godoy Matos (RJ) • **DM e demências** João Eduardo Salles (SP) • **Osso e DM2** Leonardo Bandeira (PE)
10h00 10h30	I N T E R V A L O				
10h30 12h00	Mesa-redonda **Novos alvos terapêuticos na obesidade:** Moderadores: Bernardo Brito (CE) e Marise Lima (PE) Temas: • **O ressurgimento dos endocanabinoides?** Lício Velloso (SP) • **Buscando melhora de massa magra: anticorpos antiactivina/miostatina** Clayton Macedo (RS) • **Microbiota intestinal: ainda é um alvo terapêutico?** Mário Saad (SP)	Hot topics **A morte e o ciclo da vida** Moderadores: Neuton Dornelas Gomes (DF) e Maria Tereza Nunes (SP) Temas: • **Apoptose e o processo bioquímico da morte celular** Carolina Serrano (SP) • **Morte por doenças endocrinológicas** Bianca Pititto (SP) • **Espiritualidade e ciência** • **A morte sob o olhar religioso - o legado além da jornada** Aerton Carvalho (PE)	Mesa-redonda **Doenças metabólicas e Insuficiência Cardíaca** Moderadores: Cristina Micheleto Dallago (CE) e Patrícia Mesquita (PE) Temas: • **Obesidade e IC** Carlos Eduardo Montenegro (PE) • **DM2 e IC** João Sérgio Neves (Portugal) • **DRC e IC** Gisele Vajgel (PE)	Mesa-redonda Moderadores: Jhony Willams Gusmão do Nascimento (AL) e Marla Teixeira Cruz (BA) Temas: • **LDL-c quanto menor melhor?** Thaís Gelenske (PE) • **Fibratos ainda são úteis?** Gláucia Carneiro (SP) • **Como inserir os novos fármacos hipolipemiantes na prática clínica?** Lúcia Cordeiro (PE)	Simpósio **Novas abordagens no tratamento nas doenças ósseas genéticas** Moderadores: Luiz Cláudio Castro (DF) e Marta Sarquis (MG) Temas: • **Osteogênese imperfeita nas diferentes fases da vida** Telma Palomo (SP) • **Nova abordagem terapêutica na Acondroplasia** Vanessa Radonsky (SP) • **Diagnóstico e Tratamento do raquitismo** Regina Matsunaga Martin (SP)
12h00 12h30		**Encerramento e Entrega dos Prêmios de Melhores Trabalhos**			

TEMA LIVRE - PÔSTERES

Dias: **12, 13 e 14 de outubro**
Horário: 12h10 às 14h00
Local: Pavilhão de Exposição
Área de Temas Livres

O autor deverá afixar o pôster a partir das 08h00 e retirar no final das atividades científicas do dia. O horário para o apresentador interagir com os congressistas será das 12h10 às 14h00.



TEMA LIVRE - ORAL

SALA 10
Local: Pavilhão de Exposição
Área de Temas Livres

SALA 10

TEMA LIVRE - ORAL

	DIA 12 OUTUBRO	DIA 13 OUTUBRO	DIA 14 OUTUBRO
10h20 12h30	**1609 -** Tirzepatide mitigates metabolic dysfunction-associated steatotic liver disease through the mTOR signaling pathway in obese ovariectomized mice. **1613 -** Tirzepatide enhances genes related to transdifferentiation of pancreatic alpha- and beta-cell in obese diabetic ovariectomized mice **1926 -** Impact of obesity on individuals in Brazil: a real-world patient and physician survey **2286** - The daily supplementation of colecalciferol is more effective in reducing parathyroid hormone levels in bariatric patients: a randomized trial **2322 -** EFFECTS OF MIRABEGRON AND QUINOLONE ON THE ACTIVATION OF BROWN ADIPOSE TISSUE IDENTIFIED BY FDG-PET/CT IN HUMANS (MIRAQL-BAT STUDY) **2102 -** Use of a Portable Retinograph with Artificial Intelligence for Diabetic Retinopathy Screening in Type 2 Diabetes Patients: An Observational Study in a Tertiary Hospital in Recife-PE **2379** - Generating pituitary cells from iPSCs for pituitary disease modeling and drug discovery **1966 -** Rapid and Profound Reductions of Androstenedione and 17-hydroxyprogesterone With Once-Daily Oral Atumelnant (CRN04894) in Adults With Classic Congenital Adrenal Hyperplasia: Initial Results From a 12-Week, Phase 2, Open-Label Study		**1499** - CABERGOLINE DISCONNECTION TEST: A USEFUL TOOL TO DIFFERENTIATE PROLACTINOMA FROM NON-FUNCTIONING PITUITARY ADENOMA **2314** - Efficacy and Safety of Once-Daily Oral Paltusotine in Medically Untreated Patients With Acromegaly: Results From the Phase 3, Randomized, Placebo-Controlled PATHFNDR-2 Study **2629** - Human Endogenous Retroviruses (HERVs) and Their Role in Pituitary Tumorigenesis **2647** - Unveiling Potential Therapeutic Candidates for ACTH-Silent Pituitary Neuroendocrine Tumors Through High-Throughput Drug Screening **1489** - A spliceosome gene as a new cause for Combined Pituitary Hormone Deficiency
14h00 15h30	**1591** - Anthropometric parameters of Brazilian children and adults with Familial Chylomicronemia Syndrome (FCS) caused by different mutations **2305** - Short-Term Use of Liraglutide in Congenital Generalized Lipodystrophy: Evaluation of Metabolic Parameters and Satiety **2576** - The Impact of Anabolic-Androgenic Steroids on Lipid Profiles in Athletes: A Systematic Review and Meta **1477** - Analysis Identification of predictors of metastatic potential in paragangliomas to develop a prognostic score (PSPGL) **2232** - Long-term follow-up of familial BMAD with germline ARMC5 pathogenic variants **2335** - Adult and pediatric patients with adrenocortical carcinoma associated with the same germline oncogenic variant TP53 (p.R337H) and different outcome: The influence of somatic variants in ACC **2059** - Metabolic Effects of Fibroblast Growth Factor-21 Analogues in Patients with Metabolic Syndrome: A Systematic Review and Meta-Analysis of Randomized Controlled Trials	**1617** - Serum Parathyroid Hormone Concentration On the Day After Total Thyroidectomy as a Predictor of Definitive Hypoparathyroidism **1699** - Evaluation of bone, adipose, and muscle tissues in X-linked Hypophosphatemia (XLH) **2129** - Correlations of polymorphisms of genes related to Vitamin D pathway and clinical presentation in patients with sporadic primary hyperparathyroidism **2194** - Parathyroid Allotransplantation on Refractory Hypoparathyroidism: An Innovative Brazilian Experience **1544** - Evaluation of gut microbiota and intestinal permeability in patients with Hashimoto's thyroiditis **1550** - miR-146b Expression Profiling: A Potential Predictor of Clinical-Pathological Outcomes in Differentiated Thyroid Carcinomas **1551** - Exploring Molecular Profiles of Thyroid Nodules: Insights from Brazilian patients	**2549** - 17OHP levels to diagnose Non-Classic Congenital Adrenal Hyperplasia due to 21-Hydroxylase Deficiency (NC-CAH) in children with precocious pubarche **1528** - Uterine changes in transgender men receiving testosterone therapy **1765** - Association of adverse childhood experiences with self-mutilation and suicide attempts in the transgender population treated at two reference centers in the state of Bahia: a case-control study **2184** - HEART RATE VARIABILITY IN WOMEN WITH PCOS AND TRANSGENDER MEN UNDER GENDER-AFFIRMING HORMONE THERAPY: DO ANDROGEN LEVELS MATTER? **2261** - Effects of Gender-Affirming Hormone Therapy on the Connectivity of Intrinsic Brain Networks **2265** - Comparison of Brain's Intrinsic Connectivity Between Cisgender and Transgender Individuals Prior to Hormone Therapy **2364** - Genetic Variants in a Case of SRY-Negative 46,XX Ovotesticular Differences in Sex Development with Systemic Lupus Erythematosus: Insights from Whole Exome Sequencing

PROGRAMAÇÃO CIENTÍFICA

16h00 17h30

Atualizações em doenças adrenais:
Moderadores:
Elba Bandeira (PE) e Débora Brito (PE)

Temas:

- **Hiperplasia macronodular bilateral**
  Guilherme Alencar (SC)
- **Diagnóstico bioquímico dos feocromocitomas e paragangliomas**
  José Viana Lima (SP)
- **Preparo perioperatório dos feocromocitomas e paragangliomas**
  Gustavo Fagundes (SP)

Júri Simulado - Esteroides Anabolizantes em julgamento: Explorando os limites da Legalidade no Uso e na Prescrição Médica

Juiz: João Carlos Ramos Dias (SP)
Promotora: Letícia Buzacarini Alvim (SP)
Advogada de Defesa - Valéria Vázquez Molina (SP)
"Vítima": Lucas Miranda Capossoli (SP)
Ré: Kahena Ingjatovic Faiçal (SP)
Palestrante Perita: Andrea Messias Fioretti (SP)
7 Jurados - escolhidos da plateia.

Simpósios Satélites

Exclusivo para Prescritores

12 | 10
SÁBADO

Os simpósios satélites são exclusivos para prescritores conforme as regulamentações da RDC e Interfarma, visando ao cumprimento das normas vigentes

	SALA 2	SALA 3	SALA 4	SALA 5
12h10 13h00	Simpósio **CSL VIFOR** **Anemia por Deficiência de Ferro: Diagnóstico, Tratamento e Impactos no paciente Endocrinológico** **Speakers:** Dr. Cristiano Barcellos - Endocrinologista e Dr. Aderson da Silva Araújo - Hematologista		Simpósio **NOVONORDISK** **Além do cardiometabolismo: explorando os benefícios renais e cardiovasculares de semaglutida** **Speakers:** João Salles e Thyago Moraes	
13h10 14h00		Simpósio **BOHERINGER LILLY** ***Por que agir agora pode modificar o prognóstico dos pacientes com Dm2?*** 13h10-13h20 **Impacto da inércia terapêutica no tratamento do diabetes tipo 2 na visão de cada especialidade** Dr. Marcello Bertoluci e Dra. Andrea Bauer 13h20-13h30: **Estratégias clínicas para evitar a inércia terapêutica: as novas diretrizes contemplam essas estratégias?** Dr. Marcello Bertoluci e Dra. Andrea Bauer 13h30-13h40 **Quais as evidências dos inibidores de SGLT2 nos desfechos cardiometabólicos?** Dr. Marcello Bertoluci 13h40-13h50 **Quais as evidências dos inibidores SGLT2 nos desfechos renais?** Dra. Andrea Bauer 13h50-14h00 **Q&A**		Simpósio **ASTRAZENECA** **Complicações do diabetes: importância da prevenção e otimização do tratamento** Moderador Dr. Rodrigo Moreira **Speakers:** Dra. Lidia Ana Zytynski Moura Dr. Thyago Proença
15h30 16h20	Simpósio **LILLY** **Tirzepatida: Uma Nova Era no Controle metabólico no Dm2** Moderador: Dr. Alexander Benchimol **Speakers:** Dr. João Salles e Dr. Marcello Bertolucci		Simpósio **MANTECORP** **"Novas Abordagens para a Vitamina D: prevenção e tratamento."** Moderadora: Dra. Lidiane Indiani **Speakers:** Dr. Miguel Madeira Dra. Marise Castro	

Simpósios Satélites

Exclusivo para Prescritores

13 | 10 DOMINGO

	SALA 2	SALA 3	SALA 4
12h10 13h00		Simpósio **NOVONORDISK** **Mudando a vida do seu paciente com obesidade: explorando os benefícios de Wegovy® (Semaglutida 2,4mg).** **Speakers:** Joana Dantas e Rodrigo Moreira	
13h10 14h00	Simpósio **ABBOTT** **Indo além das características com o sistema FreeStyle Libre 2. Por que estudos clínicos importam?** **Speakers:** Mark Evans e Melanie Rodacki		Simpósio **MERCK** **DIABESIDADE: Impactos da fome emocional no DM e o papel da metformina e da naltrexona/bupropiona** **Speakers:** Dr Luciano Ricardo Giacaglia Dra Erika Paniago Guedes Dr Roberto Luiz Zagury
15h30 16h20		**Simpósio RECORDATI** ***From bench to bedside: Role of medical therapy in the management of patients with Cushing's syndrome*** **Speaker:** Rosario Pivonello	

14 | 10 SEGUNDA FEIRA

	SALA 2	SALA 3	SALA 4
12h10 13h00	Simpósio **E.M.S.** **Da identificação à remissão: por que o tratamento da doença metabólica não pode esperar?** • **O impacto das primeiras condutas na evolução do tratamento** Dra. Cristina Schreiber • **Remissão do DM2: Missão Possível?** Dr. Amélio Godoy		Simpósio **BESINS** **Hipogonadismo Masculino em situações especiais** **Speakers:** Prof Dr. Alexandre Hohl, Dr. Clayton Macedo e Dr. Luiz Dieckmann
13h10 14h00		Simpósio **GSK** **Estratégias de prevenção da descompensação endócrina no adulto:** **O papel das vacinas adjuvantadas Arexvy e Shingrix no boost da resposta imunológica nessa população** Marco Aurélio Sáfadi e Márcio Krakauer	
15h30 16h20	Simpósio **NESTLÉ** **Novas terapias antiobesidade: oportunidade para colocar a massa muscular no centro** Moderadora: Livia Lugarinho Temas: • **Análogos de GLP-1 e Análogos duais (GLP-1 e GIP): o que sabemos e o que ainda precisamos saber?** **Speaker:** Bruno Halpern • **Perda de peso farmacoinduzida - estratégias para proteger a massa muscular Speaker:** Roberto Zagury		

cbem2024
11 A 15 DE OUTUBRO

36º CONGRESSO BRASILEIRO DE ENDOCRINOLOGIA E METABOLOGIA

ENDORECIFE2024

CENTRO DE CONVENÇÕES DE PERNAMBUCO - RECIFE/OLINDA

A endocrinologia e seu protagonismo nos ciclos da vida

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A endocrinologia e seu protagonismo nos ciclos da vida

TEMAS LIVRES

ADRENAL E HIPERTENSÃO

1477

IDENTIFICATION OF PREDICTORS OF METASTATIC POTENTIAL IN PARAGANGLIOMAS TO DEVELOP A PROGNOSTIC SCORE (PSPGL)

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Introduction: Paragangliomas (PGLs) are rare tumors in adrenal and extra-adrenal locations. Metastasis are found in approximately 5%-20% of adrenal and 15%-35% of extra-adrenal PGLs and there are no reliable predictors of metastatic disease. **Objective:** To develop a prognostic score of metastatic potential in PGLs and to identify predictors of disease aggressiveness in patients with metastatic disease. **Methods:** Retrospective analysis of clinical data of a cohort with PGL and tumor histological and immunohistochemical assessment. Patients were divided into metastatic PGL (MPGL – presence of metastasis) and non-metastatic PGL (NMPGL – absence of metastasis ≥ 96 months of follow up) groups. Univariate and multivariate analysis were performed to identify predictors of metastatic potential. A prognostic score was developed based on coefficients of multivariate analysis. The performance of this new score on predicting metastatic potential was compared with Pheochromocytoma of the Adrenal gland Scaled Score (PASS) and Grading System for Adrenal Pheochromocytoma and Paraganglioma (GAPP). To identify predictors of worse prognosis in metastatic disease, patients with MPGL were subdivided into aggressive (≤72 months survival) or indolent (>72 months) MPGL and a univariate analysis was performed. Kaplan Meier curves were generated to estimate Disease Specific Survival (DSS). **Results:** Out of 263 patients, 35 patients had MPGL and 110 patients had NMPGL. In multivariate analysis, four features were independently related to metastatic disease and composed the Prognostic Score of Paragangliomas (PSPGL): presence of central or confluent necrosis (33 points), >3 mitosis/10 high power field (HPF) (28 points), extension into adipose tissue (20 points) and extra-adrenal location (19 points). PSPGL showed similar sensitivity with higher specificity than PASS and GAPP. PSPGL ≤ 20 was associated with risk of metastasis of ~10% whereas PSPGL ≥ 40 was associated with > 80%. Lower urinary noradrenaline, presence of atypical mitoses and higher Ki-67 were related to disease aggressiveness but only Ki-67 ≥ 3% was related to lower DSS in MPGL. **Conclusions:** PSPGL, composed of four easy-to-access parameters, demonstrated good performance in predicting metastatic potential and good ability in estimate low and high risk of metastatic disease. For those with intermediate risk, genetic background and Ki-67 can be auxiliary tools. In patients with metastatic PGL, Ki-67 ≥ 3% was related to poor prognosis. **Keywords:** metastatic paraganglioma; PASS; GAPP.

DIABETES MELLITUS

1481

EFFICACY OF MESENCHYMAL STEM CELL THERAPY IN THE TREATMENT OF TYPE 1 DIABETES MELLITUS: A SYSTEMATIC REVIEW

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Introduction: Type 1 diabetes mellitus (T1DM) is a chronic condition, predominantly manifesting in childhood, and determined by genetic and environmental factors. It is characterized by dysfunction of pancreatic beta islet cells, where inflammatory and autoimmune processes lead to their destruction. Studies with stem cells demonstrate advances and significant therapeutic potential, emphasizing the relevance of regenerative medicine in combating T1DM. **Objectives:** To evaluate the efficacy of mesenchymal stem cells in the treatment of T1DM. **Materials and methods:** This is a systematic literature review, employing approaches based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodological recommendations. Article screening was conducted from January to March 2024 by seven researchers independently. The databases used were PubMed and the Virtual Health Library (BVS), applying the Health Sciences Descriptors (DeCS): “Stem Cells”, “type 1 diabetes mellitus”, and “treatment”. Selection followed pre-established eligibility criteria, resulting in the choice of 12 studies to compose the final sample of the work. **Results:** Initial research focused on the use of stem cells for the regeneration of β-pancreatic cells in T1DM, involving different subtypes such as mesenchymal, hematopoietic, and induced pluripotent stem cells. The results indicated an increase in C-peptide levels and a decrease in exogenous insulin dependence, pointing to some functional restoration of the pancreas. Subsequent advances incorporated the combination of stem cells with immunosuppressive therapies, aiming to optimize cellular regeneration and immunological modulation to prevent autoimmunity. These approaches resulted in significant improvements in glycemic control, confirming the potential of stem cells associated with immunomodulation and protection of β cells, in line with previous evidence. **Conclusion:** Consistent findings highlight the significant therapeutic potential of mesenchymal stem cells in the treatment of T1DM, providing a means for pancreatic regeneration and immune homeostasis, which encourages future investigations for validation and subsequent incorporation into clinical practice. **Keywords:** type 1 diabetes mellitus; stem-cells; treatment.

DISLIPIDEMIA E ATEROSCLEROSE

1482

EVALUATION OF THE NEW CARDIOVASCULAR DISEASE MARKERS FABP3 AND CXCL-16 IN FAMILIAL HYPERCHOLESTEROLEMIA AND THEIR RELATIONSHIP WITH LIPID-LOWERING TREATMENT: A CASE REPORT

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Case presentation: G.G.P., 35 years old, male, with body mass index of 20.67 kg/m², carrier of familial hypercholesterolemia, with pathogenic genetic variant Asp224Asn in the LDL-c receptor gene, presenting basal levels of LDL-c of 318 mg/dL, was subjected to marker dosages: fatty acid binding protein 3 (FABP3) and chemokine ligand 16 (CXCL-16), carried out using the multiplex technique for Luminex. The measurements of LDL-c, FABP3 and CXCL-16 were carried out at two moments, one before and the other after institution of lipid-lowering treatment, for period of 4 months, with atorvastatin 20 mg + ezetimibe 10 mg/day. There was a decrease in LDL-c to 83 mg/dL (73.9%), while FABP3 (initial dosage = 12.39 and final = 1.30) and CXCL-16 (initial dosage = 1.54 and final = 1.02) also showed a reduction of 89.5% and 33.1%, respectively. **Discussion:** Familial hypercholesterolemia is an autosomal dominant genetic disease, characterized by elevated plasma levels of low-density lipoprotein (LDL-c), resulting in a significant increase in the risk of early development of coronary events. The FABP3 is expressed in cardiac tissue and is linked to the maintenance of energy supply, regulating the transport of fatty acids in cardiomyocytes. The protein is released into the bloodstream as a result of myocardial damage, becoming a promising indicator of cardiovascular events. The CXCL-16 belongs to the group of chemokines with an anchored form expressed by the scavenger receptor for oxLDL in macrophages of atherosclerotic plaques, constituting a marker associated with plaque formation and the development of coronary artery disease. **Final comments:** The lipid-lowering treatment adopted was able to lead to a significant decline in LDL-c levels, as expected, but also in FABP3 and CXCL-16, providing its effectiveness in reducing the risk of coronary events and the formation of atherosclerotic plaques. Furthermore, FABP3 and CXCL-16 demonstrated to be potential markers of therapeutic efficacy in the treatment of familial hypercholesterolemia and other clinical outcomes that presented the use of lipid-lowering drugs. **Keywords:** biomarkers; hypercholesterolemia; hypolipidemic agents.

TIREOIDE

1483

SUBACUTE THYROIDITIS SECONDARY TO CHIKUNGUNYA VIRUS

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Introduction: Subacute thyroiditis (SAT) is an inflammatory disease of the thyroid gland, typically triggered by viral infections and manifesting 2-6 weeks post-exposure. Common viral triggers include influenza, adenovirus, Coxsackievirus, and Epstein-Barr virus. Recent reports also associated SAT to SARS-CoV-2 and dengue virus infections. However, no cases of SAT induced by the chikungunya virus have yet been documented in the literature. **Case Description:** A 67-year-old male, previously in good health, presented with a 30-day history of persistent low-grade fever, night sweats, and a weight loss of 4.4 pounds, accompanied by notable weakness and fatigue. Physical examination of the thyroid revealed no palpable abnormalities. Initial laboratory investigations highlighted hyperthyroidism, characterized by suppressed TSH and elevated T4 levels with negative anti-thyroglobulin, anti-TPO, and TRAb antibodies. Serological assays confirmed Chikungunya IgM antibodies, while other infectious screens returned negative. Ultrasound findings included an increased gland volume with a hypoechoic echotexture. Radionuclide thyroid scans showed diminished tracer uptake, leading to the diagnosis of subacute thyroiditis. The patient was managed with prednisolone and propranolol, resulting in clinical improvement. Follow-up ultrasound at 42 days post-treatment showed a hypoechoic thyroid gland with a significant reduction in thyroid volume from 21 cm³ to 10 cm³ and a normalized systolic velocity of the inferior thyroid artery, indicating a positive response to the therapeutic regimen. **Discussion:** Subacute thyroiditis is an uncommon and often overlooked consequence of Chikungunya, characterized by high FT4 and undetectable TSH levels, with antithyroid antibodies generally absent. Radionuclide thyroid scans often show diminished or absent tracer uptake, and ultrasound typically displays bilateral hypoechoic regions with reduced vascularization. Unlike other cases of SAT, this patient lacked neck pain. Thyroiditis due to Chikungunya should be included in the differential diagnosis for fever of unknown origin, in regions with a high incidence of mosquito-borne diseases, particularly since early corticosteroid use for SAT may improve clinical outcomes. Further investigation is required to determine the prevalence and outcomes of SAT in patients with Chikungunya. **Keywords:** thyroiditis; Chikungunya; ultrasound.

OBESIDADE
1487

EVALUATION OF SARCOPENIA AND BODY COMPOSITION IN PATIENTS UNDERGOING BARIATRIC SURGERY IN A TERTIARY REFERRAL HOSPITAL

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Introduction: Sarcopenia, characterized by the loss of muscle mass and strength, reduces the quality of life and increases mortality. Few studies relate diagnostic methods and the impact of sarcopenia on obesity and bariatric surgery. This study evaluates muscle strength and mass in post-bariatric surgery patients, correlating these data with cardiometabolic variations. **Objective:** To determine the body composition and frequency of sarcopenia in patients undergoing bariatric surgery at IMIP – *Instituto de Medicina Integral Professor Fernando Figueira*, in Recife-PE, through the evaluation of muscle mass by Bioelectrical Impedance Analysis (BIA) and strength by Handgrip Strength Test (HST). **Methods:** This cross-sectional descriptive observational study, conducted between January 2023 and January 2024 at IMIP, Recife-PE, analyzed medical records of patients who underwent bariatric surgery up to 2021. It included patients aged 18 to 70 years, with a BMI ≥ 40 or BMI ≥ 35 with comorbidities. Variables analyzed included sex, age, surgical technique, BMI, percentage of weight lost, and BIA data such as lean mass and body fat. Muscle strength was assessed by HST. Patients were instructed on preparation for BIA. Statistical analyses included normality tests, T-Student, Mann-Whitney, Wilcoxon, and logistic regression, using R software. **Results:** Fourteen women with a mean age of 41.79 years at bariatric surgery and 46.64 years at evaluation were assessed. The mean pre-surgery BMI was 49.69 kg/m² and 31.45 kg/m² at evaluation. The initial average weight was 124 kg and the final weight was 78.09 kg, with an average weight loss of 36.08%. The mean HST strength was 25.36 kgf. Only one patient had HST below 16 kgf. 85.71% of the patients underwent Gastric Bypass and 14.29% Vertical Gastrectomy. The mean LDL was 112.14 mg/dL, glycated hemoglobin was 5.33%, and fasting glucose was 84.5 mg/dL. There was no statistical significance in the direct correlation between variables and HST, but higher lean mass was associated with a lower chance of HST ≤ 25 kgf. Patients with limb lean mass > 18 kg were 15 times more likely to have HST > 25 kgf. **Conclusion:** This small cross-sectional observational study highlighted the critical importance of evaluating and managing sarcopenia in patients undergoing bariatric surgery. The findings reinforce the need for an integrated approach that considers not only weight loss but also muscle health. **Keywords:** sarcopenia; bariatric; bioimpedance.

OBESIDADE
1488

ESOPHAGEAL ACHALASIA AFTER ROUX-EN-Y GASTRIC BYPASS: CASE REPORT

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Case presentation: Patient 54 years old, man, with body mass index (BMI) 39 kg/m², hypertension and dyslipidemia underwent, in 2012, Roux-en-Y gastric bypass (RYGB) surgery with a ring, progressed with weight loss of 38.5% and clinical improvement in the first year after surgery. However, patient continued experiencing episodes of vomiting which, in 2018, became frequent and associated with moderate dysphagia, leading to ring removal in 2019, without improvement in the condition. In 2020, after barium esophagram and ultrasensitive manometry, type 1 esophageal achalasia was identified, leading to peroral endoscopic myotomy (POEM), with ineffective results. In 2023, he presented severe weight loss (weight: 57 kg, BMI: 17.6 kg/m²), esophagram with grade 4 achalasia and dolic megaesophagus and was hospitalized for clinical and nutritional support. On admission, he presented capillary blood glucose of 500 mg/dL with glycohemoglobin of 13%, and insulin therapy was started. In the outpatient setting, anti-ICA, anti-IAA, anti-GAD, and anti-IA2 antibodies were tested, with the latter two being positive, confirming a diagnosis of Latent Autoimmune Diabetes in Adults (LADA). In March/2024, a new POEM was performed with poor results and, by mutual agreement, treatment with liquid nutrition for diabetics and basal-bolus insulin therapy with glargine and aspart insulins was opted. He proceeded with weight gain (currently 76 kg), good glycemic control, unusual episodes of vomiting and returned to regular activities. **Discussion:** The development of achalasia in patients undergoing RYGB is rare and it cannot claim whether the disorder is a pre-existing condition, idiopathic achalasia, or if it occurred after the procedure. The patient developed LADA with positive ANTI-GAD (2,000 IU/mL, VR < 10), this antibody may be present in up to 21.4% of patients with idiopathic achalasia, even in those without diabetes or any positive antibodies. However, since RYGB is associated with remission of type 2 diabetes mellitus in most patients and due to significant weight loss, the progression of this disease was unexpected in this case, prompting the suspicion and diagnostic investigation of other types of diabetes, allowing for appropriate treatment and improvement in clinical parameters and quality of life. **Final comments:** Achalasia after bariatric surgery is rare and it is crucial to consider the possibility of idiopathic etiology and concomitant other autoimmune diseases. **Keywords:** gastric bypass; esophageal achalasia; LADA.

ENDOCRINOLOGIA PEDIÁTRICA

1489

A SPLICEOSOME GENE AS A NEW CAUSE FOR COMBINED PITUITARY HORMONE DEFICIENCY

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Introduction: Congenital combined pituitary hormone deficiencies (CPHD) is a rare heterogeneous genetic disorder characterized by a deficiency of two or more pituitary hormones. It can be associated with extra pituitary phenotypes such as midline craniofacial malformations. To date, a minority of patients carry pathogenic variants in more than 30 genes, and 80% of cases remain unsolved. **Objective:** To identify *de novo* pathogenic variants in novel CPHD genes using whole-exome sequencing (WES) on trios. **Methods:** We selected 7 trios with detailed phenotyping and performed WES. Next, we used VariantMaster, a bioinformatics tool to detect *de novo* rare variants. Finally, we prioritized the variants based on the type of mutation, gene expression in the pituitary, and association with known human phenotypes. **Results:** The 7 probands exhibit various types/degrees of pituitary hormone deficiencies. On neuroimaging, all patients had small anterior pituitaries: 3 had abnormalities in pituitary stalk and 5 had ectopic posterior pituitary. Extra pituitary phenotypes included ataxia, epilepsy, scoliosis, midline craniofacial malformations, and Joubert syndrome in one patient. In the genetic analysis, we identified 4 *de novo* rare variants (MAF < 0.0001), in 4 novel genes (*MED13*, *RASIP1*, *ECPAS* and *WBP11*) among 3 patients. After prioritization, we selected a loss-of-function variant in *WBP11* (p.Leu223ArgfsTer6) in a patient presenting CPHD with septo-optic dysplasia (SOD). Pathogenic *WBP11* variants have been reported in VACTERL syndrome. Notably, some individuals also have delayed puberty, midline craniofacial malformations and proportionate short stature resembling CPHD. *WBP11* is a gene coding for a protein that is part of the major spliceosome complex. We showed ubiquitous expression of *WBP11* in human pituitary single cell analysis, and in the transcriptomic analysis of the patient, we observed a reduced level of WBP11. In the mouse model *Wbp11*$^{+/-}$ mice at 17.5 dpc are smaller than WT and 2/9 exhibit anophthalmia resembling our patient with SOD. **Conclusions and perspectives:** We present *WBP11*, a gene involved in the spliceosome machinery, mutated in a patient with CPHD with SOD. We are currently (i) expanding our cohort of CPHD and screening individuals for *WBP11* mutations and ii) studying the morphology of the hypothalamic-pituitary region of the mutant mouse using the 3D iDISCO technique. These preliminary findings have identified a promising new genetic basis for CPHD. **Keywords:** combined pituitary hormone deficiencies; WBP11; genetic diagnosis.

ADRENAL E HIPERTENSÃO

1490

AN ADRENAL INCIDENTALOMA WITH DOUBLE HORMONAL HYPERSECRETION: A CASE REPORT

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Case report: D.C.S., a 45-year-old female patient with lumbosciatalgia, was referred to a urologist by an orthopedist because a CT scan revealed an incidentaloma of the adrenal glands. When she was assessed by the endocrinology team, she reported resistant hypertension, using five anti-hypertensive drugs to control her blood pressure, as well as having been diagnosed with type 2 diabetes mellitus a year ago and taking oral antidiabetics. She also reported gaining 44 pounds in less than 6 months, the appearance of a hump and reddish-purple stretch marks. An abdominal CT scan contrasted with the adrenal protocol revealed a lesion in the right adrenal gland measuring 3.4 x 2.9 cm, with a density of 36 HU and a washout of 66.7%, suggestive of an adenoma. The patient underwent investigation of hormone secretion. Phaeochromocytoma tests were unchanged. Post-dexamethasone suppression cortisol 17.24 mcg/dL, aldosterone: 76.4 ng/dL and renine plasmatic activity 0.22 ng/mL. He also had persistent hypokalemia. Serum ACTH was requested with a result of 5 pg/mL. The patient underwent right adrenalectomy. Her serum aldosterone level immediately after surgery was 4.1 ng/dL. On the 4th day after the operation, she developed hypotension, nausea, hyporexia and vomiting, as well as a baseline cortisol level of 0.78 mcg/dL. The diagnostic hypothesis of adrenal insufficiency was put forward and glucocorticoid replacement was started, with an improvement in her condition. **Discussion:** Adrenal incidentaloma is any lesion in the region of the gland 1 cm in size or larger, found accidentally in imaging examinations to investigate complaints unrelated to hypofunction or hyperfunction of the gland. There are various diagnoses in patients with adrenal incidentaloma, such as non-functioning adenomas, pheochromocytoma, mild autonomous cortisol secretion (MACS), among others. The patient reported in the case above would have had a prior indication to have been investigated for secondary hypertension and, even reducing morbidity, since the adrenal nodule with double hormone secretion was only discovered when the imaging examination was carried out, and not because of the clinic of mineral/corticoid hypersecretion already presented. **Final comments:** This case alerts us to the importance of actively seeking out signs and symptoms of hormone hypersecretion. In this way, we will be able to reduce morbidity and mortality in this patient profile, as well as increasing quality of life and life expectancy. **Keywords:** adrenal gland; adrenal incidentaloma; Cushing's syndrome.

NEUROENDOCRINOLOGIA

1491

ASSESSMENT OF THE QUALITY OF LIFE AND PROFILE OF PATIENTS WITH ACROMEGALY IN A TERTIARY HOSPITAL

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Introduction: Acromegaly is a rare, chronic and insidiously evolving systemic disease caused by excessive GH production, generally caused by the presence of a pituitary tumor and which is associated with increased morbidity and mortality mainly due to the presence of cardiovascular and endocrine metabolic changes. Furthermore, the physical changes caused by hormonal excess contribute to psychological outcomes and impact on quality of life. **Objective:** The objective of the present study was to evaluate the quality of life of patients diagnosed with Acromegaly treated at a reference service in the State of Ceará and determine its correlation with clinical, sociodemographic variables and level of disease control. **Methods:** This is a unicentric, cross-sectional and descriptive study, carried out at the Neuroendocrinology outpatient clinic of the General Hospital of Fortaleza (HGF), which evaluated 53 patients diagnosed with acromegaly using AcroQol. **Results:** It was observed that the population had an average age of 50 years, with a slight male predominance. The patients had an average disease duration of 9.60 ± 5.79 years and had been followed up at the tertiary hospital for approximately 8.5 years. Among the clinical symptoms, headache and enlargement of extremities stood out, and in relation to laboratory diagnosis, it was observed that the majority had a concomitant increase in IGF-1 and GH. 90.6% of individuals underwent surgical treatment, however 84.9% required adjuvant medication and 13.2% were referred to radiotherapy. Regarding the assessment of quality of life, individuals with acromegaly presented a global score of 57.87 ± 19.00 (13.60-94.30), demonstrating a greater impact on the assessment of the physical and psychological-appearance domains. It was demonstrated that those who had headaches had a greater impact on Acro-Qol (54.89 ± 17.11), mainly in the physical domain (48.83 ± 21.77; p 0.027). **Conclusion:** Despite achieving the best score in the group with normal IGF-1 for the reference value for age and sex, it was observed that there was no statistically significant difference in the Acro-QOL analysis between the groups with or without biochemical control. Therefore, it was concluded that despite biochemical control, there was no normalization of quality of life in these patients. **Keywords:** acromegaly; quality of life; AcroQol.

MISCELÂNEA

1493

PANCREAS HEAD INSULINOMA IN A YOUNG ADULT PATIENT

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Case presentation: A 36-year-old male patient presented recurrent episodes of severe hypoglycemia for three years, associated with loss of consciousness, mental confusion, and psychomotor agitation. Symptoms of hypoglycemia ceased after the administration of glucose. The neurological manifestations were treated with Risperidone and Clonazepam due to the clinical suspicion of schizophrenia. In addition, polyphagia related to significant weight gain (more than 40 kg in the period) was reported. Laboratory tests of admission showed glucose of 23.5 mg/dL, peptide C of 11.36 ng/mL, and insulin of 296.9 microIU/mL. The above clinical and laboratory findings met the Whipple triad criteria for insulinoma. Subsequently, computed tomography (CT) of the abdomen demonstrated a solid expansive formation of neoplastic aspect centered on the transition of pancreatic head and neck. It was partially exophytic, with irregular contours and heterogeneous enhancement, measuring 3,0 x 2.7 cm. The patient remained in the Intensive Care Unit (ICU) for severe refractory hypoglycemia despite the continuous infusion of hypertonic glucose in the preoperative period. The patient was referred to the surgical center to perform tumor surgical removal. After the surgical procedure, the patient returned to the ICU for postoperative recovery, which occurred without complications, and no other episodes of hypoglycemia were recorded. **Discussion:** Insulinomas are uncommon tumors that are independent insulin producers and primarily intra-pancreatic, benign, and solitary (TUCKER *et al.*, 2006). According to studies by Kavlie and White in 1972, 50% of patients with insulinomas had undergone neuropsychiatric treatment before they were diagnosed with a neuroendocrine disease, as reported above. After the surgical intervention, the excised lesion was submitted to anatomopathological analysis, which demonstrated a neoplasia of neuroendocrine pattern and a well-delimited tumor in the pancreatic parenchyma. It was later indicated towards immunohistochemistry for diagnostic confirmation. **Final comments:** This way, insulinoma is part of neuroendocrine tumors, and despite being a rare disease, it is usually potentially curable, provided it has an assertive diagnosis and proper surgical management. **Keywords:** insulinoma; pancreas; tumor.

DISLIPIDEMIA E ATEROSCLEROSE

1497

EFFICACY AND SAFETY OF TRIPLE THERAPY WITH AMLODIPINE, TELMISARTAN AND ROSUVASTATIN FOR PATIENTS WITH DYSLIPIDEMIA AND HYPERTENSION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: The combination of medications for the treatment of hypertension (HT) and dyslipidemia (DL) is widely used in several cases. However, the effects of triple therapies for the joint treatment of these diseases are still debated, which means that their prescription is applied with great caution by doctors. **Objectives:** To conduct a systematic review (SR) and meta-analysis (MA) of randomized controlled trials (RCTs) comparing the efficacy and safety of combination therapy with telmisartan, amlodipine and rosuvastatin (TAR) compared to conventional dual therapies in patients with HT and DL. **Materials and methods:** A systematic search was carried out in the PubMed, Embase and Cochrane Central databases, from inception to June 2, 2024. Only RCTs comparing TAR *versus* telmisartan plus amlodipine (TA) and telmisartan plus rosuvastatin (TR) in the management of DL and HT were included. The outcomes assessed were: low-density lipoprotein (LDL) levels; diastolic blood pressure (DBP); systolic blood pressure (SBP); adverse drug reaction (ADR) and Treatment Emergent Adverse Events (TEAE). The SR and MA were conducted according to the PRISMA protocols. Heterogeneity between studies was assessed using Cochran's Q test and the I^2 statistic. P-values of less than 0.10 and $I^2 > 25\%$ were considered indicative of significant heterogeneity. Fixed-effect and random-effect models were used for statistical analysis, with mean difference (MD), in the 5.4 version of the Review Manager software. **Results:** From the search in the databases, 215 articles were found. After the screening process, 3 articles were included in the present study, covering a total of 447 patients. There was no statistically significant difference between the groups in the high density lipoprotein (HDL) levels, nor in the number of ADRs and TEAEs. In relation to LDL levels, there was a favoring of the TAR group over the TA group [MD: -86.25; 95%CI: (-97.99, -74.51); $p < 0.001$]. With regard to cardiovascular outcomes, there was a significant favoring of SBP [MD: -16.89; 95%CI: (-27.22, -6.56); $p = 0.001$] and DBP [MD: -9.66; 95%CI: (-12.94, -6.37); $p < 0.001$] in the TAR group over the group treated with TR, but no significantly difference to the TA group. **Conclusion:** It can be inferred that the interventions addressed are effective and safe in relation to HDL, AMR and TEAE outcomes. However, ART has been shown to be superior to AT in reducing LDL levels and safer than RT in blood pressure parameters. **Keywords:** dyslipidemia; hypertension; pharmacology.

OBESIDADE

1498

EFFICACY OF PHYSICAL EXERCISE ON NEUROCOGNITIVE PERFORMANCE IN CHILDREN WITH OBESITY OR OVERWEIGHT: A SYSTEMATIC REVIEW

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Introduction: Physical exercise (PE) plays a central role in developing physical health, general well-being, and preventing obesity during childhood development. However, its effects on neurocognition are still unknown. **Objectives:** Conduct a systematic review on the effectiveness of aerobic and resistance exercise on the neurocognitive performance of children with obesity or overweight. **Material and methods:** A systematic search was carried out in the PubMed, Embase and Cochrane Central Register of Controlled Trials databases, covering all content published up to June 3, 2024, with the aim of identifying randomized clinical trials that tested the effect of aerobic exercise, added or not to resistance training, on the neurocognition of children with high BMI. The screening of articles was carried out by three authors. The outcomes assessed were: academic performance (AP), working memory (WM), reading and inhibition, assessed using the z score, BRIEF scale and Woodcock-Johnson Performance Test. The mentioned outcomes were not addressed in all the articles analyzed. The systematic review was conducted in accordance with PRISMA protocols. **Results:** From the search in the databases, 718 articles were found. After removing duplicate and ineligible studies, 3 articles were included in the present study following the inclusion criteria. In total, the research covered 347 patients. AP had considerable improvement in the studies in which it was addressed, mainly in the aspect of learning mathematics and word association. WM did not achieve statistically significant performance. In the reading parameter, despite a slight benefit from PE, there was no significant difference between the groups. In the assessment of cognitive inhibition, there was a slight improvement in the PE arm, however, this benefit was not sustained in the long term. **Conclusion:** It can be inferred that the favorable effect of PE had an impact only on BP. Furthermore, it is not possible to affirm the beneficial effect on the other outcomes discussed, and more studies on the topic are needed to better delineate the real benefit of PE on neurocognitive functions in obese or overweight children. **Keywords:** exercise; obesity; cognition.

NEUROENDOCRINOLOGIA

1499

CABERGOLINE DISCONNECTION TEST: A USEFUL TOOL TO DIFFERENTIATE PROLACTINOMA FROM NON-FUNCTIONING PITUITARY ADENOMA

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Introduction: Hyperprolactinemia can occur in non-functioning pituitary adenoma (NFPA) due to stalk compression. In some clinical scenarios, the differentiation between NFPA and prolactinoma is challenging, especially when prolactin (PRL) values are not too high. Since the normal lactotrophs seen in NFPA are very sensitive to the action of D2 agonists, the use of a low dose of cabergoline (CAB) could completely resolve the hyperPRL and even suppress it. Based on this, we explored if this would be a feasible test to differentiate NFPA and prolactinomas. **Methods:** This is a transversal study with 21 patients (11 NFPA and 10 prolactinomas) submitted to the CAB disconnection test. The patients were submitted to a unique dose of 0.25 mg CAB and had a new PRL value collected after 48h. The test was always performed before a definitive treatment, during the initial visits. Patients on drugs related to hyperPRL, macroprolactinemia and silent prolactinomas were excluded. All patients with NFPA were submitted to neurosurgery and the diagnosis was based on immunochemistry data. Prolactinoma was diagnosed on the basis of surgery with immunochemistry in 3 cases (intolerance n = 1, apoplexy n = 1 and cerebrospinal fluid leakage n = 1); the remaining were classified in this category due to classic response to CAB through the follow-up (i.e. tumor shrinkage > 30% and normal PRL). Mann-Whitney U test was used to compare the two groups and a ROC curve was performed for sensibility and specificity analysis. The $p < 0.05$ was considered statistically significant. **Results:** As expected, the baseline median PRL was 58 (range, 32.5-151.2 ng/mL) in the NFPA group, significantly lower than 545.6 (102.6-6941 ng/mL) observed in the prolactinoma group ($p < 0.001$). After the CAB disconnection test, the mean PRL was 7.9 ± 6.8 ng/mL in NFPA and 666.5 ± 1015.8 ng/mL in prolactinoma, $p < 0.001$. The mean percentage of reduction in PRL values was 85.4 ± 12% in NFPA, significantly higher when compared to 63.6 ± 19.7% in prolactinoma group ($p = 0.013$). The area under the ROC curve was 0.982 and the PRL value post-test > 15.7 ng/mL had a 100% sensibility and 90% specificity to identify prolactinomas. When using the percentage, a PRL reduction > 86.3% post-test had 54.5% sensibility, but high specificity of 100% to discriminate NFPA from prolactinoma, with an area under the ROC curve of 0.818. **Conclusion:** The CAB disconnection test is a simple, rapid and useful tool to differentiate NFPA and prolactinoma. **Keywords:** prolactinoma; cabergoline; non-functioning pituitary adenoma.

NEUROENDOCRINOLOGIA

1501

SECONDARY RESISTANCE TO DOPAMINE AGONISTS IN PROLACTINOMAS: WHEN TO SUSPECT AND HOW TO MANAGE

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Case presentation: Case 1: A 73-yrs-old woman with progressive visual loss was diagnosed with macroprolactinoma, initially sensitive to cabergoline (CAB) (3.5 mg/wk). However, after 2 yrs, there was a progressive increase in prolactin (PRL) levels, worsening of visual impairment and tumor growth, pointing to secondary resistance. Neurosurgery, via transsphenoidal, was performed and anatomopathological evaluation confirmed prolactinoma diagnosis, Ki67 15%. After two other surgeries and radiotherapy (RDT), normal PRL and tumor shrinkage were achieved, and panhypopituitarism was present in the follow-up. **Case 2:** A 45-year-old man presenting headaches and visual loss was diagnosed with a giant prolactinoma. Treatment with CAB at 3.5 mg/wk initially normalized PRL levels and reduced the tumor. However, after 7 yrs, there was a progressive increase in PRL and tumor growth, even after RDT. Neurosurgery via transsphenoidal was performed. Anatomopathological evaluation confirmed prolactinoma diagnosis, Ki67 40%. Chemotherapy with temozolomide was indicated but the tumor continued to grow. **Discussion:** Primary resistance to dopamine agonists is reported in 15 to 20% of prolactinomas. Secondary resistance should be distinguished from non-adherence, hyperprolactinemia due to other causes and sexual steroids replacement. Secondary resistance is a rare event and 40 cases were described in literature. Most cases occurred in men, were macroprolactinoma and the age of presentation varied between 22 to 70 yrs. The time to develop secondary DA resistance was between 10 months to 15 yrs. Ki67 > 3% was a frequent finding. Multimodal therapy was performed. **Final comments:** We presented two cases of prolactinoma with secondary resistance to dopamine agonists. This is a rare event and malignant prolactinoma should be investigated. The mechanisms involved with this condition are not well understood. These patients should be followed by a multidisciplinary team. **Keywords:** prolactinoma; secondary resistance; hyperprolactinemia.

DIABETES MELLITUS

1502

COGNITIVE DECLINE IN A POPULATION WITH TYPE 2 DIABETES OVER TIME : A LONG-TERM OBSERVATIONAL STUDY

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Introduction: In an aging population, chronic diseases such as type 2 diabetes mellitus (DM2) and dementia become more prevalent. People with DM2 have twice the risk of developing dementia. **Objective:** To evaluate the cognitive performance over time of a population with type 2 Diabetes Mellitus (DM 2) from a Public Hospital in Brazil. **Methods:** A longitudinal observational study was carried out from 2022 to 2023 at the Endocrinology Outpatient Clinic with patients with adult DM2 who had participated in a cross-sectional study at least 36 and no more than 65 months previously, when they underwent an evaluation with anamnesis, physical examination, screening test for depression (Patient Health Questionnaire-9) and cognitive tests (Mini Mental State Examination, Verbal Fluency Test, Trail A Test, Trail B Test and Memory Tests). Data on medical history and diabetes complications were also collected from medical records. Participants who agreed to take part in the follow-up phase repeated the procedures from the initial phase. The score of each cognitive test was converted into a Z score and its average resulted in a new variable called the Global Cognitive Z Score [ECG(z)]. An ECG(z) lower than zero on admission means a cognitive performance below the average for this population and at follow-up it means a cognitive decline in relation to the average for this population on admission. To assess the evolution of cognitive performance over time, the means of the cognitive tests and the ECG(z) were compared using Student's t-test for paired samples. The significance level used for all tests was 5%. **Results:** The sample consisted of 31 individuals, 77.4% white, 61.3% female, with a mean age of 65.5 ± 8.7 years, 9.1 ± 1.7 years of schooling and 15.6 ± 9.6 years of diabetes. The results of the cognitive tests at follow-up, after an average of 4.5 ± 0.7 years, were: Mini Mental State Examination 27.4 ± 0.7; Verbal Fluency 16.4 ± 1.8; Trail Test A 55.7 ± 11.7 seconds; Trail Test B 137.48 ± 33.91 seconds; Immediate Memory 17.8 ± 1.5; Delayed Memory 5.5 ± 0.7; Recognition Memory 8.7 ± 0.5 and ECG(z) -0.2320 ± 0.6595. When comparing the mean results of the cognitive tests at follow-up with those at admission, there was a significant difference in the results of the Immediate Memory ($p = 0.001$), Late Memory ($p = 0.023$) and ECG(z) ($p = 0.020$) tests. **Conclusions:** In this sample of patients with DM2, there was a global cognitive decline and more specifically in the memory domains. **Keywords:** Type 2 diabetes mellitus; dementia; cognitive decline.

OBESIDADE

1503

OBESITY AND DIABETES: A POPULATIONAL ANALYSIS OF DATA IN SÃO PAULO CITY

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Introduction: Obesity and diabetes mellitus (DM) are two prevalent non-communicable diseases affecting millions globally. Obesity is a significant risk factor for type 2 DM. Understanding the relationship between obesity and DM is crucial for effective prevention and management strategies. **Methods, results, and discussion:** Demographic and clinical data were collected from 1475 individuals participating in health campaigns in São Paulo. The average age of participants was 47.7 years, with females comprising 38.1%. The average weight was 76.3 kg, mean waist circumference (WC) was 94.8 cm, and mean body mass index (BMI) was 30.4 kg/m². The mean blood glucose (BG) level was 102 mg/dL. Among participants, 18% had previously altered BG measurements, 54% reported regular physical activity, and 33% used medications for blood pressure management. Of the individuals, 37.3% had a BMI between 24.9 and 29.9, and 38.3% had a BMI higher than 29.9, indicating that 75.6% had weight excess. Correlation analyses assessed the relationship between various parameters and the presence of DM. Significant correlations ($p < 0.05$) were observed between WC and DM, but the correlation between BMI and DM was not statistically significant. These findings suggest that abdominal obesity may have a more pronounced impact on DM risk compared to overall body weight. A logistic regression model indicated that systemic arterial hypertension (SAH) and female gender were significant risk factors for DM in this population. These results highlight the importance of addressing obesity and associated conditions, such as SAH, in DM prevention and management. Public health interventions promoting healthy lifestyle behaviors, including regular physical activity, balanced nutrition, and weight management, are essential for reducing the burden of DM in urban populations. Screening campaigns can help identify individuals at higher risk of developing DM, facilitating intervention and treatment. **Conclusion:** This study provides valuable insights into the relationship between obesity and DM in São Paulo. By elucidating the role of abdominal obesity and SAH as significant risk factors for diabetes, it underscores the importance of comprehensive approaches to DM prevention and management. Continued efforts in research, education, and public health initiatives are essential for addressing the growing burden of DM and improving health outcomes for individuals affected by this condition. **Keywords:** obesity; diabetes; epidemiology.

DISLIPIDEMIA E ATEROSCLEROSE

1504

ANALYSIS OF DIABETES, CHOLESTEROL PROFILES AND CARDIOVASCULAR RISK FACTORS PREVALENCE IN BRAZIL – A MULTICENTRIC POPULATIONAL STUDY

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Introduction: Early detection and control of cardiovascular risk (CR) factors such as diabetes (DM), hypertension (HAS), smoking, and dyslipidemia (DLP) are essential for preventing cardiovascular diseases (CVD), a leading cause of morbidity and mortality worldwide. Detection campaigns were conducted in Porto Alegre, São Paulo, and Vitória to assess the prevalence of these factors and their relationship with glucose and cholesterol levels. **Methods, results, and discussion:** Demographic and clinical data were collected from 1471 participants, including age, sex, race, presence of DM, HAS, smoking, DLP, cardiovascular risk, capillary BG, total cholesterol, LDL, HDL, and triglycerides. Analysis was performed using R software, for statistical tests (ANOVA, Kruskal-Wallis, and multiple linear regression). The average age of participants was 46 years, with 37.55% being female. The prevalence of DM was 9.94%, HAS 21.76%, smoking 9.66%, and statin use 13.38%. Cardiovascular risk (CR) was high in 41.74% and very high in 3.98% of the population. The mean glucose level was 106mg/dL, and the mean LDL cholesterol was 114mg/dL. People with high CR had a mean LDL of 113 (IQR 84-139) and very high CR had a mean LDL of 112 (IQR 81-150). Correlation analysis showed a significant negative correlation with HDL ($p = 0.023$) and suggested that having a random BG higher than 115 is strongly related to high or very high cardiovascular risk. Multiple linear regression indicated that DM was a more significant risk factor for CVD development than LDL levels, regardless of other risk factors ($p < 0.001$), showing 3.5 times increase in risk. The results suggest that DM management may play a crucial role in preventing CVD, even in individuals with normal cholesterol levels. Moreover, around 29.9% of the population indicated for statins is effectively using them. This highlights the importance of intervention strategies targeting both lipid and DM management in high-risk populations. **Conclusion:** The analysis of data from detection campaigns showed a significant prevalence of cardiovascular risk factors in the Brazilian population, with DM being an important independent predictor of CVD risk, consistent with scientific literature. Statin use is below WHO DM targets for 2030, and most of the population had LDL levels higher than the target for their CR. These findings indicate the need for integrated approaches to control multiple risk factors, aiming at reducing CVD morbidity and mortality in Brazil. **Keywords:** dyslipidaemia; diabetes; epidemiology.

ENDOCRINOLOGIA PEDIÁTRICA

1505

CORTISOL LEVELS IN CHILDREN SUBMITTED TO STIMULATION TESTS: IS THE CUTOFF POINT THE SAME FOR ALL TYPES OF STIMULI?

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Introduction: Basal morning serum cortisol levels may show a relatively low discriminatory capacity for the diagnosis of adrenal insufficiency in children [1,2], consequently, most children and adolescents will still require a stimulation test to confirm the diagnosis [2]. Insulin tolerance test (ITT), Glucagon stimulation test (GST), and synthetic ACTH stimulation test (AST) are the most used stimuli to assess cortisol reserve in this age group. Traditionally, the same cortisol cutoff point – 18 to 20 mcg/dL – has been used, regardless of the stimulus, which doesn't make sense, since each stimulus has a different effect on cortisol release. **Objective:** Our objective was to try to establish an individualized cortisol cutoff point according to the stimulus applied and, secondarily, to verify if there was any difference in the cortisol cutoff points between the sexes and according to the age group. **Methods:** All children referred to our Clinic for a cortisol stimulation test in the context of the investigation of growth hormone deficiency (ITT and GST) or congenital adrenal hyperplasia (AST) from 2020 to 2023 were included in this retrospective study. **Results:** A total of 267 children were retrospectively analyzed, 136 of them were submitted do ITT, 100 to GST and 31 to AST. Mean age was significantly lower ($p < 0,05$) in the group submitted to GST. Except for children submitted to ACT, most of our cohort was of males. Mean cortisol values and SD were, respectively, 20.7 ± 4.8, 20,7 ± 6 and 25.8 ± 5 in children submitted to ITT, GST and ACT. Peak serum cortisol levels of 14,5, 11,6, and 19 µg/dL corresponded to the 5th percentiles in children submitted, respectively, to the ITT, GST, and AST. We noticed a statistically significant difference ($P < 0,001$) in the peak cortisol response between children < 12 years compared with children ≥ 12 years, but only in the group submitted to ITT. Peak cortisol levels of 15,6 and 14,2 µg/dL corresponded to the 5th percentile in individuals < 12 years and ≥ 12 years, respectively. No difference in the peak cortisol response was observed between the sexes. **Conclusion:** Our data indicate that there is necessary to individualize the cortisol cutoff peak, according to the applied stimulus. According to our results, reference limits for satisfactory peak serum cortisol, according to the 5th percentile are, 14,5, 11,6, and 19 µg/dL, respectively, for children submitted to the ITT, GST, and AST. **Keywords:** cortisol reference levels; children; stimulation test.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1506

ECHOCARDIOGRAPHIC FINDINGS IN THE HEARTS OF TRANSGENDER WOMEN

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Introduction: Gender affirming hormone therapy (GAHT) for transgender women (TW) decreases muscle mass. Cisgender men (CM) typically exhibit larger cardiac chambers and muscle thickness than cisgender women (CW). Transthoracic echocardiography relies on reference values of the expected dimensions of the heart which are age-gender-ethnicity specific. **Objective:** To describe the heart of TW and compare to CM and CW. **Methods:** We conducted a cross-sectional study and evaluated 7 amateur volleyball players TW of 30.3 ± 3.2 yo, 23.1 ± 2.4 kg/m² body mass index (BMI), median age at GAHT initiation was 22.5 ± 7.6 years. They matched by age, BMI and level of physical activity to 8 CW and 8 CM. Echocardiogram was performed with colour doppler ultrasound technique and data was analysed using the corresponding software of the manufacturer (Phillips®). The heart was examined from anatomical and functional aspects. **Results:** Left ventricular mass (LV mass) (g) of TW were 125.9 ± 17.8 equal of the CW (125.7 ± 28.3) and both lower than CM (176.5 ± 17.2) (TW *vs.* CW, p > 0.05; TW *vs.* CM < 0.05). LV mass index (LVmass/body surface area) (g/m²) of TW, CW and CM were, respectively 70.2 ± 5.2, 64.8 ± 9.9, 80.4 ± 9.0 (TW *vs.* CW, p > 0.05; TW *vs.* CM > 0.05; CW *vs.* CM < 0.05). The septum (mm) in diastole: TW 8.1 ± 0.3, CW 7.7 ± 0.4, and CM 9.1 ± 1.1 (TW *vs.* CW, p > 0.05); Posterior wall (mm) of left ventricle (VE): TW 7.8 ± 0.6, 7.7 ± 0.4 in CW, and 9.1 ± 0.9 in CM (TW *vs.* CW, p > 0.05); The left atrium (LA) dimension (mm) was 32.1 ± 1.3 in TW, 33.4 ± 3.1 in CW, and 35.7 ± 2.2 in CM (TW *vs.* CW, p > 0.05). The left ventricular diastolic diameter (mm) was 48.8 ± 3.7 in TW, 49.5 ± 4.7 in CW, and 51.8 ± 2.3 in CM (TW *vs.* CW, p > 0.05), and systolic diameter (mm) was 31.4 ± 3.6 in TW, 32.2 ± 3.4 in CW, and 33.1 ± 3.4 in CM (TW *vs.* CW, p > 0.05). The ejection fraction (%) was 60.1 ± 0.09 in TW, 64.7 ± 0.02 in CW, and 65.1 ± 0.06 in CM (TW *vs.* CW, p > 0.05). **Discussion:** Our results revealed a reduction in cardiac thickness in TW due to GAHT, aligning it with CW. The hearts of CM typically have thicker walls and larger chambers compared to those of CW. This difference is attributed to variations in body size and hormone levels, Preserved ejection fraction of TW demonstrates that, despite anatomical alterations, functional cardiac adaptation has occurred. **Conclusion:** Our study demonstrates that TW under GAHT exhibit cardiac structure comparable to CW. Longitudinal studies would be valuable in demonstrating the cardiological transformation throughout GAHT. **Keywords:** transgender women; heart; estrogen.

TIREOIDE

1509

UNUSUAL CAUSE OF THYROTOXICOSIS: CASE REPORT

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The endocrine glands are highly vascularized tissues, but non-traumatic hematomas in these organs are infrequent conditions and can mimic subacute thyroiditis. We report details of the initial presentation and subsequent course of a patient with thyrotoxicosis induced by acute hemorrhage into a nodule. This case is of significant importance in raising awareness among clinicians about this unusual cause of thyrotoxicosis. A 40-year-old woman with a history of a benign thyroid nodule, previously euthyroid, presented to the emergency department, reporting that three weeks ago, she noticed a swelling in the left side of her neck. After one week, she presented pain in the cervical region, associated with orthopnea and moderate dysphagia for solids, in addition to a fever spike (38 °C). She denied any history of trauma or use of anticoagulants. She was in regular general condition, with a heart rate of 120 bpm and limb tremors. She has no signs of acute airway obstruction or Graves's orbitopathy. Firm thyroid, with a nodule in the left lobe, painful on palpation, mobile, without floating point or external phlogistic signs. Laboratory tests demonstrated thyrotoxicosis (TSH 0.06/fT4 2.61) with elevated inflammatory markers. A thyroid ultrasound revealed a cystic nodule in the left lobe, with a volume of 123cm³. The initial hypothesis was acute thyroiditis associated with an abscess. Aspiration puncture was performed, revealing a dark brown fluid suggestive of hemorrhagic fluid that was sent for culture with subsequent negative results. Antibiotic that had been started empirically was suspended. The patient maintained on b-blocker to reduce symptoms of thyrotoxicosis. The clinical signs of pain and dysphagia improved after needle aspiration. Thyroid function was re-evaluated seven days after, and thyrotoxicosis remained (TSH 0.01/fT4 7.45). Due to the improvement in general condition, the patient was discharged from the hospital. Follow-up exams showed negative anti-TSH receptor antibody. Three months after the episode, she returned to normal thyroid function, remaining euthyroid six months later. Due to an acute hemorrhage into a cyst that caused an episode of thyrotoxicosis, the patient was referred for a left thyroid lobectomy. In conclusion, this case underscores the importance of considering acute hemorrhagic nodule degeneration as a potential cause of thyrotoxicosis, thereby enlightening clinicians and enhancing our diagnostic capabilities. **Keywords:** thyrotoxicosis; thyroid nodule; acute hemorrhagic.

DIABETES MELLITUS

1512

THE BENEFITS OF YELLOW PASSION FRUIT PEEL FLOUR IN THE DIET OF PATIENTS WITH DIABETES MELLITUS: A SYSTEMATIC REVIEW

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Diabetes mellitus is considered a metabolic disease of multiple etiology, characterized by hyperglycemia resulting from a deficiency in insulin secretion or also from the inability of insulin to properly exert its effects, leading to alterations in the metabolism of carbohydrates, lipids, proteins, and especially the glycemic levels of patients with the disease. Alternative therapeutic measures, such as using substrates that help reduce the glycemic levels of these patients, have been improved in the medical field. In view of this, yellow passion fruit, a fruit popularly known worldwide, has pectin, a substrate present in the fruit's peel, and is effective in reducing the glycemic levels of diabetic patients. This study aimed to evaluate the contribution of passion fruit flour to the reduction of blood glucose according to existing publications and its beneficial actions. The methodological process followed the PRISMA step-by-step process to carry out the systematic review, searching for articles in the SciELO, PubMed, and BVS databases related to the use of yellow passion fruit peel flour. The inclusion criteria were full papers, in Portuguese, English, or available for translation, with no restriction regarding the publication date, language, or type of study. For the search, publications until March 31, 2024 were considered. An evaluation of 24 articles was conducted, with 5 of them selected related to the theme. Significant reduction in blood glucose levels in diabetic patients and diabetic rats induced by alloxan (toxic glucose analog) has been observed. In addition, the results suggest that the use of yellow passion fruit peel flour is compatible with a positive action on glycemic control, which may represent an adjuvant therapeutic option to conventional therapies in patients with diabetes mellitus. Therefore, this complementary approach can contribute to an improvement in the quality of life of patients, as well as potentially reduce costs related to the treatment of the disease. However, more research is needed to broaden the understanding of the effects of passion fruit flour on the health of diabetic patients and to elucidate the mechanisms underlying its benefits, as well as possible contraindications. **Keywords:** diabetes mellitus; passion fruit; pectin.

NEUROENDOCRINOLOGIA

1513

ENDOCRINE-METABOLIC PROFILE OF PATIENTS WITH AUTISM SPECTRUM DISORDER (ASD)

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Autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by deficits in social communication and repetitive, restricted behaviors. Its etiology is multifactorial, involving genetic and environmental components. Recent studies have suggested that endocrine-metabolic dysfunctions may be associated with the development and severity of ASD symptoms. These dysfunctions may include alterations in the hypothalamic-pituitary-adrenal (HPA) and hypothalamic-pituitary-thyroid (HHT) axes, as well as irregularities in lipid and glycemic metabolism. Understanding these profiles is crucial for identifying new therapeutic approaches that can improve patients' quality of life. This study aims to describe and analyze endocrine-metabolic changes in patients with ASD, identifying common patterns and possible correlations with symptom severity. A systematic review was carried out, using PubMed, MEDLINE and SciELO as electronic databases. Clinical studies, reviews and meta-analyses published in the last ten years that addressed endocrine-metabolic dysfunctions in individuals with ASD were included. The data were extracted and analyzed qualitatively to identify significant trends and relationships. The results of the review indicate that patients with ASD often have elevated cortisol levels, suggesting an overactivity of the HPA axis, which may be associated with an exacerbated stress response. In addition, significant prevalences of thyroid dysfunctions, such as subclinical hypothyroidism, which can negatively influence neurological development, have been observed. Changes in lipid profile, including elevated total and LDL cholesterol levels, have been reported, as well as a higher incidence of insulin resistance and type 2 diabetes, highlighting a possible link between energy metabolism and ASD. These metabolic dysfunctions may contribute to the severity of behavioral and cognitive symptoms seen in patients with ASD. The study suggests that there is a significant association between endocrine-metabolic dysfunctions and ASD. The identification of specific hormonal and metabolic patterns can help in the development of more effective therapeutic interventions, which target not only the behavioral symptoms, but also the underlying metabolic conditions. Future longitudinal studies and clinical trials are needed to clarify the causes of these dysfunctions and evaluate the impact of targeted treatments on endocrine and metabolic functions in patients with ASD. **Keywords:** autism spectrum disorder; endocrine dysfunction; metabolic profile.

ADRENAL E HIPERTENSÃO

1514

ADRENAL CARCINOMA CO-SECRETING ANDROGEN AND CORTISOL AS A CAUSE OF VIRILIZING HYPERANDROGENIC SYNDROME

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Case presentation: A 46-year-old woman sought endocrinological assessment complaining of abdominal obesity, hirsutism, male pattern baldness, thickening of the voice, clitoromegaly, increased libido and elevated blood pressure, with an evolution of 6 months. In the etiological investigation, laboratory tests revealed hyperandrogenism (total testosterone = 504 ng/dL (VR < 75), SDHEA > 1,000 ng/dL), ACTH-independent hypercortisolism (midnight salivary cortisol = 0.706 µg/dL; 1 mg overnight dexamethasone suppression test = 32.3 µg/dL; ACTH < 5.0 pg/mL). Computed tomography showed an expansive lesion in the right adrenal gland measuring 9.4 x 9.7 x 8.1 cm, with characteristics suggestive of malignancy. Laboratory tests ruled out pheochromocytoma and primary hyperaldosteronism. She was referred for oncological surgery and immunohistochemistry, according to the Weiss criteria, confirmed that it was an adrenal carcinoma co-secreting cortisol and androgens. After surgery, the patient's hyperandrogenic and cushingoid manifestations improved and she was referred for joint follow-up with oncology, where mitotane was introduced. After about 3 months, the hyperandrogenic signs and hypercortisolism worsened and liver metastases were detected. After several systemic complications, she passed away. **Discussion:** Adrenocortical carcinoma (ACC) is a rare malignant neoplasm, accounting for 0.05% to 2% of all neoplasms, and is extremely aggressive, with an average overall survival of 3-4 years. Around 40 to 60% of tumors are functional, with the most common secretion being cortisol, followed by androgen secretion - uncommon in adults (3% to 5%). Most cases of ACC are sporadic, but they can be associated with genetic syndromes such as Li-Fraumeni syndrome. The molecular mechanisms of tumorigenesis are still unclear, but it is known that genetic alterations play an important role in pathogenesis. Diagnosis is made using a combination of clinical, biochemical, imaging and histopathological criteria. It is often made late due to the multiplicity of clinical presentations, which makes its suspicion time-consuming. **Final comments:** Cases of ACC co-secretion are uncommon and have a poor overall prognosis. Knowledge of this presentation can speed up diagnosis - the most important prognostic factor - which demonstrates the importance of including ACC in the differential diagnosis of hyperandrogenism and virilization in women. **Keywords:** adrenocortical carcinoma; Cushing's syndrome; hyperandrogenism.

TIREOIDE

1516

SOCIODEMOGRAPHIC ANALYSIS OF MORTALITY DUE TO THYROTOXICOSIS IN BRAZIL: AN ECOLOGICAL STUDY FROM 2002 TO 2021

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Introduction: Thyrotoxicosis is defined as the clinical syndrome of hypermetabolism resulting from increased free thyroxine (T4) and/or free triiodothyronine (T3) serum levels with published incidence rates varying markedly in differing populations, from 6 to 93 cases per 100.000 per annum. Any or all systems of the body can be affected, but the symptoms and signs can be variable in individual patients. **Objective:** To analyze the sociodemographic profile of deaths due to thyrotoxicosis in Brazil from January 2002 to December 2021. **Methods:** An ecological time-series study with a quantitative, descriptive, and exploratory approach was conducted using open data on mortality due to thyrotoxicosis from 2002 to 2021. The data were obtained from the *Sistema de Informação sobre Mortalidade* (SIM), organized into a Microsoft Office Excel® spreadsheet, and subsequently analyzed using BioEstat®. Mortality rates (MR) were calculated using intercensal projections from the do *Instituto Brasileiro de Geografia e Estatística* (IBGE). Descriptive analysis was performed using absolute frequency, mean, and standard deviation. All statistical analyses were conducted with a significance level of $\alpha = 0.05$. **Results:** Over the 20-year analysis, the study revealed that Brazil recorded a total of 3.919 deaths due to thyrotoxicosis, with an annual average of 195,95 (±28,7) and a MR of 0,10/100.000 (±0,01). The Southeast region had the highest prevalence of deaths (41,8%), with an average of 82,10 (±19,14) and an MR of 0,13/100.000 (±0,13). A paired non-parametric variance analysis (Kruskal-Wallis test) indicated that the difference in the average number of deaths by region was significant ($p < 0,0001$). Regarding gender in the death records, there was a higher prevalence in females (77,95%), with an annual average of 152,75 (±26,52) and an MR of 0,15/100.000 (±0,03), which was statistically significantly different from males as shown by the Mann-Whitney test ($p < 0,0001$). In terms of age groups, the highest frequency of deaths was found in the population over 80 years old (18,63%), with an average of 36,50 (±9,07) and an MR of 1,18/100.000 (±0,24). **Conclusion:** The results showed that mortality due to thyrotoxicosis is prevalent in Brazil, particularly among females, individuals over 80 years old, and residents of the Southeast region. Thus, there is a need for further studies on this topic, focusing on the quality of care and the documentation of these cases in health services. **Keywords:** thyrotoxicosis; epidemiology; Brazil.

NEUROENDOCRINOLOGIA

1517

SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE SECRETION IN PATIENTS WITH PARANEOPLASTIC SYNDROME: A SYSTEMATIC REVIEW

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Introduction: The syndrome of inappropriate antidiuretic hormone secretion (SIADH) is a condition in which excessive release or action of antidiuretic hormone (ADH) results in persistent hyponatremia and inappropriately elevated urine osmolality. In cancer patients, ectopic secretion of ADH by tumor cells causes paraneoplastic SIADH. **Objective:** Analyzing the epidemiological and clinical profile of patients with paraneoplastic syndrome who developed SIADH. **Methods:** A qualitative systematic review was conducted from January 2014 to April 2024 according to the PRISMA protocol using four electronic databases: PubMed, *Biblioteca Virtual da Saúde* (BVS), ScienceDirect and Cochrane Library. The studies were analyzed based on the following eligibility criteria: at least one combination of the terms described in the search strategy appeared in the title; written in English; full articles available for free; addressed SIADH as a paraneoplastic syndrome and case report articles. Brief reports, reviews, articles based on animal models, congress proceedings, monographs, and dissertations were excluded. **Results:** A total of 77 scientific publications were selected, but only 32 of them presented the inclusion criteria in the research. In terms of the sociodemographic profile, case reports in North America (N = 14; 43,75%) had a slightly higher prevalence compared to those conducted in Asia (N = 11; 34,37%), Europe (N = 6; 18,75%), and Oceania (N = 1; 3,12%). Among the studies analyzed, SIADH appeared more frequently in male patients (N = 17; 53,12%). The age of the patients ranged from 11 to 85 years, with an average of 54,06 (±21,23). Regarding the clinical profile of the described patients, there was a higher prevalence of small cell lung cancer (N = 10; 31,25%), while head and neck neoplasms showed a frequency of 28,12% (N = 9). The serum sodium levels of the patients ranged from 98,7 to 130 mEq/L (reference range: 135 to 145 mEq/L), with an average of 117,98 (±8,19) mEq/L. The plasma osmolality ranged from 217 to 345 mOsm/L (reference range: 280 to 295 mOsm/L), with an average of 253,95 (±26,68) mOsm/L. **Conclusion:** This study highlights the significant prevalence of SIADH as a paraneoplastic syndrome, particularly among male patients, with a notable age range. Small cell lung cancer and head and neck neoplasms were the most associated cancers. More research employing robust study designs is needed to comprehensively understand SIADH in patients with paraneoplastic syndrome. **Keywords:** paraneoplastic syndrome; inappropriate ADH syndrome; vasopressin.

OBESIDADE

1518

DEVELOPMENT AND VALIDATION OF BARITRIP: A MULTIDISCIPLINARY MOBILE APPLICATION FOR THE EDUCATION AND MANAGEMENT OF PREOPERATIVE AND POSTOPERATIVE BARIATRIC SURGERY INDIVIDUALS

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Introduction: Several mobile health applications (mHealth apps) have been developed to provide bariatric surgery patients with educational material and help them engage in care. However, most apps lack multidisciplinary content and appropriate validation. **Objective:** To develop and validate a comprehensive mHealth app to increase the health literacy of bariatric surgery patients and help them engage in care. **Methods:** the development of the app required identifying patients needs, conducting a literature review, benchmarking, designing the app by a multi-professional team, and constructing the prototype. Healthcare and information technology specialists and bariatric surgery patients assessed the app's content validity. **Results:** The Baritrip app contained 188 screens divided into eight sections. It comprised clinical, surgical, nutritional, mental health, and speech therapy topics. The overall content validity index of the app assessed by the experts was 0.99. Bariatric patients assessed the app's layout, language, content organization, and engagement, with an overall agreement of 89.1%. **Conclusion:** The Baritrip mHealth app developed by a multi-professional team showed good content validity when assessed by experts and was culturally adapted by the target population. **Keywords:** obesity; bariatric surgery; mobile applications.

NEUROENDOCRINOLOGIA

1520

SILENT PITUITARY MACROADENOMA, PRESENTING WITH CYCLICAL CUSHING'S DISEASE

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Female patient, 38 years old, referred for her first consultation at our endocrinology outpatient clinic, in October 2022. Patient complains of galactorrhea, associated with temporal headache since the age of 26, associated with menorrhagia. Complementary tests show a slightly elevated prolactin level (36.2 ng/mL). During the initial assessment, she presents with galactorrhea only when expressing her nipples and, in relation to medications for continuous use, she only uses combined oral contraceptives prescribed for menorrhagia. At this first moment, medication suspension was advised, and laboratory tests and magnetic resonance imaging of the sella turcica were requested, where we saw upon return the presence of a pituitary macroadenoma with compression of the pituitary stalk, but, initially, without laboratory and clinical evidence of hormonal secretion (ACTH 24.4 pg/mL, cortisol 15 mcg/dL) and with normal neurohypophysis function, and we referred her to the neurosurgery service. After 5 months of regular follow-up at our service, the patient returned with an evolution in her clinical history, showing progressive weight gain, increased retrocervical fat, spontaneous ecchymosis and minor trauma, acne and violet striae on the lower limbs and abdomen, with laboratory tests without changes in glycemic and lipid metabolism. However, laboratory tests showing the presence of ACTH-dependent hypercortisolism (ACTH 87.8 pg/mL and basal cortisol of 23.5 mcg/dL in April 2024), showing cortisol levels after suppression with 1 mg and 2 mg, at values of 9 and 5.5 mcg/dL respectively, with prolactin levels at normal levels. The hypothesis of a non-functioning pituitary macroadenoma was initially raised, due to the fact that the patient did not present laboratory or clinical evidence of a producing adenoma for 12 years. However, the clinical evolution of the condition made us question the possibility of cyclic hypercortisolism, secondary to Cushing's disease, due to a silent corticotroph macroadenoma. Our patient is undergoing surgery by the neurosurgery team, a procedure that will be essential in her therapeutic approach and diagnostic definition, since we will need histopathological analysis to define the histological type of the pituitary tumor. **Keywords:** silent pituitary macroadenoma; cyclical Cushing's disease; Cushing's disease.

DIABETES MELLITUS

1521

TYPE 2 DIABETES WITH TENDENCY TO KETOSIS: CASE REPORT

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Case presentation: Woman, 47 years old, presented with polydipsia, polyuria and loss of 10 kg in 1 month with capillary blood glucose = 400 mg/dL. Given the situation, the patient underwent tests that showed fasting blood glucose (FG) = 280 mg/dL and glycated hemoglobin (HbA1c) = 10%. With the results, she sought medical care who diagnosed type 2 diabetes mellitus (DM2) and prescribed Metformin 1.7 g/day + Glibenclamide 5 mg/day, in addition to advising lifestyle changes (MEV). In the following month, with adequate adherence to therapy, the patient had a sudden reduction in HbA1c = 7.4% and frequent episodes of hypoglycemia, returning to the doctor for reevaluation, who maintained an optimized dose of Metformin 2.5 g/day. Despite the adjustments, hypoglycemia persisted and the patient sought specialized service. At the consultation, she presented tests with FPG = 105 and HbA1c = 5.7%, showing significant improvement in 4 months, which raised the hypothesis of DM2 with a tendency to ketosis, requiring C-peptide and autoantibodies to exclude DM1. The results showed negative anti-GAD and C peptide = 1.0 (reference: 1.2 to 4.4), therefore, DM2 with a tendency to ketosis. Metformin 500 mg/day was prescribed and returned in 6 months. One year after the event, the patient maintains MEV and has good glycemic control (HbA1c = 5.4%), and biannual clinical follow-up was chosen. **Discussion:** The case presented is DM2 with a tendency to ketosis without known precipitating factors. This atypical form of diabetes is emerging and manifests with symptoms of insulinopenia, absence of autoimmunity and beta cell dysfunction, which may lead the patient to insulin therapy. However, rapid glycemic compensation may occur with subsequent withdrawal of insulin therapy and, in some cases, even oral antidiabetic agents. The most prevalent condition in Caucasians and Hispanics, there was a significant increase in the general population with the COVID-19 pandemic, which highlights a possible correlation between the conditions. **Final Comments:** DM2 with a tendency to ketosis is an endocrinopathy with poorly understood pathophysiology that can present high glycemic levels in a short period of time and quickly go into remission with appropriate treatment. This rapid evolution makes the diagnosis and prevention of possible hyperglycemic relapses difficult. Therefore, accurate clinical investigation, correct diagnosis and early treatment are essential for adequate patient follow-up. **Keywords:** type 2 diabetes mellitus; ketosis; hyperglycemia.

DIABETES MELLITUS

1522

LATENT AUTOIMMUNE DIABETES OF ADULTS (LADA): CASE REPORT

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Case presentation: Woman, 59 years old, dyslipidemic and hypertensive, sought medical attention complaining of dizziness, presenting in the laboratory test Fasting Blood Glucose (FG): 157 mg/dL. With hyperglycemia without unequivocal symptoms of insulinopenia, new tests were requested. After 1 month, the patient returned results with GJ: 139 and glycated hemoglobin: 8.4%, confirming the hypothesis of DM2. Metformin XR 850 mg/day was prescribed, lifestyle change (MEV) was advised and return in 3 months. Upon return, there was a worsening of glycemic indices, HGT = 471 mg/dL, weight loss > 5% in 30 days and polyuria, despite the patient's adequate adherence to therapy. The doctor then optimized the dose of metformin XR to 1.5 g/day and added glibenclamide 5 mg/day. Due to the situation, the patient sought a specialized service, being asked to measure C-peptide and anti-GAD, whose results Anti GAD = 136 U/mL and C-Peptide = 0.45 ng/mL, confirmed the diagnosis of latent autoimmune diabetes of the patient. adult (LADA). Insulin Glargine 0.12 U/kg/day was prescribed and a follow-up was advised to evaluate the glycemic map. During follow-up, there was complete remission of insulinopenic symptoms and frequent pre- and post-prandial hypoglycemia. The symptoms and the low dose of insulin in use – a probable honeymoon effect, led to the replacement of insulin therapy with a DPP-4 inhibitor. With the new medication and the intensification of SEM, the patient maintains good glycemic control and no hypoglycemia. **Discussion:** The case presented corresponds to LADA in a woman > 50 years old, a type of autoimmune diabetes with slow progression that generally manifests itself in adults between 25-40 years old. It is characterized by a genetic and immunological profile of DM1 – low levels of C-peptide and positive Anti-GAD – but the clinical condition is compatible with DM2, not necessarily progressing to insulin therapy at first. Therefore, it is difficult to establish the diagnosis, which causes the patient to be treated as DM2 inappropriately and to experience worsening of symptoms in a short period of time. **Final comments:** LADA has a prevalence of 2%-12% among types of diabetes, may be associated with other autoimmunity conditions and the significant glycemic decompensation common in late diagnosis increases the risks of diabetic ketoacidosis and poor metabolic control. Therefore, clinical investigation, correct diagnosis and early treatment are essential for damage control. **Keywords:** latent autoimmune diabetes in adults; diabetes mellitus; autoimmunity.

NEUROENDOCRINOLOGIA

1523

ANTICOAGULATION PROTOCOL IN PATIENTS WITH CUSHING'S DISEASE

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Introduction: Cushing's syndrome (CS) is associated with increased morbidity and mortality, mainly due to cardiovascular complications, in addition to hypercoagulability. The risk is possibly arises from glucocorticoid-induced increases in plasma concentrations of clotting factors. Currently, the propensity to develop thrombosis in these patients is a well-established notion that has prompted anticoagulant measures in several centers. However, recent guidelines on the treatment of CS or the management of venous thromboembolism (VTE) have not specifically addressed this issue. **Objectives:** To evaluate the Anticoagulation Protocol for patients with Cushing's disease undergoing transsphenoidal surgery, conducted jointly by the Endocrinology and Hematology teams of the service, to reduce thromboembolic events and mortality in the postoperative period. **Methods:** Prospective, interventional study, conducted from March 2022 to January 2024, evaluating preoperative characteristics and postoperative complications of transsphenoidal surgery in patients with Cushing's disease and non-functioning pituitary adenoma. **Results and discussion:** A reduction in thromboembolic events was observed after implementing the anticoagulation protocol, although not statistically significant. Significant relationships were noted between age, weight, BMI, size of pituitary lesion visualized on magnetic resonance Imaging (MRI), ACTH and aPTT concerning both groups. As a risk factor for VTE, the abrupt reduction in postoperative ACTH and a tendency towards a slightly shorter aPTT compared to the control group were identified. Despite a relatively aggressive protocol, was observed its safety. **Conclusion:** The presence of a glucocorticoid-induced state of hypercoagulability and, thus the propensity for thrombosis in patients with CS is a well-established notion that has prompted anticoagulant measures in several centers. However, multicenter studies are needed to create a risk score for the introduction of anticoagulant measures. **Keywords:** Cushing's disease; anticoagulation; venous thromboembolism.

ENDOCRINOLOGIA DO EXERCÍCIO

1525

IMPACTS OF STRENGTH TRAINING ON PATIENTS WITH TYPE 2 DIABETES MELLITUS AND OBESITY: A SYSTEMATIC REVIEW

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Introduction: Obesity and type 2 diabetes mellitus are prevalent chronic conditions often coexisting and linked to significant health complications. Strength training is proposed as a potential intervention to improve clinical outcomes in these patients, although the evidence is variable and requires a comprehensive review. **Objective:** This systematic review aims to evaluate the impacts of resistance training, especially bodybuilding, on body composition, glycemic control, lipid profile, blood pressure and quality of life in patients with obesity and type 2 diabetes mellitus. **Methods:** A systematic search adhering to PRISMA guidelines was conducted in PubMed and Medline databases using keywords ("diabetes mellitus, type 2"), ("obesity"), and ("resistance training"), finding a total of 136 articles from the last 6 years. After applying eligibility criteria, 5 relevant randomized controlled trials without language restrictions were included in the final analysis. Studies involved obese type 2 diabetes patients undergoing strength training compared to sedentary controls, with outcomes related to body composition, glycemic control, lipid profile, blood pressure, and quality of life. **Results:** Bodybuilding group showed better preservation of lean mass and reduction on body mass index, in addition to reductions in adiposity and hepatic steatosis. Significant improvements in glycemic control, evidenced by the reduction in hemoglobin A1c levels, were observed in that forementioned group. Changes in blood pressure and lipid values did not differ significantly between groups. Other parameters such as C-reactive protein, tumor necrosis factor alpha, interleukin-6, albumin-to-creatinine ratio, and quality of life demonstrated significant improvements compared to controls. **Conclusion:** Exercise interventions, particularly strength training, play a crucial role in comprehensive diabetes management strategies, contributing positively to cardiometabolic indicators and overall health outcomes in individuals with type 2 diabetes and overweight/obesity. Further research with robust methodologies is needed to explore dose-response relationships, optimal training configurations, and underlying mechanisms of these adaptations. **Keywords:** diabetes mellitus, type 2; obesity; resistance training.

NEUROENDOCRINOLOGIA

1526

MACROPROLACTIN SCREENING IN PATIENTS WITH HYPERPROLACTINEMIA: COMPARISON BETWEEN DIFFERENT CRITERIA FOR DEFINING MACROPROLACTINEMIA

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Introduction: Polyethylene glycol (PEG) precipitation is the most widely used method for detecting macroprolactin, generally employing a cutoff of 40% to distinguish macroprolactinemia from true hyperprolactinemia. Nowadays, it is recommended to report results as post-PEG PRL using method-specific post-PEG reference intervals. The objective of this study was to evaluate the prevalence of macroprolactinemia in patients with hyperprolactinemia using two different criteria, a cutoff < 40% in PEG precipitation and a post-PEG PRL within post-PEG assay specific reference range. **Methods:** We analyzed blood samples requesting serum macroprolactin from patients admitted to a private clinical laboratory in Rio de Janeiro, Brazil, from 01/01/2019 to 12/31/2023. Anonymized data on laboratory tests was available from a database of the local Laboratory Information System. All patients included had PRL levels above the reference range, males > 15.2 ng/mL, females > 23.3 ng/mL (ECLIA, Modular, Roche). PEG 6000 precipitation was performed and recovery percentage for each sample was calculated. Macroprolactinemia was defined by two criteria: <40% prolactin recovery and a post-PEG prolactin concentrations with corresponding reference interval, males 3.0-11.5 ng/mL; females 3.5-17.9 ng/mL. **Results:** 9,423 patients, 80.1% women (W) were evaluated. Men (M) were statistically significantly older than women ($p < 0.001$) (45.6 *vs.* 38.9 y). Total prolactin median levels were significantly higher in women ($p < 0.001$) than men (37.4 *vs.* 23.8 ng/mL). Macroprolactinemia detection was greater ($p < 0.001$) by post-peg PRL concentration criteria (9.7%), than by <40% criteria (5.5%). Dividing patients by prolactin levels (<50.0; 50.0 to <100.0; 100.0 to <150.0, ³150.0 ng/mL), we found macroprolactinemia in 5.2%, 7.7%, 2.8% and 1.6% – <40% PRL recovery criteria; and 12.1%, 4.4%, 0.8% and 0.0% – post-PEG PRL criteria. By the last criteria, no patient with total PRL more than 150 ng/mL had macroprolactinemia. **Conclusion:** The criterion for defining macroprolactinemia has a big impact on the study results and needs to be considered in data interpretation and comparison with other studies. PEG precipitation is an easy and fast screening method for macroprolactin. Its main purpose should be determining whether the bioactive monomeric prolactin concentration is increased which is why the post-PEG PRL with corresponding reference interval is the most suitable way of reporting results. **Keywords:** macroprolactin; hyperprolactinemia; criteria.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

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ANALYSIS OF MORBIDITY AND MORTALITY DUE TO ENDOMETRIOSIS IN BRAZIL: AN ECOLOGICAL STUDY FROM 2014 TO 2024

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Introduction: Endometriosis is a debilitating disease with features of chronic inflammation and is defined as the presence of functional endometrial glands and stroma outside the uterine cavity. Endometriosis appears to be one of the most common benign gynecological proliferations in premenopausal women since it is estimated that 10%-15% of reproductive aged women suffer from pelvic endometriosis. **Objective:** To analyze the sociodemographic profile of hospital morbidity and mortality due to endometriosis in Brazil from 2014 to 2024. **Methods:** An ecological time-series study with a quantitative, descriptive, and exploratory approach was conducted using open data on hospital morbidity due to endometriosis from 2014 to 2024. The data were obtained from the *Sistema de Informações Hospitalares do SUS* (SIH), organized into a Microsoft Office Excel® spreadsheet, and subsequently analyzed using BioEstat® version 5.3. Mortality rates (MR) and incidence rate (IR) were calculated using intercensal projections from the do Instituto Brasileiro de Geografia e Estatística (IBGE). Descriptive analysis was performed using absolute frequency, mean, and standard deviation. **Results:** The study revealed that Brazil recorded a total of 121.291 hospitalizations due to endometriosis, with an IR of 5,26/100.000 (±1,57) and a MR of 0,007/100.000 (±0,002). Among the capitals of Brazilian states, São Paulo (SP) and Fortaleza (CE) had the highest frequency of cases, with 15,42% and 10,05% respectively. Regarding the type of care, the majority were elective (74,96%), with an annual average of 8.265,90 (±2.735,06). Regarding the epidemiological profile of patients, there was a higher prevalence of hospitalizations for endometriosis in the 30 to 49 age group (66,98%) and among the mixed-race population (48,50%), with respective averages of 7.385,72 (±2.199,98) and 4.470,90 (±1.777,48). The national average length of hospital stay was 2,0 days, with a total cost of hospital services for endometriosis amounting to R$ 67.144.771,10. **Conclusion:** Despite the low mortality rate, endometriosis has a high incidence in Brazil, particularly among mixed-race individuals aged 30 to 49 years. Furthermore, although this disease is benign, it significantly impacts the quality of life of patients and the public health system. Thus, there is a need for further studies on this topic, focusing on the quality of care and the documentation of these cases in health services. **Keywords:** endometriosis; epidemiology; public health.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1528

UTERINE CHANGES IN TRANSGENDER MEN RECEIVING TESTOSTERONE THERAPY

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Introduction: Gender affirmation management aims to alleviate symptoms of dysphoria related to body image, encompassing psychosocial interventions, gender-affirming hormone therapy (GAHT) and, when desired by the individual, gender affirmation surgery (GAS). Despite regular GAHT, the presence of uterine bleeding in transgender men can occur occasionally and cause profound discomfort. **Objectives:** This study aimed to evaluate the histologic features and immunohistochemical expression of estrogen (ER), progesterone (PR), and androgen (AR) receptors in the endometrium and myometrium of transgender men receiving testosterone therapy and relate them to clinical and hormonal characteristics. **Materials and methods:** Retrospective cross-sectional study. Thirty-four transgender men undergoing GAS were included. Clinical, sociodemographic, and laboratory data as well as anatomopathologic and immunohistochemical findings were evaluated. **Results:** The participants' mean age was 42.35 (SD,10.00) years, and body mass index was 28.16 (SD,5.52) kg/m^2. The mean GAHT duration before surgery was 5.36 (SD,3.24) years. The mean testosterone levels were 814.98 (SD,407.13) ng/dL, and estradiol levels were 55.22 (SD,25.27) pg/mL. The endometrium was atrophic in 61.8%, proliferative 17.6%, and secretory in 20.6%. Immunohistochemical receptor analysis revealed that endometrial epithelial cells expressed ER (90%) and PR (80%), with a lower expression of AR (30%). In stromal tissue, the median ER, PR, and AR expression was lower than that in the epithelium (60%, 70%, and 25%, respectively). The myometrium showed high expression of PR (90%) and ER (70%), with the highest expression of AR (65%) being localized to this region. **Conclusions:** In the present study, GAHT induced an atrophic condition of the endometrium in two-thirds of the transgender men, with a limited AR expression in the endometrial region. The present results suggest that testosterone based GAHT for a mean of 5 years is safe in transgender men achieving amenorrhea. **Keywords:** transgender; gender-affirming hormone therapy; endometrium.

DIABETES MELLITUS

1530

SAFETY AND EFFICIENCY OF METFORMIN IN THE TREATMENT OF GESTATIONAL DIABETES MELLITUS (GDM): AN INTEGRATIVE REVIEW

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Introduction: Gestational diabetes mellitus (GDM) is a condition in which hyperglycemia develops and is diagnosed at first during pregnancy, increasing gestational risk and long-term metabolic sequels for both mother and child. It's prevalent in Brazil and affects 18% of pregnancies. Insulin is the standard treatment, but metformin, according to studies, has become a promising alternative. However, to provide evidence that leads the clinical practice of metformin, investigations about its efficiency and security are necessary. **Objective:** This study aims to analyze, according to the literature, the safety and efficiency of metformin in the treatment of GDM. **Materials and methods:** A systematic review of the literature according to PRISMA, aiming to answer the following question: What safety and efficiency of metformin in the treatment of GDM, according to the literature?" with some search in the MEDLINE/ PubMed®, including full primary original studies from 2014 to 2024. There were rejected literature reviews, editorials, or studies without relation to the topic and duplicates. Of the total of 69 articles identified, 32 studies were selected for analysis. **Results:** Among the 32 analyzed studies, different topics were involved: a survey that analyzed the neurological effects on children exposed to metformin in the womb; studies examined how metformin affects pregnants, including glycemic control, maternal weight, and body mass index (BMI); and twenty-four studies examined the perinatal effects associated to the use of metformin during pregnancy. Seven studies have shown that metformin can be as safe as insulin, being able to be used as a viable alternative to traditional methods. Four surveys have demonstrated that insulin decreases the BMI and the percentage of fat in the mother. On the other hand, a survey reports that mothers with GDM, chronic hypertension, and/or nephropathy who used metformin had an increase in precociousness. **Conclusion:** The review has limitations due to the insufficient amount of surveys made and to the heterogeneity of them; besides that, there is no solid pieces of evidence about metformin's safety as an alternative treatment to GDM, despite having shown similar efficiency to insulin. To reach the most concrete and robust conclusions about the efficiency and safety of metformin in this context, new research in this scope is necessary. **Keywords:** diabetes, gestational; metformin; safety.

TIREOIDE

1531

EFFICACY AND SAFETY OF LONG-TERM METHIMAZOLE VERSUS RADIOIODINE THERAPY FOR HYPERTHYROIDISM: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Many studies have shown that long-term methimazole (LT-MMI) therapy for more than 5 years is both safe and effective in hyperthyroidism, with a lower risk of relapse than the usual short-term medical therapy. However, there remains no consensus on whether this approach is safe and/or superior to radioiodine (RAI) therapy. **Objective:** We aimed to compare LT-MMI with RAI for hyperthyroidism treatment in order to assess safety and thyroid status. **Methods:** We searched MEDLINE, Embase, and Cochrane Central databases for studies comparing LT-MMI with RAI therapy in patients with hyperthyroidism. The main outcomes were sustained euthyroidism, development of hypothyroidism, and hyperthyroidism relapse or persistency. Statistical analysis was performed using Review Manager 5.1.7 (Cochrane Collaboration). Heterogeneity was assessed with I^2 statistics. **Results:** We included 543 patients from 5 studies, of which 4 were randomized controlled trials. LT-MMI was used in 269 (49.5%) patients. The duration of medical therapy and follow-up ranged from 5 to 11 years, and the mean required dose of MMI after 5 years of treatment was 3.9 ± 1.4 mg. 65% of the included patients had the diagnosis of Graves' disease. Sustained euthyroidism (81.7% *vs.* 35.4%; RR 2.43; 95% CI 1.86-3.18; $p < 0.00001$) was significantly higher in patients treated with LT-MMI compared with RAI. Development of hypothyroidism (4% *vs.* 45.2%; RR 0.10; 95% CI 0.05-0.18; $p < 0.00001$) was significantly lower with LT-MMI. Comparing LT-MMI with patients who received a single dose of RAI, hyperthyroidism relapse (2.6% *vs.* 13.8%; RR 0.29; 95% CI 0.13-0.61; $p = 0.001$) was significantly lower in the LT-MMI group. **Conclusions:** In patients with hyperthyroidism, LT-MMI is associated with a lower incidence of hypothyroidism development and a significantly higher rate of euthyroidism compared with RAI, with no adverse event concerns. Additionally, LT-MMI is associated with a decreased incidence of hyperthyroidism relapse. Therefore, LT-MMI may be an alternative strategy for hyperthyroidism treatment. **Keywords:** long-term methimazole; radioiodine; hyperthyroidism.

NEUROENDOCRINOLOGIA

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CASE REPORT: CENTRAL DIABETES INSIPIDUS AND PANHYPOPITUITARISM AS A POST-SURGICAL COMPLICATION OF RATHKE'S CLEFT CYST

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Case presentation: A 46-year-old man sought ophthalmologic care with a complaint of progressive decrease in visual acuity over the past two years. Orbital CT and pituitary MRI revealed a cystic formation with regular contours and thin walls in the sellar and suprasellar regions, measuring 3.5 x 2.8 x 2.6 cm, suggesting Rathke's cleft cyst. The patient underwent transsphenoidal neurosurgery for lesion excision and optic chiasm decompression, resulting in significant postoperative recovery of visual acuity. However, he developed sudden polyuria and polydipsia, followed by fatigue, nausea, decreased libido and erectile dysfunction. Referred to an endocrinologist, laboratory tests showed Cortisol 0.5 mcg/dL, TSH 0,49 µUI/mL, free T4 0.75 ng/dL (0.85 to 1,5), LH 0.37 mIU/mL, total Testosterone 0.37 ng/mL, and free Testosterone 0.14 ng/dL, leading to the diagnosis of central diabetes insipidus (CDI) and panhypopituitarism (central hypothyroidism and hypogonadism). Treatment included desmopressin 0.1 mg/day, resulting in remission of polyuria and polydipsia within five months, as well as levothyroxine 25 mcg/day, testosterone undecanoate 1,000 mg every 12 weeks, and continuous endocrinological follow-up. **Discussion:** Rathke's cleft cysts are benign formations composed of neuroepithelial remnants from Rathke's pouch, located in the sellar and suprasellar regions, and can compress the optic chiasm and pituitary gland. Symptoms include visual impairment, headache, and mental confusion. The gold standard surgical approach is the transsphenoidal route. Post-surgical complications include CDI, characterized by polyuria and polydipsia due to a deficiency in vasopressin secretion, and panhypopituitarism, resulting from partial or total loss of pituitary hormonal function. The main etiology of CDI is traumatic, especially after surgery in the sellar region, and its treatment involves vasopressin replacement with desmopressin. Post-surgical panhypopituitarism is rare, with symptoms varying depending on the deficient hormone, including, hypotension, erectile dysfunction and depressed mood. **Final comments:** This case highlights the common age range affected, the progressive loss of visual acuity as an initial symptom, and CDI as a transient complication. The discrepancy lies in the male gender and postoperative evolution with hypopituitarism. The diagnostic delay underscores the need for awareness of pituitary pathologies and integrated clinical evaluation of the patient. **Keywords:** central diabetes insipidus; hypopituitarism; Rathke's cleft cyst.

DIABETES MELLITUS

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BARIATRIC SURGERY IN A PATIENT WITH TYPE 1 DIABETES MELLITUS USING AN INSULIN INFUSION SYSTEM: CASE REPORT

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The increasing global prevalence of obesity and type 1 diabetes mellitus (T1D) poses significant challenges. Bariatric surgery is an important treatment option for obesity, but its role in the management of T1DM is debated. Unlike T2D, where remission is possible, T1D involves autoimmune dysfunction of pancreatic beta-cells. Surgery can help control insulin resistance and improve glycemic control, making it easier to achieve on-target blood glucose (70-180 ng/dL) with less insulin. This case report presents a patient with DM1 using a continuous insulin infusion system who underwent bariatric surgery. M.L.A.S.S., 27 years old, diagnosed with T1D since the age of 15, with positive Anti-GAD antibody, on continuous insulin infusion pump therapy, with adequate education in diabetes. It does not present microvascular or macrovascular complications. She had complained of progressive weight gain since childhood, had been previously followed up with other professionals and had used pharmacological therapy for obesity with sibutramine, orlistat, liraglutide and semaglutide, associated with physical activity and healthy eating, without adequate response to clinical treatment. On physical examination, the patient presented: weight: 111 kg; height: 157 cm; BMI: 45 kg/m^2; abdominal circumference: 129 cm. In laboratory tests: HbA1c: 13%, FreeStyle Libre Sensor with time on target < 35%. As she was obese grade 3, without good glycemic control, she was referred for bariatric surgery, submitted to Sleeve surgery, without perioperative complications. In the postoperative period, the reduction of basal insulin in the insulin pump by 30% initially and later 50% due to hypoglycemic episodes was advised, associated with this, the sensitivity factor and the insulin/carbohydrate ratio were adjusted. She returns 2 months post-surgery with loss of 18 kg (16% of weight) and BMI 37.7 kg/m^2 with complaints of diarrhea, vomiting and abdominal distension with endoscopy showing gastritis test positive for *H. pylori*, with prescription of specific treatment and later improvement of symptoms. She presents new laboratory tests with HbA1c: 8% and time-to-target of 65%. We can conclude that patients with T1D who have obesity and associated insulin resistance should undergo treatment for obesity, initially with clinical treatment and, in case of refractoriness, be evaluated for bariatric surgery to improve glycemic control, as in the case described. **Keywords:** type 1 diabetes mellitus; bariatric surgery; obesity.

DIABETES MELLITUS

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CANNABIDIOL IN THE TREATMENT OF PATIENTS WITH DIABETES MELLITUS: WHAT DOES THE CURRENT LITERATURE SAY?

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Introduction: Cannabidiol (CBD) is found in the *Cannabis sativa* plant, and its use is considered safe and has side effects that are, in most cases, mild and infrequent. CBD is gaining popularity both as a dietary supplement and as a licensed medicine for the treatment of various pathologies, such as diabetes mellitus (DM). Cannabinoids (CBN) have an anti-inflammatory effect and can delay the onset of complications related to DM. **Objective:** To investigate, in the current scientific collection, the relationship between the use of cannabidiol in the treatment of patients with diabetes. **Methods:** This is an integrative literature review carried out in the Virtual Health Library, using the descriptors "Diabetes" AND "Treatment" AND "Cannabidiol", with the filters: full text, databases: MEDLINE and LILACS; with inclusion criteria: English language and in the last five years, obtaining 18 publications. **Results:** After applying the exclusion criteria: duplicate studies, unavailable in full and thematic leakage, the final corpus resulted in 7 publications. Evidence indicates that the use of CBD has increased in the last two decades, particularly among the elderly (>55 years old), delaying the appearance of complications related to hyperglycemia, acting to reduce plasma levels of pro-inflammatory cytokines produced by activated Th1 cells and peritoneal macrophages, as well as increasing the synthesis of Th2-associated cytokines, IL-4 and IL-10. Furthermore, it has an antioxidant effect, reducing malondialdehyde levels and increasing nitric oxide levels, slowing the progression of the disease. The most abundant phytocannabinoids found in the Cannabis plant, such as Δ9tetrahydrocannabinol (THC) and cannabidiol, have been used to treat painful conditions, including diabetic peripheral neuropathy, which manifests as paresthesia, tingling sensations and neuropathic pain, presenting allodynia and hyperalgesia, characterized by various debilitating sensations such as electric shock and burning. **Conclusion:** Therefore, the use of CBD can produce a therapeutic effect in different conditions such as inflammation, oxidative stress, nervous changes and degeneration, having analgesic effects in different models of inflammatory and chronic pain. Based on this potential for using CBD in the treatment of DM, more scientific evidence is suggested on this promising topic for the quality of life of diabetic patients. **Keywords:** diabetes; treatment; cannabidiol.

METABOLISMO ÓSSEO E MINERAL

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CASE REPORT: PSEUDOHYPOPARATHYROIDISM CAUSED BY A MISSENSE MUTATION ON CODON 196 OF GNAS GENE

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Female patient, 30 years old, referred the endocrinology service due to neuropsychomotor developmental delay, obesity, and short stature. Born at term of a noneventful pregnancy, history of precocious puberty, hypothyroidism, cataract and seizures. Physical examination: round face, brachydactyly of both hands and feet, height of 146 cm (Z score –1), weight of 61 kg and BMI of 28,6. Her mother had normal stature, but brachydactyly on the feet and a history of seizures. Laboratory exams: hypocalcemia (ionized calcium at 4,2 [4,4-5,8 mg/dL]), hyperphosphatemia 8,3 (2,5-4,5) and PTH at 616 (7-53 pg/mL). A disproportion between TSH at 5,03 (0,45-4,5 mUI/L) and FT4 at 1,48 (0,85-1,5 ng/dL) was noticed. X-ray of hands and feet: shortening of metatarsals and phalanges. Normal bone densitometry test (DXA). Thyroid ultrasound without abnormalities. Head CT scan: calcifications on cerebral hemispheres, basal nuclei and cerebellum. Established the diagnosis of pseudohypoparathyroidism type 1A (PHP1A)/ Albright hereditary osteodystrophy and initiated treatment with calcitriol, calcium carbonate and cholecalciferol. Molecular analysis by next generation sequencing shows a missense mutation on codon 196 of GNAS gene, promoting a substitution of the amino acid aspartate to asparagine. Patients with PHP1A may present Albright hereditary osteodystrophy (including premature metaphyseal closure, shortening of diaphysis, short stature, ectopic calcification) and resistant to other hormones with receptors coupled to G protein. The main types of PHP are caused by inactivation mutations of the GNAS gene, which codifies Gsα, with autosomal dominant mode of inheritance or caused *de novo*. GNAS presents genomic imprinting, with biallelic expression on most tissues, though primary maternal on some (thyroid, proximal renal tubules, pituitary gland and ovaries). There are more than 80 GNAS mutations described with loss of function. We identified a missense mutation on codon 196, to our knowledge described only once associated with PHP1A. The identification of new mutations highlights the importance of continued research to better define the relationship between genotype and phenotype, allowing for a higher diagnostic precision, better genetic counseling and therapeutical care. **Keywords:** pseudohypoparathyroidism; Albright; osteodystrophy.

DIABETES MELLITUS

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IMMUNE CHECKPOINT INHIBITOR-INDUCED AUTOIMMUNE DIABETES MELLITUS: A CASE REPORT

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Case presentation: A.D.S, 53 years old, female, receptionist, past medical history: primary hypothyroidism (positive anti-TPO), on levothyroxine 75 mcg/day, weight: 53 kg, BMI: 24. Diagnosed in 2023 with pulmonary adenoid cystic carcinoma, clinical stage IV, with metastasis to the liver, kidney, and lymph nodes. Started treatment in January 2024 with anti-PD1 immunecheckpoint inhibitor (ICI) every 21 days intravenously. After 4 months of medication use, developed symptoms of nausea, vomiting, diffuse abdominal pain, and hyperglycemia, requiring hospitalization due to diabetic ketoacidosis (DKA), with test results: pH: 7.29, bicarbonate: 13 mmol/L, HbA1c: 7.3%, and serum glucose: 647 mg/dL, requiring continuous intravenous insulin infusion, hydration, and electrolyte correction. Patient with no previous history of diabetes and with tests from 03/2023: HbA1c: 5.1% and glucose: 88 mg/dL. During the diagnostic elucidation of glycemic uncontrol, demonstrated C-peptide: 0.02 ng/mL (Reference value (RV): 1.1-4.4) and Anti-Gad less than 5 IU/mL (RV: 10), raising the diagnostic hypothesis of immune checkpoint inhibitor-induced autoimmune diabetes mellitus (CIADM). Patient in outpatient follow-up with partially controlled glycemia on continuous use of basal/bolus insulin regimen with Degludeca and Regular insulins. **Discussion:** ICIs have transformed the landscape of oncologic therapy and enhanced understanding of mechanisms that can result in autoimmunity. They pose the risk of triggering new autoimmune toxicities, known as immune-related adverse events. In recent years, CIADM has become an increasingly prevalent form of diabetes, with supposed autoimmune destruction of pancreatic β cells, with an incidence of 0.2% to 1.4% and a high likelihood of this percentage increasing, given that a large portion of cancer patients are becoming eligible for ICI therapy. This translates into thousands of new CIADM patients per year. There is still no official consensus on diagnostic criteria for CIADM; recently published studies suggest: 1) hyperglycemia (serum glucose ≥ 200 mg/dL and/or HbA1c ≥ 6.5%) of recent onset after ICI therapy; 2) C-peptide < 0.4 nmol/L or DKA at presentation or up to 1 month after diagnosis. **Final comments:** Despite the significant advancement of oncologic treatment by ICIs, attention must be paid to immune-related adverse effects, given the high morbidity of CIADM. **Keywords:** immune checkpoint inhibitor; adenoid cystic carcinoma; diabetes mellitus.

DIABETES MELLITUS

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INFLUENCE OF VITAMIN D ON THE EARLY STAGES OF DIABETIC KIDNEY DISEASE IN PEOPLE WITH TYPE 1 DIABETES MELLITUS

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Diabetic kidney disease (DKD) is the leading cause of chronic kidney disease. The initial clinical sign is microalbuminuria, also referred to as elevated urinary albumin excretion (UAE). Experimental, observational studies, and clinical trials suggest that Vitamin D (VD) can slow the progression of DKD, through isolated or synergistic action with inhibitors of the renin-angiotensin-aldosterone system. This study aimed to evaluate the effects of high doses of cholecalciferol on elevated UAE and the Glomerular Filtration Rate (GFR) in patients with type 1 diabetes mellitus (T1DM). A non-randomized clinical trial was conducted, recruiting T1DM patients from the Endocrinology outpatient clinic of the João de Barros Barreto University Hospital. Participants were selected with a GFR > 30 mL/min/1.73 m^2 and microalbuminuria (>30 mg/g or 30 mg/24 h and < 300 mg/g or 300 mg/24 h). Patients were divided into two groups based on baseline levels of 25-hydroxy-vitamin D – 25(OH)D, receiving 10,000 IU/day of cholecalciferol if 25(OH)D < 30 ng/mL, and 4,000 IU/day if 25(OH)D > 30 ng/mL, over 12 weeks. Data collected before and after the intervention included 24-hour microalbuminuria, isolated microalbuminuria, and creatinine. Seventeen individuals participated in this study, with an average age of 27.11 ± 9.29 years and an average T1DM duration of 12.40 ± 7.89 years. A significant increase in 25(OH)D levels (25.48 ± 6.29 *versus* 50.35 ± 24.2 ng/mL, p < 0.001) was observed, associated with a reduction in 24h albuminuria levels (84.37 ± 67.21 *versus* 60.6 ± 67.6 mg/24 h, p < 0.004). However, a slight increase in serum creatinine (0.76 ± 0.24 *versus* 0.81 ± 0.17 mg/dL, p = 0.091) and a reduction in GFR (114.11 ± 23.84 *versus* 106.35 ± 16.57) were noted. Six participants (6/17; 35%) with microalbuminuria progressed to normoalbuminuria, and slight changes in creatinine (0.66 ± 0.16 *versus* 0.76 ± 0.15 mg/dL, p = 0.015) and GFR (120 ± 22 *versus* 104 ± 21.8 mL/min/m^2, p = 0.015) were observed in this subgroup. Additionally, this subgroup had a shorter duration of T1DM compared to others (9.58 ± 5.73 *versus* 13.94 ± 8.71 years). Therefore, the results of this trial suggest that high-dose VD supplementation may reduce UAE and hyperfiltration in this population with T1DM and DKD, particularly in those with a shorter duration of T1DM. **Keywords:** type 1 diabetes mellitus; diabetic kidney disease; vitamin D.

OBESIDADE

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METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE IN OBESITY-RESISTANT RATS

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Introduction: Obesity-resistance, seen in humans and animals, involves resisting weight gain and fat deposition despite ingested food from high-calorie diets. Obesity-resistant (OR) rats have adverse metabolic parameters, but the risks of developing metabolic dysfunction-associated fatty liver disease (MAFLD) are not well understood. **Objective:** To investigate the presence of MAFLD, metabolic parameters and morphological aspects of adipose tissues (AT) in OR condition. **Material and methods:** The study was approved by the CEUA (53/2019). Wistar rats were randomized into two groups: a) SD: standard diet (n = 35); b) HFD: high-fat-diet (n = 36). After applying the tercile classification criterion to OR determination and characterization, the animals were redistributed into three groups from body weight (BW): a) control (C, n = 12); b) obesity-prone (OP, n = 12), c) obesity-resistant (OR, n = 12). The experimental protocol (EP) consisted of obesity induction and characterization of Obesity-Resistance for 14 weeks. Epididymal (EF), retroperitoneal (RF) and visceral (VF) fats pads, body fat (BF), adiposity index (AI), biochemical and hormonal characteristics, hepatic and AT morphology and MAFLD severity were determined. Comparison of experimental groups was performed by ANOVA or Kruskal-Wallis, complemented with *post-hoc* tests, as appropriate. The significance level was 5%. **Results:** From the 5th week, the OR group had lower BW compared to the OP ($p < 0.0001$). At the end of the EP, the OR rats showed an intermediate characteristic the BW, EF, RF, VF, BF, AI and leptin in relation to the OP and C animals (C<OR<OP). Glucose, insulin and homeostatic model assessment index for insulin resistance did not differ between the OR and OP, being elevated in relation to C. Histological evaluations of the AT demonstrated that the OR group presented VF adipocyte area similar to OP, but adipocyte hypertrophy in relation to C group. It has been observed the presence of hepatic steatosis in the OR and OP groups. The evolution and severity of MAFLD were identified through the presence of non-alcoholic steatohepatitis (NASH), being observed 38% in OR animals and 88% in OP rats. **Conclusion:** Chronic consumption of HFD promotes adipocyte hypertrophy in Obesity-Resistance condition and the development of MAFLD concomitantly with insulin resistance. **Keywords:** obesity-resistance; MAFLD; insulin resistance.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

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COMPARISON OF METFORMIN WITH INOSITOL VERSUS METFORMIN ALONE IN WOMEN WITH POLYCYSTIC OVARY SYNDROME: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Metformin was the first medication targeting insulin resistance in polycystic ovary syndrome (PCOS), and it has been extensively studied as a metabolic treatment option. In recent years, inositols have emerged as potential treatment options for PCOS, but confidence in the available evidence supporting their use is limited. **Objective:** Our study aimed to investigate the potential benefits of adding inositols to metformin for the treatment of PCOS. **Methods:** This systematic review and meta-analysis was performed according to the PRISMA guidelines. We comprehensively searched PubMed, Embase, and Cochrane Central databases for RCTs comparing the use of combined metformin and inositol *versus* metformin alone in women with PCOS. A random-effects model was used to calculate the risk ratios (RRs) and mean differences (MDs) with 95% confidence intervals (CIs). All analyses were performed using the R Foundation for Statistical Computing software and a p-value of < 0.05 was deemed as statistically significant. **Results:** Six RCTs and 388 patients were included in the analysis, with follow-up ranging from 3 to 6 months. Out of the 194 patients in the intervention group, 132 received metformin and myoinositol, while the remaining 62 took a combination of metformin, myoinositol and D-chiro-inositol. All 194 women in the control group received metformin alone. Metformin dose ranged from 1,000 mg to 1,700 mg daily, whereas myoinositol and D-chiro-inositol doses varied from 1100 mg to 4,000 mg and from 55.2 mg to 300 mg, respectively. Combination therapy was significantly associated with improved menstrual cycle regularity (RR 1.56; 95% CI 1.01 to 2.41; $p = 0.04$), and lower values of modified Ferriman-Gallwey score (MD -0.97; 95% CI -1.53 to -0.40; $p < 0.01$) and LH/FSH ratios (MD -0.13; 95% CI -0.24 to -0.03; $p = 0.01$). Differences in acne (MD -0.34; 95% CI -1.56 to 0.87; $p = 0.58$), body mass index (MD 0.76 kg/m^2; 95% CI -0.23 to 1.75; $p = 0.13$), fasting blood glucose (MD -1.49 mg/dL; 95% CI -3.11 to 0.13; $p = 0.07$), and HOMA-IR (MD -0.09; 95% CI -0.25 to 0.07; $p = 0.25$) were not statistically significant. **Conclusion:** In this meta-analysis of RCTs, the combination therapy was associated with cycle regularization and reduction in hirsutism and LH/FSH ratio compared to metformin monotherapy. Further studies are needed to clarify the true benefits of the use of inositol in PCOS treatment. **Keywords:** polycystic ovary syndrome; metformin; myoinositol.

TIREOIDE
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EFFICACY OF THYROID HORMONE THERAPY ON DEPRESSIVE SYMPTOMS IN PATIENTS WITH SUBCLINICAL HYPOTHYROIDISM: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Evidence about the efficacy of thyroid hormone therapy on patients with subclinical hypothyroidism (SCH) is limited and covers results in serum hormone levels and quality of life. However, it is still unclear the efficacy of thyroid hormone therapy on depressive symptoms in those patients. **Objective:** To evaluate the efficacy of thyroid hormone therapy to improve depressive symptoms compared to placebo in patients with subclinical hypothyroidism. **Methods:** PubMed, Scopus and Web of Science databases were searched RCTs and cohort studies comparing thyroid hormone therapy with placebo in depressive symptoms of patients with subclinical hypothyroidism and followed PRISMA. A random-effects model was employed to compute the standard mean difference (SMD) with 95% confidence interval (CI). Statistical analysis was performed using R software 4.3.1. **Results:** A total of 7 studies and 977 patients were included, with follow-up ranging from 3 to 12 months, of whom 495 were randomized to thyroxine or levothyroxine and 482 to placebo. Dose ranged from 20 mcg to 100 mcg daily. Compared with placebo, thyroid hormone therapy had no significant effects on depressive symptoms scores in 3 to 12 months (SMD 0.10; 95% CI [-0.02 to 0.23]; p-value = 0.10). **Conclusion:** In this meta-analysis, the results suggest that there is no statistical difference between the efficacy of thyroid hormone therapy compared to placebo to improve depressive symptoms, and the treatment of these symptoms in subclinical hypothyroidism should be further investigated. **Keywords:** subclinical hypothyroidism; thyroid hormone therapy; depressive symptoms.

TIREOIDE
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EFFICACY AND SAFETY OF TEPROTUMUMAB IN PATIENTS WITH THYROID-ASSOCIATED ORBITOPATHY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Thyroid eye disease, also known as thyroid-associated ophthalmopathy, Graves' ophthalmopathy or orbitopathy, is characterized by inflammation resulting in edema, redness and swelling. Teprotumumab, an insulin-like growth factor-1 receptor inhibitor, previously demonstrated efficacy in acute, high-inflammation thyroid eye disease (TED) trials. **Hypothesis:** The use of Teprotumumab mitigates TED. **Methods:** We used the PRISMA checklist for this review. Cochrane, PubMed and Scopus databases were searched for randomized controlled trials (RCT) comparing Teprotumumab with placebo in patients with thyroid-associated orbitopathy, and select 3 studies. A random-effects model was employed to compute odds ratio (OR) with 95% confidence interval (CI). Statistical analysis was performed using R software 4.3.1. **Results:** In all cases, Teprotumumab was compared with placebo, and a total of 3 studies and 231 patients were included, of whom 54% were randomized to Teprotumumab. Teprotumumab was in favours on proptosis response (OR 19.16; 95% CI 3.58-102.63; p = 0.000563) and clinical activity score (OR 6.76; 95% CI 3.40-13.45; p < 0.000001). Placebo was in favors on muscle spasm (OR 4.99; 95% CI 2.17-11.45; p = 0.000148) and dry skin (OR 7.85; 95% CI 1.42-43.48; p = 0.18267), but it did not yield statistically significant results on dysgeusia (OR 4.50; 95% CI 0.97-20.98; p = 0.055507), diarrhea (OR 1.24; 95% CI 0.54-2.86; p = 0.609567), alopecia (OR 1.79; 95% CI 0.69-4.70; p = 0.233327), any (OR 1.45; 95% CI 0.77-2.73; p = 0.250055) or several adverse events (OR 2.21; 95% CI 0.54-9.06; p = 0.271322), fatigue (OR 3.38; 95% CI 0.91-12.57; p = 0.068641) and diplopia response (OR 2.14; 95% CI 0.77-5.95; p = 0.145458). It had no effects on Graves' ophthalmopathy-specific quality of life (MD 10.12; 95% CI 8.61-11.63; p < 0.000001). **Conclusions:** In this meta-analysis of 3 RCT, Teprotumumab did not yield statistically significant results in major, while it was not associated with a greater number of adverse effects in muscle spasm and dry skin yet. Moreover, the positive outcomes were in clinical activity score and proptosis response. **Keywords:** teprotumumab; thyroid eye disease; orbitopathy.

METABOLISMO ÓSSEO E MINERAL

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HYPERCALCEMIA ASSOCIATED WITH FOREIGN GRANULOMA DUE TO SILICONE INJECTION: A CASE REPORT

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Aesthetic procedures using injectable products not approved for this purpose have increased in recent years, mainly due to their low cost. Among the complications of these procedures is the formation of foreign body granulomas that can be associated with hypercalcemia. A 59-year-old woman was referred to endocrinological evaluation for metabolic syndrome. Her medical history includes the histopathological diagnosis of extensive chronic sclerosing panniculitis in the glutes and thighs secondary to silicone injection when she was younger, without surgical removal possibility. Besides laboratory tests suggesting metabolic dysfunction, hypercalcemia (Total calcium 12 mg/L; URL 10,2) was incidentally detected. Further investigation confirmed PTH-independent hypercalcemia with elevated 1,25-dihydroxyvitamin D (calcitriol). As a complication of hypercalciuria (7-8 mg/kg), the ultrasound showed nephrolithiasis without renal function impairment. The diagnosis of hypercalcemia associated with silicone-induced granuloma was made, and treatment with prednisone 15 to 20 mg normalized the serum calcitriol and calcium levels. Foreign body granulomas are rich in inflammatory cells that express CYP27B1, an enzyme that catalyzes 25-hydroxyvitamin D3 hydroxylation in calcitriol. CYP27B1 expression is stimulated by cytokines, leading to high production of 1,25-dihydroxyvitamin D and, consequently, hypercalcemia with its complications, such as nephrolithiasis, chronic kidney disease, and death. Studies show that kidney failure is the most common complication related to these granulomas. Currently, most patients are treated effectively with high doses of glucocorticoids to suppress inflammation, inhibit the 1-α-hydroxylase enzyme, and gastrointestinal calcium absorption. Sparing-glucocorticoid drugs should be studied in this scenario because long-term treatment is needed. Antiresorptive drugs, denosumab, and bisphosphonates can be an alternative therapy for patients who do not control calcium levels despite the glucocorticoids. The recurrence of hypercalcemia, even after treatment, can reach 45%. Educational campaigns about the health risks related to cosmetic injection with substances not approved for this intent should be performed by government health institutions to conscientize the general population. **Keywords:** hypercalcemia; granuloma; injection silicone.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1543

PRECOCIOUS MENARCHE IS A BETTER PREDICTOR OF METABOLIC AND CARDIOVASCULAR OUTCOMES THAN SELF-REPORTED POLYCYSTIC OVARY SYNDROME: THE BRAZILIAN LONGITUDINAL STUDY OF ADULT HEALTH

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Introduction: Precocious menarche and polycystic ovary syndrome (PCOS) have been linked to adverse metabolic and cardiovascular outcomes in various epidemiological and genetic studies. However, few of these studies have been conducted in developing countries. This study aims to confirm this association in a large cohort of Brazilian women. **Methods:** The Brazilian Longitudinal Study of Adult Health (ELSA-Brasil) is a prospective cohort study involving 15,105 civil servants from six centers across Brazil. The study, initiated in 2008, aims to identify risk factors for diabetes and cardiovascular disease. To date, four longitudinal evaluations have been conducted, encompassing interviews on socio-demographics and clinical history, anthropometric measurements, and biochemical and imaging tests. All participants are also followed through annual telephone surveillance. This analysis includes data from 8,218 women aged 35 to 74 years. Precocious menarche was defined as self-reported menarche before the age of 10. PCOS was defined by self-reported medical diagnosis. The health outcomes evaluated included obesity, central obesity (waist circumference > 88 cm), type 2 diabetes mellitus (T2DM), systemic arterial hypertension, metabolic syndrome, nonfatal myocardial infarction (MI), and nonfatal stroke. Statistical significance was set at $p < 0.05$. **Results:** The median age at menarche among Brazilian women was 12 years, with a 3.1% prevalence of precocious menarche (254 women). The prevalence of self-reported PCOS was 11.8% (965 women), based on clinical diagnosis (12.3%), ultrasound diagnosis (78%), both clinical and ultrasound diagnosis (4.1%), or unspecified parameters (5.5%). Thirty-five women (0.4%) had both precocious menarche and PCOS. Women with precocious menarche had higher odds of obesity (OR 2.1), central obesity (OR 2.7), T2DM (OR 1.5), metabolic syndrome (OR 1.4), and nonfatal MI (OR 2.5) ($p < 0.05$ for all). Women with self-reported PCOS had higher odds of obesity (OR 1.25, $p = 0.005$), but no significant differences in the other evaluated parameters. Women with both precocious menarche and PCOS showed no significant differences in these outcomes compared to women with isolated precocious menarche or isolated PCOS. **Conclusions:** The association between precocious menarche and adverse metabolic and cardiovascular outcomes was confirmed in Brazilian women. Age at menarche proved to be a better predictor of these outcomes than self-reported PCOS in this population. **Keywords:** precocious menarche; polycystic ovary syndrome; cardiometabolic outcomes.

TIREOIDE
1544

EVALUATION OF GUT MICROBIOTA AND INTESTINAL PERMEABILITY IN PATIENTS WITH HASHIMOTO'S THYROIDITIS

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Hashimoto thyroiditis (HT) is a very common autoimmune disease, characterized by chronic inflammation and circulating autoantibodies against thyroid peroxidase and thyroglobulin. There is evidences that the intestinal dysbiosis, bacterial overgrowth, and increased intestinal permeability favor the HT development, and a thyroid-gut axis has been proposed, which seems to impact our entire metabolism. So, we evaluated alterations in the gut microbiota in Brazilian patients with HT and correlated this data with dietary habits, clinical data, and systemic cytokines and zonulin concentrations. Stool samples from 40 patients with HT and 53 controls were analyzed using real-time PCR, the serum cytokine levels were evaluated by flow cytometry, zonulin concentrations by ELISA, and the dietary habits were recorded by a food frequency questionnaire. We observed a significant increase ($p < 0.05$) in the Bacteroides species and a decrease in Bifidobacterium in samples of patients with HT. In addition, Lactobacillus species were higher in patients without thyroid hormone replacement, compared with those who use oral levothyroxine. Regarding dietary habits, we demonstrated that there are significant differences in the consumption of vegetables, fruits, animal-derived proteins, dairy products, saturated fats, and carbohydrates between patients and control group, and an inverse correlation between animal-derived protein and Bacteroides genus was detected. The microbiota modulation by diet directly influences the inflammatory profile due to the generated microbiota metabolites and their direct or indirect action on immune cells in the gut mucosa. Although there are no differences in systemic cytokines in our patients with HT, we detected increased zonulin concentrations, suggesting a leaky gut in patients with HT. These findings could help understand the development and progression of HT, while further investigations to clarify the underlying mechanisms of the diet-microbiota-immune system axis are still needed. **Keywords:** Hashimoto thyroiditis; gut microbiota; intestinal permeability.

TIREOIDE
1545

MATERNAL THYROID DYSFUNCTION AND RISK OF GESTATIONAL ANEMIA: AN UPDATED META-ANALYSIS

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Introduction: The hypothyroidism globally affects about 4% of pregnancies 0.5% overt and 3.5% subclinical hypothyroidism e o hyperthyroidism affects about 2.4% of pregnancies, 0.6% overt and 1.8% subclinical hyperthyroidism. Anemia during pregnancy can hinder oxygen transport and carries risk of premature birth, low birth weight and fetus malformations. However, the relationship of thyroid disorders with the risk and incidence of gestational anemia has not been thoroughly elucidated. **Methods:** A thorough literature search was conducted across PubMed, Scopus and Web of Science, focusing on studies that compared the risk of gestational anemia due to thyroid dysfunction. We computed for binary endpoints odds ratio (OR) with 95% confidence intervals (CI) which were analyzed using a random-effects model. R, version 4.4.1, was used for statistical analyses. Heterogeneity was assessed with I2 statistics. We considered ($P < 0.01$) as statistically significant. **Results:** This meta-analysis included 9 studies, involving 9915 patients, 1510 (17,96%) with thyroid dysfunction. The follow-up period ranged from 1 to 2 years, with participant ages varying from 18 to 46 years. Analysis revealed the outcome of anemia in pregnant women with thyroid dysfunction was statistically favorable for the group that had preserved thyroid function (OR= 1.96, 95% CI = 1.01-3.79, I2 = 92%, $P < 0.01$), the outcome of preeclampsia was not statistically favorable for the group that had thyroid dysfunction (OR = 2.24, 95% CI = 0.85-5.90, I2 = 78%, $P < 0.01$) and the outcome of low birth weight was likewise not statistically favorable for the thyroid dysfunction group too (OR = 1.79, 95% CI = 0.61-5.25, I2 = 73%, $P = 0.03$). **Conclusions:** This meta-analysis yielded significant results regarding the relationship between thyroid disorders and the risk and incidence of gestational anemia, indicating that these disorders can increase the risk of anemia in pregnant women and it also indicated that thyroid disorders significantly increase the risk of pre-eclampsia and low birth weight. **Keywords:** thyroid disorders; pregnancy; gestational anemia.

NEUROENDOCRINOLOGIA

1546

ECCHORDOSIS PHYSALIPHORA OR CORDHOMA: DIFFERENTIAL DIAGNOSIS IN HYPERPROLACTINEMIA

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Case presentation: A 39-yrs-old female patient reported galactorrhea, mastalgia, decrease in libido and irregular menstrual cycles. Investigation proved right to mammal abscess due Pseudomonas and Tuberculosis infection by which the patient received surgical and antibiotic treatment. Laboratory work-up showed increased prolactin (PRL) levels: 55 ng/mL (NV<23). Sellar MRI depicted a bone lesion in the clivus characterized by high signal on T2 and absence of enhancement by paramagnetic contrast medium, measuring 1.8 x 1.6 x 0.8 cm. Diagnosis possibilities were chordoma or ecchordosis physaliphora. **Discussion:** Ecchordosis physaliphora (EP) is a rare, benign notochordal remnant typically found intradurally between the sacrum and the base of the skull. EP was found in 0.5%-2% of autopsies and 1.5% of brain MRIs. Differentiating diagnosis from chordoma can be difficult. Chordoma can exhibit invasive behavior and typically requires treatment through neurosurgical intervention. In our patient, breast disease and/or pituitary stalk disconnection can cause hyperprolactinemia. Because of her symptoms, cabergoline was started and prolactin within the normal range was achieved. A follow-up sellar MRI conducted after 10 months demonstrated lesion stability. **Final comments:** Identifying the correct cause of hyperprolactinemia is essential for proper management, as it allows for targeted and effective treatment strategies. In this case, sellar MRI revealed an unexpected clival lesion that requires ongoing monitoring to differentiate between EP and chordoma, as the latter may be treated surgically. **Keywords:** ecchordosis physaliphora; cordhoma; hyperprolactinemia.

NEUROENDOCRINOLOGIA

1547

CLIVAL PROLACTINOMA: REPORT OF TWO CASES

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Case presentation: Case 1: A 39-year-old male was diagnosed with a large and invasive skull base tumor during investigation for headache symptoms. He was submitted to neurosurgery and a sellar-sphenoid sinus and clivus lesion was found without pituitary involvement. Anatomopathological evaluation showed a pituitary adenoma with immunohistochemistry positive to prolactin (PRL). After 10 yrs, he returned to a medical service with Cushing Syndrome due to multiple adrenal adenomas and hyperprolactinemia. Sellar MRI: a clival lesion, heterogeneous, poorly delimited invading right cavernous sinus. Cabergoline (CAB) was started with a decrease in PRL levels. **Case 2:** A 52-yrs-old male presented exophthalmos and left convergent strabismus, after investigation a diagnosis of prolactinoma was made: PRL 36,900 ng/mL and a clivus lesion in sellar MRI. Due to CAB resistance he was submitted to neurosurgery. Tumor lesion was invading the clivus without pituitary involvement. Histopathological analysis confirmed the prolactinoma diagnosis. **Discussion:** Ectopic pituitary tumors are exceptionally rare and are thought to originate from the neoplastic proliferation of pituitary rests along the embryological path of the pituitary development. Approximately 60% are seen in the sphenoid sinus and suprasellar region, and 30% can be located in the clivus, nasal cavity, cavernous sinus, parasellar region, and sphenoid wing. The majority of the cases secrete ACTH or PRL. Less than 20 cases of clival prolactinoma were described. Hormonal evaluation, especially serum PRL, should be performed in patients with a skull base tumor, since clinical treatments with CAB are successful in prolactinomas, even ectopic. **Final comments:** We report two patients with clival prolactinomas, confirmed by surgical findings. Although CAB is the treatment of choice, the 1st patient was submitted to surgery, probably due to initial diagnostic mistake and the 2nd due to CAB resistance. These cases emphasize the role of hormonal assessment in skull base lesion, posing prolactinoma as a differential diagnosis. **Keywords:** prolactinoma; hyperprolactinemia; clivus lesion.

NEUROENDOCRINOLOGIA

1548

PREVALENCE AND CHARACTERISTICS OF THE HYPOTHALAMIC-PITUITARY DISEASES IN A LARGE CASE SERIES FROM AN ONCOLOGY REFERENCE HOSPITAL

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Introduction: Pituitary adenomas represent approximately 15% of all intracranial tumors and are the most prevalent lesions in the hypothalamic-pituitary region. However, several other subtypes and diseases can affect the area. **Objective:** To evaluate the prevalence and characteristics of tumors and other diseases of the hypothalamic-pituitary region in a large case series from an oncology reference hospital. **Patients and methods:** Retrospective study in a single Oncology Reference Center. Between 2001 and 2024, 751 patients with diseases that impacted the hypothalamic-pituitary region were evaluated. From 2017 onwards, a Pituitary Diseases Center was formed, and a Pituitary Tumor Board was created at the Institution with the aim of multidisciplinary evaluation of clinical cases. **Results:** Confirmed or presumed pituitary adenomas represent most cases (n = 625, 83%) and half of these were submitted to pituitary surgery (n = 310). Clinically non-functioning pituitary adenomas (NFPA; null cell or LH/FSH+ at immuno-histochemical analyses) were the most prevalent etiology (n = 186). About functioning pituitary adenomas, the most common subtype was the prolactin-producer adenoma (n = 169) followed by GH (n = 68), ACTH (n = 53), and TSH in three cases. Silent ACTH-positive pituitary adenomas were present in eight cases. Other types of tumors represented 6% of cases (n = 33). Of these, the most common were: meningiomas (n = 13), craniopharyngiomas (n = 9), germ cell tumors (n = 4), and histiocytosis in three cases. Non-tumorous cystic lesions were found in 37 cases, most of them represented by Rathke's Pouch Cysts (surgery in 10 cases). Finally, some cases of non-surgical empty sella (n = 16) and hypophysitis (n = 15) were presented. Of the cases of hypophysitis, the majority were secondary to treatment with immunotherapy in non-endocrine tumors. Regarding postoperative remission rates of functioning pituitary adenomas, there were remissions in 65% of cases of acromegaly (33/51, 75% macroadenomas [MAC, 10-41 mm]), 84% of cases of Cushing's disease (27/32, IPSS in six cases, 30% MAC [10-20 mm]) and 57% of prolactinomas cases (91% MAC [10-41 mm]). **Conclusions:** Pituitary adenomas represented most of the lesions that affected the hypothalamic-pituitary region, even in an oncology reference hospital. However, other conditions such as hypophysitis secondary to immunotherapy have a specific prevalence due to the oncological context of the Institution. **Keywords:** hypothalamic-pituitary diseases; pituitary tumor; pituitary adenoma.

NEUROENDOCRINOLOGIA

1549

INSULINOMA ASSOCIATED WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 (MEN-1) – A CHALLENGE IN TUMOR LOCALIZATION

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Case presentation: 60y, female, no previous comorbidities, referred to this service due to episodes of symptomatic hypoglycemia (27-34 mg/dL) for about 1y, characterized by intense sweating, lipothymia, slurred speech and drowsiness. Abdominal MRI with no findings that justified the condition. Prolonged fasting test was performed, confirming the hypothesis of hyperinsulinemic hypoglycemia: serum glucose 47 mg/dL, cortisol 8.81, C peptide 2.69 (1.03-4.79), insulin 18.3 (2.6-24.9), anti-insulin 6% and echoEDA showed a lesion between the wall of the second duodenal portion, vena cava and uncinate process, measuring 7 x 4 mm, was referred for approach by the digestive system surgery team. Intraoperatively, pancreas ultrasound was performed and not identify the echoEDA lesion, but a 1cm lesion in the body of the pancreas, which was enucleated. In the postoperative, developed without hypoglycemic episodes for 2m. AP of the lesion was negative for a neuroendocrine tumor (NT), and she resorted to hypoglycemia, restarting the investigation, this time with PET-SCAN with increased molecular expression of the marker in the pancreatic tail without a defined nodular lesion. New surgical approach was indicated, pancreatectomy of the body and tail, without recurrence of hypoglycemia and AP confirming that it was a NT Positive investigation for MEN-1: serum calcium 11.4, PTH 156.8, prolactin 45.49 and pituitary MRI with microadenoma. Currently, she's being followed up at the outpatient clinic for treatment of diabetes mellitus and osteoporosis. Awaiting approach to the parathyroid adenoma evidenced by scintigraphy. **Discussion:** Insulinomas are the most common functioning pancreatic NT, accounting about 10% of pancreatic tumors, prevalence is approximately 1-4 cases/million. Predominance of women, > 50 years (50%) and a few < 20y. Usually, small and solitary, 10% multiple, 10% malignant and 4% associated with MEN-1. The location can represent a challenge. Most imaging studies have an accuracy of 25%-70%, but MRI has shown good sensitivity in > 2 cm. More sensitive tests (echoEDA and PET-CT), especially in the detection of small tumors, may be necessary, but difficult to access in the clinical environment. **Final comments:** We seek to expand knowledge about insulinoma and contribute to improving the care and therapies offered to this potentially fatal condition. Despite the difficulties inherent to the Unified Health System, the patient continues to present good clinical evolution. **Keywords:** insulinoma; MEN-1; PET-CT.

TIREOIDE
1550

MIR-146B EXPRESSION PROFILING: A POTENTIAL PREDICTOR OF CLINICAL-PATHOLOGICAL OUTCOMES IN DIFFERENTIATED THYROID CARCINOMAS

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Introduction: Thyroid cancer is the ninth most common cancer worldwide. Although it generally has a favorable prognosis, some cases can exhibit more aggressive behavior. Recent studies have linked high expression levels of microRNA-146b (miR-146b) in differentiated thyroid carcinomas (DTC) to more severe phenotypes, such as lymph node metastasis, extrathyroidal invasion, and with the presence of the BRAF V600E mutation. This suggests that miR-146b may be a predictor of disease progression and poorer outcomes for patients. **Objective:** To characterize the miR-146b expression as a prognostic biomarker for clinical-pathological phenotypes in DTC from fine-needle aspiration (FNA) smear slides, for early identification of potentially aggressive behavior carcinomas and a more precise clinical management of patients. **Methods:** The study cohort consisted of 199 nodules of DTC. Using the preoperative FNA smear slides, all samples were analyzed for miR-146b expression and the presence of the BRAF V600E mutation by qPCR. The patients' histopathological reports were reviewed to identify the following clinic-pathological characteristics: Extrathyroidal Invasion (EI), Vascular Invasion (VI), Lymph Node Metastasis (LNM) and ATA Recurrence Risk (RR). Using the Receiver Operator Characteristic (ROC) curve, two miR-146b expression cut-offs values for each characteristic were defined, generating three "miR-146b expression zones". **Results:** Based on the normalized miR-146b expression, the risks of developing certain characteristics within the respective "miR-146b expression zones" were as follows: Presence of LNM – 11.5% (low), 34.5% (moderate) and 75.0% (high); Probability of being classified as intermediate/high risk according to ATA RR – 16.6% (low), 46.2% (moderate) and 66.7% (high); Presence of BRAF V600E mutation – 5.5% (low), 71.4% (moderate) and 94.7% (high). There was no correlation between miR-146b expression and the presence of EI or VI. **Conclusion:** Therefore, the results suggest that normalized miR-146b expression can be used as a prognostic biomarker for predicting important clinico-pathological phenotypes and potential aggressive behaviors of DTC in the preoperative setting. **Keywords:** miR-146b expression profiling; biomarker; differentiated thyroid carcinomas.

TIREOIDE
1551

EXPLORING MOLECULAR PROFILES OF THYROID NODULES: INSIGHTS FROM BRAZILIAN PATIENTS

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Introduction: Thyroid nodules can be present in up to 60% of adults, with a higher prevalence among women (4:1 ratio to men). About 25%-30% of the cases are classified as "indeterminate" (Bethesda 3 [B3] or Bethesda 4 [B4]) upon fine needle aspiration. Molecular tests like mir-THYpe full utilize microRNA profiling and DNA analysis, including mutations in BRAF V600E, pTERT C228T/C250T, RET M918T, C634Y/R, and V804L/M, to aid in diagnosis and prognosis in these cases. **Objective:** To retrospectively assess the molecular profiles of Brazilian patients who underwent the mir-THYpe full test. **Methods:** Data from 3,164 thyroid nodules (1,812 B3 and 1,352 B4) submitted to molecular testing were analyzed, categorizing by age (using a cut-off at 55 years), sex, mutation prevalence and correlating with surgical anatomopathological reports (APRs). **Results:** Of the 3,164 nodules analyzed, 64.2% (2,032/3,164) tested negative and 35.8% (1,132/3,164) positive for malignancy using the mir-THYpe full test, with 75.5% (2,389/3,164) being from females and 24.5% (775/3,164) from males. Among those with negative results, no mutations were found; 20 patients underwent surgery, confirming 18 benign lesions via APRs. In the cohort with positive molecular results, mutations were found in 22.4% (254/1,132) of cases, including 232 BRAF V600E, 19 pTERT C228T, two RET M918T, and one RET C364R mutation. The pTERT C228T mutation occurred in 5.2% (17/329) of positive tests in individuals aged ≥ 55 years, significantly higher than the 0.2% (2/803) found in those < 55 years ($p < 0.0001$). For the BRAF V600E mutation, it was found in 17.9% (59/329) of individuals aged ≥ 55 years and in 21.5% (173/803) of those < 55 years ($p = 0.17$). Among all patients in the positive cohort, 207 APRs were available, confirming 127 cases of cancer/NIFTP. **Conclusion:** In our cohort, various clinical parameters mirrored findings in international cohorts, including gender ratios, prevalence of BRAF V600E mutation (across different age groups or overall), and prevalence of TERT C228T over C250T mutation. Interestingly, TERT positivity rates were higher in Brazilian patients aged ≥ 55 years, suggesting it as a potential risk factor for this mutation in indeterminate thyroid nodules. **Keywords:** molecular profiling; Brazilian patients; indeterminate thyroid nodules.

METABOLISMO ÓSSEO E MINERAL

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ANALYSIS OF PATIENTS EVOLUTION UNDERGOING PARATHYROIDECTOMY AND FOLLOWED AT AN ENDOCRINOLOGY REFERENCE CENTER

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Introduction: The main cause of Hyperparathyroidism is a solitary parathyroid adenoma, responsible for approximately 85% of cases. Other causes include hyperplasia and carcinoma. Studies show that parathyroidectomy results in significant improvements in bone mineral density (BMD), kidney function, and reduced incidence of bone fractures. **Methods:** Data were collected from a group of 46 patients diagnosed with hyperparathyroidism followed at reference center, over a period of 1 year (June/2023-June/2024). **Results:** Parathyroidectomy was performed in 19 patients, with a mean age of 65 years, 3 males and 16 females. Pre-surgery calcium levels ranged from 10.6-13.9 mg/dL, with an average of 11.88. PTH levels ranged from 122-1,000 mg/dL, with a mean of 286.7. The mean 25OH vitamin D was 33.69 ng/mL. No patient had changes in renal function, with a mean creatinine of 0.98 mg/dL. The average calciuria analyzed in 24 hours was 2.7 mg/kg, ranging from 0.24-6 mg/kg; in absolute values, the mean calciuria in 24 hours was 228.88 mg/mL (63-650 mg/mL in 24 hours). Eight patients (42.1%) had osteoporosis, with 6 patients classified as very high risk due to the presence of a fracture (4 vertebra fractures, 1 femur fracture and 1 patient with a concomitant vertebra and femur fracture). 30.77% (4 patients) had normal bone mineral density and 23.08% had osteopenia in the pre-surgical analysis. One patient was diagnosed with a brown tumor, she had PTH > 1,000 mg/dL, initial calcium of 13 mg/dL, preserved renal function and bone mineral density expected for the age group. Evolution after surgical intervention showed very favorable results. The average calcium dropped to 9.36 mg/dL, calciuria to 103.03 mg/dL and PTH to 83.25 mg/dL. No patient persisted with hypercalcemia, but 2 patients maintained high levels of PTH and calciuria after the surgical procedure. Of the 6 patients who had osteoporosis, 33.33% (2) progressed to normalization of bone mineral density, 50% maintained osteoporosis and 16.76% (1) progressed to osteopenia. **Conclusion:** This study provides a comprehensive overview of postsurgical outcomes in patients with hyperparathyroidism. The surgery proved to be effective in reducing calcium levels, calciuria, PTH, and positive results observed in bone mineral density. **Keywords:** hyperparathyroidism; parathyroidectomy; hypercalciuria.

TIREOIDE

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MACHINE LEARNING IN THYROID NODULE DIAGNOSIS: ASSESSING PERFORMANCE IMPROVEMENT OF MOLECULAR TESTING ALGORITHMS V1 VERSUS V2

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Introduction: In 2018, we introduced the first version (v1) of our microRNA-based algorithm (mir-THYpe full test), used for classifying indeterminate thyroid nodules in real-world clinical settings. Recently, we released an optimized version (v2) incorporating advanced machine learning techniques and integrating microRNA and DNA data. **Objective:** Our objective was to simulate and evaluate the performance of the v2 algorithm in classifying the same samples that were originally classified by the v1 algorithm. **Methods:** This study cohort included microRNA and DNA data extracted from fine-needle aspiration (FNA) smear slides of 1,718 thyroid nodules from 1,687 patients who underwent molecular testing. These nodules were initially classified using the v1 algorithm in routine clinical practice, with 945 classified as Bethesda III and 773 as Bethesda IV. Subsequently, these samples were re-analyzed using the newly optimized v2 algorithm. Molecular analysis involved profiling microRNA and analyzing DNA mutations such as BRAF V600E and TERT promoter C228T/C250T mutations. Anatomopathological data were available for 329 nodules (112 benign and 217 malignant), which were used to assess the performance of the v2 algorithm. Given the unrealistically high disease prevalence of 66.0%, an adjusted real-world prevalence of 32% was calculated using Bayes' theorem. **Results:** When comparing the outcomes between the v1 and v2 versions of the algorithm, the v2 classified 1,175 samples as negative for malignancy compared to 979 by v1 (Benign Call Rate/BCR – 68.4% *vs.* 57.0%), and 543 samples as positive *versus* 739 samples by v1. According to this simulation, the real-world performance metrics for v2 would be as follows: sensitivity of 94.5%, specificity of 75.9%, positive predictive value (PPV) of 64.8%, negative predictive value (NPV) of 96.7%, and accuracy of 81.8%. **Conclusion:** These results indicate a significant improvement in BCR with the v2 in relation to v1, leading to an increase in the number of cases that would benefit from the test, thereby potentially avoiding unnecessary diagnostic surgeries. Furthermore, v2 demonstrates high PPV and NPV, suggesting optimized real-world performance for future tests. **Keywords:** machine learning; molecular testing; indeterminate thyroid nodules.

TIREOIDE

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PEDIATRIC PATIENTS WITH INDETERMINATE THYROID NODULES: PRELIMINARY RESULTS WITH AN MICRORNA AND DNA-BASED MOLECULAR TESTING

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Introduction: Thyroid nodules are prevalent among adults (20%-76%), but are rare in the pediatric population (~1.5% of children and adolescents < 18 years old). Furthermore, the risk of malignancy (RoM) in this age group is higher compared to adults, particularly in the indeterminate cytology categories: Bethesda III, 50%-75% *vs.* 10%-30%, and Bethesda IV, 75%-93% *vs.* 25%-40%. Despite this increased risk, molecular testing is recommended and beneficial in pediatric cases. However, it's worth noting that currently available molecular tests in Latin America have not yet been validated for use in the pediatric population. **Objective:** To assess the diagnostic accuracy of the mir-THYpe full thyroid molecular classifier in pediatric patients. **Methods:** This validation study initially included FNA slides from 15 pediatric patients: seven from the National Cancer Institute (INCA) and eight from Onkos biorepository. Samples were subjected to the mir-THYpe full molecular test, which includes microRNA expression profiling and DNA analysis (BRAF V600E and pTERT C228/250T) by qPCR. RNA-sufficient samples were further evaluated for PAX8/PPRAg, RET/PTC1 and RET/PTC3 fusions. Anatomopathological reports (APR) served as the gold standard for evaluating test performance. **Results:** Among the 15 samples analyzed (six Bethesda III, five Bethesda IV, and four Bethesda VI), one was inconclusive due to insufficient material and failing quality control. Of the remaining 14 samples, 12 were positive for malignancy in the molecular classifier; 11 were confirmed malignant by APR (91.6%), including papillary thyroid carcinomas and microcarcinomas, and two BRAF-positive samples. The only false positive was a colloid goiter. The remaining two samples were negative for malignancy and confirmed as benign by APR (100%) – follicular adenomas. Overall, the molecular classifier correctly identified 13 out of 14 valid pediatric samples, achieving 92.8% accuracy. No translocations were detected in this cohort. **Conclusion:** Therefore, the preliminary results suggest the technical applicability of the mir-THYpe full molecular classifier in pediatric thyroid nodules. Ongoing robust validation with more samples aims to increase benign sample size to better assess the test's predictive values in the pediatric population. **Keywords:** pediatric patients; molecular testing; indeterminate thyroid nodules.

ADRENAL E HIPERTENSÃO

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CASE REPORT: CHALLENGES IN CLINICAL DIAGNOSIS OF SECONDARY HYPOCORTISOLISM

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Case presentation: Woman, 32 years old, white, slightly overweight, history of seeking help in ambulatory of different clinical specialties a few months before the first visit to our service with symptoms of nausea, weakness and hypotension always triggered by physical activity. Initially everything was attributed to a lack of physical preparation, however, after an exhaustive investigation and persistence of symptoms, she was referred for psychiatric evaluation. Unsatisfied, she sought out for an endocrinologist who requested tests: basal cortisol = 0.9 µg/dL (6.2 to 18 µg/dL), ACTH = 7.6 pg/mL (up to 46 pg/mL). After these results, daily prednisolone (7.5 mg) was prescribed with complete reversal of symptoms. Three months after starting treatment, the patient underwent the following tests: cortisol = 6.6 µg/dL, ACTH = 16 pg/mL, SDHEA = 81.0 µg/dL (98.8 to 340.0 µg/dL), androstenedione = 1.25 ng/mL (0.3 to 5.00 ng/mL). Her first medical appointment at our service was approximately 9 months after diagnosis and initial treatment. The patient remains asymptomatic and all the hypothalamic-pituitary axes were analyzed, but only the adrenal axis was hypofunctional. We concluded it was indeed a secondary adrenal insufficiency related to isolated ACTH deficiency. We requested an MRI of the sella turcica, because the patient had secondary amenorrhea since April 2024, with the gonadotropin profile suggesting anovulation, and we recommended medroxyprogesterone suppression test. **Discussion:** Adrenal insufficiency is a clinical entity that, regardless of its etiology, manifests itself through nonspecific symptoms. The diagnosis requires a high degree of suspicion. In case of primary etiology, the damage of the three layers of the adrenal cortex generates a more exuberant clinical condition, with serious hemodynamic impacts secondary to glomerulosa layer's involvement. In case of secondary etiology, like the case of this patient, with a subtle clinical picture, a greater suspicion degree is required, especially if the hypothalamic-pituitary-adrenal axis is the only axis involved. Under these conditions, symptoms may only appear when the patient is exposed to a stressful condition. **Final comments:** This clinical case aims to describe challenges in the clinical diagnosis of hypocortisolism, highlighting the importance of a meticulous anamnesis, allowing agility in diagnosing a condition that configures risk over the integrity of affected patients. **Keywords:** secondary hypocortisolism; corticotrophin deficiency; psycho-organic syndrome.

METABOLISMO ÓSSEO E MINERAL

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CASE REPORT: MALE OSTEOPOROSIS WITH MULTIPLE ATRAUMATIC FRACTURES SECONDARY TO CHRONIC ALCOHOLISM AND MEDICATION

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Case presentation: Male patient, 68 years old, alcoholic since the age of 14, with a history of gastric ulcers and excessive use of omeprazole and antacids. In April 2023, patient presented an atraumatic transverse fracture of the sternum. In July 2023, densitometric diagnosis of osteoporosis: BMD in g/cm² (T-score in standard deviations) with L1-L4 = 0.570 (-4.7), femoral neck = 0.775 (-1.1), total femur = 0.624 (-1.4) and radium 33% = 0.687 (-2.5). Biochemistry: Normal Ca, P, Cr and hepatogram, PTH = 58 pg/mL (N<65), hypovitaminosis D (25-OH-D = 17 ng/mL, ideally 30-60) and CTX = 0.501 ng/mL (N<0.706). In August 2023, diagnosed atraumatic fracture of the lower plateau of L1, treated with vertebroplasty, and calciferol and calcium replacement was started. In November 2023, spontaneous fractures of the upper plateaus of T12 and L4. On 11/10/2023, patient received an infusion of 5 mg zoledronic acid, with a good antiresorptive response: CTX suppressed in January 2024 (0.119 ng/mL) and P1NP = 52.1 mcg/L (N = 17-67). Negative screening for celiac disease and multiple myeloma. In April 2024, spontaneous T8 fracture and new DXA excluding L1 (vertebroplasty), L2-L4 = 0.605 (-4.4) and total femur = 0.866 (-1.1). Currently using calcium citrate and cholecalciferol, planning dual-action therapy (anabolic and antiresorptive) with romosozumab. **Discussion:** The prevalence of osteoporosis and the incidence of fragility fractures are considerably lower in males. Men experience loss of bone mass and fractures about 10 years later than women. Alcohol consumption and some medications are risk factors in secondary bone damage. Treatment aims to reduce the incidence of fractures, increase bone mineral density, reduce resorption markers and/or increase bone formation markers. If the therapeutic efficacy criteria are not met within a period of one year, treatment readjustment should be considered. **Final comments:** Male osteoporosis is neglected, although osteoporotic fractures, especially those of the hip, present greater morbidity and mortality in men. The association with secondary causes of osteoporosis, such as alcoholism, chronic diseases and their treatments, is also more common in men. Therefore, in addition to male osteoporosis itself, comorbidities also deserve greater attention due to the possibility of acting as promoters of secondary osteoporosis and aggravating its negative outcomes. **Keywords:** male osteoporosis; secondary osteoporosis; multiple fractures.

TIREOIDE

1557

MEDULLARY THYROID CANCER DIAGNOSED BY CALCITONIN MEASUREMENT – A CASE REPORT

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Presentation: F.V.D.L.P., male, 44-year-old, engineer, married, came to appointment in May 2023 after the incidental found of an image in thyroid gland when undergoing an MRI scan of the cervical spine. The patient referred pain in the neck, but he attributed the pain to the movements he had to make during his working hours. Besides, he had no other complaints. Physical examination showed a palpable nodule in the left lobe of the thyroid, with approximately 2,5 cm of major diameter, of firm consistency. The patient was not in use of any medications, had nothing important to tell about his medical past and had no familiar history of malignancy. An ultrassonography of the thyroid and cervical region was done and showed a mixed cystic and solid hypoecoic nodule in the left lobe of the thyroid, 3 x 2 x 2,6 cm of diameter, TIRADS3/Chammas III. Cervical lynfonodomegaly was not found. Blood tests showed normal ranges of thyroid hormones, elevated lactic desidrogenase (647 U/L – normal range 135-225 U/L) and calcitonin (233 pg/mL – normal range until 14,3 pg/mL). A fine-needle biopsy was done and the citology showed insufficient material to analysis. Another fine-needle biopsy was required. The citology showed a benign pattern: Bethesda II. A second calcitonin dosage showed an elevation (287 pg/mL), lactic desidrogenase falled to normal range and CEA showed an elevation (19 micrograms/L – normal range until 3,0 mcg/L). The patient was, so, referred to an endocrine surgeon, whith the recommendation of a total thyroidectomy whith central lymph node resection. Pheocromocytome and hyperparathyroidism were excluded. The surgeon asked him to perform a third fine needle biopsy, with the dosage of calcitonin in the wash out of the needle and immunohistochemical analysis. The cytology of this procedure was diagnostic of medullary thyroid cancer and so were the analysis. The patient underwent surgery in November 2023. He had clinic hypoparathyroidism, but the condition was clinically treated. He is now receiving levothyroxin and the treatment for hypoparathyroidism. The calcitonin dosage three months after surgery was at the detection level of the analysis method. **Discussion:** Medullary thyroid cancer accounts for approximately 1 to 2 percent of the thyroid cancers. The routine dosage of calcitonin is controverse, but, in this case, it was of great value for the diagnosis. **Final Considerations:** Calcitonin dosage is still the major clue to medullar thyroid cancer diagnosis. **Keywords:** medullary thyroid cancer; calcitonin; diagnosis.

ADRENAL E HIPERTENSÃO

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CAVERNOUS HEMANGIOMA OF THE ADRENAL MEDULLA ASSOCIATED WITH PRIMARY HYPERALDOSTERONISM: A PUZZLING CASE REPORT

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Case report: A 77-year-old male patient was referred to our endocrinology service for the investigation of an adrenal incidentaloma on the right adrenal gland, discovered during an abdominal ultrasound for preoperative evaluation of inguinal hernioplasty. The patient had a history of hypertension with inadequate control. Initial investigation included a CT scan showing a nodule with soft tissue attenuation and regular margins in the right adrenal gland with heterogeneous enhancement, contrast, and small calcifications measuring 4.4 x 3.3 cm. Laboratory tests were performed, showing aldosterone 36 ng/dL, plasma renin activity (PRA) 0.5 ng/mL/h, ARR (aldosterone-to-renin ratio) 72, urinary metanephrines 218.9 mcg/24h (NR 10-718 mcg/24 h), plasma metanephrines 26.4 pg/mL (normal range < 100 pg/mL), and cortisol after suppression with 1 mg dexamethasone 2.28 µg/dL. Due to the inability to rule out malignancy, a right adrenalectomy was performed. Anatomopathological and immunohistochemical findings were compatible with cavernous hemangioma of the adrenal medulla. After the surgical procedure, the diagnosis of primary hyperaldosteronism was reexamined: aldosterone 24.1 ng/dL, PRA 0.34 ng/mL/h, ARR 60.2, potassium 4.5 mEq/L. After the high suspicion of primary hyperaldosteronism, treatment was initiated with 50 mg spironolactone once daily, with subsequent dose titration until PRA > 1 ng/mL/h. **Discussion:** Cavernous hemangioma of the adrenal gland is an extremely uncommon benign tumor, with 74 cases reported to date. Typically, it presents as a non-functioning tumor and is mostly diagnosed postoperatively. Among the 74 reported cases, only 6 were functional, with 3 cases of hyperaldosteronism. However, no cases of concomitant primary hyperaldosteronism and cavernous hemangioma, each occurring independently, have been reported to date, making our case particularly unique. **Final comments:** The discovery of a cavernous hemangioma in the adrenal gland should not preclude the investigation of conditions such as primary hyperaldosteronism in patients with adrenal incidentalomas and hypertension. As demonstrated in our case, although rare, this association is plausible. **Keywords:** cavernous hemangioma; primary hyperaldosteronism; hypertension.

OBESIDADE

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EVALUATION OF ENDOTHELIAL FUNCTION BY VENOUS OCCLUSION PLETHYSMOGRAPHY AND ITS RELATIONSHIP WITH VISCERAL ADIPOSE TISSUE ANALYZED BY DXA

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Introduction: Obesity is a disease of great importance due to its significant prevalence throughout the world and is an important risk factor for several diseases, not just cardiovascular diseases. **Objective:** The study evaluated body composition, especially visceral adipose tissue (VAT), through dual-energy x-ray absorptiometry (DXA) and its relationship with endothelial function investigated by venous occlusion plethysmography (VOP), as well as analysis of low-grade inflammation via ultrasensitive C-reactive protein (hsCRP). **Materials and methods:** Cross-sectional study of 101 adults of both sexes, aged between 18 and 50 years, divided into four body mass index groups: group 1 (BMI, 20-24.9, n = 30), group 2 (BMI, 25-29.9, n = 22), group 3 (BMI, 30-34.9, n = 27) and group 4 (BMI, 35-39.9, n = 22). VAT was analyzed, among other adiposity parameters, by DXA Lunar iDXA, equipped with the Corescan tool. The study of endothelial function was evaluated using the Hokanson AI6 plethysmograph through analysis of the forearm blood flow (FBF) and calculated in mL^{-1}. For statistical analysis, SPSS version 25 software was used, depending on whether the data were parametric or not, comparison tests were carried out between groups using ANOVA or Kruskal-Wallis and correlation tests using Pearson or Spearman. Regarding categorical variables, the χ^2 test was used. **Results:** An inverse correlation was observed between TFT (total fat mass), % RFM (regional fat mass), FMI (fat mass index) and VAT (visceral adipose tissue) with the increase in arterial blood flow in VOP. Furthermore, in the comparative aspect between groups, a decrease in this flow was identified related to the increase in BMI, adiposity indices, mainly VAT. hsCRP values showed a direct correlation with the progression of adiposity and VAT between groups. **Conclusion:** VAT progression by DXA analysis was associated with decline in endothelial function and increased inflammation, demonstrating potential use in early identification of individuals at cardiovascular risk. **Keywords:** visceral adiposity; endothelial dysfunction; DXA.

OBESIDADE

1562

BODY MASS INDEX IN MEDICAL STUDENTS AND ITS RELATIONSHIP WITH SYMPTOMS OF ANXIETY AND DEPRESSION

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Eating and affective disorders are related to body mass index (BMI), as they impact body self-image, emotions, thoughts, daily behavior and interpersonal relationships. It is estimated that six to 17% of the population have already experienced a depressive episode in their lives. Anxiety was more commonly observed in overweight and obese. To evaluate the relationship between BMI and symptoms common to depression and anxiety in medical students. Observational, cross-sectional and ecological study on the prevalence of self-reported symptoms common to depression and anxiety and BMI, based on criteria of DSM-5, related to BMI. Ethics committee 4.206.836. Total of 229 students participated: aged between 17 and 40 years old (22.89 ± 3.79). Depressive symptoms: BMI < 18 kg/m² in 31(13.5%) of the total; 24(10.5%) had prolonged food restriction, resulting in low weight; feeling of mood depression 141(61.6%) ≥ 2 weeks; 69% reported loss of interest or pleasure; unintentional weight gain or loss in 65.5%, being significantly higher (98.5%) in the overweight/obese group (p = 0.002); insomnia was declared by 41.9%; agitation and psychomotor retardation in 45.9; fatigue or loss of energy by 71.6%; feeling of guilt or excessive uselessness by 67.2%; recurrent thoughts of death in 20.1%, being significantly higher (41.7%) in the low weight group and in the obesity group (33.3%) (p < 0.001); eating episodes that interfered with carrying out daily tasks, 72.9%. Anxiety symptoms: 69.9% reported impaired ability to concentrate and think; excessive suffering due to separation/removal from important and loved ones 62%; excessive concern about the possibility of morbidities, disasters or death for themselves or loved ones 57.2%, being higher in low weight and obesity groups (p = 0.009); persistent reluctance or refusal to leave home, due to fear in 12.2%, with significance in low weight and obesity (p < 0.001); persistent and excessive fear of separation from attachment figures 65(28.4%), significantly higher in obesity (p = 0.007); nightmares about separation or abandonment 45 (19.7%); somatization with effective separation 19.7%, higher in obesity 41.7% (p = 0.009). There were more symptoms common to depression in overweight/obese group as increased frequency of symptoms of "unintentional weight loss or gain" and "feelings of death" Low weight. The symptoms common to anxiety were statistically relevant at the extremes of the body mass index. **Keywords:** depressive and anxiety symptoms; body mass; medial students.

OBESIDADE

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ANALYSIS OF THE NUMBER OF HOSPITALIZATIONS RELATED TO OBESITY IN THE STATE OF SÃO PAULO FROM 2019 TO 2023 AND ITS MONETARY IMPACT: AN ECOLOGICAL STUDY

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Introduction: Obesity is a multifactorial chronic non-communicable disease (NCD), characterized by excess adipose tissue and a body mass index (BMI) over 30 kg/m². Recently, obesity prevalence has increased exponentially in both developed and developing countries. This condition is linked to higher comorbidity risks, imposing significant costs on the Unified Health System (SUS). In Brazil, healthcare costs related to obesity are estimated at US$ 2.1 billion annually. Understanding the expenses from obesity-related hospitalizations in São Paulo is crucial for better public policy planning. **Objective:** This abstract analyzes the number and monetary impact of obesity-related hospitalizations in São Paulo from 2019 to 2023. **Materials and methods:** This observational ecological study with a quantitative approach used secondary data from the SUS Hospital Information System (SIH), available on DATASUS from 2019 to 2023, limited to January-November. The sample includes individuals aged 5-80 years, hospitalized for obesity (ICD-10 E66) in São Paulo. Variables include hospitalizations for obesity, total cost per hospitalization, and average cost per hospitalization. Data were collected considering all ICDs specified in the period to assess obesity-related spending. The data were organized and analyzed using Excel 2019. **Results:** DATASUS data show variations in obesity-related hospitalizations over the years. In 2019, there were 923 hospitalizations, totaling R$ 2,660,635.86, with an average cost of R$ 2,851.81, which is 42% higher than the average cost of hospitalizations for general causes. In 2023, 661 hospitalizations were recorded, with an average cost of R$ 3,179.03. From 2020 to 2021, hospitalizations increased by 109.85% and total expenditures by 129.86%. An increase was observed between 2021-2023, especially among individuals aged 20-80 years. Consequently, total expenditures and average hospitalization costs rose, increasing the burden on the Brazilian healthcare system. **Conclusion:** The study observed a rise in the number and cost of hospitalizations for obesity between 2021 and 2023, highlighting the financial impact in São Paulo. The average cost of these hospitalizations is 42% higher compared to all causes. Data suggest an increasing trend, indicating the need for early intervention strategies by the Brazilian healthcare system to prevent the progression of obesity and its associated costs. **Keywords:** obesity; hospitalization; monetary impact.

METABOLISMO ÓSSEO E MINERAL

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GIANT TUMOR-INDUCED OSTEOMALACIA: A CASE REPORT

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Case presentation: A.T., male, 46 years old, was referred to the service for the investigation of hyperparathyroidism due to multiple spontaneous fractures and persistent severe hypophosphatemia. The first fracture occurred at the age of 34, without any known traumatic event, he underwent resection of a giant cell tumor in the cervical spine. Due to the persistence of the condition, he developed movement limitations and became wheelchair-bound. Rickets was ruled out by genetic testing, and osteogenesis imperfecta was considered unlikely due to a history of physical activities without complaints and the absence of fractures during youth. The diagnosis was a tumor-induced osteomalacia (TIO) producing fibroblast growth factor 23 (FGF23), characterized by progressive hypophosphatemia, low levels of 1,25Dihydroxyvitamin D (1,25OH2D), and hyperphosphaturia, refractory to the use of calcitriol and phosphate. A computed tomography (CT) of the cervical spine identified a large expansive and infiltrative mass measuring 8.1 x 6.2 x 4.7cm. FGF-23 levels were 1974 RU/mL(26 to 110 RU/mL), and a biopsy showed a low-grade malignant fibrous histiocytoma without the presence of giant cells, suggesting histological transformation. Surgical resection was contraindicated due to the location and extent of the lesion, and the patient received palliative care and started treatment with burosumab. During dose progression, the patient died of respiratory failure due to tumor compression. **Discussion:** TIO is a paraneoplastic disease in which the tumor secretes FGF23, with a challenging diagnosis due to its nonspecific clinical presentation and insidious progression. It presents with muscle weakness, bone pain, fractures and hypophosphatemia, due to phosphaturia and inadequately normal or low levels of 1,25OH2D. Typically, it is a small, slowly growing nodule in the subcutaneous tissue. The treatment is complete surgical resection, which can be curative, leading to clinical recovery, biochemical reversal, and healing of skeletal sequelae. If surgery is contraindicated, phosphate and calcitriol supplementation is recommended. Burosumab, although clinically and biochemically effective, does not prevent tumor growth and is costly. **Final comments:** This case involves a giant, unresectable tumor. Additionally, there are fewer than 1,000 reported cases in the literature, emphasizing the rarity of the condition. The delay in diagnosis corroborates the difficulty reported in the literature. **Keywords:** osteomalacia; phosphate; fibroblastic growth factor 23(FGF23).

NEUROENDOCRINOLOGIA

1565

A SUCCESSFUL PREGNANCY IN A PATIENT WITH MIXED PITUITARY NEUROENDOCRINE TUMOR SECRETING PROLACTIN AND GH – CASE REPORT

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Case report: A 28-year-old woman was referred to our endocrinology service due to complaints of amenorrhea and episodes of galactorrhea. Laboratory indicated prolactin (PRL) of 145.03 ng/mL (normal: 5.18-26.53 ng/mL) and negative ß-hCG. In addition, a right ovarian teratoma was identified on endovaginal USG. Upon return, after 4 months, facial features of acromegaly were noted. New laboratory exams demonstrated: PRL > 200 ng/mL; IGF-1 381 ng/mL (normal: 84-259 ng/mL), estradiol in follicular phase 17 pg/mL, FSH 2.14 mIU/mL and LH 0.67 mIU/mL. MRI of the pituitary revealed an expansive nodular formation in the adenohypophysis (1.7 x 1.1 cm). Initially she was diagnosed with a pituitary neuroendocrine tumor (PNT) secreting PRL and started on Cabergoline 0.5 mg/week. After a new IGF-1 of 632 ng/mL and a lack of GH suppression (11.3 ug/L) after glucose overload, a diagnosis of mixed PNT secreting PRL and GH (PNTPG) was established and Lanreotide 120mg/month was started. After 14 months, she announced that she was pregnant (8 weeks). At the time her PRL was 60.4 ng/mL and IGF-1 419 ng/mL. Cabergoline and Lanreotide were discontinued. During pregnancy, she received high-risk prenatal care without any complaints or complications. At 12 and 20 weeks of gestation, her IGF-1 was 358 and 360 ng/mL, respectively. The birth occurred vaginally, at 38 weeks, without complications. The newborn weighed 3,085 g and had an APGAR score of 8 and 9. After birth, PRL levels were > 200 ng/mL and IGF-1 levels were 170 ng/mL. **Discussion:** PNTPG are rare and have few reports in the literature, especially when associated with pregnancy, since acromegaly and hyperprolactinemia directly affect fertility. In our patient the presence of hypogonadism, menstrual irregularities, ovarian teratoma and pituitary tumor >1cm further corroborate the risk of infertility, but even with all these factors, she conceives spontaneously and has a successfully childbirth, demonstrating the atypicality of the case. Furthermore, she presented an unusual situation in which there was no increase in IGF-1 levels from the second trimester of pregnancy, followed by a significant drop in the postpartum period (tumor apoplexy?). **Final comments:** We report a rare case of PNTPG, which became even more unusual due to the occurrence of a spontaneous pregnancy, and, most notably, its positive outcome. The reduction in IGF-1 after pregnancy is under investigation. **Keywords:** neuroendocrine tumors; hyperprolactinemia; acromegaly.

TIREOIDE

1566

THYROTOXIC CRISIS ASSOCIATED WITH POSSIBLE ENCEPHALOPATHY IN A PATIENT WITH GRAVES' DISEASE: EMERGENCY APPROACH WITH PLASMAPHERESIS – CASE REPORT

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Case report: A 16-year-old boy sought care at a Pre-Hospital Unit with complaints of odynophagia, fever, weakness and inappetence. First, he was diagnosed with acute bacterial tonsillitis, but during treatment with antibiotic, he presented chest pain, sweating, lethargy, palpitations and tachycardia (170-180 bpm), evolving into a tonic-clonic seizure. As he had a history of Graves' Disease (GD) for one year, but with irregular use of medication (Methimazole), he was referred to our Emergency Service with suspected thyrotoxic crisis (TC). Exams on admission: TSH 0.002 µIU/mL (0.43-4.2); free T4 3.95 ng/dL (0.7-1.8); T3 5.14 ng/dL (0.58-1.59); TRAb 40 U/L (<0.55). Confirmed TC, treatment with Hydrocortisone, Metoprolol, Propranolol and Propylthiouracil (800 mg/day) was started. After initial treatment, even with clinical improvement and a decrease in T3 (1.6 ng/dL) and free T4 (2.88 ng/dL) levels, the patient presented recurrent seizures refractory to the use of Diazepam, Phenytoin and Phenobarbital. He evolved into status epilepticus, requiring intubation. Since the medication has already been optimized, and an immediate surgical treatment was unavailable, Plasmapheresis was started on alternate days. He was also evaluated by a neurologist who suggested that the status epilepticus was possibly secondary to hyperthyroidism, without being able to rule out autoimmune encephalitis concomitant with TC. After five plasmapheresis sessions, his neurological condition improved, allowing extubation. Furthermore, seizures stopped and he begins Prednisone 20 mg/day. **Discussion:** This rare situation of TC which occurred in a young male, was probably triggered by the combination of poor GD control and a bacterial infection. The patient continued to experience seizures, despite clinical improvement and thyroid function with the use of medication for TC and the use of recommended anticonvulsants in an optimized dose. This raised the suspicion of an encephalopathy associated with thyroid disease (EATD), which is an extremely rare situation and has few reported cases. Plasmapheresis has shown good response in individual cases of EATD, which was confirmed in our patient. **Final comments:** We report a rare case of TC that, despite initial conventional treatment, proved resistant due to the persistence of convulsive crises. This led to the hypothesis of EATD and the need for plasmapheresis, resulting in a significant improvement in the clinical picture. **Keywords:** thyroid crisis; plasmapheresis; encephalopathy.

ADRENAL E HIPERTENSÃO

1567

EFFECTIVE MANAGEMENT OF MILD AUTONOMOUS CORTISOL SECRETION WITH KETOCONAZOLE – A COMPELLING ARGUMENT FOR ADRENALECTOMY – CASE REPORT

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Case report: A 56-year-old woman, during investigation of cholelithiasis by CT-Scan discovered a 15HU hypodense formation in the right adrenal gland (2.1 x 2.1 cm), being diagnosed with adrenal incidentaloma (AI). At the time (2009) she had hypertension, diabetes, dyslipidemia and obesity. Preliminary laboratory tests indicated nonfunctional AI. The patient lost medical follow-up, returning 12 years later, at 68-year-old, with an enlarged tumor (2.8 cm) and weighing 80.3 kg. Her blood pressure (BP) was 150/80 mmHg and there were no clinical signs of Cushing's syndrome. New tests were requested: cortisol after suppression with 1mg of dexamethasone (DST) = 3.9 µg/dL; ACTH 8.3 pg/mL; DHEA-S < 15 µg/dL; HbA1c 10.1%, been diagnosed with mild autonomous cortisol secretion (MACS). As there was doubt whether the metabolic changes were a consequence of hypercortisolism, ketoconazole 200 mg/day was started as a "concept proof" with instructions to double the dose in 15 days (maximum dose reached: 400 mg/day). After 12 weeks she noticed significant improvements: DST of 0.9 µg/dL, HbA1c of 8.0% (with no changes in diabetes treatment), lost 4 kg, BP of 118/74 mmHg, and so we decided to refer her for adrenalectomy, maintaining her medications. After 4 months, still without surgery, she returns with HbA1c of 7.7%, lost another 1kg and BP of 124/76 mmHg. AST/ALT levels were 17 U/L and 10 U/L. Since starting treatment with ketoconazole, it has been possible to reduce insulin from 28 IU/day to 22 IU/day and metformin XR from 1.5 g/day to 1 g/day. After 6 months of starting ketoconazole, she underwent right adrenalectomy with no complications and a great improvement of her comorbidities. **Discussion:** Although there is minimal therapeutic evidence in the literature on the use of ketoconazole, an inhibitor of adrenal steroidogenesis, in individuals with MACS, we initially opted for the off-label use of this medication. After treatment with this drug, our patient demonstrated not only a reduction in cortisol secretion by the adrenal, but also significant improvements in glycemic, BP and weight control. This effect on glycemia enabled a substantial reduction in insulin and metformin doses. Although the main side effect of ketoconazole is the increase in liver transaminases, our patient did not experience this condition. **Final comments:** Our report highlights a situation with minimal documented evidence regarding the use of ketoconazole in patients with MACS, but we demonstrated largely positive results. **Keywords:** ketoconazole; hypercortisolism; adrenalectomy.

TIREOIDE

1568

COST-BENEFIT ANALYSIS OF RADIOIODINE THERAPY FOR THE TREATMENT OF GRAVES' DISEASE IN A UNIVERSITY HOSPITAL IN NORTHEASTERN BRAZIL

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Introduction: The primary cause of hyperthyroidism (HT) is Graves' disease (GD). Treatment options include antithyroid drugs (ATD), radioiodine therapy (^{131}I), and thyroidectomy. Literature indicates a higher cost-benefit (CB) ratio with ^{131}I and a preference for ATD among Brazilian endocrinologists. **Objective:** This study aims to analyze if the preferred therapy (PT) choices for treating HT due to GD at the evaluated University Hospital (UH) align with major guidelines' recommendations for ^{131}I. Additionally, it compares the CB of treatments with ATD and ^{131}I, identifying the PT choices for this population. **Materials and methods:** This observational, descriptive, cross-sectional study examined patient (PA) records with GD from January 2023 to March 2024. Data were collected using a form focused on appropriate PT choices, with a sample of 99 PA. **Results:** The final sample included 99 PA (81 women, 18 men). Of those, 85 had no contraindication (CI) for ^{131}I treatment, including 16 elderly (ED). Among those 85 PA, 53 had at least one indication (IN) for ^{131}I, with 12 being ED. Overall, 45 PA were lost to follow-up, including 40 without CI and 8 ED. Of the 53 PA without CI and with IN, 32 used ATD for more than 2 years or had treatment failure, and 23 were not referred to ^{131}I, with 13 lost to follow-up. Among the 11 PA referred for ^{131}I, 7 completed the treatment and 4 were lost to follow-up. One patient underwent thyroidectomy. In total, 91 PA are on ATD. Regarding consultations, the interval was 1,5 months in the first year and 3 months in the second year of treatment for GD. Nuclear medicine requires one consultation before, during, and after ^{131}I. Hypothyroidism management requires a consultation every 6 months. Diagnostic tests for HT include thyroid-stimulating hormone (TSH), free T4 (T4L), and T3, while follow-up tests are TSH and T4L. The estimated cost per patient for ATD treatment was R$ 1,556.91 and R$ 973.97 for ^{131}I. The 91 PA on ATD cost to Unified Health System (UHS) R$ 141,678.81 over 2 years. If PA without CI had been treated with ^{131}I, the savings would have been R$ 58,891.36. **Conclusion:** There is a discrepancy between the ^{131}I PT indications and the choices made at this UH. The study highlights the CB relationship of ^{131}I and ATD and the preference for ATD treatment in Brazil. It underscores the importance of evaluating PT choices, considering the high loss to follow-up rate, risks of uncontrolled disease, and cost to the UHS. **Keywords:** Graves' disease; radioiodine therapy; antithyroid agents.

DIABETES MELLITUS

1569

POLYENDOCRINE SYNDROME ASSOCIATED WITH IMMUNOTHERAPY FOR CANCER TREATMENT: A TOPIC OF GREAT IMPORTANCE FOR THE ENDOCRINOLOGIST

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Case presentation: A 70-year-old man undergoing treatment for melanoma with lung metastasis was on combined immunotherapy (IM) with nivolumab and ipilimumab. 30 days after starting IM, he developed polyuria, polydipsia, weight loss, and general decline, leading to a diagnosis of decompensated diabetes mellitus (DM) in the emergency room (ER), followed by hospitalization for diabetic ketoacidosis (DKA). After discharge, he was referred for endocrinological evaluation, which confirmed autoimmune DM. At the consultation, he was in good general clinical condition and asymptomatic, but cardiac auscultation revealed an irregular heartbeat due to high-frequency atrial fibrillation (AF). He was immediately referred to the cardiology ER, where the diagnosis was confirmed and reversed with amiodarone. This raised the suspicion of thyrotoxicosis (TX) due to follicular destruction thyroiditis following immunotherapy, leading to thyroid function tests, which confirmed the hypothesis: TSH: 0.01 UI/mL; Free T4: 2.94 ng/dL; TRAB: <1.26. After the TX phase, which lasted about 8 weeks, he developed hypothyroidism: TSH: 42.96 UI/mL; Free T4: 0.50 ng/dL. He began treatment with levothyroxine in increasing doses up to the current dose of 112 mcg/day and glycemic control with a basal-bolus insulin regimen, with current levels: TSH: 4.75 UI/mL; Free T4: 1.44 ng/dL; glycated hemoglobin: 6.8%. **Discussion:** This case exemplifies autoimmune polyglandular syndrome type III (APS-3) induced by IM with checkpoint inhibitors (CI), which are associated with the onset of autoimmune endocrine diseases, a known immune-mediated adverse effect (IAE). Thyroid involvement is the most common endocrine IAE of these medications, occurring after an average of 6 weeks of treatment. The presentation of TX with high ventricular response AF, as reported in this case, is uncommon, with palpitations and psychomotor agitation being more frequent. Additionally, autoimmune DM affects less than 1% of patients, and the reported case shows an earlier onset than usual, within 4 weeks, diverging from the average of 7 to 17. However, the onset of DKA occurs in 50% to 75% of cases. **Final comments:** This report illustrates a medically significant case of APS-3 induced by CI, increasingly common in hospitals. The emergent repercussions – DKA and AF – demonstrate the need for continuous vigilance and rapid identification through careful anamnesis and physical examination for early intervention in patients undergoing IM. **Keywords:** polyendocrinopathies, autoimmune; immune checkpoint inhibitors; atrial fibrillation.

DIABETES MELLITUS

1570

EPIDEMIOLOGICAL PROFILE ACCORDING TO THE FRAX TOOL OF PEOPLE WITH TYPE 2 DIABETES MELLITUS FOLLOWED UP IN A REFERENCE HOSPITAL IN BELÉM BETWEEN THE YEARS OF 2020 AND 2022

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Diabetes mellitus is responsible for several metabolic changes in the body, and it can be mentioned the decrease in bone mass predisposing to the occurrence of osteoporotic fractures. At the moment, tools and studies have been developed to identify those repercussions, such as the Fracture Risk Assessment Tool – FRAX. This tool allows to calculate the risk of the individual developing fragility fracture in ten years. The patient with diabetes, however, has variables that are not taken into account in the calculation of the FRAX and that could underestimate the risk of fracture. This study sought to trace and analyze the epidemiological profile of the population with type 2 diabetes mellitus followed at a referral hospital in Belém – Pará, between the years 2020 and 2022, according to the FRAX tool. The study was individual, observational and cross-sectional, carried out at the Endocrinology Outpatient Clinic of Hospital João de Barros Barreto (HUJBB). Data were collected through a questionnaire, after which the patients were classified into groups of high, medium and low risk for fracture development according to the FRAX. After analyzing 200 patients, it was noticed that the female gender represented 73.5% of the sample and the mean age of 61.78 years, 11% of the participants were characterized as high risk. Personal history of fracture was very prevalent, affecting 73.9% of high-risk patients; Alcoholism and smoking increased progressively among the risk groups - with maximum prevalence value in the high-risk group. Dyslipidemia reached its maximum value in the high-risk group (86.9%), 75% in the low-risk group and 80.5% in the medium-risk group. Glycated hemoglobin was 8% in the low and medium-risk groups, and 9% in the high-risk group. Thus, it was identified that previous personal fracture, alcoholism, smoking, parents with fracture, dyslipidemia and rheumatoid arthritis were more frequent in the high-risk population, and can be evaluated together with FRAX to enable even more positive results, providing lower morbidity and mortality in these patients. Since the participants who were at high risk were not being treated for osteoporosis and did not have bone mineral densitometry, it is suggested that although FRAX underestimates the risk of fracture in patients with diabetes, your application is beneficial. **Keywords:** diabetes; FRAX; fracture.

DIABETES MELLITUS

1571

ASSESSMENT OF FRACTURE RISK IN PEOPLE WITH TYPE 1 DIABETES MELLITUS: A STUDY IN A REFERENCE HOSPITAL IN THE AMAZON REGION

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Introduction: In type 1 diabetes mellitus (DM1), there is autoimmune destruction of pancreatic beta cells, that causes an absolute lack of insulin. It is known that the bone quality of individuals with diabetes is reduced, compared to healthy individuals and that is why the FRAX tool, which estimates the risk of bone fractures in adults in 10 years, may underestimate the risk of these fractures in people with diabetes. **Objective:** Analyze the risk of fracture in patients with DM1, identify clinical characteristics prevalent in individuals at medium and high risk of fractures. **Patients and methods:** After approval by the HUJBB ethics committee, a cross-sectional, observational and descriptive epidemiological study was carried out, which included 13 participants over 40 years old and diagnosed with DM1, who underwent a questionnaire with personal information, personal and family history, laboratory parameters, FRAX and bone mineral densitometry. People with a previous diagnosis of osteoporosis were excluded. **Results:** The average age was 46 years, with 53% women and 47% men. The average duration of DM1 was 25.5 years. BMI distribution corresponded to 23% normal, 46% overweight, 23% grade I obesity and 7% grade II obesity. Regarding fractures, 30% reported previous fractures. In the studied sample, 53% had diabetic kidney disease, 46% diabetic retinopathy, 46% systemic arterial hypertension (SAH) and 23% peripheral arterial obstructive disease. Regarding lifestyle habits, 15% were alcoholics, 30% had low sun exposure and 7% had low calcium intake. Furthermore, 40% reported a family history of fractures and 30% reported a family history of osteoporosis. The laboratory showed an average fasting blood glucose of 112.5 mg/dL and an average glycated hemoglobin of 8.75%. Regarding FRAX, 85% of patients demonstrated a high risk for fractures. Only 23% of participants had densitometry, which limited the analysis of these data. **Conclusion:** Although the FRAX tool underestimates the risk of fracture in people with diabetes, given that 85% of participants are at high risk, this tool proves to be useful as a screening method and does not delay intervention in situations where densitometry is not widely available. **Keywords:** type 1 diabetes mellitus (DM1); FRAX; fracture.

METABOLISMO ÓSSEO E MINERAL

1572

HYPOPARATHYROIDISM SECONDARY TO METASTATIC BREAST CARCINOMA: CASE REPORT

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Case presentation: Patient M.C.B., female, 34 years old, was admitted to our service with a seizure, cramps and paresthesias. In the initial investigation, severe hypocalcemia was found (levels below 5 mg/dL) and initial measures were initiated. During the investigation of hypocalcemia, low PTH levels were found, 5 and 3 pg/mL respectively, closing the diagnosis of hypoparathyroidism. and during hospitalization, she presented significant visual blurring, a retinal mapping exam was performed, where bilateral neuroretinitis was found. With these findings, we raised the diagnostic hypothesis of POEMS syndrome. protein electrophoresis and immunoelectrophoresis tests were performed, which were normal, however, the bone marrow biopsy revealed the presence of atypical cells (carcinoma). Finally, immunohistochemistry was performed, which was positive for breast carcinoma, which was confirmed through pathology. **Discussion:** The incidence of hypocalcemia in patients with breast cancer is very uncommon. The most common site of metastasis is the bones, in which the most accepted theory according to the medical literature is that osteoblastic metastases cause a huge accumulation of calcium deposited in the bone matrix, resulting in severe hypocalcemia. Hypoparathyroidism may be the late presentation of breast cancer associated paraneoplastic syndrome and could be the side effect of radiotherapy and chemotherapy in breast cancer. In this specific case (chemotherapy or radiotherapy was not started). Hypoparathyroidism is an endocrine disease of bone metabolism, resulting in very low levels of PTH, leading to hypocalcemia and hyperphosphatemia. The main cause of hypoparathyroidism in adults is parathyroidectomy associated with total thyroidectomy and in children, the most common cause is autoimmune. Treatment aims to control serum calcium and phosphor, through calcium intravenous replacement in more severe cases and calcium oral replacement associated with Calcitriol in more chronic cases. **Conclusion:** Hypocalcemia is an unusual but known complication of breast cancer with bone metastases. Of note, we should consider hypoparathyroidism in the differential diagnosis of hypocalcemic symptoms as a paraneoplastic syndrome. **Keywords:** hypoparathyroidism; hypocalcemia; breast cancer.

MISCELÂNEA

1573

CLINICAL AND EPIDEMIOLOGICAL PROFILE OF ADMISSIONS IN A SPECIALIZED ENDOCRINOLOGY UNIT IN 2023 IN A HOSPITAL OF REFERENCE IN THE AMAZON REGION

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Introduction: The prevalence of chronic non-communicable diseases (NCDs) reflects the aging population and the need for continuous care, which increases the demand for hospitalization, especially related to endocrinology where there are several chronic diseases within the scope of action. **Objectives:** To analyze the clinical and epidemiological profile of patients admitted to the endocrinology beds of a reference hospital in the Amazon region in 2023. Patients and **Methods:** After approval by the ethics committee, an analytical, retrospective cohort study was carried out by analyzing the medical records of people admitted to endocrinology beds. 82 patients were included in the present study. **Results:** During the studied period, 82 patients were admitted, 40.47% were male and 58.53% were female. The average age was 53 years old, the youngest was 17 and the oldest was 78 years old. Among the initial diagnoses, 59.75% were based on diabetes mellitus 2 (DM2), of which 28.57% were associated with diabetic foot and 17.07% with urinary tract infection; 17.07% were due to complications related to Diabetes Mellitus 1 (DM1); 7.31% thyroid diseases; 2.43% pituitary disorders; 6.09% other types of decompensated diabetes; 2.43% were hospitalized due to hyperparathyroidism and 4.88% for other reasons. The average length of stay was 11 days, with a minimum of 2 and a maximum of 40 days. The mortality rate was 1.21% related to patients receiving palliative care due to neoplastic disease. **Conclusion:** These results highlight the need to implement effective management and prevention strategies to reduce hospitalizations, improve the quality of care and optimize the use of hospital resources. Furthermore, the overload of tertiary services highlights the importance of strengthening primary and secondary care for better control of NCDs and their complications. **Keywords:** hospitalization; endocrinology; diabetes.

TIREOIDE

1574

AUTOIMMUNE POLYGLANDULAR SYNDROME TYPE 3B A CASE REPORT: RARITY OR UNDERDIAGNOSIS?

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Case presentation: A 36-year-old man with hypothyroidism (HT) due to Hashimoto's thyroiditis, with irregular use of levothyroxine (LT) 100 mcg, presented to the hematology emergency department with severe fatigue, bitter mouth, numb tongue, heartburn, jaundice (1+/4), and pallor - hypochromic (+4/4). Acute myeloid leukemia was ruled out by bone marrow examination. He was diagnosed with decompensated primary HT and megaloblastic anemia (AN) due to pernicious anemia (PA) through the following tests: Hemoglobin (HB): 7,6 g/dL; Hematocrit: 21,6%; Mean Corpuscular Volume (MCV): 114 fL; Mean Corpuscular Hemoglobin (MCH): 40 pg; Platelets: 151.000/µL; Leukocytes: 2,960/µL; Blood Glucose: 90 mg/dL; Free T4 (FT4): 1,41 ng/dL; TSH: 47,24 µUI/mL; Creatinine: 0,95 mg/dL; Serum Iron: 107 µg/dL; Ferritin: 172 ng/mL; Vitamin B12 (B12): 110 pg/mL; Anti-intrinsic factor antibody: 145 U/mL. B12 replacement was initiated, and the patient was referred to the endocrinology clinic. He continued to experience fatigue, hair loss, brittle nails, constipation, cold intolerance, and memory deficit. He had a BMI of 23,43, was normotensive, had a heart rate of 77 bpm, was hypochromic (1+/4), had a firm texture on thyroid palpation, and had orange-colored hands. The LT dose was increased to 200 mcg, and screening was performed to rule out other autoimmune diseases (AD). After 6 months, AN (HB: 16,32 g/dL) and HT (TSH: 0.89 µUI/mL and FT4: 1.44 ng/dL) normalized, and the LT dose was adjusted to 175 mcg. **Discussion:** Autoimmune polyglandular syndrome (APS) is a rare disease with a prevalence of 1:20.000 people, more common in women. This case describes an APS type 3B, which involves autoimmune involvement of the thyroid and gastrointestinal tract, in a man, which differs from the usual presentation. The literature shows a high correlation between these two conditions, with about 40% of PA patients having thyroid autoantibodies. However, a PubMed search revealed just 5 cases reported between the two conditions in the last 5 years, with only 1 without other associated ADs, suggesting potential underdiagnosis of this condition. The similar symptomatology between the conditions and the similar initial presentation of PA and HT related AN - with macrocytic morphology - explain the diagnostic difficulty. **Conclusion:** The report reveals potential underdiagnosis of PA associated with HT, which can be avoided thorough investigation and early treatment of each case, improving patients' quality of life. **Keywords:** polyendocrinopathies, autoimmune; Hashimoto disease; anemia, pernicious.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1575

HEMODYNAMIC INSTABILITY POSTPARTUM AS A WARNING SIGN FOR THE INVESTIGATION OF SHEEHAN'S SYNDROME: EARLY DIAGNOSIS CASE REPORT

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Case presentation: A 26-year-old female patient was admitted to the ICU after experiencing hypovolemic shock due to obstetric complications during a cesarean section. After stabilization, she developed severe hypoglycemia (around 60 mg/dL) and hyponatremia (Na = 132 mEq). Laboratory tests showed decreased serum cortisol (1.6 mcg/dL), leading to the diagnosis of acute adrenal insufficiency (AAI), and hydrocortisone replacement therapy was initiated. Low TSH (0.44 µU/mL) was also identified; however, free T4 measurement was unavailable at the hospital. After clinical stabilization, she was discharged with a prescription for 5 mg of prednisone daily and referred to an endocrinologist. Five months later, during the endocrinological consultation, she reported agalactia, hot flashes, decreased libido, pubic and axillary hair loss, vaginal and skin dryness. Clinical and laboratory findings indicated panhypopituitarism: Na 140 mEq/L, FSH 6.76 IU/L, LH 4.43 IU/L, progesterone 0.1 ng/mL, T4L 0.53 ng/dL, cortisol < 4 mcg/dL, TSH 1.1 µU/mL, ACTH 6.2 pg/mL, estradiol < 15 pg/mL, prolactin 1.71 ng/mL. She was prescribed 50 mcg of levothyroxine daily, continued on prednisone, and was referred to gynecology. Four months later, awaiting a gynecological appointment, she continued to experience hypoestrogenism symptoms, so local estrogen therapy with promestriene 1 mg daily was initiated, and new tests were requested: T4L 0.88 ng/dL, IGF-1 67 ng/mL, Na 143 mEq/L. Physical examination at both consultations showed normal blood pressure, thinning of axillary and pubic hair, and agalactia. **Discussion:** Hypovolemic shock resulting from postpartum hemorrhage (PPH) can lead to pituitary necrosis and hypopituitarism, defining Sheehan's syndrome (SS). Diagnosis is often made many years after childbirth, with acute presentation being extremely rare. Insufficient pituitary secretion of adrenocorticotropic hormone (ACTH) and, consequently, cortisol, explains the patient's severe hypoglycemia and hyponatremia, which is an initial sign in about 60% of acute SS cases, serving as a highly suggestive alert for investigation. The earliest and most common symptom of SS is agalactia, while hypothyroidism and secondary adrenal insufficiency are usually late manifestations. **Final comments:** The presence of AAI in a hemodynamically unstable PPH context should serve as a warning sign for investigating SS, as early diagnosis and treatment significantly improve these patients' quality of life. **Keywords:** hypopituitarism; adrenal insufficiency; hypovolemic shock.

METABOLISMO ÓSSEO E MINERAL

1576

SEVERE HYPOPARATHYROIDISM WITH LATE DIAGNOSIS

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Case report: A 66-year-old female patient was hospitalized due to difficulty walking, decreased level of consciousness, dysphagia, and an increased frequency of seizures, which she had experienced for decades, currently having 5 seizures per day, in addition to depression. A cranial CT scan revealed calcifications in the basal ganglia, and physical examination showed a positive Trousseau sign. Based on this information, the hypothesis of hypoparathyroidism (HPT) was considered. Total calcium (Ca), PTH, and phosphorus (P) levels were requested, and calcitriol and calcium carbonate were prescribed every 6 hours after a Ca result of 3.5 mg/dL (corrected 4.04 mg/dL). From that moment, the seizures ceased, and the patient regained consciousness, even after a slight increase in Ca (3.8 mg/dL) due to the unavailability of calcium carbonate in the institution. The PTH level was undetectable, and creatinine clearance was 36 mL/min per 1.73 m². **Discussion:** HPT results from a deficiency in the secretion and/or action of PTH, causing a reduction in Ca and an increase in P. PTH secretion is regulated by a feedback system dependent on plasma calcium levels. HPT can be caused by acquired factors or congenital causes. Patients with HPT have an increased risk of renal insufficiency, cardiovascular diseases, cataracts, infections, and neuropsychiatric complications, without an apparent increase in mortality. The patient in question experienced significant physical and psychological suffering due to the extremely late diagnosis, as well as renal and possibly cognitive impairment. **Final conclusions:** Calcium measurement should be part of the routine investigation in patients presenting with unexplained seizures, calcification disorders, muscle disorders, depression, unexplained decreased level of consciousness, or physical examination findings compatible with hyperexcitability, to avoid irreversible health damage. **Keywords:** hypoparathyroidism; hypocalcemia; seizure crisis.

ENDOCRINOLOGIA DO EXERCÍCIO

1577

ANABOLIC STEROID USE AND DIAGNOSIS OF ACUTE INTERMITTENT PORPHYRIA

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Case presentation: A 34-year-old male with no known comorbidities. Regular physical activity practitioner and user of anabolic steroids (Oxandrolone 20 mg/day and Testosterone Propionate 30 mg/mL + Testosterone Phenylpropionate 60 mg/mL + Testosterone Isocaproate 60 mg/mL + Testosterone Decanoate 100 mg/mL, administered 1 mL every 7 days). Presented with acute diffuse abdominal pain, associated with constipation refractory to laxative measures. Admitted to a tertiary care service for further investigation. Abdominal contrast-enhanced computed tomography revealed hepatic hemangioma and marked distension of the colonic frame by fecal residues, up to 8.5 cm in diameter at the cecum, without obstructive factors. PET-CT FDG showed bilateral gynecomastia without new findings. Altered laboratory tests included AST 48 U/L, ALT 72 U/L, serum sodium 132 mEq/L, Ferritin 675 ng/mL, total testosterone 569 ng/dL, free testosterone 595.4 pmol/L, and urinalysis showed 40,000 RBCs/mL, 16,000 WBCs/mL, and positive urobilinogen. During hospitalization, he remained refractory to analgesia and laxative measures, developing diffuse neuropathic pain, depressive mood, gastric distension necessitating nasogastric tube placement and parenteral nutrition, with an 18 kg weight loss and severe hypertensive crisis requiring ICU admission and vasopressor use. After 20 days, following the exclusion of various diagnostic hypotheses, acute intermittent porphyria was considered, confirmed by urine porphobilinogen levels of 100,233 mg/g creatinine. Treatment with Hematin resulted in clinical improvement. He developed hypogonadotropic hypogonadism, requiring Clomiphene for 10 months and HCG for cycle restitution, with improvement in total and free testosterone levels and resolution of symptoms. **Discussion:** The risks of using AAS for aesthetic purposes are well-known, including potential hepatic, cardiac, and lipid dysfunctions. This case highlights a manifestation of a rare hematologic disorder, which was triggered by indiscriminate hormone use. **Final comments:** This case presented a diagnostic challenge and highlighted the prolonged management of hypogonadotropic hypogonadism. It underscores the importance of educational measures against the non-medical use of AAS for aesthetic purposes. **Keywords:** anabolic steroid; acute intermittent porphyria; hypogonadism.

DIABETES MELLITUS

1578

PANCREATIC RESERVE AND INSULIN THERAPY DISCONTINUATION AFTER 34 YEARS OF TYPE 2 DIABETES MELLITUS

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Case presentation: A 61-year-old male with systemic arterial hypertension, grade 1 obesity (weight 94 kg), dyslipidemia, and type 2 diabetes mellitus for 34 years. Medications in use: Dapagliflozin 10 mg/day + Metformin 2,000 mg/day + Pioglitazone 30 mg/day + Sitagliptin 100 mg/day + Degludec 36 IU/day + Lispro 24 to 28 IU/day + Losartan 100 mg/day + Chlorthalidone 12.5 mg/day + Atenolol 25 mg/day + Rosuvastatin 20 mg/day. He had already developed microvascular complications such as bilateral amaurosis due to diabetic retinopathy and poor glycemic control over the past 10 years, despite correct regular medication use, but with poor adherence to lifestyle changes (high-calorie and carbohydrate-rich diet, and sedentary behavior). During the initial consultation, lifestyle modification was advised, and further tests were requested. HbA1c was 8.9%, fasting blood glucose 168 mg/dL, triglycerides 207 mg/dL, HDL 21 mg/dL, LDL 24 mg/dL and C-peptide 1.76 ng/mL. The treatment plan included adding Gliclazide 120 mg/day, increasing pioglitazone to 45 mg/day, discontinuing sitagliptin, and introducing oral semaglutide 3 mg/day for 30 days. After 30 days, semaglutide was increased to 7 mg/day with a reduction in Degludec to 28 IU/day and Lispro to 20 IU/day. Despite adjustments, episodes of hypoglycemia persisted, prompting a gradual reduction in insulin therapy. After another 30 days, semaglutide was increased to 14 mg/day, and Degludec and Lispro were reduced to 14 IU/day and 15 IU/day, respectively. Some episodes of hypotension occurred, leading to potential adjustments in antihypertensive therapy to Perindopril 10 mg/day and discontinuation of atenolol, chlorthalidone, and losartan. After 15 days of using semaglutide 14 mg/day, insulin therapy was discontinued due to hypoglycemia, and Gliclazide was reduced to 60 mg/day. New laboratory tests after 90 days showed HbA1c 7.3%, fasting blood glucose 90 mg/dL and triglycerides 102 mg/dL. Body weight decreased to 88 kg. **Discussion:** In this case of poorly controlled diabetes, despite 34 years of disease and 20 years of insulin therapy, the patient still exhibited pancreatic reserve, allowing for the introduction of a sulfonylurea and discontinuation of exogenous insulin due to the efficacy of new diabetes management drugs. **Final comments:** This case underscores the importance of clinical follow-up and the avoidance of therapeutic inertia, even in the presence of inadequately controlled diabetes over several years. **Keywords:** pancreatic reserve; insulin therapy; new drugs.

OBESIDADE

1579

PREVALENCE OF BINGE EATING DISORDER IN OVERWEIGHT INDIVIDUALS AT THE ENDOCRINOLOGY OUTPATIENT SERVICE OF A STATE HOSPITAL IN SÃO PAULO

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Introduction: Binge eating disorder (BED) is the most prevalent eating disorder in society, yet remains poorly understood. It is known that individuals with overweight have a higher prevalence of this disorder compared to the eutrophic population. Obesity is currently one of the greatest public health issues worldwide, considered a chronic disease with multifactorial etiology, reaching the status of a global epidemic. Obesity itself does not psychiatric disorders; however, individuals seeking weight loss treatment often exhibit high psychiatric morbidity. **Objective:** To investigate the prevalence of BED in overweight individuals attending an endocrinology and metabolism outpatient service in São Paulo. **Methods:** A descriptive exploratory study with a cross-sectional design was conducted with 151 individuals at a state hospital outpatient clinic in São Paulo. The sample underwent anthropometric assessment of weight and height. The Questionnaire on Eating and Weight Patterns-5 (QEWP-5) was administered to assess binge eating disorder. Cases where BED coexisted with other eating disorders such as bulimia and anorexia were excluded to emphasize the prevalence of BED in overweight individuals. Based on this, 6 questionnaires (7%) among the 88 positive for BED showed clinical signs suggestive of other eating disorders, requiring further investigation for possible definitions. **Results:** A total of 151 participants correctly completed the QEWP-5 questionnaire, including 123 females (81.5%) and 23 males (18.5%), with a mean age of 48.32 ± 12.30 years and mean BMI of 36.78 ± 7.52 kg/m^2. BED was observed in 41.7% of individuals, more prevalent in those with severe obesity (35%), and highest among those aged 50-59 years (32%). A positive association was found between BED and overweight ($p < 0.05$). The prevalence of BED was 9.5% in overweight patients, 30% in individuals with obesity grade I, 25.5% in obesity grade II, and 35% in obesity grade III. Therefore, the prevalence of BED was highest in individuals with severe obesity. **Conclusion:** This study underscores the high prevalence of BED in the overweight population, highlighting the need for further research into its genesis and clinical management. **Keywords:** binge eating disorder; obesity; binge eating.

DIABETES MELLITUS

1580

DIABETES REMISSION AND RENAL FUNCTION CONTROL IN A PATIENT UNDERGOING SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANTATION

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Case presentation: Patient I.I.S., 41 years old, type 1 diabetic diagnosed at age 11 after investigation for glucosuria without presenting DKA. Using multiple daily insulin injections. Other comorbidities included dyslipidemia, secondary hyperparathyroidism due to stage V CKD, and hepatitis B in remission. During the consultation on April 12, 2022, the patient was on insulin therapy with glargine 18 IU in the morning and glulisine for correction targeting 150 mg/dL with a sensitivity factor of 50. Other medications included a statin and vitamin supplementation. At that time, blood glucose was 67 mg/dL and HbA1C was 8.6%. The patient had microvascular complications: diabetic retinopathy with retinal detachment in 2016, underwent cataract surgery and vitrectomy in September 2019. Patient had stage V CKD with severe albuminuria (975 mg/g) in May 2021, under nephrology follow-up awaiting renal transplantation. A fistula was planned for dialysis initiation. On April 15, 2022, the patient underwent simultaneous kidney and pancreas transplantation without complications. Currently, the patient is only using immunosuppressants: mycophenolate 360 mg, tacrolimus 1 mg, and prednisone 5 mg/day. Has been free from insulin for 1 year and 2 months. Currently, the patient shows no need for insulin and improvement in renal function. **Discussion:** Type 1 diabetes mellitus (DM1) is characterized by the destruction of pancreatic β-cells, typically diagnosed after DKA in children and adolescents. Chronic hyperglycemia leads to microvascular complications such as retinopathy, neuropathy, and diabetic kidney disease, and macrovascular complications including coronary artery disease, cerebrovascular disease, and peripheral arterial disease. Diabetic kidney disease (DKD) causes albuminuria and loss of renal function, potentially progressing to end-stage renal disease requiring dialysis. In patients with stage V CKD, associated with diabetes and β-cell failure (DM1 or advanced DM2), simultaneous pancreas and kidney transplantation may be considered. This procedure improves both conditions, albeit requiring immunosuppression. **Final Considerations:** Simultaneous pancreas-kidney transplantation has demonstrated improved functional survival in patients, particularly in the first year post-procedure. This case report demonstrates improved quality of life for the patient, maintaining independence from dialysis or daily insulin use. **Keywords:** diabetes; transplantation; diabetes remission.

NEUROENDOCRINOLOGIA

1581

PANHYPOPITUITARISM CAUSED BY COMPRESSION OF THE PITUITARY STALK BY A RATHKE'S CLEFT CYST

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Case presentation: A 65-year-old man presented to the emergency department with vomiting, loss of appetite, headache, and general malaise. Initial evaluation revealed mild hyponatremia (Na+ 129 mEq/L) and a history of type 2 diabetes mellitus, hypertension, and epilepsy. He was on Metformin, sulfonylureas, an angiotensin receptor blocker, and Phenytoin. During hospitalization, attempts to correct sodium levels with hypertonic saline were unsuccessful. Neurology consultation recommended switching from Phenytoin to Lamotrigine and ordered neuroimaging, which revealed an empty sella turcica (CT scan). Endocrinology evaluation showed low TSH (0.17 mU/L) with normal FT4 (1.1 ng/dL), and morning cortisol was also low (<0.5 µg/dL), confirming hypocortisolism. Abdominal imaging (adrenal glands) and MRI of the sella turcica were requested, along with pituitary hormone profiling. The patient reported erectile dysfunction and decreased libido. Imaging showed a cystic lesion measuring 1.9 x 1.6 x 1.5 cm in the sella turcica, extending into the suprasellar cistern and contacting the optic chiasm, without extrinsic compression but displacing the pituitary stalk to the left, likely a Rathke's cleft cyst. Currently, he is under neurosurgical evaluation for surgery and receiving hormone replacement therapy with Prednisone, testosterone, and Levothyroxine. He reports improvement in symptoms and libido. **Discussion:** Rathke's cleft cyst is an embryonic remnant resulting from incomplete involution, potentially leading to cellular proliferation and secretion accumulation, forming cysts. These cysts persist postnatally between the anterior and posterior pituitary. While often asymptomatic, they can grow and compress surrounding structures, causing panhypopituitarism. **Final considerations:** Due to the absence of visual symptoms and headache improvement, our patient is currently under observation by neurosurgery, requiring long-term hormone replacement therapy (testosterone, Levothyroxine, and Cortisol) under endocrinology supervision. **Keywords:** Rathke's cleft cyst; panhypopituitarism; hypogonadism.

METABOLISMO ÓSSEO E MINERAL

1582

REVISITING THE INTERACTION BETWEEN ALDOSTERONE AND BONE METABOLISM: METABOLIC IMPROVEMENT OF HYPERPARATHYROIDISM AFTER PRIMARY HYPERALDOSTERONISM TREATMENT – 4 CASES REPORT

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Case presentation: Case 1: 74-year-old woman, with hypertension (HTN) since her 40s, hypokalemia, post-menopausal osteoporosis, multiple fractures. Initial tests: parathormone (PTH) 149 pg/mL (VR 12-65), total calcium (CaT) 8.3 mg/dL (VR 8.3-10.6), ionized calcium (Cai) 1.08 mmol/L (VR 1.16-1.32), 25OHD 20.4 ng/mL, urine calcium (CaU) 428 mg/24 h (VR < 250 mg, < 4 mg/kg), potassium (K) 3.4 mEq/L (VR 3.5-5.1), aldosterone/renin ratio (A/R) 43 (VR < 27), plasma renin activity (PRA) < 0.04 ng/mL/h (VR 0.2-3.3). Diagnosis: primary hyperaldosteronism (PA) due to adrenal hyperplasia. Treatment: spironolactone 75 mg/day. New tests: PTH 42.7 pg/mL, CaT 9.4 mg/dL, Cai 1.18 mmol/L, 25OHD 28.5 ng/mL, CaU 100 mg/24 h, K 5.1 mEq/L, APR 1.85 ng/mL/h. **Case 2:** Male, 56 years old, multiple fractures background, nephrolithiasis, HTN, hypokalemia, bariatric surgery at 50 years old. Initial tests: PTH 80 pg/mL, CaT 9.7 mg/dL, Cai 1.3 mmol/L, 25OHD 46 ng/mL, CaU 135 mg/24 h (VR < 300 mg), K 2.9 mEq/L, A/R 112. Diagnosis: PA, due to a right adrenal adenoma. Treatement: right adrenalectomy. New tests: PTH 43 pg/mL, CaT 9.84 mg/dL, Cai 1.32 mmol/L, 25OHD 47 ng/mL, CaU 87 mg/24 h, K 4.4 mEq/L, A/R 3. **Case 3:** Woman, 51 years old, HTN since her 30s. Initial tests: PTH 81 pg/mL, CaT 8.8 mg/dL, Cai 1.19 mmol/L, 25OHD 30 ng/mL, CaU 267 mg/24 h (5.3 mg/kg). Treatement: hydrochlorothiazide (HCTZ), for idiopathic hypercalciuria. Due to hypokalemia, years after starting HCTZ, screening for PA was performed: A/R ratio (2 tests) 28.3 and 29.2. Etiology: adrenal hyperplasia. New Treatment: HCTZ discontinued and spironolactone was indicated. New tests: PTH 36 pg/mL, CaT 9.4 mg/dL, Cai 1.23 mmol/L, 25OHD 47 ng/mL, CaU 151 mg/24 h. **Case 4:** Woman, 56 years old, HTN at 32y, nephrolithiasis, hypercalciuria, submitted to left inferior parathyroidectomy at 40y due to primary hyperparathyroidism. Exams after surgery: PTH 71 pg/mL, CaT 9.6 mg/dL, Cai 1.35 mmol/L, 250HD 42 ng/mL, CaU 97 mg/24 h, A/R ratio 32. Diagnosis: PA. Treatment: spironolactone 75 mg/day. New tests: PTH 55 pg/mL, CaT 9.4 mg/dL, Cai 1.32 mmol/L, 250HD 43 ng/mL, CaU 87 mg/24 h, A/R 9.5. **Case discussion:** The cases reported highlight the need to include PA among the causes of hypercalciuria and isolated increases in PTH. **Conclusion:** The renin-angiotensin-aldosterone and calcium-PTH-vitamin D axis are interconnected. The repercussions of PA on mineral and bone metabolism should be considered, since the clinical/surgical treatment of PA can attenuate and/or reverse osteometabolism disorders.
Keywords: hyperparathyroidism; hyperaldosteronism; hypercalciuria.

ADRENAL E HIPERTENSÃO

1583

ONCOCYTIC ADRENOCORTICAL NEOPLASIA: A RARE CASE OF ADRENAL INCIDENTALOMA

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Case presentation: A 37-year-old woman underwent total abdominal Magnetic Resonance Imaging (MRI) due to abdominal pain in the left flank. A heterogeneous, predominantly solid lesion was found in the left adrenal gland, with regular contours, intense post-contrast enhancement and wash-out in the later post-contrast sequences. She was then referred for endocrinological assessment, in which tests were carried out for primary hyperaldosteronism, hypercortisolism and pheochromocytoma, all of which were negative. The diagnostic hypothesis was a non-functioning adrenal tumor in the left adrenal measuring 5.1 x 4.7 x 4, and the patient was referred for surgery. The anatomopathological analysis identified it as a primary adrenal neoplasm of eosinophilic cells with a nuclear grade of Fuhrman IV and free surgical margins. In the immunohistochemical study, the findings were compatible with an adrenal cortical tumor of the oncocytic type with benign behavior according to the Lin-Weiss-Bisceglia criteria. **Discussion:** Oncocytic adrenocortical neoplasia, which can be with or without function, is a rare condition and has the characteristic of being found occasionally during complementary examinations. Oncocytomas are composed of oncocytes, epithelial cells with acidophilic granular cytoplasm filled with mitochondria; these lesions are usually benign. Imaging tests are not decisive for the diagnosis of adrenocortical oncocytoma, only histological microscopy and immunohistochemistry can confirm the hypothesis, as in this case, when only after surgical resection of the tumor was the neoplasm proven. Its malignancy is classified according to the Lin-Weiss-Bisceglia scoring system, created as a way of improving and adapting the classic Weiss model. The majority of adrenocortical oncocytomas are non-functional (66%). **Final comments:** Adrenal oncocytic tumors are rare and mostly found accidentally. In this context, this report exposes this knowledge with the aim of identifying it in differential diagnoses of adrenal cortex tumors.
Keywords: oncocytoma; adrenal incidentaloma; neoplasm.

DIABETES MELLITUS

1584

IMPACT OF ANNEXIN A1 ON NLRP3 INFLAMMASOME ACTIVATION IN THE GUT IN A TYPE 1 DIABETES MURINE MODEL

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Introduction: The NLRP3 (nucleotide-binding domain, leucine-rich – containing family, pyrin domain – containing-3) inflammasome plays a crucial role in intestinal epithelial cells by modulating immune responses and maintaining barrier integrity in the gastrointestinal tract. Despite the anti-inflammatory annexin A1 (AnxA1) influences NLRP3 inflammasome activation and its downstream effects, their relationship has not been explored in the context of diabetes. **Objective:** To investigate the impact of the lack of AnxA1 on NLRP3 activation in a type 1 diabetes model. **Methods:** Male C57BL/6 AnxA1 $^{+/+}$ and AnxA1 $^{-/-}$ mice were used to induce diabetes over 12 weeks using streptozotocin administration (65mg/kg during five days). Body weight and blood glucose levels were monitored (CEUA 2125200323). After 90 days, intestinal samples were collected and processed for histological and immunohistochemistry. Western blot was employed to analyze the levels of AnxA1 and components of the NLRP3 inflammasome (NLRP3, ASC, and cleaved caspase 1) in intestinal homogenates. Additionally, cytokines and chemokines levels in intestinal homogenates were evaluated by multiplex assay. **Results:** Diabetic AnxA1$^{-/-}$ mice displayed increased epithelial cell height (***$p < 0.001$) compared to diabetic AnxA1$^{+/+}$ and reduced goblet cell numbers (**$p < 0.01$) compared to AnxA1$^{-/-}$ controls, indicating structural alterations in the absence of AnxA1. Although no changes were detected by western blot in the levels of AnxA1 in gut homogenates, an intense expression of AnxA1 was exhibited in the intestinal epithelium of diabetic AnxA1$^{+/+}$ animals, particularly in the apical cytoplasm of enterocytes. Both diabetic AnxA1$^{+/+}$ and AnxA1$^{-/-}$ groups exhibited elevated NLRP3 expression compared to controls, highlighting the inflammasome's involvement in diabetic conditions. However, AnxA1$^{-/-}$ controls showed increased cleaved Casp-1 and ASC levels compared to AnxA1$^{+/+}$ controls, suggesting a regulatory mechanism of inflammasome activation in the lack of AnxA1. The diabetic AnxA1$^{-/-}$ group also had higher cleaved Casp-1 and ASC levels compared to diabetic AnxA1$^{+/+}$, along with reduced levels of pro-inflammatory cytokines IL-2, IL-4, IL-6, IL-10, CXCL1/KC, and TNF-α. **Conclusion:** These findings indicate that AnxA1 plays a crucial role in regulating inflammatory responses and maintaining intestinal epithelial integrity in diabetic conditions. Funding: Fapesp. **Keywords:** diabetes mellitus; inflammation; intestinal integrity.

DIABETES MELLITUS

1587

PRECONCEPTIONAL CARE IN DIABETES MELLITUS: EVALUATION OF KNOWLEDGE LEVEL AND DEVELOPMENT OF AN EDUCATIONAL BOOKLET FOR WOMEN WITH DIABETES MELLITUS OF CHILD-BEARING AGE

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Introduction: It is known that women with Diabetes Mellitus (DM) require specific care during the reproductive period. Consequently, actions focusing on the diabetes-pregnancy relationship are scarce and can lead to negative outcomes both during pregnancy and postpartum. Therefore, efforts aimed at assessing the degree of knowledge about specific preconception care in DM and subsequent intervention on this issue need to be encouraged. **Objectives:** The objective was to measure the degree of knowledge about preconception care in Diabetes Mellitus. **Materials and methods:** This was a pilot epidemiological study, descriptive and cross-sectional in design, based on interview data collected from patients at a university hospital. Participants were women aged between 18 and 50 years diagnosed with DM. Data analysis was conducted using absolute and relative frequency data and the Likert methodology. **Results:** A total of 41 women participated in the study. The age profile ranged from 30 to 40 years, predominantly with type 2 Diabetes Mellitus, residing in the city of Belém, primarily homemakers, with an average of 12 years of education, low income, and an average of 2 children. Regarding knowledge of preconceptional care related to diabetes, 40.7% reported feeling inadequately supported, and regarding factors hindering gestational care, 83.3% cited lack of information on specific DM measures. Regarding their perception of knowledge about diabetes mellitus and pregnancy, 88% reported below-average knowledge, with 41.5% reporting knowing nothing, 22% knowing little, and 24.4% having moderate knowledge. These patients experienced complications related to glycemia during pregnancy, including miscarriages (17.9%), preeclampsia (31.3%), and gestational diabetes (31.3%). **Conclusion:** The research highlights a lack of knowledge among the target population on this issue. These results reflect multifactorial complexities of socio-economic issues, especially educational, related to poor health assistance about familiar planning. As an outcome, there is an increase in bad glycemic control complications and underscores the need for developing and expanding healthcare strategies to improve pregnancy outcomes and promote primary prevention in health. **Keywords:** diabetes mellitus; preconception care; health education.

TIREOIDE

1588

ASSOCIATION OF FOLLICULAR THYROID CARCINOMA AND PAPILLARY CARCINOMA IN A PATIENT WITH THYROID NODULE AND FINE-NEEDLE ASPIRATION BIOPSY INDICATING BENIGNITY

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Case presentation: A 63-year-old female patient sought endocrinology evaluation for type 2 diabetes mellitus (DM2) management, during which an increase in cervical volume was noted, attributed to the right lobe of the thyroid. On palpation, a hard, mobile, painless nodule measuring approximately 4 cm was observed, with no lymphadenopathy. Thyroid ultrasound indicated the presence of an isoechoic nodule with smooth, regular borders and a thin hypoechoic halo, measuring 3.9 x 2.8 x 2.9 cm, with normal thyroid function. Fine-needle aspiration biopsy (FNAB) of the nodule was performed, and the cytopathology report indicated Bethesda category II. The patient was referred for head and neck surgery, where lobectomy and isthmectomy were performed. Histopathological examination revealed a nodule in the right lobe measuring 4.0 x 3.5 x 3.5 cm and a nodule in the isthmus measuring 0.4 x 0.4 x 0.5 cm. The larger lesion in the right lobe was diagnosed as follicular neoplasia with oncocytic cells and the isthmus lesion was suggestive of follicular variant papillary carcinoma. Immunohistochemistry showed that the larger nodule was diffusely positive for TTF-1-8G7G3/1, indicative of a differentiated follicular carcinoma with Hurthle cell variant, encapsulated and minimally invasive, while the smaller nodule was diffusely positive for TTF-1-8G7G3/1, CK19-RCK108 3/3+, Galectin-3-9C4 3/3+, HBME-1 3/3+, consistent with well-differentiated encapsulated follicular variant papillary carcinoma without capsular or vascular invasion. Ablative treatment with radioactive iodine could not be performed due to the patient's refusal to undergo total thyroidectomy. The patient continues on 112 mcg of Levothyroxine with suppressed thyroid-stimulating hormone (TSH) levels. **Discussion:** Thyroid carcinoma is the most common endocrine neoplasm, with differentiated types being the most prevalent, predominantly papillary (50%-80%), followed by follicular (15%-20%), and finally Hurthle cell types. However, the association of papillary and follicular thyroid carcinoma is considered rare in the literature. FNAB indicated a benign condition, which was inconsistent with the histopathological examination, skewing the initial understanding of the case. **Final comments:** This case illustrates the rare association of follicular and papillary thyroid carcinomas in a patient with FNAB indicating benignity, highlighting the importance of considering nodule consistency, size, and patient age in surgical indications. **Keywords:** papillary carcinoma; follicular thyroid carcinoma; fine-needle aspiration biopsy.

OBESIDADE

1589

ASSOCIATION OF BODY ADIPOSITY ASSESSED BY DUAL EMISSION X-RAY ABSORPTIOMETRY (DXA) AND PANCREATITIS IN INDIVIDUALS WITH FAMILIAL CHYLOMICRONEMIA SYNDROME (FCS)

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Introduction: Familial chylomicronemia syndrome (FCS) is a rare genetic condition, with a prevalence of 1:1 million, characterized by a significant increase in chylomicrons, resulting in severe hypertriglyceridemia (HTG) and recurrent episodes of acute pancreatitis (AP). In the general population, obesity is associated with a higher risk of AP. **Objective:** The present study aimed to analyze indicators of body adiposity and the frequency of AP episodes in individuals with FCS. **Methods:** A cross-sectional study was conducted in a referral outpatient clinic at a tertiary hospital in Ceará, Brazil, in which all patients with a positive genetic diagnosis for FCS were included through next-generation sequencing to investigate genetic variants potentially related to hypertriglyceridemias and pancreatitis. Body adiposity was assessed by dual-energy X-ray absorptiometry (DXA (Lunar Prodigy Advance, GE®). Spearman's correlation was used to analyze possible associations between body adiposity variables and AP episodes ($p < 0.05$). **Results:** Ten individuals were included, with a median of 47 (31 - 64) years, 60% women. Eight individuals had pathogenic variants in the LPL gene (FCS-LPL), one in the APOA5 gene, and one in the GPIHBP1 gene (FCS-non-LPL). All participants had severe HTG, with a median of 2,339 (1,394 - 5,639) mg/dL. The FCS-LPL individuals had the highest levels of triglyceridemia in the sample and the highest frequency of AP, with a mean of 4 episodes. The percentage of body fat (BF%), fat mass index (FMI) and visceral adipose tissue (VAT) had medians of 23.0 (8.8 - 42.3), 5.5 (1.6 - 12.7) kg/m² and 315 (0 - 1137) cm³, respectively. All FCS-non-LPL individuals showed an android fat distribution pattern, with higher values of BF%, FMI and VAT. None of the FCS-non-LPL had AP. An inverse correlation was identified between the number of AP and the anthropometric indicators FMI ($rs = 0.654$; $p < 0.04$), VAT ($rs = 0.690$; $p < 0.03$) and %BF ($rs = 0.667$; $p < 0.04$). **Conclusion:** In individuals with FCS, lower body adiposity was associated with a higher number of AP episodes. Such findings may be related to a possible impairment of triglyceride accumulation in peripheral fat sites in cases resulting from the deficiency of LPL action (Lipodystrophy-like). **Keywords:** hyperlipoproteinemia type I; visceral adipose tissue; lipoprotein lipase.

TIREOIDE

1590

IMMUNE THROMBOCYTOPENIC PURPURA AND ACUTE HEPATIC FAILURE ASSOCIATED WITH THYROTOXIC CRISIS

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Liver dysfunction is a complication that can result from hyperthyroidism itself and/or the side effect of using antithyroid drugs, such as methimazole and propylthioracil (PTU). This case report describes an initial patient presentation of imune thrombocytopenic purpura associated with thyrotoxic crisis due to Graves' disease and acute liver failure resulting from the disease and use of antithyroid drugs, highlighting this rare co-occurrence. J.E.O.S., male, 51 years old, was admitted to thyrotoxic crisis with a score of 50 on the Burch-Wartorsfky scale due to tachycardia (150 bpm), atrial fibrillation, psychomotor update, associated with epistaxis. He reported clinical symptoms of palpitation, weight loss, psychomotor improvement, hyperphagia and heat intolerance that began 6 months ago. Laboratory tests discovered: and thrombocytopenia: 5,000 cells/mm^3, TSH 0.005, T4L > 7.7 and TRAB >1.75 IU/L. Treatment for thyrotoxic crisis was initiated with propylthioracil (PTU), hydrocortisone and propranolol. The patient showed improvement in adrenergic symptoms and subsequent normalization of plaques. After 15 days of administration, the patient developed itching associated with jaundice, with laboratory tests showing bilirubin 44 mg/dL, with direct bilirubin 20 and BI 24, alkaline phosphatase 934, TGP 148, TGO 71, INR 0.94. Additional investigation excluded other differential diagnoses. Due to the suspicion of cholestasis caused as a side effect of Tapazol, it was decided to temporarily suspend the drug, with a return to a lower dose of 10 mg due to the need to control thyroid hormones, while awaiting iodine therapy for definitive treatment of hyperthyroidism. He returned to the outpatient clinic after months, asymptomatic, after definitive treatment with radiotherapy and normalization of liver function. After the procedure, hypothyroidism developed and hormone replacement therapy was started. Due to the potential severity of this secondary effect to the use of antithyroid medications, this case suggests the importance of monitoring liver function in patients with hyperthyroidism before treatment and during follow-up. Although hematological manifestations are rarely described in association with thyrotoxicosis, in the present case we observed complete resolution of thrombocytopenia after compensation of hormonal levels, emphasizing the need for screening thyroid function in the investigation of hematological disorders. **Keywords:** thyrotoxicosis; Graves' disease; immune thrombocytopenic purpura.

DISLIPIDEMIA E ATEROSCLEROSE

1591

ANTHROPOMETRIC PARAMETERS OF BRAZILIAN CHILDREN AND ADULTS WITH FAMILIAL CHYLOMICRONEMIA SYNDROME (FCS) CAUSED BY DIFFERENT MUTATIONS

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Introduction: Familial chylomicronemia syndrome (FCS) is a rare disease that causes severe hypertriglyceridemia (HTG). The signs and symptoms often already manifest in childhood. Usually, affected adults have low body weight and body mass index (BMI) compatible with normal weight or low weight. This fact has been possibly attributed to the restriction of food consumption due to constant abdominal pain and the fear of recurrent episodes of acute pancreatitis (AP), although data in children, who usually do not have AP, are scarce in the literature. **Objective:** This study aimed to compare anthropometric parameters between children and adults with FCS. **Methods:** A cross-sectional study was conducted in a referral outpatient clinic at a tertiary hospital in Ceará, Brazil. Individuals of all ages, of both sexes, with a positive genetic diagnosis for FCS, were included by means of next-generation sequencing to investigate genetic variants potentially related to HTG and pancreatitis. Clinical data, lipid profile, and anthropometric data were collected: weight, height, and BMI calculated. **Results:** We included 18 participants with canonical genes for FCS, of which 44.4% were children. The median age was 32 (5-64) years. Seven adult individuals and four children with pathogenic variant in LPL (FCS-LPL), one adult and three children with mutation in GPIHBP1, one adult with mutation in APOA5 and one child with pathogenic variant in APOC2 (FCS-non-LPL) were identified. All participants had severe HTG, with triglyceride levels of 11.588 (1.921-43.466) mg/dL in children and 2.553 (1.880-5.639) mg/dL in adults. There was, however, a higher number of AP in the adult population (6 cases *vs.* 2 cases). BMI was compatible with normal weight in 75% of the children, in all pathogenic variants, and in 70% of the adults, except for those with FCS-non-LPL (GPIHBP1 and APOA5). Children with AP had BMI/age compatible with normal weight (15,2) and low birth weight (18,2). **Conclusion:** Only one child with FCS was overweight and had a pathogenic variant of the GPIHBP1. However, all FCS-LPL children had a eutrophic or low weight phenotype, although only one of them had AP. These findings suggest that the body composition of FCS-LPL patients is not related to the occurrence of AP, suggesting the possibility of an action of lipase on the accumulation of triglycerides in peripheral fat sites, such as lipodystrophies. **Keywords:** hyperlipoproteinemia type I; lipoprotein lipase; body composition.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1593

HORMONE THERAPY, OSTEOPOROSIS, AND RISK FACTORS FOR CARDIOVASCULAR DISEASE IN WOMEN WITH EARLY OVARIAN FAILURE: A RETROSPECTIVE COHORT STUDY

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Introduction: Early ovarian failure (premature ovarian insufficiency, POI) is defined by the loss of ovarian function before the age of 40. With this loss of function, women begin to experience menstrual irregularities or amenorrhea, increased FSH levels, and hypoestrogenism. Due to the decrease in estrogen, these women are more susceptible to risks related to bone, reproductive, and cardiovascular health. The challenge of hormone replacement therapy (HRT) is to mitigate these risks while remaining the first-line treatment. **Objective:** To analyze the presence of complications in bone and cardiovascular health in women with POI who delayed initiating hormone replacement therapy at a specialized center. **Methods:** This retrospective cohort study examined patients with early ovarian failure who were candidates for HRT with estrogen and progesterone. Data were obtained from clinical histories, laboratory tests, and imaging studies from 1999 to 2024 at a specialized center. **Results:** We analyzed 23 cases of patients aged between 45 and 73 years, of whom only 18 underwent HRT. Amenorrhea in these patients occurred between the ages of 18 and 39, with the diagnosis of POI made between ages 18 and 42. During this period, 70% developed vasomotor or genitourinary symptoms, and 20% had risk factors for cardiovascular disease prior to POI. Hormone replacement therapy was administered orally in 3 patients and topically in 15 patients. Only 1 patient began replacement therapy in the same year as diagnosis, while 17 patients initiated therapy 1 to 4 years later. Treatment duration ranged from 1 to 20 years. Cardiovascular risk factors, such as diabetes mellitus, arterial hypertension, and hypertriglyceridemia, affected 3 patients, and 13 patients had hypercholesterolemia despite using topical or oral HRT. Carotid Doppler studies were performed in 3 patients, one of whom showed 20 to 30% obstruction of the carotid arteries. Low bone mass was observed in 7 patients, who are currently receiving medication for osteoporosis. **Conclusion:** Patients who delayed diagnosis and initiation of HRT exhibited a higher incidence of risk factors for cardiovascular disease and bone health issues. Therefore, it is recommended that both the diagnosis of POI and initiation of HRT be considered in cases of amenorrhea in women under 40 years of age to relieve symptoms and improve bone health, as well as to provide potential cardiovascular benefits. **Keywords:** early ovarian failure; hormone replacement therapy (HRT); osteoporosis and risk factors for cardiovascular.

NEUROENDOCRINOLOGIA

1594

EVALUATION OF CLINICAL, LABORATORY, AND RADIOLOGICAL FINDINGS IN PATIENTS DIAGNOSED AND TREATED FOR CENTRAL DIABETES INSIPIDUS AT AN ENDOCRINOLOGY CENTER IN RIO DE JANEIRO

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Introduction: The primary hormone regulating body homeostasis and water balance is antidiuretic hormone (ADH), also known as vasopressin. A deficiency or insensitivity to this hormone results in diabetes insipidus (DI). The main form of DI is central diabetes insipidus (CDI), which can be either congenital or acquired. Objective. This study aims to share the experience of a specialized endocrinology reference center regarding the diagnosis, management, and treatment of CDI. **Materials and methods:** Data collected were analyzed from a review of 30 medical records of patients diagnosed with CDI at the outpatient hypophysis clinic. **Results:** The findings indicated that the primary symptoms reported prior to diagnosis were polyuria, polydipsia, and nocturia. The most prevalent associated comorbidities were panhypopituitarism and dyslipidemia, with idiopathic etiology being the most frequent. In patients with panhypopituitarism, the most commonly associated hormonal deficiencies were TSH and ACTH. The stimulation test (RH test) in our study was the gold standard used to confirm the diagnosis of CDI. The laboratory tests requested to monitor the disease included serum sodium, plasma osmolarity, and urine osmolarity. The MRI findings of the sella turcica that most correlated with the diagnosis of CDI in non-surgical patients was a “partially empty sella.” The most effective daily dose of desmopressin acetate for controlling symptoms in our study was 30 micrograms per day. **Conclusions:** This study highlights the findings and experiences of a specialized endocrinology center, providing valuable data that may aid in the diagnosis, management, and treatment of CDI. **Keywords:** central diabetes insipidus; urinary osmolarity; plasma osmolarity.

MISCELÂNEA

1595

INSULINOMA AS A RARE CAUSE OF HYPOGLYCEMIA: CASE REPORT

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Introduction: Insulinoma is a tumor originating in pancreatic beta cells. Although rare, with an incidence of 4 per 1,000,000 people per year, it is the most common pancreatic neuroendocrine tumor. Diagnosis is suspected in the presence of Whipple's triad, requiring laboratory confirmation of hypoglycemia and hyperinsulinemia. After biochemical diagnosis, imaging tests are needed to locate the tumor and define the surgery. Drug treatment, with diazoxide or somatostatin analogues, is only used for preoperative control or in patients who are not candidates for surgery. **Case presentation:** Female, 62 years old, controlled hypertension with indapamide, no other comorbidities, referred due to hypoglycemia. Reported episodes of dizziness, chills, cold sweats and palpitations occurring twice a week, for about a year, without triggering factors, with improvement after eating. After developing syncope, sought care at emergency room, where hypoglycemia was found and corrected with intravenous glucose, without further investigation. Due to a recurrence of the condition, went to an endocrinologist who ordered laboratory tests: fasting glucose: 46 mg/dL, C-peptide: 11.20 ng/mL (range: 1.1-4.4), basal insulin: 98.5 mcg/mL (3-25), HbA1C: 4.6% and basal cortisol 16.0 mcg/dL (5-23). Was referred to a specialized service for further investigation. During hospitalization, she remained on continuous glucose infusion, still with episodes of hypoglycemia, but asymptomatic. Abdominal MRI showed a solid nodular image with defined contours and significant contrast enhancement, measuring 2.0 x 1.6 cm and located in the uncinate process of the pancreas. Echoendoscopy confirmed the location. The patient underwent enucleation of the pancreatic lesion by laparotomy and was discharged from hospital after no further episodes of hypoglycemia or surgical complications. The anatomopathological study detected neuroendocrine neoplasia and immunohistochemistry confirmed insulinoma. At a follow-up four months post-surgery, she remained euglycemic and asymptomatic. **Final comments:** As described in the literature, the case reflects a common delay in the diagnosis of insulinoma, given the presence of non-specific symptoms and the little relevance given to hypoglycemia in emergency, where etiological investigation is often neglected. Therefore, the importance of diagnostic suspicion is noted so that the surgical approach can be carried out briefly and improve the quality of life of affected patients.
Keywords: hypoglycemia; insulinoma; pancreas.

NEUROENDOCRINOLOGIA

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EXCLUSIVELY DOPAMINE-PRODUCING PARAGANGLIOMA: A CASE REPORT

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Pheochromocytomas/paragangliomas (PPGLs) are neuroendocrine tumors derived from chromaffin cells of the adrenal medulla or extra-adrenal paraganglia, respectively. These tumors secrete catecholamines, mainly epinephrine and norepinephrine. Exclusively dopamine-producing PPGL are extremely rare and, because of the lack of adrenergic symptoms, are diagnosed at larger sizes. Here we described a successful case based on the proper evaluation. A 27-year-old woman without comorbidities was referred to our service to evaluate an incidental retroperitoneal mass detected by computed tomography (CT) performed due to trauma during football training. She was asymptomatic except for mild-intensity abdominal pain. The abdominal CT revealed a 75 x 55 x 50 mm, hyper-enhancing, and heterogeneous mass in the retroperitoneum suggestive of PPGL. Laboratory tests showed increased serum 3-metoxytyramine, a dopamine metabolite (1.9 nmol/L, reference value: <0.1), but plasmatic and urinary metanephrine and normetanephrine levels were normal. The iodine-131-meta-iodobenzylguanidine (MIBG) scintigraphy only revealed tracer uptake in the area corresponding to the abdominal tumor. The patient did not receive α-adrenergic blockage. Preoperatively, intravenous saline and a high-sodium diet were administered. During tumor manipulation, the patient presented with a transient hypertensive crisis treated with intravenous sodium nitroprusside, which was gradually tapered and later dropped. Until hospital discharge, she remained hemodynamically stable. There are few exclusively dopamine-secreting PPGL cases reported in the literature and, therefore, little is known about their behavior in the pre and pos operative phases. The hypothesis to explain only dopamine secretion is the lack of expression of dopamine β-hydroxylase (DBH) and loss-of-function mutations in the DBH gene and others that modulate DBH activity. The clinical symptoms of dopamine-secreting PPGL are due to mass compression and rarely present with typical catecholamine symptoms, delaying the diagnosis. There is a concern about a higher metastatic potential. The treatment is tumor resection, and preoperative α-blockade is not necessary, since dopamine has no affinity for the α-receptor. Besides that, dopamine can relax smooth muscles via D1 receptors. The prognostic is uncertain, so a long-term follow-up for screening recurrence or metastasis is required. **Keywords:** dopamine; paraganglioma; alfa-blocker.

OBESIDADE

1597

OBESITY TREATMENT WITH GLUCAGON-LIKE PEPTIDE-1 AGONIST IN A YOUNG MALE WITH HYPOGONADISM AND COGNITIVE IMPAIRMENT: A CASE REVIEW

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A 36-year-old man with a history of testicular cancer at age 30 sought evaluation at an Endocrinology center due to hypogonadism. Furthermore, he had impaired cognitive development and episodes of psychomotor agitation. The physical examination revealed obesity, with a BMI of 39. The genital examination indicated an empty scrotum. Laboratory test results showed testosterone levels at 77 ng/dL. Initially, we chose not to prescribe testosterone replacement therapy due to aggressive episodes. The patient was advised to make lifestyle changes; however, no weight loss was observed. The patient returned almost 2 years later, with significant weight gain during this period, with a maximum BMI of 48.8, in addition to high blood pressure. Furthermore, he underwent an abdominal ultrasound which revealed severe hepatic steatosis. In this scenario, and considering that the patient had not presented other aggressive episodes in the last year, we chose to start treatment with low doses of testosterone, due to its benefits for metabolism and body composition. We also started a glucagon-like peptide 1 (GLP-1) agonist approved in Brazil for the treatment of obesity, which is well tolerated by the patient. The combination therapy successfully resulted in a weight loss of almost 21 kg (14.6% of body weight) in approximately 10 months, with a subsequent BMI of 41.2. There were also improvements in blood pressure and lipid profile, including a reduction in LDL cholesterol, without the use of statins. Follow-up abdominal ultrasound showed mild hepatic steatosis. **Discussion:** Obesity, a chronic disease, is linked to increased cardiovascular risk and several health problems. Successful management requires a personalized and multidisciplinary approach. GLP-1 receptor agonists have demonstrated significant effectiveness in weight loss. The SCALE Obesity trial, evaluating liraglutide 3.0 mg per day, resulted in an average weight reduction of 8.4 kg. In this study, 33.1% of patients in the liraglutide group lost more than 10% of their body weight at 56 weeks. Our patient had an excellent response despite the lack of assessment of hypogonadism in the SCALE trial population. We believe that testosterone replacement therapy was important to our patient's overall success in improving body composition. This case highlights the effectiveness of liraglutide in the treatment of obesity and emphasizes the positive impact of testosterone supplementation on body composition when indicated. **Keywords:** Obesity; GLP-1 receptor agonists; hypogonadism.

NEUROENDOCRINOLOGIA

1598

INSULINOMA: DIAGNOSTIC AND THERAPEUTIC CHALLENGES – A CASE REPORT

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Case report: S.A.M., 58, female, presented with symptomatic and documented hypoglycemia, reaching 19 mg/dL, accompanied by sweating and syncope, which had been occurring on for 3 years. She had a confirmed Whipple's triad (symptoms of hypoglycemia that improve when serum glucose normalizes and serum hypoglycemia). In addition, she had been hypertensive for 5 years and had generalized anxiety for 3. She underwent a Magnetic Resonance Imaging (MRI), which revealed preserved pancreatic morphology, with no alterations. Over the following 6 months, her symptoms persisted and intensified. She then underwent an echoendoscopy which identified an isoechoic, homogeneous, regular image, with precise limits and contours, measuring 14.5 mm x 10.1 mm, in the region of the body and tail of the pancreas and vascularization on Doppler. After echo-guided punctures of the lesion, the anatomopathological results were consistent with a small cell neoplasm, suggestive of a neuroendocrine tumor, compatible with the hypothesis of insulinoma. The results of the immunohistochemical study corroborated this hypothesis. In view of these findings, the patient underwent body-caudal pancreatectomy with splenic preservation and drainage of the cavity, resolving the hypoglycemic symptoms. **Discussion:** The report illustrates a case of recurrent hypoglycemia with a subsequent diagnosis of insulinoma. This rare neoplasm, which ranges from 1 to 4 in every 1 million people, is characterized by excessive insulin production. Whipple's triad was fundamental for suspecting this condition. Imaging tests were used to confirm the diagnosis, which showed the low sensitivity of MRI and the importance of echoendoscopy, despite its high cost. The anatomopathological and immunohistochemical findings consistent with insulinoma defined the final diagnosis. The treatment through body-caudal pancreatectomy with splenic preservation aimed to resect the tumor and preserve the remaining pancreatic function. Although significant improvement in symptoms after surgery is expected, long-term follow-up is necessary to monitor recurrence and pancreatic function. **Final comments:** Given the rarity of insulinoma, this case highlights the importance of adequate clinical suspicion and a systematic diagnostic approach to the investigation of recurrent hypoglycemia. It also highlights the efficacy of echoendoscopy and ultrasound-guided puncture in locating and characterizing suspicious pancreatic lesions. **Keywords:** insulinoma; echoendoscopy; hypoglycemia.

NEUROENDOCRINOLOGIA

1599

INSULINOMA – REPORT OF TWO CASES

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Case 1: S.C.N., 25 years old, female, previously healthy, reported episodes of symptomatic hypoglycemia that began about four years ago, with capillary glucose (CG) values reaching 23 mg/dL, associated with intense sweating, lipothymia, slurred speech, and somnolence, which improved with glucose administration. In the period, there was a gain of 15 kg. CT showed a topography image of the head of the pancreas. On admission, hypercalcemia and increased blood pressure levels were observed, with a negative investigation for secondary hypertension and resolved after insulinoma approach. He is under investigation for primary hyperparathyroidism (PH). She underwent Whipple surgery, with no new episodes of hypoglycemia. The patient developed without diabetes, but with significant weight loss, sporadic episodes of vomiting and steatorrhea, when fat intake increases, and the investigation of exocrine pancreatic insufficiency was positive. **Case 2:** L.R., 48 years old, with no report of comorbidities, admitted to a referral hospital due to malaise and syncope, with CG < 40 mg/dL, and remission of symptoms after correction with intravenous blood glucose. Fasting test confirmed endogenous hyperinsulinemic hypoglycemia. MRI: did not show tumor image, and underwent ultrasound endoscopy with biopsy, which resulted in the tumor being located in the head of the pancreas. She underwent the surgical procedure and, since then, has evolved without new episodes of hypoglycemia. Under investigation for MEN-1, no findings of PH or pituitary adenoma. **Discussion:** The prevalence of insulinoma is approximately 1-4 cases per million people and may or may not be associated with MEN-1. Insulinomas are the most frequent functioning pancreatic neuroendocrine tumors, predominantly in women over 50 years of age. Usually small and solitary, 10% multiple, 10% malignant, and 4% associated with MEN-1. The location can represent a challenge for the medical team due to the low sensitivity, specificity, and accuracy of the most available preoperative imaging tests. **Final comments:** Delay in diagnosis can bring important risks to patients, related to complications of hypoglycemia. Based on these cases, we seek to expand knowledge about insulinoma and contribute to the improvement of the care offered to patients with this potentially fatal condition. Despite the delay in diagnosis related to the difficulties inherent to the Unified Health System, the patients had a good clinical evolution. **Keywords:** insulinoma; MEN-1; ultrasound endoscopy.

TIREOIDE

1602

ANALYSIS OF THYROTOXICOSIS HOSPITALIZATIONS IN THE LAST 10 YEARS IN NORTHEASTERN BRAZIL

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Introduction: Thyrotoxicosis is the manifestation of a high concentration of circulation thyroid hormones, causing several symptoms, such as tachycardia, embolic events, tremors, osteoporosis and altered mental status. Therefore, the epidemiological analysis of thyrotoxicosis hospitalizations is of particular importance, as they are indicators of serious morbidity due to lack of control or poor monitoring of hyperthyroidism. **Objective:** To analyze data relating to hospital admissions for thyrotoxicosis in the Brazilian public health system, by age and sex, in the last 10 years in the Northeast Region (NE). **Methods:** This is a qualitative, quantitative, population-based and descriptive study based on the analysis of thyrotoxicosis hospitalizations from April 2014 to April 2024, in the NE, according to data collected from SUS Hospital Information System. The variables gender, age, average value, time and nature of hospitalizations were analyzed. **Results:** The total number of thyrotoxicosis hospitalizations in the NE in the period was 1123. This number increased between 2014 (63 cases) and 2019 (127 cases), which was interrupted in 2020, probably due to pandemic, with only 76 hospitalizations, increasing again until reaching its peak in the last full year: 2023 (141 cases). Bahia was the state with the highest number of hospitalizations (221), and Rio Grande do Norte (RN) with the lowest (28). Around 65% of these hospitalizations were urgent, besides 78% were women, corresponding to what is established in the literature, that there is a female prevalence of thyroid dysfunctions. The NE has the highest average length of stay per hospitalization in Brazil (8,9 days), around 34% above national average (6,6 days). To compare, the South and Southeast regions have average length of stay lower than the national average, which demonstrates a regional discrepancy in morbidity due to thyrotoxicosis. NE also has the highest average cost of hospitalization (734,83 *reais*), around 29% above Brazilian average (586,51 *reais*), with emphasis on RN (2008,44 *reais*). **Conclusion:** Despite having a number of hospitalizations proportional to population, comparing to other regions, the NE has a higher average length of stay and hospitalization value than the others. Therefore, it is notable the importance of actions aimed at understanding and solving regional differences in this type of hospitalization. **Keywords:** epidemiology; hospitalization; thyroid.

ENDOCRINOLOGIA PEDIÁTRICA

1603

CHALLENGES AND COMPLEXITIES IN XYY TRISOMY: A CASE REPORT

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Introduction: XYY Trisomy, or Jacobs Syndrome, affects 1 in 1,000 males, resulting in an extra Y chromosome. It is characterized by tall stature and behavioral challenges. Health problems affect 19% of patients, with 63% experiencing long-term health issues. Literature associates the syndrome with autism spectrum disorder (ASD). **Case presentation and discussion:** In April 2023, a 9-year-old male patient was referred to the pediatric endocrinology service due to suspected micropenis. He had a prior diagnosis of Attention Deficit Hyperactivity Disorder (ADHD), learning and communication difficulties were noted in the history. The patient's mother provided a hand X-ray showing short metacarpals, particularly the 4th and 5th. Despite parameters of weight and blood pressure appropriate for his age, his height was elevated. Upon inspection, valgus elbow was observed, along with Tanner Stage I pubertal development, suspected micropenis (5.5 cm), and testicles with an approximate volume of 2 mL. Considering the diagnostic hypothesis of mosaicism, the patient's karyotype was requested. On November 4th, the patient's mother brought the karyotype results, which were consistent with 47, XYY. Further detailed history collection revealed inappropriate posture when writing, difficulty in mobility due to inability to extend hands and hold objects, cognitive and behavioral delays, and aggressive temperament in contradictory situations, including refusal to share objects, aggression, and sleep disturbances suggesting a potential association with ASD. The overall clinical picture, combined with collected data and described examinations, supported a diagnosis of Jacobs Syndrome (47, XYY). **Conclusion:** The main challenge lies in integrating these elements to guide treatment and support the child's development. Socioeconomic context, including access to specialized professionals through the Unified Health System (SUS), is crucial for the patient's comprehensive well-being. **Keywords:** trisomy; XYY karyotype; autism spectrum disorder (ASD).

ENDOCRINOLOGIA PEDIÁTRICA

1604

EFFICACY AND SAFETY OF VOSORITIDE IN CHILDREN WITH ACHONDROPLASIA: A SYSTEMATIC REVIEW AND SINGLE ARM META-ANALYSIS

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Achondroplasia (ACH) is a genetic disorder caused by activating mutations in the FGFR3 gene, which inhibit endochondral ossification. Historically, ACH treatment was generally symptomatic, with limited options to address the underlying mechanisms of the disorder. Recently, a novel therapy called Vosoritide, a C-type natriuretic peptide analogue, was developed to target biochemical pathways involved in ACH, offering a promising approach. Vosoritide was approved for use in children with ACH in 2021, marking a significant advancement in ACH treatment. Therefore, we conducted a systematic review and meta-analysis aiming to consolidate and summarize current knowledge on the efficacy and safety of vosoritide specifically in children with ACH. Following PRISMA guidelines, we conducted a comprehensive literature search across PubMed, Embase, Clinicaltrials.gov, Cochrane Library, and Web of Science, using "vosoritide" and "achondroplasia" as key terms. Efficacy outcomes included annualized growth velocity and z-score improvement at 12 months. Safety outcomes comprised incidence of overall, specific, and grade ≥ 3 adverse events (AEs). Data were summarized using means, proportions, 95% confidence intervals, and I^2 was used to assess the heterogeneity. Statistical analyses were performed using R version 4.4.1 software. Out of 207 initially identified studies, 4 were included in the final analysis, comprising a total of 157 patients. The mean follow-up duration was 23.2 months. The mean age of patients was 7.22 years, with 97 (51,8%) being male. The pooled annualized growth velocity at 12 months was 5.64 cm/year (n = 157, 95% CI: 5.26-6.01; I^2 = 70%). Z-score improvement from baseline at 12 months averaged 0.36 (95% CI: 0.25-0.46; I^2 = 89%). The incidence of any-grade (AEs) was 77.78% (95% CI: 71.17%-83.49%), increasing to 98.91% (95% CI: 94.09%-99.97%) in randomized controlled trials (RCTs). Grade ≥ 3 AEs occurred in 3.17% of patients (95% CI: 1.17%-6.78%). The treatment discontinuation rate was 4.76%, with 1.06% due to AEs. The most common AEs were injection site reactions (61.0%), injection site erythema (51.3%), and injection site swelling (24.6%). The current data suggest that Vosoritide is a promising therapy for children with ACH. Despite the high incidence of adverse events, most were mild and manageable. These findings highlight Vosoritide as a significant advancement in treatment options. Further long-term studies are necessary to confirm its efficacy and safety. **Keywords:** achondroplasia; vosoritide; meta-analysis.

TIREOIDE

1605

ANAPLASTIC THYROID CARCINOMA ASSOCIATED WITH COLUMNAR CELL VARIANT OF PAPILLARY THYROID CARCINOMA: A CASE REPORT

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Anaplastic thyroid carcinoma (ATC) is a rare, rapidly progressive, and highly aggressive tumor. A well-differentiated component was recognizable in 30%-50% of the patients with ATC. A 55-year-old woman was referred to the endocrinology service because of a goiter with substantially fast growth in the last 3 months, causing compressive symptoms (dysphonia, dyspnea and dysphagia). The neck computed tomography showed a solid tumor in thyroid right lobe/isthmus measuring 13 x 12 x 8,4 cm with 50% luminal reduction of the trachea. Laboratory tests showed normal thyroid stimulating hormone levels. Due to goiter size and compressive symptoms the patient was referred to surgery. A right lobe and isthmus partial thyroidectomy was performed, as the totalization was not possible to be performed due to the size of the goiter and proximity with the carotid artery. Microscopy analysis shows a poorly differentiated malignant neoplasm classified as an ATC associated with a columnar cell variant of papillary thyroid carcinoma (PTC). Immunohistochemical analysis was positive for TTF-1, PAX-8 and BRAF; and negative for calcitonin and tireoglobulin. A second surgery was then performed with total thyroidectomy and lymphadenectomy. Microscopy analysis of thyroid shows colloid goiter and absence of lymph node metastasis. At this time, 1 year and 3 months after the thyroidectomy the patient is alive and monitored by the endocrinology service. ATC is an uncommon carcinoma representing 1 to 4 % of all thyroid cancers. ATC patients have a historical median survival of 5 months and a 1-year overall survival of 20%. Studies suggest that the ATC originates from a differentiated thyroid carcinoma in a process of dedifferentiation, with the tall cell variant of PTC more frequently associated with ATC. We presented the report of a rare case of an ATC associated with a columnar variant of PTC in a patient who is alive more than 1 year after the diagnosis despite the aggressive characteristics of the disease, highlighting the dedifferentiation process and necessity to improve research and understanding of this process. **Keywords:** anaplastic thyroid carcinoma; papillary thyroid carcinoma; thyroid.

DIABETES MELLITUS

1606

MORTALITY DUE TO DIABETES MELLITUS IN BRAZIL IN ELDERLY PEOPLE FROM 2010 TO 2022: A DESCRIPTIVE ANALYSIS BETWEEN THE REGIONS OF THE COUNTRY

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Introduction: Diabetes mellitus is a multifactorial and chronic metabolic condition, caused by a lack of insulin production, resistance to its action, or both, which results in chronically high blood glucose levels. Prolonged lack of control of these levels can trigger serious microvascular and macrovascular complications, leading patients to develop neuropathies, amputations, retinopathies, diabetic kidney disease and cardiovascular diseases. These conditions often result in hospital admissions and can be fatal for patients with DM, being the main cause of death due to cardiovascular diseases. **Objective:** To describe the distribution, by region of Brazil, of mortality from diabetes mellitus in the elderly from 2010 to 2022. **Methods:** This is an observational, descriptive and retrospective study, built from the Mortality Information System (SIM/SUS). To analyze the data, they were organized into tables and the variables were broken down by region, mortality, sex, and age group from 60 years of age onwards. **Results:** From 2010 to 2022, 831,495 deaths from diabetes mellitus were quantified. Of these data, 674,910 (81.11%) deaths occurred in elderly people over 60 years of age. Of this last number mentioned above, the southeast region was the most affected with 261,628 (38.77%) deaths, followed by the northeast region with 221,798 (32.86%) cases. It is worth highlighting the progressive increase in the number of total deaths in the age group analyzed between the year 2010 (43,932) and the year 2022 (62,632). As for genders, there was no major discrepancy between the data, with women representing 382,224 (56.63%) deaths. Regarding the chosen age groups, the group of elderly people aged over 80 years old was the most affected, with 253,127 deaths (37.5%). **Conclusion:** It is possible to see that diabetes mellitus represents the biggest cause of mortality from endocrine, metabolic, and nutritional diseases in Brazil. In this study, this situation translates into the high mortality rate of elderly people with DM in the Southeast region. Furthermore, it is worth noting that deaths in elderly people over the age of 60 represent more than 80% of deaths due to DM in the period analyzed. **Keywords:** diabetes mellitus; mortality; elderly.

TIREOIDE

1607

HOSPITALIZATION IN BRAZIL FOR THYROTOXICOSIS BETWEEN 2013 AND 2023: A DESCRIPTIVE ANALYSIS BETWEEN THE COUNTRY REGIONS

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Introduction: Thyrotoxicosis is characterized as a clinical syndrome resulting from excess circulating thyroid hormones, secondary to causes of hyperfunction, destruction of the thyroid gland, or excessive exogenous replacement of thyroid hormones. Its consequences are wide-ranging, affecting metabolism, the cardiovascular system, and emotional and psychological well-being, in addition to being able to cause eye complications, among other problems. In Brazil, thyroid disorders, including potential causes of thyrotoxicosis, represent the fourth leading cause of mortality of the spectrum of endocrine, nutritional and metabolic diseases, reflecting a worrying reality regarding the control of these medical conditions. **Objective:** The aim was to describe the distribution of hospitalization for thyrotoxicosis between regions of Brazil from 2013 to 2023. **Methods:** This is an observational, cross-sectional, retrospective, and descriptive study. Data collection was carried out in the SUS Hospital Information System (SIH/SUS) between January 2013 and December 2023. The study takes into account patients who were hospitalized for thyrotoxicosis, and the variables were organized in tables, including age, sex and region. **Results:** From 2013 to 2023, there were 6985 hospitalization cases in Brazil due to thyrotoxicosis. Of these, the southeast region had the highest rates, with 4303 (61.6%) hospitalizations, followed by the northeast region with 1159 (16.6%) hospitalizations. Regarding sex, women constituted the highest number of hospitalizations recorded in the period, with 5437 (77.8%), maintaining the same order of prevalence by region, what is already expected by the epidemiology of the thyroid diseases in women. Regarding age, it was observed that the age group from 20 years to 59 years (77.1%) is the most affected, while the age group at the extremes of age has fewer cases of hospitalization, with emphasis on 1 to 4 years (0.2%) and 80 years and over (1.6%). **Conclusion:** Based on the results presented on the distribution of hospitalization for thyrotoxicosis in the regions of the country, it is observed that the southeast region predominates with 61.6% of cases in the analyzed period, in addition to the highest prevalence in the adult age group from 20 to 59 years old. As for sex, there is a higher prevalence in women, following the epidemiology of the disease. **Keywords:** thyrotoxicosis; hospitalization; regions.

METABOLISMO ÓSSEO E MINERAL

1608

VITAMIN D-DEPENDENT RICKETS TYPE II: ATYPICAL PRESENTATION OF A RARE DISEASE

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Case presentation: Female patient, 10 years old, with a history of universal alopecia since 2 months of age. Only child of consanguineous parents (first-degree cousins), born full-term, appropriate for gestational age and with neuropsychomotor development within expected in childhood. A similar presentation was reported in her father, her paternal uncle and multiple cousins. Scalp biopsy revealed non-scarring alopecia with milia, prompting referral to a genetics service to differentiate between a hairless gene mutation and a vitamin D resistance. The vitamin D receptor gene (VDR) sequencing identified homozygous C>T variant p.Arg73Gln, confirming Vitamin D-dependent Rickets type II. Renal function, as well as calcium, phosphate and PTH levels were within reference ranges in laboratory workup – the sole alteration was an elevated 1.25-hydroxyvitamin D level (>200 pg/mL). The sequential bone densitometry showed mineral density within reference values. This mutation was also found in a heterozygous state in her mother and a homozygous state in her father. **Discussion:** Vitamin D-dependent Rickets type II is a rare autosomal recessive disease characterized by a mutation in the gene encoding the VDR leading to the inability for its activation, even in the presence of high levels of 1.25(OH)2D. Due to impaired action on the intestine, kidney, parathyroid gland and bone, a calcium and phosphate metabolism disorder develops with hypocalcemia, compensatory hyperparathyroidism, hypophosphatemia and bone mineralization defects, resulting in rickets. The identified mutation is considered pathogenic and involves a semi-conservative amino acid substitution impacting on protein secondary conformation. The case is distinctive from the classical expected presentation, as the patient has normal calcium and phosphate levels, adequate bone mineral density and no signs of rickets. **Final comments:** Vitamin D-dependent Rickets type II is a rare and still poorly understood condition. As new mutations related to VDR are discovered, it is understood that there is a broad spectrum of possible phenotypes, making it extremely important to document and study this pathology for a better global comprehension. **Keywords:** Rickets; vitamin D receptor gene; vitamin D dependent rickets.

OBESIDADE

1609

TIRZEPATIDE MITIGATES METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE THROUGH THE MTOR SIGNALING PATHWAY IN OBESE OVARIECTOMIZED MICE

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Introduction: Metabolic dysfunction-associated steatotic liver disease (MASLD) is characterized by insulin resistance and excessive fat accumulation in liver cells. MASLD is prevalent among individuals with obesity and diabetes. Menopause adds another layer of complexity, as hormonal changes can exacerbate MASLD in these populations, potentially progressing to more severe steatohepatitis, fibrosis, cirrhosis, and hepatocellular carcinoma. **Objective:** To assess the effects of Tirzepatide (Tzp, a dual agonist GLP-1/GIP) on liver metabolism and structure in obese diabetic ovariectomized mice. **Methods:** The study was approved (CEUA/018/2022). Female mice (C57BL/6) at three months were randomly subjected to a bilateral ovary removal or sham procedure (n = 120/group) and fed for 12 weeks with a control diet (kJ%: 76 [10 sucrose]/10/14, carbohydrate/fat/protein) or a high-fat and high sucrose diet (kJ%: 36 [32 sucrose]/50/14, carbohydrate/fat/protein). Tzp was subcutaneously administered at 10 nmol/kg daily for an additional four weeks (abbreviations: Od = obese diabetic, O = ovariectomy). Blood glucose, insulin, adiponectin, and leptin were measured in plasma during the experiment. We assessed body weight, food consumption, triacylglycerol (TAG) and cholesterol (hepatic and plasma), liver enzymes (AST and ALT), liver steatosis, and gene expressions (RT-qPCR) related to mTOR pathway (Pik3c2a, mTORC2, mTORC1, Eef2, Eif4ebp1, and ULK3), lipogenic genes (Srebf1, Acaca, Chrebp1, and Pparg), and inflammatory markers (Il17; Il22 and Col1a1). **Results:** Od and OdO mice showed increased BW, TAG, cholesterol, liver enzymes, steatosis, mTOR pathway, lipogenic, and inflammatory markers. However, Tzp administration effectively mitigated all the issues. **Conclusion:** Tzp significantly benefits obese, diabetic, and menopausal mice with MASLD. Tzp improves metabolic parameters, reduces hepatic steatosis, and enhances overall liver function, showcasing its potential as a therapeutic agent for managing obesity-related complications and metabolic dysfunctions in this model. **Keywords:** obesity; metabolic dysfunction-associated steatotic liver disease; tirzepatide.

DIABETES MELLITUS

1611

THERAPEUTIC APPROACHES IN LATENT AUTOIMMUNE DIABETES IN ADULTS (LADA): EVALUATION OF THE IMPACT ON THE PRESERVATION OF β-CELL FUNCTION

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Introduction: Latent autoimmune diabetes in adults (LADA) is an autoimmune disease that shares characteristics with type 1 and type 2 diabetes mellitus (DM). It is characterized by the presence of autoantibodies against the beta cells of the pancreas, responsible for the production of insulin. This condition is often diagnosed in adults and may progress more slowly compared to DM1. In the current context, where increasing incidence of diabetes is a global problem, understanding therapeutic approaches and their impact on pancreatic β-cell function is crucial to improving the prognosis of patient with LADA. **Objectives:** To describe therapeutic approaches in the treatment of LADA and evaluate the impact of these interventions on preserving β-cell function. **Methods:** A systematic review was carried out following the guidelines of the PRISMA protocol. The Chochrane databases were used, with the descriptors: "Latent Autoimmune Diabetes in Adults OR LADA" AND "treatment", without filters. The search resulted in 129 studies, of which 21 were included because they met the objectives of the proposal. **Results:** Several studies point to a similarity in the therapeutic choice between LADA and DM2, highlighting the benefits of early insulin therapy. There was consensus on the harmful effects of sulfonylureas on the maintenance of β cells, and these should be avoided. The therapeutic effect of DPP-4 inhibitors such as sitagliptin and saxagliptin was comparable to that of insulin; Both classes of medications had enhanced results when associated with vitamin D. The GLP-1 and/or GIP agonists, Dulaglutide and Tirzepatide, have been reported as effective alternatives for glycemic control, with emphasis on Dulaglutide, which proved to be superior to sitagliptin in reducing HbA1c. Additional therapies included the use of thiazolidinediones, combined with insulin, and GAD-alum infusion. **Conclusion:** LADA is a growing problem in public health. It's treatment may include the use of insulin therapy and DPP-4 inhibitors, associated with vitamin D, GLP-1 and/or GIP agonists, thiazolidinediones or GAD-alum, which preserve the functionality of β cells, unlike sulfonilureas. However, there is no specific protocol for therapeutic approaches in LADA, requiring greater investments and clinical studies aimed at its implementation. **Keywords:** latent autoimmune diabetes in adults; insulin; treatment.

OBESIDADE

1613

TIRZEPATIDE ENHANCES GENES RELATED TO TRANSDIFFERENTIATION OF PANCREATIC ALPHA- AND BETA-CELL IN OBESE DIABETIC OVARIECTOMIZED MICE

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Introduction: Tirzepatide (Tzp, a dual GIP/GLP-1 agonist) has been recently approved for treating insulin resistance and obesity, a frequent condition affecting postmenopausal women. **Aim:** A mouse model of obesity and type 2 diabetes was castrated to simulate postmenopausal sex hormone deprivation. The aim was to investigate Tzp administration's effect on alpha- and beta-cell transdifferentiation genes. **Materials and methods:** The study was approved (CEUA/018/2022). Female mice (C57BL/6) at three months were randomly subjected to a bilateral ovary removal or sham procedure (n = 120/group) and fed for 12 weeks with a control diet (kJ%: 76 [10 sucrose]/10/14, carbohydrate/fat/protein) or a high-fat and high sucrose diet (kJ%: 36 [32 sucrose]/50/14, carbohydrate/fat/protein). Tzp was subcutaneously administered at 10 nmol/kg daily for an additional four weeks (abbreviations: Od = obese diabetic, O = ovariectomy). Blood glucose, insulin, adiponectin, and leptin were measured in plasma, pancreatic islets were isolated, and genes involved with transdifferentiation of islet alpha- and beta-cells were analyzed. **Results:** Tzp showed a potent effect in reducing body weight and controlling carbohydrate metabolism. *Pdx1* expression (a master regulator in pancreatic development and function of endocrine and exocrine cells) and *Pax6* (a transcription factor for maintaining beta-cell identity, essential for alpha-cell differentiation through glucagon production) were enhanced under Tzp administration. *Bcl2* (antiapoptotic function) was less expressed under Tzp treatment. In addition, *Tgfbr1* (for activating pancreatic stellate cells) showed no difference among the groups. **Conclusions:** Present experimental data suggest Tzp may stimulate the cell remodeling of islet pancreatic cells, potentially restoring pancreatic function in diabetic individuals. Exploring these pathways associated with islet endocrine cell differentiation could create new therapeutic strategies for treating diabetes. Tzp represents a promising frontier in managing diabetes and obesity, particularly among postmenopausal women. **Keywords:** tirzepatide; pancreas; obese.

DIABETES MELLITUS

1614

THE LINK BETWEEN SLEEP DURATION AND TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW

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Introduction: According to the WHO, 422 million people globally have type 2 diabetes mellitus (T2DM), which is linked to significant morbidity and mortality. Sleep duration, an essential health factor, is often disrupted by various disorders. About one-third of the population struggles with sleep due to factors such as age, psychological issues and medications. These widespread issues underline the importance of exploring potential connections between sleep duration and T2DM. **Objective:** To investigate the link between sleep duration and T2DM and its clinical impacts. **Methods:** This systematic review searched PubMed/MEDLINE and the Cochrane Library using "sleep duration" AND ("Type 2 diabetes" OR "type 2 diabetes mellitus" OR "T2DM"). Included were clinical trials, systematic reviews, and meta-analyses published in English in the last 3 years. Exclusions were studies with populations under 18 years and other diabetes types. Initially, 52 articles were identified; after screening titles and abstracts, 7 articles remained for review. **Results:** The 7 studies included systematic reviews, some with meta-analysis, and clinical trials, covering cohort and observational studies, and randomized trials. They found that sleep duration is associated with an increased risk of T2DM development and worsened glycemic control in diagnosed patients. Men showed a slightly stronger association with T2DM than women, with no age group preference observed. Sondrup *et al.* identified increased insulin resistance in individuals with reduced sleep by using glucose tolerance tests. In contrast, increased sleep latency is secondarily associated with factors such as a sedentary lifestyle, poverty, and depression, which are all linked to higher insulin resistance, as elucidated by Lu *et al.*'s meta-analysis. The association between sleep duration and T2DM management is also highlighted by García-Serrano *et al.*'s trial, which observed two groups of T2DM patients: one received guidance for normal sleep duration, while the control group did not. The trial revealed that patients in the control group required more medication adjustments compared to the intervention group (28% *vs.* 7%, $p < 0.005$). **Conclusion:** Adequate sleep duration plays a crucial role in managing T2DM. Thus, emphasizing proper sleep in therapeutic and preventive strategies could significantly benefit disease management. Further research is needed to elucidate the link between sleep duration and T2DM, particularly in developing countries. **Keywords:** type 2 diabetes mellitus; sleep duration; T2DM.

TIREOIDE

1615

SEVERE HYPERTHYROIDISM LEADING TO SARCOPENIA IN A YOUNG PATIENT: A CASE REPORT

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Patient M.S.C., 36 years old, female, without comorbidities or prior medication use, experienced a weight loss of 17 kg over approximately one year, along with intense muscle weakness, tremors, palpitations, insomnia, and falls, requiring assistance for mobility. She did not present with fever, edema, gastrointestinal symptoms, or altered consciousness. She was diagnosed with autoimmune thyroid disease resembling Graves' disease, with initial tests showing TSH < 0.01 microUI/mL, free T4 6.92 ng/dL, total T3 > 800 ng/dL, and presence of autoantibodies: Anti-TSH Receptor 11 U/L, Anti-Thyroid Peroxidase 1,300 U/mL, and Anti-Thyroglobulin 688 U/mL. After three weeks of treatment with Methimazole 60 mg once daily and Propranolol 40 mg three times daily, there was a reduction in symptoms intensity and weight stabilization. Graves' disease is an autoimmune thyroid disorder and the most common cause of hyperthyroidism. It is 5 to 10 times more common in women than in men, predominantly affecting Caucasian individuals and an incidence peak between 30 and 60 years of age. Clinical manifestations result from the stimulatory effect of thyroid hormones on metabolism and tissues. Common symptoms include agitation, excessive sweating, heat intolerance, palpitations, fatigue, weight loss, and muscle weakness. Excessive thyroid hormones lead to increased protein breakdown and muscle catabolism. Severe loss of skeletal muscle mass associated with functional impairment defines sarcopenia. In this case report, the patient presented with sarcopenia secondary to hyperthyroidism confirmed by SARC-CaIF questionnaire scoring 16 points, Sit-to-Stand Test taking 53 seconds to complete, and electrical bioimpedance analysis showing 14 kg of muscle mass. Due to treatment refractoriness and complications, the patient was referred for surgical treatment and awaits total thyroidectomy. In conclusion, severe hyperthyroidism can lead to significant weakness and weight loss, including substantial muscle mass loss, contributing to the development of sarcopenia even in young patients if timely intervention is not undertaken. **Keywords:** hyperthyroidism; sarcopenia; thyroid.

METABOLISMO ÓSSEO E MINERAL

1617

SERUM PARATHYROID HORMONE CONCENTRATION ON THE DAY AFTER TOTAL THYROIDECTOMY AS A PREDICTOR OF DEFINITIVE HYPOPARATHYROIDISM

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An increasing prevalence of definitive hypoparathyroidism (HypoPT) has been observed, primarily due to the rise in thyroidectomy procedures. In this scenario, the II International Workshop on the Evaluation of HypoPT strongly recommended measuring serum parathyroid hormone (PTH) post thyroidectomy to predict chronic HypoPT. They highlighted that a PTH level greater than 10 pg/mL within 12 to 24 hours post total thyroidectomy (TT) virtually excludes chronic PTH deficiency. Conversely, PTH values below this threshold do not necessarily predict the development of definitive HypoPT. In this context, we aimed to describe a population from a single tertiary hospital that underwent TT, both at baseline and at least 6 months following the surgery, and to evaluate whether PTH levels 12-24 hours after TT could predict the non-occurrence of chronic HypoPT. We conducted a longitudinal observational study in two stages: initially by reviewing medical records of all patients who underwent TT and were evaluated by the endocrinology team; and then, at least 6 months following surgery, to assess for definitive HypoPT through online interviews or charts reviews. The study was approved by the Institutional Review Board (CAAE: 73394223.0.0000.5125). A total of 118 patients were analyzed at baseline, 52 of whom were reached out at least 6 months post-surgery. At baseline, the mean age was 50 (±14.5) years, and 82% were women. Thyroid cancer was present in 55% of patients. The prevalence of a PTH level ≤ 10 pg/mL 12-24 hours after TT was 28.8%. There was no difference in the mean age or BMI between patients with a PTH below or above this threshold. Compared to patients with a higher PTH, those with a PTH ≤ 10 pg/mL had a significantly greater hospitalization time and phosphate levels, and a significantly lower calcemia (all $p < 0.001$). Among the 52 patients assessed > 6 months post TT, 10 were considered to have definitive HypoPT, all of whom had a PTH ≤ 10 pg/mL on the day after the surgery. In contrast, among the 42 patients with a normal parathyroid function 6 months post TT, only 8 (19%) had a PTH ≤ 10 pg/mL post TT. The sensitivity, specificity, PPV and NPV of a PTH ≤ 10 pg/mL 12-24 hours after TT to identify patients who developed permanent HypoPT were, respectively, 100%, 81%, 55% and 100%. These findings align with the latest international consensus on Hypoparathyroidism, confirming that patients with a PTH >10 pg/mL on the day after TT are very unlikely to develop definitive HypoPT. **Keywords:** hypoparathyroidism; hipocalcemia; parathormone.

TIREOIDE

1618

CLINICAL IMPLICATIONS OF PATHOLOGICAL HYPERTHYROIDISM DURING PREGNANCY: A SYSTEMATIC REVIEW

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Introduction: Thyroid disorders are prevalent during pregnancy, with thyrotoxicosis characterized by an increase in thyroid hormones, with hyperthyroidism being the main cause. If not treated properly, thyrotoxicosis can cause serious complications for both the mother and the fetus. Therefore, it is crucial to understand the impacts of this condition on the maternal-fetal binomial, aiming for early diagnosis and adequate treatment of thyroid diseases during pregnancy and the promotion of fetal and maternal health. **Objective:** To analyze the clinical implications of pathological hyperthyroidism during pregnancy. **Materials and methods:** This study is a systematic review, guided by the question "what are the impacts of pathological hyperthyroidism during pregnancy?" and based on the PRISMA method. The selection was carried out in July 2024, in the MEDLINE and LILACS databases, using the descriptors "hyperthyroidism", "pregnancy complications", "pregnant women", "thyrotoxicosis" and "pregnancy", in three combinations: "Hyperthyroidism AND Complications in pregnancy", "Hyperthyroidism AND Pregnant Women" and "Thyrotoxicosis AND Pregnancy", which returned 1,389 articles. The search was refined by year of publication (2019 to 2024), full availability and Portuguese, Spanish and English languages, totaling 117. In the screening phase, there was an analysis of the title and summary of the articles, in which there was selection and reading in full for eligibility. Those with a relevant proposal were included in this review, totaling 14 works. **Results:** Thyrotoxicosis in women of reproductive age is predominantly caused by hyperthyroidism. Therefore, it is essential that all women with thyroid disorders receive preconception guidance to assess and adjust their thyroid function. Clinical hyperthyroidism, when not adequately treated, is associated with unfavorable pregnancy outcomes, which can lead to fetal loss, gestational hypertension, gestational diabetes mellitus, placental abruption, prematurity, low birth weight or fetal macrosomia, low Apgar score, intrauterine growth restriction, neonatal thyrotoxic crisis, congestive heart failure in the mother and postpartum hemorrhage. **Conclusion:** In view of the evidence, it is inferred that adequate diagnosis and treatment of hyperthyroidism during pregnancy are essential to prevent adverse maternal and fetal complications, including pregnancy loss. **Keywords:** hyperthyroidism; pregnancy; thyrotoxicosis.

NEUROENDOCRINOLOGIA

1619

LAPAROSCOPIC CAUDAL BODY PANCREATECTOMY FOR INSULINOMA – CASE REPORT

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Case presentation: M.P.C., female, 34 years old, with episodes of malaise, paresthesias in the hands, visual blurring, dizziness, and lipothymia since 2019, reaching a CG of 18 mg/dL. At the time, there was no biochemical evaluation and magnetic resonance imaging was negative. In 2024, a new MRI detected a characteristic lesion on the pancreatic body/tail. The patient underwent partial laparoscopic pancreatectomy, without intercurrences, and to date, there has been no recurrence of hypoglycemic episodes. The anatomopathological results confirm a neuroendocrine tumor compatible with insulinoma. On investigation for MEN-1, negative tests for primary hyperparathyroidism and pituitary adenoma. **Discussion:** The prevalence of insulinoma is approximately 1-4 cases per million people and may or may not be associated with MEN-1. They are the most frequent functioning pancreatic neuroendocrine tumors, predominantly in women over 50 years of age. The location can represent a challenge for the medical team due to the low sensitivity, specificity, and accuracy of the most available preoperative imaging tests. The mini-invasive approach has been shown to be safe for benign insulinomas located preoperatively, and should be approached laparoscopically, if technically feasible. **Final remarks:** A recent systematic review supports a laparoscopic approach to insulinoma resection in terms of safety, possibly reduced length of hospital stays, and cure rates comparable to open surgery. The evolution of localization tests and surgical techniques used has made it possible to use a minimally invasive approach in the treatment of insulinomas. **Keywords:** Insulinoma; laparoscopic approach to insulinoma; mini-invasive approach.

NEUROENDOCRINOLOGIA

1620

MORTALITY FROM NEUROLOGICAL COMPLICATIONS IN PATIENTS WITH INSULIN DIABETES MELLITUS - DEPENDENTS IN THE NORTHEAST FROM 2019 TO 2023 – AN EPIDEMIOLOGICAL OVERVIEW

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Introduction: Type 1 diabetes mellitus (DM1) is characterized by the destruction of pancreatic beta cells, resulting in insulin deficiency. Among the chronic complications associated with DM1, peripheral neuropathy is one of the most prevalent, affecting almost 50% of individuals with diabetes mellitus throughout their lives. The manifestations of diabetic neuropathy (DN) vary depending on the nervous system involved. Impairment of the autonomic nervous system can cause serious dysfunction in the cardiovascular, respiratory, digestive, urinary and genital systems. In this context, to prevent serious complications and reduce mortality associated with DM1, it is necessary to implement prevention and early diagnosis strategies. **Objective:** The present study aims to analyze premature mortality due to neurological complications in insulin-dependent patients in the northeast between 2019 and 2023. **Materials and methods:** A retrospective and descriptive epidemiological study based on data collection in the Department of Informatics of the Unified System of Health (DATASUS) on deaths due to neurological complications in insulin-dependent patients in the Northeast from 2019 to 2023. Data are compared between states in the Northeast region. The variables included were death notifications, number of deaths and age group (30 to 69 years). **Results:** The years 2020 and 2021 were the periods in which premature mortality represented a higher percentage of deaths in relation to mortality in all age groups. Among them, 2020 recorded the highest mortality rate in this period, with 9,204 deaths, representing 30% of Brazil's total mortality. In 2023, there was a reduction in the number of deaths, recording 7,344 premature deaths due to neurological complications in patients with DM. Regarding location, the Northeast represents 29.3% of total premature deaths in Brazil. Among the states in the Northeast, Bahia recorded the highest number, with 11,293 premature deaths. On the other hand, Sergipe reported fewer deaths between 2019 and 2023 (1,597 deaths). **Conclusion:** Scientific results reveal negligence in the public health system in ensuring early diagnosis, assistance and treatment of neurological complications in insulin-dependent patients, resulting in a high rate of fatalities in the region. Despite the improvement reported in the most recent index, in 2023, the need to improve preventive public policies in the country's Primary Care stands out. **Keywords:** diabetes mellitus; epidemiological monitoring; diabetic neuropathies.

ENDOCRINOLOGIA PEDIÁTRICA

1621

CHALLENGES OF LATE DIAGNOSIS OF TURNER'S SYNDROME: A CASE REPORT

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Case presentation: K.M.R., a 17-years-old female patient, was referred to the pediatric endocrinology clinic with a complaint of underdeveloped breasts, absence of menarche and short stature. She denied having any comorbidities or using drugs for continuous treatment. Physical evaluation revealed body weight of 50.45 kg (z-score - 0.64), height of 1.36 m (z-score - 4), Body Mass Index (BMI) of 27.3 kg/m² (z-score + 1.62), a clinically significant short stature, absence of breasts (Tanner staging M1P4), short and webbed neck, acanthosis nigricans on the neck and armpits, shield chest, cubitus valgus and breast hypertelorism. Complement tests showed FSH 71.7 mUI/mL, LH 36.46 mUI/mL, estradiol 13 pg/mL, total cholesterol 209 mg/dL, LDL 123 mg/dL, HDL 48 mg/dL, TGO/AST 54 U/L, TGP/ALT 53 U/L, glycemia 85 mg/dL, HbA1C 5.1%, insulin 22 µU/mL, normal thyroid and kidney functions. At the pelvic ultrasound, the uterus was pyriform in shape and 6.9 cm³ (3.1 x 0.9 x 2.4 cm), the right ovary was 3.3 cm³ and the left ovary was 1.7 cm³. The abdominal ultrasound showed no alterations. The bone age radiograph was compatible with a 14-year-old. The G-band karyotype confirmed Turner's syndrome (45,X). **Discussion:** Turner's syndrome (TS) is a genetic condition characterized by complete or partial monosomy-X chromosome that affects about 1 in every 2,500 girls. The clinical presentation is variable and often includes short stature, hypergonadotropic hypogonadism, and a variety of phenotypic features, such as a webbed neck and cubitus valgus. Children with TS can have a significant improvement in final height, especially if there is early intervention with growth hormone (GH). The patient's age at the start of treatment is the main predictor of a better response to GH treatment. Patients with TS also have a higher risk of cardiovascular complications, dyslipidemia and insulin resistance, as well as incomplete development of secondary sexual characteristics, with a consequent worsening of self-esteem, increasing the risk of isolation and anxiety. All these comorbidities should be assessed. **Final comments:** Early diagnosis of TS allows for the implementation of targeted therapies that can significantly improve quality of life and health outcomes. Therefore, it is essential to raise awareness about TS clinical conditions among the population, especially medical professionals. **Keywords:** Turner's syndrome; late diagnosis; short stature.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1622

BONE HEALTH IN TRANSGENDER ADOLESCENTS TREATED WITH GNRH ANALOGUES AND SUBSEQUENT GENDER-AFFIRMING HORMONE THERAPY: A SYSTEMATIC REVIEW

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Introduction: Pubertal suppression in transgender adolescents with gonadotropin-releasing hormone analogues (GnRHa) aims to delay unwanted secondary sexual characteristics, allowing for subsequent gender-affirming hormone therapy (GAHT). However, this intervention can significantly impact bone health. During puberty, there is a substantial increase in bone mass, crucial for long-term skeletal health. GnRHa pubertal suppression may disrupt this process, potentially affecting bone mineral density and increasing the risk of future osteoporosis. Therefore, understanding the effects of these treatments on bone health is essential to guide appropriate medical interventions and promote healthy development in transgender adolescents. **Objectives:** To analyze the effects of treatment with GnRHa and subsequent GAHT on the bone health of transgender adolescents. **Patients (materials):** Adolescents diagnosed with gender dysphoria. **Methods:** We searched the PubMed, Embase, and Web of Science databases for observational studies and randomized clinical trials analyzing the effects of puberty suppression with GnRHa followed by GAHT on bone health in transgender adolescents. The main outcomes were bone mineral density (BMD), BMD z-scores, and body mass index (BMI). Two independent authors applied eligibility criteria and extracted data according to PRISMA and Cochrane recommendations. **Results:** A sample of 6 observational studies was obtained with a total of 728 patients, of which 481 were trans boys. The average follow-up time was 2 years. Decreases in BMD and BMD z-scores during GnRHa treatment were observed in both trans boys and trans girls, followed by an increase after 24 months of treatment with GAHT, especially in the lumbar spine. Z-scores normalized in trans boys but remained below zero in trans girls. Patients who started treatment during early puberty showed better results in bone development than those who started at mid or late puberty. Increased BMI was more expressive in trans boys. **Conclusion:** Pubertal suppression with GnRHa followed by GAHT in transgender adolescents may negatively impact bone health, initially reducing BMD with some recovery over time. Early interventions during puberty may be crucial in mitigating these effects. Additionally, longer-term studies are necessary to fully understand the enduring effects of GAHT in transgender youth, including potential differences between those who received GnRHa and those who did not. **Keywords:** transgender; bone health; treatment.

DIABETES MELLITUS

1623

EFFICACY AND SAFETY OF THE COMBINATION OF SGLT2 INHIBITORS AND PIOGLITAZONE IN THE MANAGEMENT OF THERAPEUTIC INERTIA IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW

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Introduction: Therapeutic inertia in the treatment of type 2 diabetes mellitus (T2DM) is an emerging concern, leading to complications. Combinations including SGLT2 inhibitors and pioglitazone, an insulin sensitizing agent, can enhance therapeutic effects and reduce the risk of adverse effects observed with isolated use. **Objective:** To evaluate the efficacy and safety of the combination of SGLT2 inhibitors and pioglitazone in patients with T2DM through a systematic review. **Materials and methods:** A search was conducted in the PubMed database using the descriptors: (Type 2 Diabetes) AND ((SGLT2 Inhibitors) OR (sodium-glucose transporter 2 inhibitors)) AND (Pioglitazone), with a filter for randomized clinical trials. The search resulted in 27 articles, of which 5 were included that evaluated the combined use of pioglitazone and SGLT2 inhibitors. Articles that analyzed the drugs in isolation or by direct comparison were excluded. **Results:** The combination of dapagliflozin and pioglitazone was effective in reducing HbA1c, with an average decrease of up to 1.4% compared to the isolated use. Additionally, this combination was superior in mitigating the weight gain associated with pioglitazone, with patients showing an average weight reduction between 0.7 and 1.4 kg over 48 weeks. The combination resulted in a significant reduction in the daily insulin dose required in poorly controlled T2DM patients, without a significant increase in plasma ketone concentration, contrasting with the increase observed with isolated dapagliflozin. The safety of the combination was supported by a low incidence of hypoglycemia and serious adverse events, such as genital and urinary infections. Edema events were less frequent in the dapagliflozin plus pioglitazone group compared to the placebo plus pioglitazone group. Additionally, canagliflozin, another SGLT2 inhibitor, showed similar efficacy, with significant reductions in HbA1c, body weight, and blood pressure in patients treated with metformin and pioglitazone over 52 weeks. There were no significant reports of congestive heart failure or bone fractures. **Conclusion:** The combination of SGLT2 inhibitors and pioglitazone offers an effective and safe therapeutic approach for managing T2DM, especially in patients with inadequate glycemic control with pioglitazone monotherapy. **Keywords:** drug therapy; treatment; clinical inertia.

DIABETES MELLITUS
1624

HNF4A-MODY: GENETIC INSIGHTS AND CLINICAL IMPLICATIONS IN A PEDIATRIC CASE

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Case report: An 11-year-old female presented to the medical clinic in 2021 with reports of weakness, polyphagia, decreased visual acuity, and polyuria. Her initial fasting blood glucose (FBG) was 205.9 mg/dL, and her glycated hemoglobin (HbA1c) was 10.2%. She was diagnosed with diabetes mellitus, most likely type 1, and was treated with diet, metformin, and gliptin due to her mother's refusal to start insulin therapy. After three months, there was symptomatic improvement, with FBG of 160 mg/dL and HbA1c of 7.3%. In 2023, the patient attended an endocrinology follow-up and was asymptomatic with good glycemic control. Her mother, who is also diabetic, reported that her daughter was born full-term and was large for gestational age and macrosomic. Additionally, three prior generations of the patient's family had early diagnoses of diabetes mellitus, both type 1 and type 2. All those diagnosed began treatment with oral antidiabetics and eventually progressed to insulin therapy. Given this family history, the possibility of MODY (Maturity-Onset Diabetes of the Young) type diabetes was considered. The patient's data were entered into the MODY Probability Calculator, which indicated a 75.5% chance of having MODY. Subsequently, the patient and seven other family members already diagnosed with diabetes mellitus opted for genetic testing. All were diagnosed with autosomal dominant MODY, associated with the *HNF4A* gene, chromosomal position chr20: 42,984,494; variant NM_175914.4; c.48C>G:p. (Tyr16*); heterozygosity 51.67%; pathogenic classification. With this diagnosis, diabetes treatment was optimized using sulfonylureas for those not yet on insulin, and insulin dose optimization for those already receiving insulin. After three months, the family achieved clinical improvement and glycemic control. **Discussion:** MODY is an underdiagnosed form of diabetes and is often mistaken for other types of diabetes mellitus. One of its subtypes, MODY-HNF4A, results from heterozygous pathogenic variants of the *HNF4A* transcription factor. Warning signs include diagnosis before the age of 25, a family history of diabetes spanning at least three generations, good initial response to sulfonylureas, neonatal macrosomia, and hypoglycemia at birth. **Final comments:** MODY should be more widely recognized within the medical community to reduce underdiagnosis, optimize treatment, and improve the quality of life for patients diagnosed with diabetes. **Keywords:** HNF4A-MODY; monogenic diabetes; maturity onset diabetes mellitus.

DIABETES MELLITUS
1628

HIGH PREVALENCE OF ADVANCED HEPATIC FIBROSIS IN PATIENTS WITH TYPE 2 DIABETES FOLLOWED UP IN AN ENDOCRINOLOGY AND METABOLOGY SERVICE IN SOUTHERN BRAZIL

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Introduction: Metabolic dysfunction-associated steatotic liver disease (MASLD) corresponds to the deposition of hepatic fat of more than 5% of the liver weight, with insulin resistance being the main precipitating factor for this disease, which explains its increased prevalence in patients with diabetes mellitus type 2. Clinically, MASLD varies from simple hepatic steatosis to cirrhosis, which can progress to hepatocellular carcinoma. In this sense, transient hepatic elastography is a practical and non-invasive method, capable of evaluating organ fibrosis, precisely the main prognostic factor of the disease. The result of this examination is obtained through the average of at least 10 valid measurements which, following the METAVIR classification, is graded in fibrosis from F0 to F4, in which F0 corresponds to the absence of fibrosis and F4 to already established cirrhosis. From F2 onwards, fibrosis becomes clinically significant, while F3 is considered advanced fibrosis. **Objective:** To evaluate the prevalence of MASLD and liver impairment (clinically significant liver fibrosis) in patients with type 2 diabetes, being monitored in an Endocrinology and Metabology Service in southern Brazil. **Methods:** A quantitative descriptive research was carried out with 130 individuals between the months of October and December 2023. Of these, 8 were excluded from the analysis due to the technical impossibility of performing elastography. Of the remaining 122, 81 have type 2 diabetes, 33 have type 1 diabetes and 3 have latent autoimmune diabetes in adults (LADA). The data obtained were stored in Microsoft Excel and logistic regression was performed in STATA. **Results:** Of the 81 participants with type 2 diabetes, 37 (45.67%) had some degree of clinically significant fibrosis (F2 to F4), with 21 (25.92%) classified as having advanced fibrosis (F3 and F4) and 10 participants (12.34%) were classified as having liver cirrhosis (F4). Furthermore, in multivariate logistic regression, increased waist circumference was a risk factor for clinically significant fibrosis (odds ratio = 1.10; p = 0.001). **Conclusion:** Increased abdominal circumference is a risk factor for clinically significant fibrosis in patients with type 2 diabetes, who have a high prevalence of advanced fibrosis and cirrhosis, justifying the need for specialized monitoring of these individuals. New analyzes with laboratory and bone densitometry indicators will be carried out later. **Keywords:** liver cirrhosis; elastography; diabetes mellitus.

DISLIPIDEMIA E ATEROSCLEROSE

1630

BRIEF EVOLUTION OF FAMILIAL PARTIAL LIPODYSTROPHY TYPE 2 COMPLICATIONS: A CASE REPORT

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Case report: P.S.R., female, began follow-up with endocrinology at 17 years old. She was diagnosed with diabetes mellitus (DM) at the age of 12, asymptomatic. She had severe hypertriglyceridemia and acute pancreatitis at 15. By physical examination, loss of adipose tissue in the limbs and excess in the chin were noted, as well as pseudo-hypertrophy of the calves and phlebomegaly. There was a paternal history of a similar phenotype, suspecting familial partial lipodystrophy type 2. Over time, she was hospitalized 12 times due to severe hypertriglyceridemia, despite treatment. At 27, she was diagnosed with advanced diabetic retinopathy. After 4 years without follow-up, she returned with angina, syncope, worsening vision and renal function. Tests revealed persistent hypertriglyceridemia and renal dysfunction, suggesting progressive diabetic nephropathy, confirmed by kidney biopsy, and also three-vessel coronary artery disease. Myocardial revascularization surgery and hemodialysis were performed. **Discussion:** FPLD2 is a rare and still underdiagnosed condition. It is an autosomal dominant disease that affects the *LMNA* gene and presents with a florid clinical spectrum. In addition to the redistribution of adipose tissue, insulin resistance and hypertriglyceridemia are present, with dyslipidemia being more prevalent and severe in women. Laminopathies can manifests with renal dysfunction aggravated by poor DM control and ectopic triglyceride deposition. In the report, there is progressive worsening of proteinuria and renal function, besides biopsy compatible with rapidly progressive diabetic nephropathy. The pathogenic *LMNA 482* variant is associated with the early development of DM and greater severity of cardiomyopathies. Guidorizzi *et al.* has shown one-third of deaths in a FPLD population were due to cardiac issues, with the majority individuals carrying *LMNA 482* variant. On them, atheromatosis begins before the age of 45, associated with electrical conduction disturbances and cardiomyopathy. The reported patient has this variant and after 4 years without adequate follow-up and treatment, developed three-vessel coronary artery disease and underwent myocardial revascularization at the age of 34. **Conclusion:** Although this is a case of early and unfavorable outcomes, the need of intensive screening of complications related to lipodystrophy is reinforced, fostering the development of a specific form of comorbidities' investigation and treatment in these patients.
Keywords: familial partial lipodystrophy; cardiovascular disease; hypertriglyceridemia.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1631

CLINICAL AND IN SILICO PREDICTIVE ANALYSIS OF ANDROGEN INSENSITIVITY SYNDROME: GENOTYPES VERSUS PHENOTYPES CORRELATION

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Introduction: Androgen Insensitivity Syndrome (AIS) is a 46,XY Disorder of Sex Development (DSD). Pathogenic variants in the Androgen Receptor (AR) lead to different phenotypes, known as complete androgen insensitivity (CAIS), partial (PAIS), and mild (MAIS). **Objective:** To analyze the effect of variants in the AR protein and perform the genotype *versus* phenotype correlation. **Patients and methods:** Patients from the Clinical Genetics Service of a university hospital with 46,XY karyotypes, complete sequencing of the AR gene, and pathogenic alterations in the respective gene were selected. Syndromic DSD cases were excluded. Predictive analysis of the variants was performed using bioinformatics programs. **Results:** Applying the inclusion and exclusion criteria, three unrelated patients were selected. Predictive analyses revealed the following results: the p.Ala475Val alteration was classified as benign. This alteration was identified in a 10-year-old patient who presented the clinical phenotype of PAIS, with the phallus measuring 32 mm in length and 0.6 mm in diameter, a history of bilateral gonadectomy, and using oral estrogen. This variant is associated with less severe phenotypic alterations. The p.Asp696Asn alteration, classified as pathogenic, was identified in a 13-year-old female patient with female external genitalia, absence of thelarche, and incipient pubarche, classified with a clinical phenotype of CAIS. The p.Gln868* alteration, classified as likely pathogenic, was identified in a patient with female external genitalia, sparse pubic hair at 22 years old, and a history of inguinal herniorrhaphy, with clinical characteristics of CAIS. **Conclusion:** Molecular investigation of AIS is essential for diagnosis elucidation and early treatment, which may include hormone replacement, genitoplasties, and corrective surgeries. A detailed evaluation of hormonal profile and phenotypic characteristics contributes to understanding the effect of variants in the AR protein. Finally, predictive analysis helps understand the impact of alterations in the affected protein and its underlying biochemical reflections, essential for personalized treatment.
Keywords: androgen insensitivity syndrome; androgen receptor; predictive analysis.

TIREOIDE
1632

THYROID EYE DISEASE IN A HYPOTHYROID PATIENT: A RARITY IN THE SPECTRUM OF THYROID AUTOIMMUNE DISEASE

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Case presentation: A 56-year-old Caucasian male was diagnosed with hypothyroidism in 2017 after presenting with bilateral eye pain and a sensation of a foreign body in both eyes. Initial lab results showed Free T4 (T4L) at 0.23 ng/dL (reference range: 0.61-1.48) and TSH at 150 mIU/L (reference range: 0.34-5.1). A thyroid ultrasound revealed a heterogeneous echotexture with a total volume of 23 mL. He began levothyroxine (LT4) at 25 µg/day with progressive dose increases. At LT4 100 µg, TSH was 7.92 mIU/L, T4L was 1.15 ng/dL, and he tested positive for antithyroglobulin antibodies (AATg) at 4,000 IU/mL (<115), antithyroid peroxidase antibodies (AATPO) at 600 IU/mL (3-24), and anti-thyrotropin receptor antibodies (TRAb) at 14.93 U/L (<1.5). Despite treatment, his TSH was 0.52 mIU/L, and T4L was 1.08 ng/dL, with worsening ocular symptoms. The physical examination showed a Clinical Activity Score (CAS) of 2 and increased right proptosis. Orbital MRI confirmed Graves' orbitopathy (GO) with enlarged extraocular muscles (EOM) and bilateral proptosis. Prednisone 30 mg/day for 30 days was ineffective. In January 2019, he received 10 sessions of retroocular radiotherapy (RT) totaling 2,000 cGy, which improved his visual complaints. Post-procedure, on LT4 100 µg, his TSH was 5.14 mIU/L, T4L was 1.21 ng/dL, TRAb was negative, and thyroid volume reduced to 4.3 mL. Orbital MRI four years post-RT showed reduced EOM dimensions with residual enhancement, indicating possible residual inflammatory activity but asymptomatic (CAS 0). **Discussion:** GO is typically linked with hyperthyroidism from Graves' disease and rarely occurs with primary hypothyroidism from Hashimoto's thyroiditis (TH), with an incidence of 2%-7.5%. This case presents concurrent moderate TH and GO. GO pathogenesis involves stimulatory TRAb acting on TSH receptors of orbital fibroblasts, causing inflammation and tissue infiltration. Despite positive TRAb, the patient developed hypothyroidism and GO, suggesting the coexistence of both stimulatory and inhibitory TRAb at diagnosis (predominance of the latter). In a study of 44 TH and GO patients, 68,2% had positive stimulatory TRAb. Treatment for GO in hypothyroid patients is not well-defined in the literature, with suggestions including maintaining euthyroidism, oral glucocorticoids, and ocular radiotherapy for moderate cases, as in the present report. **Conclusion:** This case underscores the rarity of this condition and the need for further research. **Keywords:** anti-thyrotropin receptor antibodies (TRAb); thyroid autoimmune disease; Graves' orbitopathy.

TIREOIDE
1634

ACUTE DRUG HEPATITIS IN A PREGNANT WOMAN WITH HYPERTHYROIDISM TREATED WITH PROPYLTHIOURACIL: CASE REPORT

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Case presentation: C.A.D., a 27-year-old female, G2P1A0, 24 weeks pregnant, undergoing high-risk prenatal care due to Graves' disease and hypertension. She had a previous history of hyperthyroidism treated with methimazole 5 mg/day, which was replaced by propylthiouracil (PTU) 100 mg/day upon discovering the pregnancy at 6 weeks. At 24 weeks, she was transferred to the hospital due to jaundice, choluria, fecal acholia and pruritus. On admission: T4L 1.96 ng/dL (0.7-1.2), AST 1422 U/L, ALT 1684 U/L, and total bilirubin 10.7 mg/dL (direct bilirubin 6.7 mg/dL). She was taking PTU, Methyldopa, Ferrous Sulfate, Aspirin, and Calcium, all of which were discontinued due to suspected drug-induced hepatitis. Abdominal ultrasound, MRI cholangiography, viral serology, and investigations for other liver diseases (ceruloplasmin, alpha-1-antitrypsin, anti-LKM1, anti-mitochondria, anti-smooth muscle, and ANA) showed no abnormalities. After stopping PTU, she developed signs and symptoms of thyrotoxicosis and lab results were: TSH <0.01 ng/dL, T4L 6.20 ng/dL, T3L 16.2 pg/mL (2.77-5.27), Anti-thyroglobulin 611.75 UI/mL (< 4.11), anti-TPO 4202.16 UI/mL (<5.61), and TRAB 40 U/L (<1.75). Liver function and symptoms of cholestatic syndrome gradually improved after discontinuing PTU. Given the severe thyrotoxicosis during pregnancy, and contraindications to drug treatment, the patient underwent total thyroidectomy after administration of beta-blockers and Lugol's solution. There were no severe complications, except for transient hypoparathyroidism. **Discussion:** This case demonstrates the risks of using PTU, even in low doses, during pregnancy. The transition from PTU to methimazole from 16 weeks onwards, as recommended by current literature, is necessary. In this context of pregnancy associated with severe hyperthyroidism and liver disease induced by antithyroid drugs, total thyroidectomy proved to be the only viable treatment option, despite the risks of pregnancy loss, thyrotoxic crisis, and prematurity. This therapy is rarely used for the treatment of hyperthyroidism during pregnancy, and radioiodine therapy is contraindicated due to the risk of congenital anomalies, ablation of fetal thyroid tissue, and consequent damage to neurocognitive development. **Final comments:** The importance of an individualized and multidisciplinary approach in a reference center specialized in managing thyroid diseases during pregnancy is highlighted, given the particularities and risks involved. **Keywords:** drug hepatitis; propylthiouracil; hyperthyroidism.

ADRENAL E HIPERTENSÃO

1635

DIFFICULTY IN DIAGNOSING PHEOCHROMOCYTOMA IN A PATIENT WITH PANHYPOPITUITARISM

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Case presentation: Five years ago, a 56-year-old man was referred to our service. He had been diagnosed with a psychotic disorder for two decades and was taking aripiprazole 10 mg, olanzapine 5 mg, and haloperidol 5 mg. At the age of 35, he was diagnosed with a clinically non-functioning pituitary macroadenoma, presenting with visual impairment. Following transsphenoidal surgery and radiotherapy, he developed bilateral blindness and hypopituitarism (secondary hypothyroidism, hypogonadotropic hypogonadism, adrenal insufficiency, and diabetes insipidus), for which appropriate hormonal replacement therapy was initiated. In July 2019, the patient experienced a hypertensive spike of 180/140 mmHg associated with syncope, leading to the initiation of antihypertensive therapy. Subsequently, he experienced uncontrolled blood pressure, oscillating between 160/100 mmHg and 90/50 mmHg, despite daily use of optimized doses of olmesartan, hydrochlorothiazide, and metoprolol. Additionally, he presented with cold sweats, tremors, tachycardia, and recurrent episodes of abdominal pain and syncope. In December 2020, due to persistent unilateral abdominal discomfort, an abdominal CT scan was performed, revealing a left adrenal incidentaloma measuring 4.5 x 3 cm. Urinary and plasma metanephrine levels were elevated, confirming the diagnosis of pheochromocytoma, and the patient was referred to our service. After adequate preoperative preparation, he underwent a left adrenalectomy without complications. **Discussion:** The presence of classic symptoms of pheochromocytoma, such as headache, sweating, palpitations, and paroxysmal hypertension, typically contributes to its diagnosis. However, this patient presented with nonspecific and atypical symptoms, including syncope, abdominal pain, blood pressure oscillations, and tremors, which were previously attributed to panhypopituitarism or psychiatric conditions and medications. The blood pressure fluctuations in this case can be explained by the overlap of hypopituitarism symptoms with those of pheochromocytoma. While glucocorticoids and antipsychotics could potentially influence metanephrine levels, contributing to diagnostic uncertainty, this was not the primary factor in this case. **Final comments:** This case underscores the importance of considering pheochromocytoma in differential diagnoses, even when symptoms are non-classical and the patient has other comorbidities that may obscure the diagnosis.
Keywords: pheochromocytoma; hypopituitarism; adrenal.

ADRENAL E HIPERTENSÃO

1636

RECURRING PARALYSIS EPISODES AS A CLINICAL MANIFESTATION OF PRIMARY HYPERALDOSTERONISM

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34-year-old woman, eutrophic, reported in the past 4 years a condition of persistent arterial hypertension despite use of losartan and hydrochlorothiazide. In addition, she presented with recurring paresthesia episodes in face and extremities, with periods of weakness in the limbs. Initially, the episodes occurred every six months, with 2 to 4 days of duration and spontaneous remission, developing in frequency, duration and intensity. She complained of muscular cramps and involuntary contractions of the fingers. She had been previously evaluated in urgency and emergency units and in primary care, without an established diagnosis. During her last hospitalization for acute tetraparesis, she showed 1,7mmol/L potassium levels and 160x90mmHg blood pressure. The hypothesis of hypokalemic periodic paralysis secondary to hyperaldosteronism was raised. Dosed seric aldosterone resulted in 30,4 ng/dL associated with a renin plasmatic activity of 0,09 ng/mL/hour. As differential diagnoses, Sjogren syndrome, primary channelopathies and thyroid dysfunctions were discarded. In clinical management, spironolactone 50 mg/day and losartan 100 mg/day were prescribed, with normalization of the blood pressure. Proceeding the etiologic investigation, a computed tomography of the adrenal glands revealed a nodule of 1.6 cm in the right adrenal gland. Due to the unavailability of the renal arteries catheterism, videolaparoscopic right adrenalectomy was recommended, with 5.6 ng/dL post-operative aldosterone levels. The anatomopathological examination confirmed an adrenal adenoma of 1.0 cm. After the surgery, all antihypertensive medication was interrupted on account of the normalization of blood pressure and kalemy. Primary hyperaldosteronism is present in up to 8% to 10% of hypertensive patients. In face of a hypertension diagnosis, especially among young patients, a risk stratification that explains the clinical presentation is essential, since there are secondary causes that are liable to interventions. The triad arterial hypertension, paresthesia and hypokalemia indicates the possibility of hyperaldosteronism, although hypokalemia presents in 50% of the cases. When there is a high suspicion of primary hyperaldosteronism accompanying a unilateral nodule, the surgical conduct is indicated, as the renal arteries catheterism is unavailable in many facilities. The early diagnosis is key to clinical healing before the establishment of sequelae, mainly cardiac remodeling and atherogenesis.
Keywords: hyperaldosteronism; hypokalemia; paresthesia.

OBESIDADE

1638

EVALUATION OF OBESITY DIAGNOSIS IN A TERTIARY UNIVERSITY CENTER: A RETROSPECTIVE STUDY

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Introduction: Obesity is a disease with multifactorial etiology associated with inflammatory, humoral, mechanical and endocrine changes in the body. Furthermore, obesity is directly related to the increase in morbidity and mortality of this population and negative psychosocial and economic impacts on these individuals. However, despite its magnitude, obesity often appears not to be adequately addressed. **Objective(s):** Evaluate the diagnosis and management of obesity in a tertiary university center. **Methods:** Observational cross-sectional study with data obtained through the retrospective analysis of 606 medical records referring to the care of adult patients in a tertiary university center (internal medicine, cardiology, endocrinology, rheumatology and gastroenterology), completed between February and December 2022. **Results:** Of the total sample evaluated, anthropometric data was recorded only in 29% of cases. Of these, the diagnosis of obesity was indicated in 118 medical records, with ICD E66 recorded in 6.43% of patients. Of the individuals with obesity, 22% were diagnosed with grade I obesity, 12% with grade II obesity and 15% with extreme obesity. After diagnosis, 49% of patients received proposed management interventions, of which diet was prescribed for 34%, regular physical activity for 33%, referral to a nutritionist and/or endocrinologist for 24% and drug treatment for 12%. Finally, it was found that in 28% of cases obesity was presented as a specific complaint. **Conclusion:** Existence of underreporting of the diagnosis of obesity and probable unpreparedness of professionals to efficiently manage the pathology, with frequent adoption of unifocal therapy, through guidance on changing lifestyle habits, as the only treatment proposal for patients affected by obesity. From an epidemiological point of view, this finding may be related to important repercussions, such as the reduction of governmental prioritization in the creation of public health policies focused on combating obesity, which is an important barrier in the management of the pathology. **Keywords:** obesity; diagnosis; treatment.

NEUROENDOCRINOLOGIA

1639

MCCUNE-ALBRIGHT SYNDROME ASSOCIATED ACROMEGALY: A CASE REPORT

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Patient O.J.M., male, 47 years old, with past medical history of SAH and DM, was initially referred to otorhinolaryngology due to a tumor in the nasal region and hyposmia that had been progressing for 20 years, with progressive worsening of symptoms. He also reported a tumor in the anterior thoracic region with a similar evolution. After initial evaluation of imaging tests by the otorhinolaryngology team, he was referred to endocrinology for a better assessment of the condition due to suspicion of fibrous dysplasia in the facial skeleton. On physical examination, there were no café-au-lait macules; however, there was enlargement of the extremities and widening of the base of the nose, in addition to the nasal tumor. Following the investigation, a bone scintigraphy was performed, revealing a diffuse hyperconcentrated area with a heterogeneous appearance in the nasal region, jaw, costal arches, arms, scapulae and femur. The main diagnostic hypothesis was polyostotic fibrous dysplasia of bone (FD). Laboratory results showed increased levels of IGF-1 (672 ng/mL) and GH (6.72 ng/mL), as well as an elevated total prolactin level (over 200) and diluted prolactin of 227. An MRI of the pituitary gland revealed an oval hypointense lesion in the adenohypophysis, measuring 1.7 cm. Due to the association of FD and Acromegaly, the patient was diagnosed with McCune-Albright Syndrome (MAS). Pamidronate was initiated as treatment for FD. Regarding acromegaly, lanreotide 90 mg was started due to the challenge of performing pituitary surgery on the patient, given the bone disease component of the syndrome. Currently awaiting progression and follow-up to assess the response to the instituted therapy. McCune-Albright Syndrome is characterized by the combination of polyostotic fibrous dysplasia, café-au-lait macules and hyperfunctioning endocrinopathies. Acromegaly is present in approximately 20% of cases. It's important to conduct laboratory investigations for acromegaly in patients with FD, as the bone disease can mask facial changes compatible with acromegaly. Pituitary surgery for the treatment of acromegaly in these cases is extremely technically challenging, given the thickness of the dysplasia in the cranial region and the existing risk of hemorrhage due to the high vascularization of the area. Therefore, medication therapy, unlike cases of acromegaly without associated bone disease, is the treatment of choice. **Keywords:** McCune-Albright syndrome; acromegaly; polyostotic fibrous dysplasia of bone.

TIREOIDE

1647

CASE REPORT: PLEURAL EFFUSION IN A PATIENT WITH PAPILLARY THYROID CARCINOMA, LUNG METASTASES AND RADIODINE TREATMENT

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Case presentation: A 65-year-old female with a history of papillary thyroid carcinoma underwent total thyroidectomy and cervical lymph node dissection followed by radioiodine therapy in 2018. She continued clinical follow-up with an endocrinologist and, after three years, exhibited an elevated serum thyroglobulin level. Due to financial reasons, the patient lost medical follow-up. In 2022, new staging CT scans demonstrated bilateral lung metastases, and radioiodine therapy was indicated. Shortly after the treatment, the patient began to experience symptoms of asthenia, dyspnea, and cough. She sought emergency care due to worsening dyspnea. An X-ray showed a massive left pleural effusion. Before receiving iodine, the patient had no symptoms of respiratory disease. One week before the treatment, a thoracic X-ray showed the contours of the left and right diaphragm visible and no signs of pleural effusion. A scintigraphy after radioactive iodine therapy showed radioisotope uptake in the thoracic region in the lung topography bilaterally, more intense on the left. She underwent thoracentesis with drainage of 1,250 mL of serosanguinous fluid, which upon analysis identified papillary carcinoma cells and showed highly elevated levels of thyroglobulin at 6,296 ng/mL. The patient's serum thyroglobulin levels were 253 ng/mL. **Discussion:** Papillary thyroid carcinoma (PTC) is the most common thyroid neoplasm with a 95% 10-year survival rate. Approximately 30% to 40% of PTC cases metastasize to regional lymph nodes, with distant metastases to the lungs, skeleton, and central nervous system occurring in 1%-4% of patients. Rarely, metastasis to the pleura can occur, presenting as malignant pleural effusion diagnosed by pleural fluid cytology. Radioactive iodine therapy is indicated in PTC patients post-thyroidectomy, particularly in cases of distant metastases. Complications related to radioiodine therapy are typically associated with I-131 toxicity, with common side effects including sialadenitis, dysgeusia, neck pain, and pulmonary fibrosis. However, we report a case of pleural effusion shortly after radioiodine therapy for lung metastasis, an uncommon finding not extensively described. Assessment of thyroglobulin levels in pleural effusion, while not routine, has been documented in the literature. **Final comments:** We present an unusual case of PTC treated with thyroidectomy, followed by late lung metastases and subsequent pleural effusion after radioactive iodine therapy. **Keywords:** papillary thyroid carcinoma; radioactive iodine therapy; malignant pleural effusion.

NEUROENDOCRINOLOGIA

1648

CHRONIC DIARRHEA AS THE INITIAL PRESENTING SYMPTOM OF MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 (MEN1)

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Introduction: MEN1 is a rare autosomal dominant disorder with a prevalence of 1:10,000 to 1:30,000 individuals. The classical clinical presentation consists of parathyroid hyperplasia, pancreatic neuroendocrine tumors (NETs) and pituitary tumors. We aim to describe two patients who had chronic diarrhea as the initial presentation of MEN1. **Case 1:** A 49-year-old woman with an ongoing investigation of chronic diarrhea for four years was admitted for diagnostic evaluation. Diagnosis of Zollinger-Ellison syndrome (ZES) was made, with fasting serum gastrin level of 2,580 pg/mL (RR < 105 pg/mL) and esophagogastroduodenoscopy showing a 2 cm elevated lesion covered by normal mucosa. This prompted investigation of other endocrinopathies, which revealed PTH-dependent hypercalcemia and a 3,2cm pancreatic nodule on abdominal CT. These findings are compatible with MEN1, and genetic testing confirmed the diagnosis with the following germline MEN1 mutation c.1087G>T (p.E363*). Her symptoms improved with PPIs, and the pancreatic lesion and hyperparathyroidism were treated surgically. **Case 2:** A 30-year-old woman presented to the clinic with a history of chronic diarrhea for 2 years accompanied by a weight loss of 23 kg during that time. Initial diagnostic evaluation for diarrhea was inconclusive. ZES was considered due to a basal gastrin level of 511 pg/mL and she was started on PPIs (omeprazole 80 mg daily). She responded well clinically to PPIs, leading to a diagnosis of ZES. Additionally, the patient presented with PTH-dependent hypercalcemia and a prolactinoma, suggesting a hypothesis of MEN1. Genetic testing confirmed a positive result for mutation c.201_201delC (p.A68Pfs*51). **Discussion:** MEN1 is a rare and challenging disorder and diagnostic delay may occur due to non-specific symptoms. Gastrinomas are the most frequent functioning gastrointestinal NETs, occurring in 40% of patients with MEN1, and are mainly found in the duodenum but may also arise in the pancreas. Diagnosis can be made with gastrin greater than 10 times the upper limit. The increased acid secretion leads to decreased absorption of sodium and water from the intestinal lumen and inactivation of pancreatic enzymes, causing diarrhea. Benya *et al.* reported in 1994 that up to 30% of patients with ZES and MEN1 can initially present with ZES without any other concurrent endocrinopathies, therefore clinical suspicion of the syndrome is necessary in patients with chronic diarrhea without any other apparent etiology. **Keywords:** MEN1; gastrinoma; chronic diarrhea.

TIREOIDE

1649

AUTOIMMUNE CEREBELLITIS AS A RARE CLINICAL MANIFESTATION OF THYROTOXIC CRISIS DUE TO GRAVES' DISEASE: A CASE REPORT

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Female patient, 16 years old, entered the emergency room of a hospital with agitation, tachycardia, tremors and a diffuse painless goiter. She has a previous story of hyperphagia, diarrhea, chest pain, hair loss, irritability and weight loss. Due to clinical presentation, the hypothesis of thyrotoxic crisis was made. Laboratory tests detected TSH < 0.008 IU/mL, free T4 7.73 ng/dL and total T3 221 ng/dL. Treatment for thyrotoxic crisis was started with attack and maintenance dose of propylthiouracil, alongside with hydrocortisone and propranolol. After 3 days, she began to present emotional lability, ataxia, slurred speech and infantilization. An investigation for these symptoms was made, and evidence of changes in cerebellar cortex suggestive of inflammatory impairment (autoimmune cerebellitis) were observed in the Magnetic Resonance Imaging of the skull. Clinical improvement was demonstrated after therapy with prednisone had begun. Patient remained hospitalized for 12 days, and was discharged with methimazole 30 mg daily, propranolol 40 mg 6/6h and prednisone 60 mg daily. On outpatient follow up, there was no evidence of thyroid or neurological decompensations. Thyroid diseases can precipitate various signs and symptoms, including neurological changes, which can be caused both by hypothyroidism and, less commonly, by hyperthyroidism. Neurological symptoms presented during thyrotoxicosis include tremors, emotional lability, seizures, corea, peripheral neuropathies and, rarely, encephalopathy. There are few reported cases of thyrotoxic encephalopathy in the literature which makes it challenging to identify. In this reported case, the patient was diagnosed with autoimmune cerebellitis due to thyrotoxicosis, showing complete improvement after treatment with corticotherapy and antithyroid drug. Studies suggest that thyroid antigens may play an important role in the pathogenesis of encephalopathy in triggering an immune reaction. Therefore, the neurological symptoms present a good response to the treatment of thyrotoxicosis as shown in the case above. Thyrotoxic crisis is a serious and potentially fatal complication of decompensated hyperthyroidism, requiring high diagnostic suspicion and immediate treatment when identified. In this case report, we describe an unusual neurological manifestation of thyrotoxicosis. **Keywords:** thyrotoxicosis; cerebellitis; thyrotoxic encephalopathy.

NEUROENDOCRINOLOGIA

1650

DIAGNOSIS OF ARGININE VASOPRESSIN DEFICIENCY WITH SERUM COPEPTIN IN A PATIENT WITH EXTENSIVE PREVIOUS INVESTIGATION WITHOUT AN ESTABLISHED DIAGNOSIS: CLINICAL CASE REPORT

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A female patient, 16-yrs-old, has presented with polydipsia, polyuria, nocturia, and urinary incontinence since the age of 6-yrs-old. Diagnosed with anxiety disorder, pre-diabetes mellitus and obesity. She underwent investigation at the pediatric endocrine, including two water restriction tests, with results not suggestive of arginine vasopressin (AVP) deficiency (AVPD). Several laboratory tests over the years have revealed serum sodium at upper borderline levels and urinary density at the lower limit of normality. Admitted to the service after being lost to follow-up, she presented significant impairment in her quality of life, especially due to polyuria and nocturia. No history of traumatic brain injury. Recent laboratory tests indicated urinary hyperosmolarity and calciuria1mg in 24-hour urine (volume 6,400 mL). Two main diagnostic hypotheses were considered: AVPD or psychogenic polyuria (PP - Munchausen Syndrome). To differentiate them, stimulated copeptin dosage was measured resulting in 4.4 pmol/L with concomitant sodium of 152 mEq/L. The polyuria-polydipsia syndrome has several differential diagnoses, including AVPD(central diabetes insipidus), AVP resistance (AVPR) (nephrogenic diabetes insipidus), and PP. Differentiating these etiologies in young patients can be challenging due to nonspecific presentation. After excluded history of traumatic brain injury, renal or serious psychiatric diseases that could guide the diagnosis, the copeptin test stimulated with a hypertonic solution have been reported as a tool for the diagnostic. The copeptin is a peptide derived from the same AVP precursor protein, and both have a similar correlation with serum osmolality. However, the copeptin demonstrates greater post-collection stability compared to AVP. In a hyperosmolar environment (Na ≥ 150 mEq/L), stimulated copeptin is expected ≥ 4.9 pmol/L, indicating adequate AVP production. The stimulated copeptin, in this case, results of 4.2 pmol/L and sodium of 152 mEq/L confirmed the AVPD in the patient. Treatment with intranasal vasopressin and etiological investigation were initiated, considering, although rare, the possibility of hereditary forms of the condition. The stimulated copeptin dosage was decisive in confirming the AVPD, with a sensitivity of 93% and specificity of 100%. This test provided a more objective and targeted diagnostic approach, significantly improving the patient's quality of life and preventing future complications. **Keywords:** diabetes insipidus; copeptin; hypernatremia.

DIABETES MELLITUS

1651

GLUCOSE MONITORING TECHNIQUES IN THE TREATMENT OF TYPE 1 DIABETES MELLITUS: A COMPARATIVE ANALYSIS

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Introduction: Type 1 diabetes mellitus (T1DM) is an autoimmune condition causing insulin deficiency due to pancreatic beta-cell destruction, leading to elevated blood glucose levels. Effective management necessitates vigilant disease progression and glucose level monitoring to replace insulin and lower glucose levels. Traditional methods like glucometers may inaccurately read if improperly configured. Newer monitoring technologies such as Continuous Glucose Monitoring (CGM), Insulin Pumps, and Flash Glucose Monitoring Systems enhance treatment, reduce errors, and improve patient convenience. **Objective:** To conduct a comparative analysis of glucose monitoring techniques in Type 1 Diabetes Mellitus treatment, detailing their functionality, accuracy, challenges, and impact on patient quality of life. **Methods:** The review followed the PRISMA guidelines and used the descriptors "flash glucose monitoring system", "insulin pump", and "continuous glucose monitor". Only English-language studies published in the last 6 years were considered. PubMed yielded 23 articles, with 5 selected. **Results:** In comparing glucose monitoring techniques in Type 1 Diabetes Mellitus (T1DM), significant differences were observed. Continuous Glucose Monitoring (CGM) with Multiple Daily Insulin Injections (MDI) and Flash Glucose Monitoring (FGM) with MDI showed similar efficacy but more glycemic variability and prolonged hyperglycemia. The SAP-PLGS system provided more time within the ideal range of 70-180 mg/dL compared to CGM + MDI and FGM + MDI, with predictive functionality for hypoglycemia suspension, enhancing patient safety. Hybrid Closed-Loop (HCL) systems achieved the best outcomes, combining SAP-PLGS with automatic adjustments via algorithms, resulting in increased time within the ideal glucose range and reduced hypoglycemia incidence, albeit requiring initial adaptation and continuous monitoring. Evidence is lacking regarding superiority across different age groups or in comorbid T1DM cases. **Conclusion:** Continuous glucose monitoring in T1DM patients is crucial for improving quality of life. While the glucometer remains standard, newer technologies offer fewer limitations. Both CGM and FGM, combined with MDI, are effective but exhibit extended periods of hyperglycemia. SAP-PGLS offers more time in the ideal glucose range. HCL excels in predicting hypoglycemia, enhancing safety. All these technologies enable multiple improvements in the life quality of T1DM patients. **Keywords:** type 1 diabetes mellitus; insulin; disease.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1652

EFFICACY AND SAFETY OF COMBINED THERAPIES WITH GLP-1 ANALOGS AND METFORMIN, AND SGLT2 INHIBITORS AND METFORMIN COMPARED TO METFORMIN MONOTHERAPY IN PATIENTS WITH POLYCYSTIC OVARY SYNDROME AND OBESITY: A SYSTEMATIC REVIEW

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Introduction: Polycystic ovary syndrome (PCOS) is considered one of the main causes of female infertility, with a wide range of clinical manifestations such as reproductive and metabolic disorders. Clinical and epidemiological data indicate that up to 80% of women with PCOS are overweight or obese. Metformin (Met), the primary monotherapy for PCOS, can improve insulin sensitivity, reduce androgen levels, and enhance ovulation. However, it has little effect on weight reduction. New antidiabetic agents, such as GLP-1 analogs (GLP-1a) and SGLT2 inhibitors (SGLT2i), also promote weight loss, offering other therapeutic options for patients with PCOS and obesity. **Objectives:** This systematic review aims to evaluate the efficacy and safety of combined therapies of Met with aGLP-1 or SGLT2i compared to Met monotherapy in patients with PCOS and obesity, including adverse events and clinical-laboratory effects. **Materials and methods:** We followed the PRISMA guideline to conduct this systematic review. Studies from 2019 to May 2024 were searched in the PubMed, Cochrane, and BVS databases. Only randomized clinical trials were included. The descriptors used were "Polycystic Ovary Syndrome", "obesity", "Sodium-Glucose Transporter 2 Inhibitors", "Glucagon-Like Peptide-1 Receptor Agonists" and "Metformin." After applying inclusion and exclusion criteria and screening abstracts and full texts, 4 studies were selected. Bias analysis was performed using the Jadad Scale. **Results:** We identified 172 women with PCOS, aged 18 to 40, with 86 treated with Met (control group – CG) and 86 with Met combined with aGLP-1 or SGLT2i (intervention group – IG). After 12 weeks, BMI decreased by 0.53% in CG and 3.41% in IG. In laboratory analysis, IG showed a reduction in LH (33.96%), FSH (20.03%), testosterone (31.33%) and an increase in SHBG (28.88%), while CG showed reductions in LH (15.44%), FSH (10.89%), testosterone (17.07%) and an increase in SHBG (16.32%). Adverse effects were mild and mainly gastrointestinal. **Conclusion:** Combined therapy of Met with aGLP-1 or SGLT2i appears more effective than Met monotherapy for women with PCOS and obesity, showing greater BMI reduction and substantial improvements in hormonal levels. However, further studies are needed to evaluate the efficacy and safety of these combined therapies. **Keywords:** polycystic ovary syndrome; glucagon-like peptide-1 receptor agonists; sodium-glucose transporter 2 inhibitors.

MISCELÂNEA

1655

AN UNCOMMON CAUSE OF HYPERCALCEMIA: GRANULOMATOUS DISEASE SECONDARY TO POLYMETHYLMETHACRYLATE APPLICATION FOR AESTHETIC PURPOSES – CASE REPORTS

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Case 1: A 47-year-old female patient with a history of polymethylmethacrylate (PMMA) injection in the glutes presented with hypercalcemia, renal insufficiency, and ureterolithiasis. Laboratory tests revealed a serum creatinine level of 7.2 mg/dL, potassium 5.5 mmol/L, corrected calcium 13.4 mg/dL, and phosphorus 6.4 mg/dL. Imaging showed a 0.6 cm calculus in the left ureter and calcification of coronary, renal, and iliac arteries. 25-hydroxyvitamin D was 30.81 ng/mL, 1,25-dihydroxyvitamin D was 80.7 pg/mL, PTH was 13.6 pg/mL, and PTHrp was 31 pg/mL. The hypothesis of granulomatous disease due to a foreign body was considered and treated with hydration, diuretics, corticosteroids, and zoledronic acid, without improvement. Hemodialysis was initiated, and the patient was referred to the nephrology outpatient clinic for follow-up. **Case 2:** A 49-year-old female patient with a history of PMMA injection, acute myocardial infarction, chronic kidney disease, and ureterolithiasis presented with macroscopic hematuria, fever, and worsening renal function. Serum corrected calcium was 12.4 mg/dL, PTH 4.5 pg/mL, 25-hydroxyvitamin D 18.3 ng/mL, 1,25-dihydroxyvitamin D 19 pg/mL, and PTHrp 14 pg/mL. The hypothesis of granulomatous disease associated with a foreign body was considered. Treatment included diuretics, hydration, corticosteroids, and zoledronic acid, resulting in improvement. **Discussion:** We present two cases with a history of PMMA injection. Granulomatous disease associated with foreign body application is characterized by PTH-independent hypercalcemia with elevated 1,25-dihydroxyvitamin D, suppressed PTH, and decreased 25-hydroxyvitamin D. Measurement of parathyroid hormone-related protein (PTHrp) is crucial to rule out neoplastic causes of hypercalcemia. Patients with this condition typically exhibit vascular calcification, kidney stones, kidney dysfunction, and complications related to atherosclerosis. Initial management is conservative, with renal replacement therapy for refractory cases. **Final considerations:** Due to the high number of individuals undergoing aesthetic procedures, particularly the application of injectable substances, as well as the lack of guidelines to guide the use of these substances, understanding their complications is crucial. **Keywords:** hypercalcemia; granulomatous disease; polymethylmethacrylate.

NEUROENDOCRINOLOGIA

1656

HYPERCOAGULABILITY AND IMMUNOSUPPRESSION IN CUSHING'S DISEASE: RELEVANCE OF PREVIOUS BACKGROUND FEATURES

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56-year-old woman referred for surgical procedure evaluation of 3.5 cm lesion in clivus associated with intense headache. In initial evaluation, patient did not present classic clinical signs of hypercortisolism, acromegaly, hyperprolactinemia, or thyrotoxicosis, showing only grade 3 obesity controlled with a 17% weight loss from the maximum weight and menopause since age 51. Laboratory tests showed cortisol at 2.2 mcg/dL (reference 5-25), and ACTH at 25.9 pg/mL (reference up to 45). Repeated cortisol showed a value of 5.5 mcg/dL and was opted to start prednisone considering partial adrenal insufficiency of central etiology. Patient's medical history showed she began progressive weight gain in 2010, developed pulmonary embolism in 2011 with no identified cause and was prescribed anticoagulation. In June 2022, she was hospitalized for cervical abscess requiring surgical intervention, during which a sellar lesion was identified on cranial and cervical CT. November of the same year, she presented with a new deep vein thrombosis in lower limb, and anticoagulation was reintroduced, which had been suspended since previous surgical procedure. Few weeks later, she had a sudden, intense headache with spontaneous resolution. In the following months, she noticed substantial weight loss of up to 10 kg without significant lifestyle changes. Cushing's disease was our primary hypothesis, as she presented with obesity, hypercoagulability (thrombosis) and immunosuppression (cervical abscess), later suffering apoplexy and evolving with adrenal insufficiency of central etiology. MRI from our service showed an enlarged sella turcica with insinuation of cerebrospinal fluid content compressing adenohypophysis along the floor. Expansive lesion in clivus topography measuring 3.5x2.0x1.6 cm without clear cleavage planes with the sella turcica. Patient underwent surgical procedure without complications, and pathology showed a piTNET with immunohistochemistry positive in 90% for ACTH and Ki-67 of 2%, corroborating our initial hypothesis of Cushing's disease. In 2019 meta-analysis by German Rubinstein *et al.* with more than 5,000 patients worldwide, the average time to diagnose pituitary Cushing's syndrome was 38 months compared with approximately 156 months from our case considering the 2011 pulmonary embolism. This case supports that hypercoagulability and immunosuppression should led to investigate hypercortisolism and how the delayed diagnosis could've led to a fatal complication. **Keywords:** hypercortisolism; Cushing's disease; delayed diagnosis.

ADRENAL E HIPERTENSÃO

1658

EMERGENCE OF AUTOIMMUNE DISEASES AFTER RESOLUTION OF HYPERCORTISOLISM: REPORT OF TWO CASES

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Cushing's syndrome (CS) is characterized by prolonged hypercortisolism, which may be secondary to endogenous or exogenous causes. Exogenous hypercortisolism is generally caused by the prolonged administration of corticosteroids, while endogenous hypercortisolism can be adrenocorticotropic hormone (ACTH)-dependent or independent. High levels of cortisol suppress the immune system, and after the treatment of hypercortisolism, there may be an intense immune reaction that leads to the emergence of autoimmune diseases. The objective of this study is to report two cases of hypercortisolism: one with an exogenous cause and the other with an endogenous cause, both resulting in the emergence of autoimmune diseases post-treatment. In the first case, a 50-year-old woman with hypertension, type 2 diabetes, and dyslipidemia developed intense fatigue, lower limb pain, and fragmented sleep after using topical dexamethasone cream for a year to treat dermatitis. The hypothesis of Cushing's syndrome was suggested and confirmed through laboratory tests. Dexamethasone cream was subsequently discontinued, and following the resolution of hypercortisolism, the patient developed psoriasis on her feet, hands, elbows, knees, and scalp. In the second case, a 31-year-old woman with hypertension, type 2 diabetes, and polycystic ovary syndrome developed hirsutism, facial flushing, spontaneous bruising on her arms and legs, significant weight gain with increased waist circumference, asthenia, and difficult-to-control hypertension. The hypothesis of Cushing's disease was raised and confirmed by laboratory tests and MRI of the Turkish sella, which revealed a pituitary microadenoma. After treatment for hypercortisolism, this patient developed Graves' disease. We conclude that after treating hypercortisolism, patients should be closely monitored for the potential emergence of autoimmune diseases. **Keywords:** hypercortisolism; autoimmunity; corticosteroids.

DIABETES MELLITUS

1659

EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH DIABETES MELLITUS (DM) HOSPITALIZED IN THE STATE OF AMAZONAS BETWEEN 2019 AND 2023

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Introduction: Diabetes mellitus (DM) is a public health issue in Brazil and worldwide. It is recognized as a group of metabolic diseases characterized by hyperglycemia, resulting from defects in insulin secretion or action, or both. Chronic hyperglycemia is associated with dysfunction in various organs. In the state of Amazonas, 5.4% of the population lives with the disease. **Objective:** This study aimed to identify the epidemiological profile of hospitalized patients with DM in the state of Amazonas between 2019 and 2023. **Materials and methods:** A retrospective descriptive epidemiological study with data obtained from the SUS Hospital Information System (SIH/SUS), made available by the SUS Department of Informatics (DATASUS), covering the period from January 2019 to December 2023. The study included the following variables: gender, age group, color/race, number of hospitalizations, cost of hospitalizations, average length of stay, type of care, treatment regime, municipalities, number of deaths, and mortality rate. **Results:** There were 16,419 hospitalizations during the study period, with 9,342 (56.8%) being male and 7,037 (42.8%) female. The most affected age groups were 60 to 69 years (4,868 [29.6%]) and 50 to 59 years (3,952 [24%]). Regarding color/race, the majority were mixed-race (12,177 [74.1%]). The average length of stay was 8.84 days, with 14,557 (88.6%) urgent and 1,822 (11%) elective hospitalizations, totaling a cost of R$15,786,442.5. The year with the highest number of hospitalizations was 2022 (4,016) and the municipality with the highest number of hospitalizations was Manaus (10,084), representing 62.44% of state records, followed by Parintins (501). Among these patients, 744 (4.5%) died, resulting in a mortality rate of 4.62 per thousand inhabitants. **Conclusion:** The lack of epidemiological studies related to hospitalizations with DM in Amazonas and the Northern Region can limit the understanding of the impact of DM on public health and expenses, as hospitalizations due to complications or decompensation could be avoided with adequate disease control. The peculiar geographical aspects of the state mean that most hospitalizations occur in the capital, Manaus, which also receives patients transferred from other municipalities due to infrastructure failures. The increasing trend of DM incidence owing to unhealthy lifestyle habits and the aging population makes the analysis of epidemiological data crucial for prevention and early diagnosis. **Keywords:** diabetes mellitus; epidemiological profile; hospitalization.

NEUROENDOCRINOLOGIA

1660

PITUITARY METASTASIS: AN ANALYSIS FROM A BRAZILIAN CASE SERIES

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Introduction: Pituitary metastasis (PM) is a rare condition with few studies and limited documentation in the literature. It is associated with severe clinical manifestations and a shortened lifespan. Better understanding could lead to earlier diagnosis, appropriate therapy, and improved survival. **Objective:** To evaluate tumoral and clinical characteristics in patients with PM and assess overall survival following diagnosis. **Patients and methods:** A comprehensive evaluation was conducted on patients diagnosed with PM from neuroendocrinology, neurosurgery, and neuro-oncology outpatient departments. Data were collected on age, sex, primary tumor type, imaging characteristics, presence of other metastases, treatment type, interval between primary tumor diagnosis and PM, and overall survival. **Results:** Nine patients were identified, with a mean age of 47.8 years and a female predominance (66.6%). Breast cancer was the most common primary tumor (44.4%), followed by lymphoma, melanoma, gastrointestinal adenocarcinoma, and a singular case of non-seminomatous germ cell tumor. One case had an unidentified primary tumor. Arginine vasopressin (AVP) deficiency and visual disturbances were the predominant clinical presentations. Most cases were diagnosed during oncological follow-up, with an interval of 2.9 years between primary tumor diagnosis and PM, and 8/9 patients had metastases at other sites. At the time of analysis, 7 patients had died, with a mean survival duration of 4.5 months following PM diagnosis. Two patients were alive and continued receiving oncological treatment. Therapeutic approaches included transsphenoidal surgery, radiotherapy, chemotherapy, or combinations of these, tailored to the clinical presentation and tumor type. Four patients received no treatment due to poor clinical status, exhibiting the lowest survival rates (approximately 1 month). **Conclusion:** Despite its rarity, PM incidence is increasingly reported, with breast cancer as the most common primary site. The prognosis following PM diagnosis remains poor, with significant endocrine and tumoral complications impacting survival and quality of life. Healthcare providers should consider PM in oncological patients presenting with visual impairment and AVP deficiency, given the propensity for posterior pituitary involvement. Further studies are needed to determine optimal therapeutic strategies, but early diagnosis and prompt targeted treatments are critical in managing this condition effectively. **Keywords:** pituitary metastases; clinical characteristics; survival outcomes.

TIREOIDE

1661

TREATMENT OF THYROID EYE DISEASE WITH RETROBULBAR TRIAMCINOLONE INJECTION

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Case presentation: C.A.O., a 56-year-old woman with hyperthyroidism that is difficult to control clinically, underwent total thyroidectomy and is currently on 88 mcg of levothyroxine. In 2016, she developed diplopia, photophobia, bilateral proptosis, and ocular pain on movement. She sought ophthalmologic care for proptosis, upper eyelid retraction, conjunctival hyperemia with vascular congestion, bilateral abduction limitation (more pronounced on the left), and diplopia with worsening on dextroversion. She was diagnosed with thyroid eye disease with a Clinical Activity Score (CAS) of 4. Orbital contrast-enhanced computed tomography (CT) showed extraocular muscle thickening, confirming the diagnosis. Bilateral retrobulbar triamcinolone injections were prescribed weekly for 4 weeks. One week post-treatment, improvements were noted in hyperemia, congestion, retraction, motility, photophobia, and ocular pain. At 2 months, the eye remained calm without congestion, with improved eyelid retraction and myogenic changes on CT. The outcome was highly satisfactory with reduced signs and symptoms (CAS=0) and improved facial aesthetics. **Discussion:** Thyroid eye disease is caused by autoantibodies binding to the thyroid-stimulating hormone receptor on thyroid follicular endothelial cells, leading to excessive thyroid hormone production. Different anti-TSH antibodies activate various signaling pathways, resulting in clinical phenotypes such as active congestive, “white-eyed” expansive, apical “hydraulic,” apical “white-eyed,” active cicatricial, and passive cicatricial. Due to the range of clinical manifestations, variable symptom onset, and severity spectrum, each case requires subtype-specific treatment. In this case, based on the new classification, the patient fits the active cicatricial phenotype, responding well to retrobulbar depot corticosteroid injection. **Conclusion:** Current understanding of thyroid eye disease underscores multiple potential therapeutic targets and challenges in selecting effective immunotherapy. Targeted therapy can significantly improve quality of life by addressing specific clinical parameters and exploring new treatment avenues. **Keywords:** Graves ophthalmopathy; hyperthyroidism; triamcinolone.

OBESIDADE

1664

EPIDEMIOLOGICAL ANALYSIS OF OBESITY IN NORTHEAST BRAZIL IN THE LAST DECADE

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Introduction: Obesity is defined as excess body fat, with a body mass index > 30 kg/m². It is a highly prevalent condition in Brazil and has various negative repercussions for both affected individuals and the healthcare system. Therefore, understanding the epidemiological profile of this condition is crucial, especially in regions like the Northeast, where it can guide more effective and targeted interventions. **Objective:** To analyze the sociodemographic profile of obesity in the Northeast from 2013 to 2023. **Methods:** A descriptive epidemiological study was conducted using data from the Hospital Information System of the Unified Health System (SUS), provided by the SUS Informatics Department (DATASUS) on the Health Information platform (TABNET). Hospitalizations due to obesity in the Northeast during the mentioned period were analyzed, considering variables such as year of service, nature of service, hospitalization regime, state, sex, race, and age group. **Results:** During the studied period, 10,090 hospitalizations due to obesity were recorded in the Northeast. Of these, 8,679 (86.01%) were classified as elective care, although the hospitalization regime was ignored in 7,630 cases (75.6%). The years with the highest incidence were 2019, with 1,118 cases (11.08%); 2022, with 1,135 cases (11.24%); and 2023, with 1,181 cases (11.70%). Pernambuco was the most affected state in the Northeast, with 4,600 cases (45.58%). The mixed-race population was the most affected, recording 5,469 cases (54.20%), and females represented 8,634 cases (85.56%). The most affected age groups were: 20 to 29 years, with 1,337 cases (13.25%); 30 to 39 years, with 3,698 cases (36.65%); 40 to 49 years, with 2,962 cases (29.35%); and 50 to 59 years, with 1,618 cases (16.03%). After analyzing the reported cases, it was found that 17 (0.16%) resulted in death. **Conclusions:** Obesity is a prevalent disease in the Northeast, especially in the last two years. It mainly affects females, mixed-race individuals in the economically active age group, particularly in the state of Pernambuco. Since it is a risk factor for other diseases, controlling this morbidity is necessary for prophylaxis and health promotion, facilitated by epidemiological screening. **Keywords:** obesity; epidemiological profile; Northeast Brazil.

DIABETES MELLITUS

1665

CLINICAL AND SOCIODEMOGRAPHIC PROFILE OF PEOPLE WITH TYPE 1 DIABETES MELLITUS IN A REFERENCE HOSPITAL IN THE AMAZON

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Type 1 diabetes mellitus (DM1) is a chronic and genetic disease, caused by the destruction of pancreatic beta cells, responsible for the production of insulin. Its etiology is predominantly autoimmune. It is the most common type of Diabetes in children, adolescents and young adults, with a high prevalence in Brazil. The present study aims to establish a clinical and sociodemographic profile of people with DM1 in a reference hospital in the Amazon, in addition to understanding the variables of their treatment and complications. The medical records of 71 patients with DM1 were evaluated, followed on an outpatient basis between January 2019 and December 2022, revealing that around 55% were women and 45% men, with a predominance of the age group between 21 and 40 years old, and residents of the metropolitan region of Belém. Most patients had been diagnosed for more than 10 years and it was noted that as the time spent living with DM1 increases, the proportion of patients within the glycemic target decreases. More than 85% of patients did not reach the glycated hemoglobin target of 7% and none of the 32 men treated did so. This lack of control may be related to low education, as only 38% of patients had completed high school and the cultural factor, where men tend to take less care of their health. This data may reflect a greater picture of social vulnerability, with low-income patients who are known to have greater difficulty following recommendations regarding the consumption of healthy foods and physical activity – 69% in this study. All patients were on insulin treatment, with the majority using basal and prandial insulin, with 46% using basal and ultra-rapid-acting insulin analogues. Furthermore, 46% were taking statins and 58% were taking antihypertensives, which reflects the risk of developing hypertension caused by DM. Among the patients in this study with more than 15 years of diagnosis, 38% have microvascular complications and 6.4% macrovascular complications, such as acute myocardial infarction. No patient with less than 10 years of diagnosis studied had microvascular or macrovascular complications. Therefore, this study contributes to the visualization of adapted and necessary strategies to improve glycemic control, including intensive education, multidisciplinary support and continuous monitoring, in order to reduce the risk of macrovascular and microvascular complications. **Keywords:** type 1 diabetes mellitus (DM1); clinical epidemiology; diabetes complications.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1667

ANALYSIS OF HEALTHCARE ASSISTANCE FOR TRANSGENDER AND GENDER-DIVERSE INDIVIDUALS IN THE DISTRITO FEDERAL: IMPACT ON QUALITY OF LIFE

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Introduction: Transgender and gender-diverse (TGD) patients are those who have a gender identity that does not correspond to the sex assigned at birth; however, these patients are not considered to have any pathology. Gender dysphoria is characterized by a discrepancy between biological sex and gender identity, associated with psychological distress. Unfortunately, gender diversity is subject to stigmatization in various societies, resulting in the phenomenon known as "minority stress." As a consequence, TGD individuals become more susceptible to mental health problems. **Objective:** To assess the quality of care provided in a specialized gender diversity service in the Federal District and its impact on patients' quality of life. **Methods:** Analytical cross-sectional observational study, conducted through the administration of a previously validated questionnaire, filled out online (electronic form) or in person (during consultations), by 37 transgender patients undergoing affirming hormonal therapy for at least one year, in outpatient follow-up at a reference service in 2023. **Results:** The mean age of the cohort was 31 years, with a predominance of trans men (59.46%). Patients were mostly without a stable partner (91.89%), with a complete higher educational degree (40.54%), however, 37.84% were unemployed. Hormone therapy for more than two years was prescribed in 83.78% of the participants, and 43.24% had already undergone some type of associated surgical treatment. The prevalence of smoking and alcohol consumption in the sample was equal (42.1% each) while 15.8% reported illicit drug use. In the questionnaire, comprising 38 questions, the global average was 3.35 out of 5.0. This average was mainly represented by the group "gender-related mental well-being and overall life satisfaction", in which the subscale that contributed mostly to the score was "psychological functioning." In the "gender congruence" group, the subscale "other secondary sexual characteristics" was the greatest positive contribution to the final average. **Conclusion:** The study concludes that healthcare for TGD patients at this specialized outpatient clinic is satisfactory. Implementation of a smoking cessation program focused on TGD patients, policies targeting surgical interventions for these patients, and expansion of access to healthcare are needed.
Keywords: transgender person; quality of life; gender dysphoria.

NEUROENDOCRINOLOGIA

1668

CHALLENGES IN TREATING ACROMEGALY IN THE ELDERLY: CASE REPORT OF A LATE DIAGNOSIS AT AGE 84

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Female patient, 84 years old, with a 14-year history of enlargement of the hands, feet, nose, mouth, ears, and frontal protuberance without prior investigation or treatment of these signs was referred by the cardiologist to the endocrinologist due to acromegaly phenotype and resistant hypertension. She was previously taking once daily antihypertensives (perindopril arginine 10mg, indapamine 2,5 mg and amlodipine 10 mg), 100 mcg of levothyroxine for primary hypothyroidism and CPAP for obstructive sleep apnea. On physical examination, her height was 1.55m and her weight was 57 kg with a calculated body mass index of 22.31 kg/m^2. Laboratory tests showed growth hormone (GH) and IGF-1 levels above the reference values for her age. She had no other impairment in the hypothalamic-pituitary axes. Pituitary MRI revealed a macroadenoma. At that moment, drug treatment with a long-acting somatostatin analogue, administered every 28 days, was initiated considering the risk-benefit for the patient. Acromegaly is a rare disease, more common in young adults. It is characterized by elevated GH and IGF-1 levels and is generally caused by a pituitary adenoma. Studies demonstrate an increase in elderly people with acromegaly due to longer life expectancy and the availability of effective treatments. However, primary diagnosis after 65 years of age is still rare. The clinical manifestations are insidious and can be mistaken for normal aging. Commonly related pathologies include cardiovascular diseases, glycemic changes, obstructive sleep apnea, polyps, and goiter. The diagnosis is based on clinical suspicion, followed by hormonal measurements and imaging tests to confirm the cause of excessive GH secretion. Early diagnosis provides a greater chance of effective treatment, which can reduce morbidity and mortality. Neurosurgery is considered the first-line treatment, even in the elderly. However, therapy with long-acting somatostatin analogues can be considered for those with comorbidities that make surgery impossible. Non-invasive therapy requires lifelong treatment, which is costly and increases the risk of glycemic metabolic impairment. As a conclusion, acromegaly must be considered in elderly people with life expectancy to benefit from the therapy and neurosurgery is still the first option. However, as in this case report, the risk-benefit ratio must be assessed and clinical treatment must be considered in those with comorbidities that compromise the outcome.
Keywords: acromegaly; growth hormone; pituitary tumour.

METABOLISMO ÓSSEO E MINERAL

1670

EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH NORMOCALCEMIC HYPERPARATHYROIDISM MONITORED AT AN ENDOCRINOLOGY REFERENCE CENTER

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Introduction: Normocalcemic hyperparathyroidism is a challenging condition as patients do not present with hypercalcemia, the classic sign of hyperparathyroidism. The present study analyzes the clinical profiles and laboratory results of patients diagnosed with normocalcemic hyperparathyroidism. **Methods:** Data were collected from the medical records of patients diagnosed with normocalcemic hyperparathyroidism followed at CEDEBA. **Results:** Eight patients were found with normocalcemic hyperparathyroidism out of a total of 45 patients followed with hyperparathyroidism. The average age is 70.17 years, with 85.71% (6) female. The average Calcium of these patients is 8.62 mg/dL, the average PTH: 112.32 pg/mL, average Calciuria: 185.88 mg/24 hours, average Vitamin D: 31.2 mg/dL, average creatinine: 0.8 mg/dL. 3 patients have osteoporosis, 1 patient has osteopenia and 3 have normal bone mineral density. 31 patients with hypercalcemic hyperparathyroidism were found, with a mean age of 66.86 years, 86.6% (30) of whom were female. Average calcium is 12.38mg/dL, average PTH: 201.86 mg/dL, average calciuria: 141.1 mg/24 hours, average vitamin D: 30.13 mg/dL, average creatinine: 0.71 mg/dL. 58% (18) of patients have osteoporosis, 50% of these with fractures. **Discussion:** Patients with normocalcemic hyperparathyroidism had a slightly higher average age (70.17 years) compared to hypercalcemic patients (66.86 years). In both conditions, the predominance was female. PTH levels were higher in hypercalcemic patients (mean of 201.86 pg/mL) compared to normocalcemic patients (mean of 112.32 pg/mL). The mean calciuria was higher in normocalcemic patients (185.88 mg/24 hours) compared to hypercalcemic patients (141.1 mg/24 hours). This finding is interesting, as elevated calciuria is generally associated with hypercalcemia. The mean vitamin D level was higher in normocalcemic patients (31.2 mg/dL). Analysis of bone mineral density revealed that a greater proportion of hypercalcemic patients had osteoporosis (58% *vs.* 37.5%) compared to normocalcemic patients. Furthermore, the occurrence of fractures was significantly higher in hypercalcemic patients with osteoporosis. These findings suggest that hypercalcemic hyperparathyroidism may be associated with an increased risk of serious skeletal complications. **Keywords:** normocalcemic; hyperparathyroidism; bone mineral density.

DIABETES MELLITUS

1671

CORRELATION BETWEEN COGNITIVE PERFORMANCE AND GLYCATED HEMOGLOBIN PROFILE IN TYPE 2 DIABETES MELLITUS POPULATION

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Introduction: People with type 2 diabetes mellitus (T2DM) have twice the risk of developing dementia. However, the relationship between cognitive performance and the previous glycated hemoglobin (HbA1c) values and variability is still controversial. **Objective**: To correlate the cognitive performance of T2DM adult patients from a Public Hospital with their previous HbA1c and its variability. **Methods:** A sample of 251 T2DM adult patients were submitted to cognitive tests (CT). Clinical and laboratory information were extracted from hospital files, including HbA1c values. The CT performed were: Mini-Mental State Examination, Semantic Verbal Fluency Test, Track Test A and B, and Word Memory Tests. Patients without past HBA1c information in their medical records were excluded. After data collection, a Z score was performed for each cognitive test and a Global Cognitive Score was created and calculated. Based on this results, a Spearman's correlation test was performed between the mean and coefficients of variability of the previous HbA1c and the Z score of each test and of the Z score of global cognitive score. The level of statistical significance was set at 5% and the data were analyzed using the statistical software IBM SPSS Statistics, version 29.0. **Results:** Of the 251 patients included in the project, those who did not have the date who had less than 2 previous HbA1c values were excluded. Thus, our sample consisted of 70 people, in which the mean age was 61.2 ± 10.4 years old, and the male gender was predominant (54.3%). The mean previous HbA1c (%) was 8.41 ± 1.4 and the coefficient of variability (%) was 8.74 ± 6.81. The mean of HbA1c measures was 4.9 ± 3.4 e median 3.5 (2-6) and the mean time (days) between the 1st HbA1c considered and the cognitive test was 971.9 ± 542.1. There was no evidence of a statistically significant correlation between the measures of mean and coefficient of variability of previous HbA1c and the Z score of the CT and the global cognitive score. **Conclusion:** The present study did not show a correlation between previous HbA1c and CT. However, due to the sample size and observation time, further studies correlating these variables are necessary. **Keywords:** type 2 diabetes mellitus; dementia; glycemic variability.

ADRENAL E HIPERTENSÃO

1672

AGGRESSIVE TREATMENT FOR OCCULT ACTH-SECRETING TUMORS (EAS): ETOMIDATE AND BILATERAL ADRENALECTOMY

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Case 1: A 41-year-old patient, previously hypertensive, experienced worsening blood pressure control, weight gain, and proximal weakness for the past two years, along with severe hypokalemia noted during hospitalization for pneumonia. Laboratory tests revealed a 24-hour urinary cortisol level of 6,913 mcg/24 h (reference value [RV] 4.2-60 mcg/24 h) and a plasma ACTH level of 143 pg/mL (RV 10-63 pg/mL), indicating an ACTH-dependent Cushing's syndrome. **Case 2:** A previously healthy 27-year-old man was recently diagnosed with hypertension, diabetes mellitus, significant weight gain, purple stretch marks, and mood changes, over the previous 6 months. Laboratory tests revealed ACTH-dependent hypercortisolism, with a 24-hour urinary cortisol level of 1196 mcg/24 h (RV 4.2-60 mcg/24 h). The dexamethasone 1mg suppression test demonstrated a lack of cortisol suppression (cortisol level of 45.5 mcg/dL) and an ACTH level of 100 pg/mL (RV 10-63 pg/mL). In both cases, there were no abnormalities on etiological investigation. A Magnetic Resonance Imaging (MRI) of the sella turcica as well as a thoracic, abdominal, and pelvic Computerized Tomography (CT) scans were performed and there was no finding of a focus of the ectopic ACTH production. In both cases there was refractoriness to oral treatment with anticortisolic drugs (cetoconazole). Due to severity of hypercortisolism and the lack of identification of the ACTH secretion focus, intravenous (IV) etomidate was administered through a continuous infusion pump and, thereafter, bilateral adrenalectomy was performed. **Discussion:** In patients with severe hypercortisolism due to EAS, oral treatment with anticortisolic drugs must be initiated. If the patient does not respond to this initial approach and the ACTH secreting tumor is not identified, a more aggressive treatment should be the next step. IV etomidate has been used in the control of a life-threatening hypercortisolism due to its efficacy and rapid onset of action. If satisfactory control of hypercortisolism is not achieved, bilateral adrenalectomy is the ultimate option. After the control of cortisol levels and the patient is clinically stable, further investigation of the focus of ACTH-production must be performed. **Conclusion:** This report shows that in cases of EAS with overt hypercortisolism, the rapid control of hypercortisolism is the basis for stabilizing the clinical condition, and after ensuring stability, the search for the location of the ectopic tumor is pursued. **Keywords:** occult ACTH-secreting tumors; bilateral adrenalectomy; etomidate.

ADRENAL E HIPERTENSÃO

1673

A CASE REPORT OF PRIMARY ADRENAL INSUFFICIENCY DUE TO A NOVEL PATHOGENIC VARIANT IN NR0B1 (DAX 1) GENE

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1. IRMANDADE SANTA CASA DE MISERICÓRDIA DE SÃO PAULO, SÃO PAULO, SP, BRASIL.

Case report: Our male patient first presented with adrenal crisis at the age of 11 years, managed with glucocorticoids (prednisolone) and mineralocorticoids (fludrocortisone) in a local hospital at Bahia state, Brazil. He was referred to our reference service in São Paulo at the age of 14, in regular use of those medications. In this time, he brought some laboratorial analysis from the time of diagnosis, and it showed hyponatremia (sodium 99 mEq/L; NR 135-150) and hyperkalemia (potassium 6,7 mEq/L; NR 3,5-5), ACTH 23,2 pg/mL (NR < 45) and basal cortisol 6,6 mcg/dL (NR 5-18). In addition, we had from this time some additional laboratorial data from our admission analysis, that found S-DHEA 10,1 mcg/dL (NR: 23,8-267,7), total testosterone 472 ng/dL (NR: 240-816), FSH 3,05 mUI/L (NR: < 10), LH 2,63 mUI/L (NR: <10), aldosterone 1,9 ng/dL (NR: 5-23) and renin > 500 µIU/mL (NR: 2,8-39,9). Over the years, he started to present hyperpigmented skin lesions, due to primary adrenal insufficiency, resulting in great psychological suffering. We have screened hypogonadism many times during follow-up, but it was never found. The Genetics analysis by next generation sequence (NGS) identified in homozygosity, in gene NR0B1 (DAX1) on X chromosome, a variant of normality (chrX:30.309.248 C>T) were amino acid tryptophan was replaced by a stop codon. The patient does not have any brother, no other similar cases in the family and their parents deny consanguinity. Our case differs from others previously described because of the absence of associated hypogonadism, which is very common in NR0B1 variants. **Discussion:** X-linked adrenal hypoplasia congenita caused by a pathogenic variant in NR0B1/DAX-1 is a rare inherited disorder. Patients with adrenal hypoplasia congenita are usually diagnosed with primary adrenal insufficiency in infancy or early childhood and usually present hypogonadotropic hypogonadism during adolescence. **Final lesson:** This case report shows that the absence of hypogonadism does not exclude the possibility of primary adrenal insufficiency caused by NR0B1(DAX 1) gene variants, and encourages genetic testing to patients living with this disease. **Keywords:** primary adrenal insufficiency; NR0B1/DAX-1; adrenal crisis.

MISCELÂNEA
1674

RISK AND COMORBIDITIES ASSOCIATED WITH SPONTANEOUS SEVERE HYPOGLYCEMIA IN THE HOSPITAL: A CROSS-SECTIONAL STUDY

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Introduction: Spontaneous hypoglycemia (SH) is defined as a blood glucose level below 70 mg/dL not related to the use of insulin or hypoglycemic agents. It is considered severe when below 40 mg/dL. In the hospital, its occurrence is variable and generally associated with insulin. SH is less studied. **Objectives:** to evaluate the prevalence of severe spontaneous hypoglycemia (SSH) at hospital and to characterize risk factors, comorbidities, and mortality. **Methods:** this cross-sectional study included all capillary blood glucose (CBG) measurements from adult patients admitted to wards, semi-intensive, and intensive care units of an academic and tertiary hospital collected between 11/01/2023 and 03/31/2024. Clinical, laboratory, and outcome data were extracted from medical records. **Results:** 98,059 CBG measurements were performed in 5,803 patients during the period. Among the 134 (2.3%) who had at least one CBG ≤ 40 mg/dL, 78 using insulin and 9 with measurement errors were excluded, remaining 47 (0.81%) for study. The mean age was 73 ± 18 years, and 55.3% were men. Venous glucose at 25% or 50% was used in 78%, but only 26% had measures and corrections within 30 minutes. The most frequent comorbidities or acute complications were: infection (77%), poor perfusion (lactate > 2 mmol/L) or use of vasoactive drugs (69%), renal failure [IRA] (51%), neoplasia (46%), fasting (42%), possible adrenal insufficiency (25%), heart failure (15%), low body weight (15%), ischemic hepatitis (11%), and corticosteroid use >15 days (8.7%). Mortality was 66%, and those who died had 2 times more comorbidities or complications ($p < 0.001$), higher lactate (3.6 *vs.* 1.1 mmol/L; $p = 0.002$) and creatinine (1.44 *vs.* 0.87 mg/dL; $p = 0.031$), and recurrence of hypoglycemia within 24h (1.8 *vs.* 0.7, $p = 0.036$). Recurrence occurred in 22 (46.8%), with 1, 2, 3, 5, 7, and 9 recurrences occurring in 21.7%; 10.9%; 6.5%; 8.7%; 2.2%; and 2.2%, respectively. Among those who recurred, the most frequent comorbidities were infection (87%), poor perfusion or hypotension (77%), fasting (65%), and IRA (57%). Creatinine, lactate, and number of comorbidities were higher, respectively, although without statistical difference. Mortality affected 82% of those who recurred. **Conclusions**: severe spontaneous hypoglycemia is uncommon in the hospital, and the most frequent complications/comorbidities were infection, IRA, and hypoperfusion with hypotension. Mortality is very high, especially in those who recur within 24h. **Keywords:** hypoglycemia; hospital; mortality.

MISCELÂNEA
1675

HIGH MORTALITY ASSOCIATED WITH SEVERE SPONTANEOUS HOSPITAL HYPOGLYCEMIA – CAUSE OR CONSEQUENCE?

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Introduction: Spontaneous hypoglycemia is defined as a blood glucose level < 70 mg/dL not related to the use of insulin or hypoglycemic agents. It is considered severe when ≤ 40 mg/dL. In the hospital, it is generally associated with severe conditions and mortality, but it is not well established whether it is the cause of death or a consequence of comorbidities. **Objectives:** to investigate mortality and associated factors in patients who presented with severe spontaneous hypoglycemia (SSH) in the hospital. **Methods:** the study included capillary blood glucose (CBG) measurements from adult patients admitted to wards, semi-ICU, and ICU in an academic and tertiary hospital collected between 11/01/2023 and 03/31/2024. Data were extracted from medical records. **Results:** 98,059 CBG measurements were performed in 5,803 patients. Of the 134 (2.3%) patients who had at least one CBG ≤ 40 mg/dL, 78 using insulin and 9 with measurement errors were excluded, remaining 47 (0.81%) for analysis. Most SSH episodes occurred between 22 and 07 h (43%). Recurrence within 24h occurred in 52.2% of patients, and 41% were fasting. Death within 24 h occurred in 45.2% (13/31), with same-day death in 25.2% (7/13) and, in 86%, within 10 h after the first SSH. Among those who died, the number of comorbidities/complications was higher: 4.3 *vs.* 2.3, $p < 0.001$, creatinine 1.44 *vs.* 0.87 mg/dL, $p = 0.031$; lactate 3.6 *vs.* 1.1, $p = 0.002$; number of hypoglycemia (Hypo) recurrences within 24 h, 1.8 *vs.* 0.7, $p = 0.036$; presence of hypotension/hypoperfusion ($p < 0.001$), use of ATB ($p = 0.029$), and infection ($p = 0.007$). There were no differences regarding age, Hypo value, Na, K, AST, albumin, BMI, sex, suspected adrenal insufficiency, ischemic hepatitis, corticosteroid use > 15 days, neoplasia, fasting, postoperative status, diabetes, and heart failure. Among the 46.8% (22/47) who had recurrences within 24h, mortality reached 82% (18/22). These patients had 2.2x more comorbidities/complications ($p = 0.020$) and higher lactate 5.3 *vs.* 1 mmol/L ($p = 0.022$). Half of the deaths occurred within the first 24h, and 27% on the same day. **Conclusions:** severe spontaneous hypoglycemia is an uncommon event in the hospital. Mortality is high and is associated with greater patient severity, being more frequent in patients with renal failure, hypotension, and infection. In most cases, death occurs within the first 24h after the first Hypo, and in patients who recur within 24 h, mortality is extremely high, reaching 82%, with 50% of deaths occurring within 24 h. **Keywords:** severe spontaneous hypoglycemia; hospital; mortality.

DIABETES MELLITUS

1676

QUALITY OF LIFE IN PEOPLE WITH DIABETES

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Introduction: Diabetes mellitus (DM) is a chronic disease that can lead to chronic complications that can impact negatively in patients' functionality, autonomy and quality of life (QOL). **Objective:** The objectives were: analyze the QOL of patients with DM at a Public Hospital, analyze the correlation of age, gender, marital status, age at diagnosis, diabetes duration, chronic complications, and glycated hemoglobin levels and QOL, and finally compare the QOL scores between type 1 diabetes mellitus (T1DM) and type 2 diabetes mellitus (T2DM). **Methods:** Patients were randomly invited to the study and the *Diabetes Quality of Life Measure-Brazil* questionnaire was performed. The questionnaire has 44 questions, divided into four domains: satisfaction with treatment, impact of the disease, socio vocational concerns and disease-related concerns. Each question is answered on a scale from 1 to 5 and the score is calculated by the average of the answers. The lower the score means better quality of life. **Results:** 99 patients were included, 27 T1DM (mean age 39.4 ± 15.9 years, mean diabetes duration 15.3 ± 10.8 years, 59.7% female) and 72 T2DM (mean age 65.5 ± 9.3 years, mean diabetes duration 19.3 ± 13.5 years and 44.7% female). The median global QOL was 2.0 and 2.1 for T1DM and T2DM respectively. The best and worst scores were respectively at the socio vocational concerns domain (T1DM = 1.6; TD2M = 1.0) and concerns related to DM domain (T1DM = 2.5; T2DM = 2.4). T2DM patients had better QOL in males and there was no difference in gender for T1DM. There was no correlation between QOL and marital status, age, diabetes duration and microvascular complications for T2DM, but there was an inverse correlation between the socio vocational concerns domain and age at diagnosis and a positive correlation with glycated hemoglobin. The basal plus prandial insulin therapy impacted negatively at QOL in T2DM. For T1DM patients, an inverse correlation was observed between impact of the disease domain and age and disease duration, and a positive correlation was noticed between concerns related to the disease domain and age at diagnosis. Comparing T1DM and T2DM, only socio vocational domain shows a better QOL in DM2. **Conclusion:** Concerns related to DM are what most negatively impact quality of life. In DM1 it was found that the older the age and the longer the disease, the better the QOL. In DM2 it was observed that a worse QOL is linked to the female gender and the use of basal bolus insulin treatment. **Keywords:** diabetes; quality of life; determinants.

MISCELÂNEA

1678

GLUCOMETRICS AND MORTALITY IN OVER ONE MILLION TWO HUNDRED THIRTY-SIX THOUSAND BLOOD GLUCOSE MEASUREMENTS (1,236,091) IN AN ACADEMIC HOSPITAL IN SALVADOR, BA

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Introduction: Glucometrics are the systematic analysis of blood glucose data in hospitalized patients and are used to monitor glycemic control over time. Given that hospital dysglycemia is associated with worse outcomes and increased costs, glucometrics allow for the assessment of protocol effectiveness and quality improvements, enabling comparisons between units and hospitals, optimizing resources, and identifying priority actions. Since 2018, the Hospital Glycemic Control Committee (HGCC) was implemented in the studied hospital to optimize dysglycemia management**. Objectives**: to report and analyze six glycemic metrics and their association with mortality in a large academic hospital annually over 5 years. **Methods:** Capillary blood glucose (CBG) measurements were categorized into ranges: <40, <54, <70, 70 to 180, >180, and >300 mg/dL. Prevalence and mortality were calculated for each metric over 5 years. The unit of analysis was the total number of CBG measurements. **Results:** A total of 1,236,091 CBG measurements were analyzed, with 1,206,000 in adults. The following data represent prevalence (P) and mortality (M) for each year from 2019 to 2024 (up to 07/12). Hypoglycemia (HyPo) < 40 mg/dL: P = 0.43; 0.53; 0.39; 0.45; 0.32 and 0.26% and M =18.47; 18.19; 18.48; 15.38; 16.41 and 13.25%. HyPo < 54 mg/dL: P =1.01; 1.28; 0.89; 1.05; 0.78 and 0.70% and M = 11.03; 11.30; 11.53; 10.12; 10.61 and 9.05%. HyPo < 70 mg/dL: P = 2.88; 3.40; 2.43; 2.85; 2.55; 2.51 and M = 5.68; 6.02; 6.03; 5.49; 4.80 and 4.47%. Blood glucose levels between 70 and 180 mg/dL: P = 70.8; 67.8; 69.1; 70.99; 74.84 and 77.77% and M = 0.18; 0.24; 0.20; 0.22; 0.16 and 0.16%. Hyperglycemia (HypEr) > 180 mg/dL: P = 26.30; 28.79; 28.43; 26.16; 20.14 and 19.72% and M = 0.03; 0.04; 0.04; 0.04; 0.03 and 0.04%. HypEr > 300 mg/dL: P = 4.52; 5.99; 5.46; 4.83; 3.01% and 3.18% and M = 0.08; 0.05; 0.05; 0.06; 0.05 and 0.09%. There was a significant reduction in P and M for three metrics over five years, except for M in blood glucose levels > 300 mg/dL, and an increase in P for blood glucose levels between 70 and 180 mg/dL, with a reduction in M. **Conclusions**: Hypo < 40 mg/dL and < 70 mg/dL are uncommon to common events, respectively, related to high mortality, especially in severe HyPo. The reduction in the prevalence of HyPo and HypEr, with an increase in the percentage of blood glucose levels between 70 and 180 mg/dL from 2019 to 2024, likely reflects quality improvement interventions through institutional surveillance and protocols. **Keywords:** glucometrics; inhospital glycemic control; mortality.

TIREOIDE

1679

MARINE-LENHART SYNDROME AND ITS CLINICAL DIVERSITY: A CASE SERIES OF TWO PATIENTS

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Case presentation: Patient 1: A 23-year-old woman presented with xerosis, weight loss, tremors, palpitations, agitation and liquid stools. Laboratory tests (LT) showed hyperthyroidism with TSH < 0.01 mUI/L and free T4 (FT4) at 1.85 ng/dL (normal range: 0.7-1.48 ng/dL). The patient was prescribed Methimazole (MTZ) 10 mg/day and Propranolol 20 mg/day, but discontinued due to anaphylactic shock. Extra investigations confirmed Graves' disease (GD) with positive antibodies (TRAb, anti-TPO, anti-TG). Thyroid ultrasound (US) revealed a solid 8 x 5 mm nodule in the right lobe (RL) with diffuse hypervascularization on Doppler, and a total thyroid volume of 13 cm^3.The 99mTc scintigraphy revealed diffuse increased uptake with a focal hyperfunctioning nodular area in the RL, consistent with Marine-Lenhart syndrome (MLS). Fine-needle aspiration cytology was classified as Bethesda category 2. The patient undergoes radioiodine therapy (RIT) (15 mCi), resulting in hypothyroidism after 3 months, which was managed with L-thyroxine. Patient 2: A 78-year-old hypertensive woman presented with significant weight loss, goiter, hoarseness and exophthalmos. LT showed suppressed TSH (<0.01 mUI/L) and clearly elevated FT4 (>7.7 ng/dL) with positive TRAb and anti-TPO, confirming GD. Treatment with MTZ 20 mg/day provided partial symptom relief. Thyroid US revealed multiple nodules (MN) within a heterogeneous goiter with diffuse hypervascularization on Doppler. 99mTc scintigraphy reveals a multinodular goiter with focal nodular hypercaptivity in the left lobe and lower third of the RL, indicative of MLS. Total thyroidectomy was considered due to the extension of goiter (volume:35.6 cm^3) and presence of MN. Sadly, patient died of upper gastrointestinal bleeding before the procedure. **Discussion:** MLS represents a rare manifestation of GD characterized by hyperfunctioning nodules exhibiting diffuse increased uptake on scintigraphy. Nodules are detected in up to 35% of GD cases with hyperfunctioning nodules observed in 0.8%-2.7%. Patients with MLS are typically more resistant to standard-dose iodine therapy. The cases highlight MLS's diverse clinical presentations: a younger patient responding well to RIT targeting a solitary hyperfunctioning nodule *versus* an elderly patient with extensive multinodular disease requiring ponderation of surgical intervention to manage symptoms and exclude malignancy. **Conclusion:** Those cases show MLS variability and the need of tailored treatment to improve outcomes. **Keywords:** Marine-Lenhart syndrome; hyperthyroidism; hyperfunctioning nodules.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1680

BODY COMPOSITION ASSESSMENT (BONE, FAT, AND LEAN MASS) OF MALE WISTAR RATS ON ESTRADIOL ENANTHATE AND ALGESTONE ACETOPHENIDE (EEN/DHPA) FOR STUDYING GENDER-AFFIRMING HORMONE THERAPY (GAHT) IN TRANSWOMEN

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Introduction: Gender-affirming hormone therapy (GAHT) is commonly used by transgender individuals to achieve body composition (BC) changes and secondary sex characteristics aligned with their transitioned gender. Transfeminine people using estrogens and antiandrogens experience an increase in fat percentage and a decrease in muscle mass. Bone mineral density (BMD) usually increases, despite a higher risk of fractures compared to ciswomen. EEn/DHPA is a frequently used regimen for GAHT in Brazilian transfeminine individuals. **Objectives:** Using an experimental rodent model, we investigated the effects of EEn/DHPA on the BC of rats. We hypothesized that administering EEn/DHPA would result in body changes similar to those observed in transwomen. **Methods:** Twelve adult male and six female Wistar rats were divided into three groups: 1) six males received EEn/DHPA (MH); 2) six males received sesame oil (MO) as controls; and 3) six females received sesame oil (FO) as female controls. For two months, EEn/DHPA or oil was administered via intramuscular (IM) injections every ten days. After this period, we evaluated body composition using densitometry (DXA) to measure bone, fat, and lean mass. We used Kruskal-Wallis and *post-hoc* Dwass-Steel-Critchlow-Fligner (DSCF) tests for statistical analyses. **Results:** As expected, the EEn/DHPA-treated males (MH) and female controls (FO) had lower body mass compared to the male control (MO) group (MH 270.3 ± 17 g; FO 225 ± 19.1 g; MO 397.6 ± 41.5 g; p = 0.011), and the same was observed for lean mass, with FO having lower fat mass compared to MO (FO 18.3 ± 4.1 g; MO 31.3 ± 7 g; p = 0.011). Interestingly, MH (239 ± 17.6 g) presented lean mass values between MO (358 ± 34.7 g; p = 0.011) and FO (201 ± 16.8 g; p = 0.028). A similar pattern was observed with bone mineral content (BMC), where MH showed changes between controls MO and FO (MO 9.45 ± 0.4 g; MH 7.58 ± 0.7 g; FO 6.30 ± 0.5 g; p = 0.011). However, when assessing bone mineral density (BMD), MH (0.150 ± 0g/cm^2) had higher values than both controls FO (0.131 ± 0 g/cm^2, p = 0.018) and MO (0.145g/cm^2), although not significantly (p = 0.320). **Conclusion:** The hormonal regimen combining estrogen and progestin (EEn/DHPA) in male adult rats reduced total body mass by decreasing lean mass. The higher BMD observed in males on EEn/DHPA compared to controls suggests that this model may replicate the findings observed in transwomen on EEn/DHPA. A longer study is necessary to gain more translational insights into chronic GAHT use. **Keywords:** transgender persons; body composition; estrogens.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1681

LONG-TERM EVOLUTION OF GENDER-AFFIRMING SURGERIES: IMPACTS OF THESE PROCEDURES ON TRANSGENDER MEN

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Introduction: In recent years, there has been a growing demand for health services specialized in the treatment of transgender people. Hormonal treatment is well-established practice, and the repercussions of surgical treatment for trans men (TM) have been increasingly discussed. **Aim:** to assess the effects of gender-affirming surgeries on personal and sexual satisfaction levels in TM. **Methods:** 82 TM followed at a single healthcare service that provided psychological and psychiatric support, hormonal therapy, and surgical procedures for gender reassignment. Metaoidioplasty was the technique performed for the reconstruction of male genitalia. The most recent surgical procedure occurred at least 6 months before the interview. Postoperative assessments evaluated factors such as morphology, genitourinary function, sexual activity, and satisfaction with the surgical outcomes. Two satisfaction level questionnaires designed for TM, PROM and TRANS Q, were translated and validated for the study. IPSS and BDI-II were also used. **Results:** Out of the 82 individuals, 55 underwent mastectomy, 43 panhysterectomy, and 36 genitoplasty (23 all steps, 36 partial steps). The mean age at the time of thoracic masculinization was 32 yrs (21-57 yrs). 73% of TM reported satisfaction with the appearance, position, and symmetry of the scars and nipples. The neophallus length after testosterone therapy and meatoplasty, ranged from 4 to 6.5 cm (mean- 5.6 cm). Urethral complications occurred in 7/23 cases, dislocation or rejection of testicular implant in 4/23 cases. Of those who have completed all stages of genitoplasty, 50% urinate while standing and 42% required urethral milking. In the survey on the degree of satisfaction with the post-surgical morphological aspect of the genitalia, only 33% were satisfied with the penile aspect. Although 42% of the TM were unsatisfied with the neophallus sexual function and used a penile prosthesis for penetration, 75% of them reported that sexual activity was satisfactory, 91% would undergo the surgery again, and 75% would recommend it. **Conclusion:** This study provides original data on the satisfaction levels of Brazilian TM undergoing gender affirmation surgeries, showing that thoracic masculinization and metoidioplasty were successful procedures. Despite limitations regarding neophallus size and functionality, the increased feeling of masculinity post-surgeries lead individuals do not regret the procedures and recommend them to other TM. **Keywords:** transgender; genitoplasty; trans man.

DIABETES MELLITUS

1685

INFLUENCE OF EATING HABITS ON THE HEALTH AND GLYCEMIC CONTROL OF CHILDREN WITH TYPE 1 DIABETES: A SYSTEMATIC REVIEW

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Introduction: Children with type 1 diabetes mellitus (DM1) face specific challenges related to glycemic control, and eating habits play a crucial role in managing the disease. Understanding the influence of these habits is essential to develop intervention strategies that promote a better quality of life and glycemic control for these children. **Objective:** To investigate the influence of eating habits on the health of children with type 1 diabetes, focusing on the relationship between diet, glycemic control and complications associated with DM1. **Research method:** This is a systematic review of the literature. The research question was structured using the PICO (Patient, Intervention, Comparison, Outcome) model. The focus was on children and adolescents with type 1 diabetes. For the search, the following Health Sciences Descriptors (DeCS/MeSH) were used: "Diabetes Mellitus, Type 1", "Diet" and "children", combined with the operator boolean AND. The research was carried out in the following databases: Virtual Health Library (VHL); PubMed and SciELO, in the period 2019-2024. Articles with full text in Portuguese, English or Spanish, published in the last 5 years and type of study were included: meta-analyses and clinical trials. Those that did not evaluate the target audience, were not available in full or were off topic were excluded. 2 articles from the VHL and 2 from PubMed were selected. No studies were found in SciELO. The studies were assessed for risk of bias using the PEDro scale, and were considered to have a low risk of bias. **Results:** Diets rich in fiber and with a low glycemic index were associated with better glycemic control, with a significant reduction in glycated hemoglobin (HbA1c). Children who follow a balanced diet, including fruits, vegetables, whole grains and lean proteins, had a lower incidence of complications such as hypoglycemia and diabetic ketoacidosis. Nutritional education programs have proven to be effective in promoting healthy eating habits, resulting in a significant improvement in glycemic control and quality of life for children with DM1. **Conclusion:** Balanced, nutrient-rich diets, together with nutritional education programs, proved to be effective for glycemic control and preventing complications associated with DM1. Continued investments in research and education are needed to develop more effective and personalized interventions for this population. **Keywords:** diabetes mellitus, type 1; diet; children.

ENDOCRINOLOGIA PEDIÁTRICA

1686

PRIMARY CONGENITAL HYPOTHYROIDISM DUE TO THYROID AGENESIS ASSOCIATED WITH PITUITARY RESISTANCE TO THYROID HORMONE

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Introduction: Primary congenital hypothyroidism (PCH), a disease of low incidence, is one of the most common preventable causes of intellectual disability. The most common cause of PCH is thyroid dysgenesis, which includes agenesis, hypoplasia, or ectopia of thyroid tissue. In this context, most newborns with the disease are asymptomatic, which has motivated worldwide screening efforts since the 1970s through the measurement of TSH and/or T4 concentrations in blood samples using the heel prick test. **Case presentation and discussion:** J.E.S.B., male, 13 years old, was referred for evaluation by a pediatrician at 4 years of age with PCH detected by the heel prick test and thyroid agenesis confirmed by exams. He was already on levothyroxine replacement therapy but had persistently elevated TSH levels. Despite dose adjustments of the hormone replacement therapy, he presented with serum T4 concentrations above the laboratory reference limit and typical hyperthyroid symptoms (tachycardia, insomnia, and emotional lability), while TSH remained elevated, sometimes with values 10 times above the target. At the age of 5, the hypothesis of pituitary resistance to the action of thyroid hormone was raised, and the levothyroxine dose was adjusted based on the free T4 concentration in the upper half of the normal range, resulting in better control of hyperthyroid symptoms and signs. However, some patients with PCH have elevated TSH levels and demonstrate a reduced suppression of TSH with supraphysiological doses of levothyroxine. The literature recognizes the association of PCH with pituitary resistance to thyroid hormone and a reduced ability to suppress the TSH response to TRH stimulation, likely due to a defect in feedback, hypothalamic-pituitary-thyroid axis immaturity, or a concomitant genetic defect causing isolated central resistance to thyroid hormone. Thus, contrary to the expected symptoms of hypothyroidism in an under-treated patient, we found a patient with symptoms and signs of hyperthyroidism due to iatrogenesis in the pursuit of normalizing thyroid-stimulating hormone. **Conclusion:** Patients with PCH may have resistance to the negative feedback of thyroid hormone without showing signs of peripheral tissue resistance. There is uncertainty whether pituitary resistance is a consequence of intrauterine hypothyroidism, causing immaturity of the hypothalamic-pituitary-thyroid feedback axis, or if it is an association between two distinct pathological conditions. **Keywords:** thyroid dysgenesis; pituitary resistance; thyroid dysfunction.

DIABETES MELLITUS

1687

PREVALENCE OF DIABETES MELLITUS IN THE BRAZILIAN POPULATION: AN ANALYSIS OF VIGITEL BRASIL 2023

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Introduction: Diabetes mellitus (DM) is a chronic disease with increasing incidence and prevalence. Many patients who have the condition are unaware of the diagnosis, worsening the prognosis, which constitutes a major public health problem. **Objective:** To analyze the prevalence of DM in adults living in Brazilian capitals, characterizing: sex, age and years of education. **Methods:** Population-based cross-sectional study, which used data from Vigitel Brasil 2023 (chronic disease risk factor surveillance system via telephone survey). Data collection was carried out by telephone interview, using landlines and mobile phones from 12/26/22 to 04/24/23. Participants were selected through probabilistic sampling of adults aged 18 years or older. The study locations were the 26 capitals and the Federal District. 21,690 interviews were completed. Among the self-reported data collected, knowledge about the medical diagnosis of DM stands out. This sample allows us to estimate, with a confidence coefficient of 95% and a maximum error of four percentage points, the frequency of any risk and protective factor in the adult population of each location. Free and informed consent was obtained orally at the time of telephone contact with the interviewees and the Vigitel project was approved by the National Commission for Ethics in Research for Human Beings of the Ministry of Health. **Results:** In 2023, Vigitel indicated that the percentage of adults who reported a medical diagnosis was 10.2%, being more frequent among women interviewed (11.1%) than among men (9.1%). Regarding the age of highest prevalence of DM, 65 years or older had the highest percentage (30.3%), highlighting the relationship between DM and increasing age. With regard to education, it was observed that the prevalence was higher in the range of years of study from 0 to 8 years, which corresponds to 19.4% of interviewees, suggesting that the diagnosis of DM is more common when there is low schooling. **Conclusion:** The data are consistent with those found in the literature, indicating that there is a higher prevalence of DM in females, the elderly and the population with low education. Therefore, socioeconomic improvements with public health impact are necessary to improve conditions for population screening, early treatment and effective educational interventions. **Keywords:** diabetes; prevalence; Vigitel.

MISCELÂNEA

1689

FAMILIAR PARTIAL LIPODYSTROPHY: A CASE REPORT

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Female patient, 38 years old, started nodulation on both feet at the age of 12, evolving into a hardened hyperpigmented lesion on the right upper limb. She sought health care and an anatomopathological examination was carried out, with a diagnosis of scleroderma. She started treatment, however, without clinical improvement. It evolved with an acromegalic face, calcinosis and loss of adipose tissue. In addition, she also has diagnoses of DM 2 with microvascular complications of mild non-proliferative retinopathy in the right eye, systemic arterial hypertension, dyslipidemia, grade III hepatic steatosis, hypertriglyceridemia, polycystic ovary syndrome and metabolic syndrome. The FIB-4 was recently calculated and a value above 1.3 was found, requiring liver elastography. The patient is currently receiving treatment for comorbidities and remains stable. Given the therapeutic refractoriness, clinical characteristics not typical of Scleroderma and metabolic complications, the hypothesis of lipodystrophy was raised and will be subjected to genetic testing. Lipodystrophies are characterized by changes in body fat deposits. They are classified according to the extent of fat loss (generalized or partial) and the form of inheritance (inherited or acquired). Familial partial lipodystrophies (FPL) are rare forms, presenting a centripetal distribution of body adiposity, diabetes mellitus (DM) and early-onset dyslipidemia. LPF is inherited predominantly autosomal dominant, characterized by loss of adipose tissue in the limbs and trunk and progressive accumulation of fat in the cervical, facial and intra-abdominal regions. It manifests itself during childhood or, more classically, during or after puberty. It presents with muscular hypertrophy in the limbs, phlebomegaly, hypertension, dyslipidemia and insulin resistance. Some patients may present with myopathy, cardiomyopathy and electrical conduction disorders. Diagnosis is based on clinical history, physical examination, body composition and metabolic changes. Genetic testing can help in cases of suspicion. To date, there is no cure for this disorder, but there are recent treatments that help reduce the morbidity associated with this disease. A treatment approved for use in lipodystrophy is metreleptin. There is an improvement in DM2, dyslipidemia and a reduction in mortality and an improvement in quality of life. **Keywords:** familial partial lipodystrophy; insulin resistance; metreleptin.

ENDOCRINOLOGIA BÁSICA

1690

TIRZEPATIDE: A PROMISING APPROACH TO WEIGHT LOSS IN PATIENTS WITH OBESITY AND TYPE 2 DIABETES. A SYSTEMATIC REVIEW

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Introduction: The incidence of obesity and type 2 diabetes mellitus (DM2) has increased in last decades, representing a challenge for global public health. Obesity is a primary risk factor for developing DM2, and both are associated with long-term health complications. Therefore, the search for treatments that, linked to lifestyle changes, can simultaneously control blood glucose levels and promote weight loss is crucial. In this scenario, tirzepatide appears as a promising therapy. The medication is a double incretin analogue that acts on GLP-1 and GIP receptors, amplifying the beneficial effects on glycemic control and reducing body weight. **Objective:** Compile data from the literature on the effectiveness of tirzepatide in weight loss in obese patients and in the control of DM2. **Patients (materials) and methods:** This is a systematic review, defined using the PRISMA (Population Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The searches were conducted in the PubMed databases, applying the Health Sciences Descriptors (DeCS): "Tirzepatide AND Weight Loss AND Obesity" and later "Tirzepatide AND weight loss AND diabetes mellitus 2". The selection criteria included articles published in the last 5 years and free of charge. **Results:** Of the 20 initial articles, 18 were included in the final sample after applying the exclusion criteria, of which 13 were primary studies and 5 were meta-analyses. The variables used to compare control and intervention groups using tirzepatide were: BMI, efficacy, weight loss, glycated hemoglobin (HbA1c) and adverse events. Of the 18 studies, 15 indicated benefits from the use of tirzepatide in patients with type 2 diabetes and obesity, with Jansen's study showing that, in obese patients without DM2, weight loss was dependent on the weekly dose of tirzepatide, with loss of 20.9% over 72 weeks for dose of 15 mg. And also showed a weight loss of 14.7% in 72 weeks in patients with DM2 with a dose of 15 mg. HbA1c reduced by 2.4% in 5 articles in the DM2 intervention groups. Two articles highlighted the need for more studies for obese people without DM2. **Conclusion:** This review suggests that tirzepatide, a dual incretin analogue drug that acts on GLP-1 and GIP receptors, demonstrates significant beneficial effects in controlling glycemic levels in patients with type 2 diabetes and weight loss in obese patients. However, more research is needed to ensure long-term benefits and identify potential adverse effects. **Keywords:** tirzepatide; obesity; diabetes mellitus 2.

TIREOIDE
1691

PATIENT WITH MARINE-LENHART SYNDROME: CASE REPORT

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Case presentation: Female, 87 years old, with high blood pressure and osteoporosis, reports weight loss and high blood pressure that is difficult to control. She began follow-up with an endocrinologist, even without a typical Graves clinic, so she underwent laboratory tests, in which the sample showed a suppressed TSH of 0.01 and a positive TRAB of 5.51. Complementary tests were carried out which showed diffuse nodular goiter, septate cyst in the right lobe, TIRADS III and a nodule larger than 4 cm on ultrasound, as well as on thyroid scintigraphy it was possible to detect hyper-uptake in the 75% gland (reference: 15%-35%) and in the nodules of the thyroid, in which they appeared as hot in the right and left lobes. **Discussion:** Marine-Lenhart syndrome is a rare condition that causes hyperthyroidism and is characterized by the coexistence of Graves' Disease (GD) and the presence of one or more hyperfunctioning thyroid nodules. It is estimated that this syndrome occurs in 0.8% to 2, 7% of patients with GD. Furthermore, GD is an autoimmune disease in which autoantibodies (TRAb) stimulate the production and excessive release of thyroid hormones. The patient may present with extra-thyroidal manifestations, such as orbitopathy, dermopathy and acropathy. Criteria for the diagnosis and classification of patients with GD and functioning thyroid nodules include thyroid function tests indicative of hyperthyroidism, with the presence of TRAb antibodies to GD, increased radioactive iodine uptake and identification of "hot" thyroid nodules. " or "colds", and a biopsy of a thyroid nodule that reveals a hyperplastic lesion or follicular adenoma, in cases of follicular adenoma, diagnostic surgery may be necessary to exclude a suspicion of follicular carcinoma. **Final comments:** The suspicion of Marine-Lenhart syndrome should always be considered in cases of resistance to pharmacological treatment for hyperthyroidism or rapid relapse after stopping antithyroid drugs. Therefore, it can be said that the syndrome is a contradictory cause of hyperthyroidism, the identification of this condition is crucial due to its therapeutic implications, which may influence the choice of surgical treatment, which is total thyroidectomy, as it provides radical treatment and control of GD. **Keywords:** Marine-Lenhart syndrome; hyperthyroidism; Graves' disease.

TIREOIDE
1692

TREATMENT OF HYPOTHYROIDISM IN CHILDREN WITH DOWN SYNDROME: A SYSTEMATIC REVIEW

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Introduction: Hypothyroidism (HT) constitutes the main endocrine dysfunction in children with Down syndrome (DS). However, the advantages of using levothyroxine sodium in these cases are still unclear. **Objective:** This study aims to evaluate the effectiveness of levothyroxine sodium for HT in children with DS. **Methods:** A systematic review following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) criteria, using Cochrane, MEDLINE (PubMed), and LILACS databases with the descriptors (down syndrome) AND (hypothyroidism) AND (treatment). Inclusion criteria followed the PICO strategy (P: Patients with DS and HT, I: Levothyroxine, C: Not applicable, O: Effectiveness); articles published within the last 10 years were included. Case reports, reviews, and unavailable articles were excluded. The search strategies resulted in 81 articles, of which 12 met the inclusion and exclusion criteria. Risk of bias analysis used the NewCastle-Ottawa scale and Cochrane RoB 2. **Results:** It was observed that subclinical HT is the most prevalent form found in children with DS. Regarding treatment, Brazilian guidelines for HT recommend initiating treatment with oral levothyroxine sodium, but there are uncertainties regarding when to start medication in cases of subclinical HT in children. According to Murillo-Llorente *et al.* (2023), reference values for free T4 and thyroid-stimulating hormone (TSH) should be specific for DS, being determined as: TSH (0.88 to 11.24 mIU/L) and free T4 (0.71 to 1.63 ng/dL). In the study by Corona-Rivera *et al.* (2021), the case group with DS and HT showed a higher number of female patients compared to the control group. However, when correlating family history of thyroid disease with congenital HT in DS, there was a higher incidence in males. AlAaraj *et al.* (2019) found that children with high TSH levels had lower stature and higher Body Mass Index (BMI) compared to individuals with DS in the same age group. However, after starting Levothyroxine, their stature and BMI equaled those of the control group. **Conclusion:** The review concluded that subclinical HT is the most prevalent thyroid dysfunction in children with DS, with higher prevalence in females. Levothyroxine is effective in children with DS and elevated TSH levels, resulting in reduced BMI and appropriate stature. However, modified reference values for free T4 and TSH are necessary for monitoring treatment effectiveness in DS patients. **Keywords:** hypothyroidism; Down syndrome; levothyroxine sodium.

METABOLISMO ÓSSEO E MINERAL

1693

JUVENILE HYPOPHOSPHATASIA: CASE REPORT

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Case description: B.G., 2 years old, female, with a history of decreased growth velocity over the past year (from the 15th percentile to the 3rd percentile) and alkaline phosphatase below the lower limit of normal. Denies other complaints, chronic illnesses, or medication use. Had normal newborn screening, exclusively breastfed until 6 months, and good dietary introduction. Panoramic radiographs of the entire spine and additional laboratory tests showed no abnormalities (except for alkaline phosphatase); bone age radiography was compatible with chronological age. Through Next-Generation Sequencing (NGS) panel, the patient was identified with a pathogenic heterozygous mutation in the ALPL gene. **Discussion:** Hypophosphatasia (HPP) is a disease caused by mutations in the ALPL gene, resulting in a deficiency of the alkaline phosphatase enzyme, which is crucial for bone matrix production. This condition can present itself with various clinical presentations that can occur at any stage of life, including infants, children or adults. There are two forms of pathogenic mutations in the ALPL gene: Autosomal dominant - associated with milder changes and late onset, and Autosomal recessive - related to the more severe form of the disease. The clinical spectrum can range from short stature to premature tooth loss and seizures. The pathophysiology is associated with the accumulation of substrates, primarily inorganic pyrophosphate, which inhibits bone mineralization, affecting growth and predisposing to recurrent fractures. Disease-modifying treatment emerged with the administration of Asfotase Alfa, a fusion protein that promotes bone mineralization. This condition is considered rare, necessitating careful management in such scenarios. In discussing B.G.'s case, the detection of a pathogenic mutation in the ALPL gene through genetic sequencing confirms the diagnosis of HPP, corroborating observed clinical signs such as short stature and decreased alkaline phosphatase levels. Normal laboratory and radiographic findings, except for low alkaline phosphatase, underscore the importance of genetic sequencing in early diagnosis confirmation for potential therapeutic intervention**. Final comments:** The patient awaits the initiation of enzyme replacement therapy, crucial for managing HPP, aiming to improve bone mineralization by inhibiting the accumulation of substrates, particularly inorganic pyrophosphate, and preventing disease-related complications. **Keywords:** hypophosphatasia; decreased growth; ALPL gene.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1694

EVALUATION OF CARDIAC ABNORMALITIES AND CARDIOVASCULAR RISK IN ADULT WOMEN WITH TURNER SYNDROME: A CROSS-SECTIONAL STUDY

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Introduction: Turner syndrome (TS) affects 1:2,000 newborn girls and manifests as short stature, ovarian insufficiency, autoimmune diseases and congenital anomalies, associated with total or partial loss of an X chromosome. Congenital or acquired cardiovascular (CV) diseases can affect up to half of patients with TS and screening is recommended by international guidelines. **Objective:** To assess the frequency of CV abnormalities and the Framingham Global Risk Score (GMR) in adult women with ST. **Patients and methods:** An observational, cross-sectional, retrospective study by reviewing the medical records of 99 adult women with ST followed up at a referral service. Data were collected and processed using the REDCap electronic capture tool hosted at our institution. Continuous variables are presented as mean +/- standard deviation (median) and categorical variables as n (%). Kruskal-Wallis or Fisher's exact test were used for comparison between groups, considering $p < 0.05$ significant. **Results:** Follow-up time and age at last visit were 14 ± 9 (13) and 29 ± 11 (27) years, respectively. The distribution by karyotype: X monosomy (43%), mosaicism (31%), isoXq or ring X (22%) and with Y material (3%). The majority (55%) had received somatropin (GH) therapy for 4.8 ± 3.6 (4) years. The age of menarche was 17.3 ± 3.7(17) after estrogen use (81%). Sedentary lifestyle, overweight, hypertension and DM were present in 66%, 41%, 31% and 11% respectively. Distribution by FGR: low (67%), intermediate (22%) and high (11%). Of the 95 women who underwent an echocardiogram, 38% had alterations, with BAV being the most common (11.5%). Of the 16 women who underwent magnetic resonance imaging (MRI) of the heart/aorta, 48% had alterations: abnormal aortic caliber(3), BAV(2), aberrant subclavian artery(1), arrhythmogenic right ventricular dysplasia(1) and severe aortic stenosis(1). There was no significant difference in the frequency of CV anomalies and FGR score by karyotype or GH use. **Conclusion:** CV risk is high or intermediate in 1/3 of young adult women and the high prevalence of overweight and sedentary lifestyle in the sample reinforces the importance of early diagnosis of TS for lifestyle intervention. Heart/aorta MRI detected more CV abnormalities than echocardiography and should be made more accessible to women with TS. **Keywords:** turner syndrome; heart disease risk factors; cross-sectional studies.

NEUROENDOCRINOLOGIA

1695

BIOCHEMICAL CONTROL, PAIN ASSESSMENT DURING SOMATOSTATIN RECEPTOR LIGAND APPLICATION, AND SATISFACTION WITH SWITCHING FROM OCTREOTIDE LAR TO LANREOTIDE AUTOGEL IN PATIENTS WITH ACROMEGALY

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Introduction: Injected somatostatin receptor ligand (SRL)-based therapy is the treatment of choice in patients with acromegaly who did not achieve biochemical remission after surgery, or who were not submitted to surgery for different reasons. The first generation SRL, Octreotide LAR (OCT) and Lanreotide autogel (LAN), have similar efficacy in the treatment of acromegaly, but different pharmacokinetics and administration devices. **Objective:** to evaluate biochemical control and patient satisfaction with switching from OCT to LAN; and to compare pain intensity during SRL administration and patient satisfaction with current treatment. **Patients and methods:** patients with acromegaly in medical therapy with OCT and LAN were evaluated. IGF-I was determined by the mean of two IGF-I results immediately pre- and post-switch from OCT to LAN. Unavailability of OCT 20 mg at the State Health System > 3 months was the reason for switching to LAN. The following items were evaluated: 1) Likert scale to assess satisfaction with switching from OCT to LAN (score from 1 to 5, where 1 = excellent and 5 = poor); 2) satisfaction visual analogue scale (VAS) with SRL in use (score from 1 to 10, where 10 = very satisfied and 0 = very unsatisfied; and 3) pain VAS regarding to pain intensity during SRL application (score from 1 to 10, where 0 = no pain and 10 = very intense pain). Patients who did the switch also answered pain VAS related to previous OCT use. **Results:** 16 patients who switched from OCT to LAN and 20 patients in OCT use were evaluated. Median pre-switch IGF-I was 1.15 upper limit of normality – ULN (IQR 0.84-1.34), and median post-switch IGF-I was 0.89 ULN (IQR 0.66-1.05), with no statistical difference. The mean Likert scale about switching from OCT to LAN was 2.06 ± 1.12. Mean satisfaction VAS with LAN therapy was 8.75 ± 2.04, and OCT therapy, 7.50 ± 1.97 (with no statistical difference). The mean pain AVS with LAN was 1.93 ± 1.76, compared to 4.81 ± 3.25 with previous use of OCT (p = 0.001). Patients who remained in OCT presented pain AVS of 2.76 ± 2.16. Pain AVS was not statistically different between LAN group and patients who remained with OCT use (p = 0.56). **Conclusions:** There was no difference in biochemical control of acromegaly with switching from OCT to LAN, which reflects their similar efficacy in real life. Patients who did the switch to LAN presented lower indexes of pain with LAN compared to previous OCT use, probably because they had the personal experience with both SRL application. **Keywords:** acromegaly; lanreotide; octreotide.

NEUROENDOCRINOLOGIA

1696

CALCIFIED PROLACTINOMA MIMICKING A CRANIOPHARYNGIOMA

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Case presentation: A 23 yrs-old man with severe obesity presented fatigue, decreased libido and headache. No visual or neurological deficits were observed, neither gynecomastia nor galactorrhea. Cranial CT and sellar MRI showed a heterogeneous sellar and suprasellar mass of 4.5 x 4.2 cm with areas of calcification, compressing the optic chiasm. Tumor characteristics pointed to the diagnosis of craniopharyngioma. Laboratory findings showed panhypopituitarism and increased serum prolactin (PRL) levels (79.9 ng/mL N < 18). Transcranial surgery was performed and histopathological evaluation was consistent with prolactinoma. Four months after surgery, sellar imaging depicted sellar and suprasellar mass with gross calcifications (4.0 x 3.2 cm) and PRL 137 ng/mL. Cabergoline (CAB) treatment was started at 1 mg/week and normoprolactinemic level was achieved. After 10 yrs of clinical treatment, there were no visual deficiencies, tumor dimensions shrunk (3 x 2 cm) and panhypopituitarism remained, treated with proper hormonal replacement. **Discussion:** Calcification in the sellar and suprasellar region is associated with a variety of pathological entities, including craniopharyngioma, meningiomas, chordomas/chondrosarcomas. Pituitary tumors rarely present calcification and tumor removal by neurosurgery is difficult due to calcifications. There are 12 cases of calcified prolactinomas reported in the literature: the majority of the patients were male, presented macroadenomas and in some cases PRL was lower than expected to its tumor dimensions, as observed in our case. In our patient, as a consequence of the atypical neuroimaging with calcifications and disproportionately low PRL levels to the size of the tumor mass, diagnosis of craniopharyngioma with hyperprolactinemia secondary to stalk disconnection was made. **Final comments:** We report a unique case of a calcified prolactinoma that was at first diagnosed as craniopharyngioma and submitted to surgical treatment. After histological findings confirming prolactinoma, CAB was started and disease control was achieved. Although rare, calcified pituitary tumors should be in the differential diagnosis of calcified sellar masses. **Keywords:** calcified prolactinoma; craniopharyngioma; sellar mass.

ENDOCRINOLOGIA PEDIÁTRICA

1697

TREATMENT OF SHORT STATURE WITH GROWTH HORMONE IN A CHILD WITH ALAGILLE SYNDROME

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Case presentation: E.J.L.B., 5 years and 6 months old, has a confirmed diagnosis of Alagille syndrome through Exome sequencing – CNV heterozygous pathogenic variant in the JAG1 gene. He was born weighing 1,900 g (Z Score = -2.4) and measuring 45 cm (Z Score = -1.5), at 37 weeks of gestation. He is under the care of a pediatric hepatologist and takes ursodeoxycholic acid and rifampicin. He has no cardiac or orthopedic comorbidities. He is described as an intelligent, active, and happy child. Physical examination reveals typical syndromic facies, weight 9.9 kg (Z Score = -3), height 83 cm (Z score = -3), and P1G1. After discussion with the team, it was decided to monitor his progress, despite the family's keen interest in treating his short stature. The child returned at 3 years and 10 months with unchanged weight and height Z scores. Laboratory findings include TSH: 2.1 mIU/L, T4: 1.2 ng/dL, IGF-1: 33 ng/mL, and IGFBP-3: 1 ug/mL, with elevated transaminases and cholesterol consistent with cholestasis. The case was discussed again with the hepatology team due to the rarity of the disease and the absence of literature on human growth hormone (GH) use in this condition. A therapeutic trial with somatropin at a dose of 0.12 U/kg/day was initiated, which the child tolerated well without adverse reactions. Six months later, the GH dose was adjusted to 0.15 U/kg/day. **Discussion:** Alagille syndrome is a rare autosomal dominant disorder with incomplete penetrance, primarily caused by mutations in either of two genes, with JAG1 located at 20p12.2 in approximately 98% of cases. Its main clinical manifestation is cholestasis, often accompanied by ocular anomalies, facial dysmorphism, and cardiac disease. Growth impairment in Alagille syndrome may result from reduced intake, increased energy expenditure, or resistance to human growth hormone. Due to the lack of literature on GH use in this condition, favorable outcomes were not expected. However, in this case, the child responded well: starting at Z score- 3 SD and achieving Z score- 1 SD after 1 year and 6 months of treatment. **Final considerations:** This case highlights the therapeutic challenge and novelty of using somatropin in Alagille syndrome, a complex condition deserving attention in medical literature. **Keywords:** child; Alagille syndrome; growth hormone.

TIREOIDE

1698

PEMBROLIZUMAB-INDUCED THYROIDITIS IN A PATIENT WITH METASTATIC MELANOMA: A CASE REPORT

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Case presentation: A 59-year-old woman was diagnosed with metastatic malignant melanoma and underwent excision and axillary lymph node dissection in 2023. She began adjuvant therapy with pembrolizumab in 2024 and after the first cycle of immunotherapy, she developed insomnia, heat intolerance, unintentional weight loss, and agitation. The patient had no personal or family history of thyroid disease. Laboratory tests revealed TSH < 0.01 (RV 0.4-5.8 mcIU/mL) and total T4 > 30 (RV 6.1-12.2 ng/dL). Based on clinical presentation and lab results, treatment with propylthiouracil and propranolol was prescribed. Two months after starting treatment, she reported fatigue, weight gain, emotional lability, and periorbital edema. Further tests showed TSH 132.3 mcIU/mL, free T4 0.19 (RV 0.9-1.7 ng/dL), Anti-TPO 1300 (RV < 60 IU/mL), and TRAB 0.12 (RV < 1.75 IU/L). Given the diagnosis of pembrolizumab-induced thyroiditis, treatment was adjusted by discontinuing antithyroid drugs and symptomatic medications, introducing Levothyroxine, and consequently improving symptoms. **Discussion:** Pembrolizumab is a monoclonal antibody that inhibits the programmed cell death-1 (PD-1) immune checkpoint present on T cells. It was initially approved for the treatment of advanced melanoma, but its indications have since been extended to other types of cancer. Its use can cause endocrinopathies, the most common being hypophysitis, hypothyroidism, and thyrotoxicosis. In this specific case, the patient developed thyroiditis, and treatment was promptly initiated following diagnosis, without the need to interrupt immunotherapy. The mechanism of thyroiditis remains uncertain; however, it is known that anti-PD-1 agents block the interaction between PD-1 and its ligands, preventing the inhibition of T cells. This results in T cell activation, which can trigger an autoimmune response in various organs. Therefore, monitoring thyroid function during its use is crucial. **Final comments:** The increasing use of Pembrolizumab in treating various types of cancer has raised the incidence of thyroid alterations. Thus, it is essential that endocrinologists be aware of the potential adverse events associated with this medication. Active monitoring of thyroid function during immunotherapy is crucial for early diagnosis and effective management of complications. **Keywords:** thyroiditis; immune checkpoint inhibitors; malignant melanoma.

METABOLISMO ÓSSEO E MINERAL

1699

EVALUATION OF BONE, ADIPOSE, AND MUSCLE TISSUES IN X-LINKED HYPOPHOSPHATEMIA (XLH)

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XLH results from an inactivating mutation in the *PHEX* gene, with a consequent increase in FGF23 levels, leading to hypophosphatemia. There is a paucity of studies on the relationship between the hard (bone) and soft (muscle and adipose) mesenchymal tissues and its implications for the alterations in bone and energy metabolism in XLH. In this cross-sectional study, we have evaluated adipose tissue quantity and quality within bone marrow (MAT) and muscle (intra (IMCL) and extra (EMCL) myocellular), muscle function (phosphorus (P) disposal), and bone quantity and quality in XLH. The study comprised 11 patients with XLH (8W and 3M) and 22 controls (16W and 6M), matched by sex and age (C = 30, IQR 24-33; XLH = 31, IQR 23-34 years; p = 0.955). Dual-X-ray absorptiometry (DXA) was used to assess bone mineral density (BMD), trabecular bone score (TBS), body composition, and fat shadow (FS). Magnetic resonance spectroscopy (MRS) of phosphorus (^{31}P) and hydrogen (^{1}H) was used to estimate, respectively, muscle metabolism and lipids in MAT, IMCL, and EMCL. XLH patients had a higher body mass index (BMI) and FGF23, but lower levels of P than C ($p < 0.05$). Serum levels of glucose and insulin, HOMA-IR and triglyceride index were similar in both groups. XLH and C groups showed similar amounts of visceral adipose tissue. FS by DXA detected a predominant subcutaneous fat distribution in XLH. BMD and TBS in lumbar spine were higher in XLH than in C, but BMD was lower in 1/3 radius in XLH than in C. There was no difference in tibial MAT (total, saturated, or unsaturated lipids) between groups. However, XLH exhibited higher EMCL (C = 1387, IQR 1017-1790; XLH = 2337, IQR 1655-5698AU, p = 0.03) than C. Muscle functional analysis showed lower levels of phosphocreatine at rest in XLH patients (C = 0.0213, IQR 0.0181-0.0248; XLH = 0.0153, IQR 0.0090-0.0193 AU, p = 0.021), but there was no difference in the other parameters (ATP levels, pH, Mg, and Pi), at rest or after exercise. The present study suggests that overweight and obesity are frequent among XLH subjects; despite this, they show a healthy fat distribution profile and normal insulin resistance parameters. Curiously, not only BMD but also TBS are increased in lumbar spine of XLH. The present study encourages further studies to evaluate the meaning of lower muscle levels of phosphocreatine in XLH and its consequence for bone strength. **Keywords:** XLH; hypophosphatemia; energy metabolism; muscle; hydrogen spectroscopy; phosphorus spectroscopy; body composition.

OBESIDADE

1701

PROPORTION OF OBESES TO THE GLOBAL AND AMERICAN NIVEA: PRESENT VALUES AND FUTURE ESTIMATES

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Introduction: Obesity is defined by a body mass index ≥ 30 kg/m² in normal individuals. It is an increasingly prevalent chronic disease in several countries, in some cases surpassing malnutrition and even some infectious diseases, revealing a radical and recent change in society as a result of urbanization and industrialization. There are various health consequences for obese individuals, such as dyslipidemia, coronary artery disease, hypertension, some types of cancer, as well as the psychosocial repercussions associated. Discussion of the issue by the scientific community is therefore unavoidable. **Methods:** A cross-sectional, population-based study was carried out using data from the World Obesity Atlas 2023. The main data collected referred to the percentage of people with obesity in the Americas and the world, where a comparative analysis of these figures was carried out, highlighting the sex of the participants and the respective projection rates for the future. **Results:** The World Obesity Atlas 2023, in its latest edition, publishes figures for the number and proportion of obese people, separated by sex, globally and by regions of the world. Initially, for adults, considered to be people aged 20 and over, the number of obese men in 2020, on a global scale, was 347 million (14% of the population), while the number of obese women was 466 million (18%). The projection for the following years is that these figures will increase to 16% and 21%, respectively, for men and women in 2025, followed by 19% and 24% in 2030 and 23% and 27% in 2035. Compared to the region of the Americas, these figures are much more significant in percentage terms, with a greater impact on their local economies. In 2020, there were 111 million obese people (32%) and 135 million obese people (37%). As with global data, in the Americas, all figures are expected to increase over the years. By 2025, it is estimated that the percentage for men will be 36% and for women, 40%. This is followed by 41% for men and 45% for women in 2030, and 47% and 49% for men and women in 2035, in that order. **Conclusions:** Obesity is one of the fastest-growing diseases in recent years, especially in the **Americas.** Compared to world data, the projection for 2035 is that around half of the population in this region will be obese. It is therefore clear that there is an increasing need to strengthen public projects, especially in digital media, where the majority of the world's population lives. **Keywords:** obesity; Brazil; Americas.

TIREOIDE

1702

HYPOTHYROIDISM AS A RISK FACTOR FOR METABOLIC SYNDROME

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Introduction: Several studies have demonstrated the association between hypothyroidism and cardiovascular disease (CVD), regardless of ethnicity and gender, although it is associated with advancing age. Thyroid hormones have an important influence on metabolism and the development of CVD risk factors. **Objective:** The objective of the present study was to investigate the prevalence of hypothyroidism in patients with metabolic syndrome (MetS) in a population of patients undergoing treatment at the Endocrinology and Metabolism outpatient clinic of HCFMUSP. **Methods:** According to the plasma concentrations of TSH (µUI/L) and Free T4 (ng/dL), two groups of patients were selected, euthyroid (TSH ≤ 4.1) and hypothyroid (TSH ≥ 4.2) respectively. The diagnosis of MS according to the ATP III criteria of NCEP4. Fasting blood samples were measured: blood glucose (mg/dL), glycated HbA1c (%), HDL-Col (mg/dL), triglycerides (mg/dL). Waist circumference (cm), SBP and DBP blood pressure (mmHg), weight (kg) and height (m) were measured for BMI (kg/m^2), all patients were undergoing treatment for dyslipidemia and high blood pressure. **Results:** Total of 138 patients divided into two groups according to gender, 47 men and 91 women, and thyroid function. The prevalence of hypothyroidism in the entire studied population was 47%, in relation to gender, it was 49% in women and 43% in men. The results are presented in the table below. Men with hypothyroidism had higher TSH ($p < 0.03$); higher HDL-chol ($p < 0.018$); Lower DBP ($p < 0.03$) and older age than euthyroids. Women with hypothyroidism had higher TSH ($p < 0.01$); Lower HDL-chol ($p < 0.013$) and there was no difference between the other data. **Discussion:** In this study, the prevalence of hypothyroidism in patients with MS was 47%, being higher in women (49%) than in men (43%). Other studies report a correlation between MS and hypothyroidism. The higher prevalence in women was also reported in others studies, and increase with age It was also observed that HDL-chol was higher in euthyroid than hypothyroid women ($P < 0.018$) this data is in line with other studies that report lower HDL-chol in hypothyroidism. DBP was lower in hypothyroid men and there was no difference among women. **Keywords:** hypothyroidism; metabolic syndrome; obesity.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1703

PREGNANCY IN A YOUNG WOMAN WITH FLUCTUATION OF OVARIAN FUNCTION

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Introduction: Premature ovarian failure (POF) is defined by the loss or decrease in ovarian functionality before the age of 40, which impacts hormonal production. The diagnosis is based on a clinical history of irregular menstrual cycles, primary or secondary amenorrhea, and elevated gonadotropin levels (FSH > 25 mIU/mL) in two measurements taken more than 4 weeks apart. This condition leads to decreased fertility and difficulties in conceiving. **Objective:** To report a case of a young patient with POF who became pregnant. **Case report:** M.D.S.S., female, 26 years old, GA: 11w6d, G3P1A1, farmer, overweight. She has a history of menstrual irregularity since the age of 11 with intermittent amenorrhea lasting 2-6 months, followed by high-flow menstruation lasting 5-7 days, along with symptoms of hot flashes and vaginal dryness. Diagnostic investigation began in 2021, showing no clinical signs of POF or laboratory abnormalities in thyroid and prolactin levels, but with fluctuating ultrasound, LH, and FSH results. She used estradiol valerate + levonorgestrel for 6 months, and upon discontinuation, became pregnant. Imaging exams in March 2023 showed low bone mass on DXA and reduced ovarian dimensions on TVS (right: 1.1 cm^3 and left: 0.9 cm^3). In laboratory tests from January 2021, she was not menstruating with estradiol: 19 pg/mL, FSH: 78 mIU/mL, LH: 37 mIU/mL, and progesterone: 0.69 ng/L. At the start of treatment in March 2023, estradiol: 5 pg/mL, FSH: 77.4 mIU/mL, LH: 39 mIU/mL, and prolactin: 13.5 ng/mL. **Discussion:** The clinical history of M.D.S.S. includes FSH levels above 70 mIU/mL, intermittent amenorrhea, and symptoms of hypoestrogenism, confirming the diagnosis of POF. Although POF is associated with infertility, spontaneous pregnancy can occur in 5% to 10% of women with this condition. M.D.S.S fell into this statistic, becoming pregnant after completing hormone replacement therapy. The low bone mass is an expected finding in cases of POF due to the estrogen deprivation this condition causes. Regarding ultrasound findings, the literature describes enlarged ovaries with multiple follicles in cases of POF; however, M.D.S.S presented reduced ovaries during clinical follow-up. **Conclusion:** Therefore, the relevance of this case lies in the importance of diagnosing POF to manage symptoms and prevent complications such as infertility. **Keywords:** ovarian insufficiency; ovarian fluctuation; fluctuation of ovarian function.

ENDOCRINOLOGIA BÁSICA

1704

LIPEDEMA: A SYSTEMATIC REVIEW OF AVAILABLE TREATMENTS

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Introduction: Lipedema is a chronic condition characterized by the abnormal accumulation of fat and edema in the lower limbs, primarily in the ankles. Misdiagnosis has often led it to be confused with obesity. The treatment for lipedema remains a subject of research, as knowledge about the disease is relatively limited. This article reviews studies that investigated the most commonly used interventions for treating this condition, such as decongestive therapy, lymphatic drainage and liposuction, and their effectiveness. **Methods:** A systematic literature review was conducted using the PRISMA methodology. The search for articles was performed from June to July of 2024 through an independent search in the PubMed database using the descriptor "Lipedema". The selection followed pre-established quality criteria, resulting in 5 articles for the final sample of this review. **Results:** Randomized clinical trials studied 31 female participants diagnosed with lipedema, using 3 control groups. They found that decongestive therapy, which includes the use of bandages and compression garments, when combined with physical exercise, is an intervention that reduces pain and swelling, especially when compared to the group that only performed physical exercise or only lymphatic drainage. Another randomized prospective study analyzed the use of pneumatic compression and conservative treatment, finding improvements in calf circumference and bioimpedance, as well as reductions in swelling. To compare conservative and surgical treatments, a multicenter study – LIPLEG – found that liposuction is an alternative to explore when conservative treatments fail, as it results in the reduction of fat tissue and increases mobility. This study also highlighted the need for more research, as evidence proving that surgical intervention presents long-term results equivalent to decongestive therapy and lymphatic drainage is lacking, especially in advanced stages of the disease. Other interventions being explored involve dietary changes, focusing on less carbohydrate intake, and low-frequency vibration therapy, which showed positive results when combined with manual lymphatic drainage. However, these alternative treatments don't show significant results. **Conclusion:** The findings highlight the research deficit in this area, particularly concerning surgical treatment. The positive results of conservative therapies, are emphasized, as they improve patients' quality of life and reduce pain. **Keywords:** lipedema; treatment; interventions.

NEUROENDOCRINOLOGIA

1705

ACROMEGALY DUE TO PITUITARY MACROADENOMA WITH TUMOR REGRESSION AND SUCCESSFUL WITHDRAWAL OF MEDICATIONS

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Case presentation: Female patient, 69 years old, diagnosed with acromegaly due to pituitary macroadenoma at the age of 51, after presenting macroglossia, mandibular protrusion and dental malocclusion. An MRI of the sella turcica was requested in December 2008 showing pituitary macroadenoma measuring 1.1 x 0.9 cm, and OGTT in February 2009, which confirmed the diagnosis, with IGF-1 of 583 VR (81-225). Referred for surgery, remaining away for a while awaiting surgery, without success. A new MRI showed a lesion 1.2 x 0.9 cm, still with the same symptoms already reported, in addition of paresthesia, and pain, Wherefore, due to the unavailability of surgery, we chose to start second-line treatment, which is a medication that contains octreotide 30 mg, every 28/28 days, with improvement in the condition, and decrease in IGF-1 and GH in follow-up with new laboratory and imaging tests, observing both a decrease in IGF-1 and GH parameters. The MRI showed decrease in the size of the lesion measuring 0.5 x 0.7 cm in 2011. In May 2012, in addition to the treatment with octreotide, we started cabergoline 0.5 mg 5 times a week, increasing up to 7 times a week, progressing with improvement in the clinical picture. The last MRI done in 2019 showed regression of the tumor, new IGF-1 with 154 VR (81-225) and GH of 0.85, that is why a gradual reduction in the dose of the medication was carried out until suspension, without recurrence so far, in regular monitoring every 6 months. **Discussion:** In this case report, the initial drug treatment considered second-line for acromegaly was used, as already explained, and was successful, showing the disappearance of the lesion. **Final comments:** If surgery is not available, drug treatment may be an option, which in this case gave excellent results with the disappearance of the lesion and control of acromegaly without the use of medication. **Keywords:** hypophysis; pituitary macroadenoma; acromegaly.

OBESIDADE
1706

HYPOGONADISM IN A 55-YEAR-OLD MAN WITH GRADE III OBESITY: MOSH OR DAEM?

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Case presentation: A 55-year-old man, dyslipidemic, sedentary, hypertensive and with Diabetes Mellitus (DM) II for three years, attends the consultation referring to the desire to lose weight, reporting low self-esteem, impaired sleep quality and low libido. Taking medications: metformin (1,000 mg) + dapagliflozin (5 mg), twice a day; simvastatin (40 mg), losartan (50 mg) and orlistat (120 mg). He denied binge eating, diarrhea, constipation, alcoholism and smoking. Bioimpedance revealed body weight of 131.2 kg, fat percentage of 47.4%, muscle mass of 39.1 kg and fat mass of 62.2 kg (BMI of 42.8; designating grade III obesity). Furthermore, previous laboratory tests were: glucose 164, Hba1c 7.0%, LDL 195, HDL 33, total cholesterol 249, triglycerides 107, creatinine 0.9, TSH 1.8, free T4 0.8, DHEA 53, PSA 0.8, total testosterone 318, free testosterone 6.0, FSH 3.0 and LH 2.5. Abdominal ultrasound showed grade III hepatic steatosis. Characterizing a metabolic syndrome. The therapeutic approach was based on the diagnostic hypotheses Male Hypogonadism Secondary to Obesity (MOSH) or Male Androgenic Aging Disorder (ADEM), as both can lead to reduced testosterone levels and normal LH and FSH levels. Weight training and aerobic exercises, testosterone replacement therapy (TRT) with Deposteron (1 ampoule every 2 weeks) and anti-obesity drug therapy with Semaglutide were recommended, with the goal of losing 40 kg of fat in 18 months. **Discussion:** TRT was performed for 4 months. After 2 months of suspension and weight loss of 20 kg, total testosterone levels increased to 605 ng/dL, demonstrating an increase in endogenous production. Given the clinical evolution, the patient was diagnosed with MOSH, characterized by hypothalamic inflammation typical of obesity that occurs with a reduction in GnRH pulses. Regarding the resolution of DM, after losing 40 kg and discontinuing metformin, glycated hemoglobin fell to 5.2%. The outcome obtained is in line with the findings of the DIRECT study, which demonstrates that 86% of patients with concomitant diabetes and obesity achieve disease remission after losing 15% of their initial weight. **Final comments:** The treatment of obesity is essential to address the cause of several metabolic diseases. By reducing the meta-inflammation associated with obesity, control of these conditions is achieved and the risk of morbidity and mortality is reduced. **Keywords:** obesity; hypogonadism; metabolic syndrome.

OBESIDADE
1707

METABOLIC BENEFITS, OBTAINED IN TRAINING AND DETRAINING CYCLES THROUGH HIGH-INTENSITY INTERVAL TRAINING, REMAIN THROUGHOUT DETRAINING CYCLES IN MICE FED A HIGH-FAT DIET

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Introduction: Weight regain after weight loss is a frequent problem that overweight, obese and even eutrophic individuals face. This weight gain is often attributed to a lack of adherence to adequate eating habits and physical exercise. Physical exercise, associated with a balanced diet, is the first line of treatment for cardiovascular diseases, obesity and hepatic steatosis, but sustaining this new lifestyle in the long term is a challenge and regaining body weight is a recurring fact. High-intensity interval training (HIIT) presents itself as a good alternative non-pharmacological treatment for obesity and related diseases, being more effective and motivating than other training methods. **Objective:** To study the impact of the effects of training and detraining of physical exercise on metabolism, the liver and the left ventricle (LV). **Methods:** Experimental model using 80 C57Bl/6 mice (3 months old) fed a control diet (C, 10% lipids, n = 40) or a diet rich in saturated fat (HF, 50% lipids, n = 40) during 12 weeks, to develop a model of metabolic changes. Subsequently, the animals were redivided into 8 groups (4 C and 4 HF), these being: Untrained throughout the experiment (NT); Trained throughout the experiment (T); Trained-Untrained-Trained (TNT) and Untrained-Trained-Untrained (NTN). Body mass (BM) and systolic blood pressure (SBP) were measured; oral glucose tolerance test, biochemical tests, RT-qPCR for genes related to hepatic lipogenesis (*Srebp1c, Cherbp, fas and fat-cd36*), hepatic β-oxidation (*Pparα* and *Cpt1a*), renin angiotensin system pathway and its axis counter regulatory and irisin/UCP-2 in the LV, the work was approved by CEUA 015/2023. **Results:** At the end of the first 12 weeks, a significant increase in MC in the HF-NT group, SBP, glucose and lipid profile was observed, in addition to an increase in hepatic steatosis and LV remodeling, in relation to the C-NT group. Such parameters were significantly reduced during the training cycles, with emphasis on the groups that alternated detraining cycles (TNT and NTN). **Conclusion:** These results indicate that the reduction in hepatic and LV steatosis and other metabolic improvements, resulting from training cycles with HIIT, were perpetuated during the detraining cycles, even though the mice continued to ingest a high-fat diet. **Keywords:** obesity; hepatic steatosis; high-intensity interval training.

DIABETES MELLITUS

1708

EFFECT OF BASELINE ANTIHYPERGLYCEMIC MEDICATIONS ON WEIGHT REDUCTION WITH TIRZEPATIDE: SURMOUNT-2 SUBGROUP ANALYSIS

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Introduction: Antihyperglycemic medication (AHM) may influence body weight causing weight gain or weight reduction. In SURMOUNT-2, tirzepatide, a once weekly GIP/GLP-1 receptor agonist, resulted in significantly greater weight reduction compared to placebo in participants with BMI ≥ 27 kg/m² and type 2 diabetes. **Objective:** We conducted a subgroup analysis to explore the association between the weight-reduction efficacy of tirzepatide and concomitant AHMs at randomization categorized as promoting weight loss (WL), weight gain (WG), or weight neutral (WN). **Methods and material:** A mixed model for repeated measures assessed the change in body weight from randomization to endpoint (week 72). Logistic regression was conducted to analyze the proportion of participants achieving ≥5%, ≥10%, and ≥15% weight reduction targets at endpoint. **Results:** At baseline, mean weight was 95.7, 100.6, and 101.8 kg and BMI was 34.5, 36.0, and 36.4 kg/m² in the WL, WG, and WN subgroups, respectively. Tirzepatide resulted in significantly greater weight reduction than placebo in all AHM subgroups (all $p < 0.001$). No differences were observed among tirzepatide-treated AHM subgroups in the percent change in body weight and the proportion of participants achieving weight reduction targets. **Conclusion:** Tirzepatide was superior to placebo for weight reduction and showed similar weight reduction efficacy across AHM subgroups. Previously presented at ADA 2024. **Keywords:** tirzepatide; diabetes; body weight.

TIREOIDE

1709

EPIDEMIOLOGICAL PROFILE OF THYROTOXICOSIS IN NORTHEAST BRAZIL FROM 2013 TO 2023

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Introduction: Thyrotoxicosis is a syndrome characterized by elevated serum levels of thyroid hormones, considered a medical emergency. The primary cause is Graves' disease, but it can also be triggered by other conditions and certain medications. Understanding the epidemiological profile of this disease is crucial, particularly in Northeast Brazil, as this knowledge can guide more effective and specific interventions. **Objectives:** To analyze the epidemiological profile of hospitalizations due to thyrotoxicosis in Northeast Brazil from 2013 to 2023. **Methods:** This is a descriptive observational epidemiological study with a cross-sectional design, using data from the Brazilian Unified Health System Hospital Information System (SIH/SUS-DATASUS) on hospital admission rates for thyrotoxicosis. Variables analyzed included: year of admission, type of admission, hospitalization regime, state, sex, race, and age group. **Results:** During the study period, 1,159 hospitalizations due to thyrotoxicosis were recorded in Northeast Brazil. Of these, 760 (65.55%) were emergency admissions, although the hospitalization regime was unknown in 939 (81.01%) cases. The highest incidence years were 2019, with 130 (11.21%) cases; 2022, with 137 (11.82%) cases; and 2023, with 124 (10.70%) cases. The most affected states in the Northeast were Ceará, with 224 (19.32%) cases; Pernambuco, with 233 (20.10%) cases; and Bahia, with 220 (18.98%) cases. The brown-skinned population was most affected, with 669 (57.70%) cases, and females accounted for 901 (77.72%) cases. The most affected age groups were: 20-29 years, with 185 (15.97%) cases; 30-39 years, with 264 (22.79%) cases; 40-49 years, with 272 (23.48%) cases; and 50-59 years, with 205 (17.69%) cases. Analysis revealed that 24 (2.07%) cases resulted in death. **Conclusion:** Thyrotoxicosis is prevalent in Northeast Brazil, especially in recent years, affecting predominantly brown-skinned women of working age, particularly in the most populous states. This study aims to provide knowledge to develop interventions in healthcare networks for individuals with thyroid disorders, aiming to reduce severe cases leading to hospitalizations and deaths. **Keywords:** thyrotoxicosis; epidemiological profile; Northeast Brazil.

OBESIDADE

1711

ASSESSING THE EFFICACY OF TOPIRAMATE FOR WEIGHT LOSS IN OBESE PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Obesity is a comorbidity that leads to a significant increase in morbidity and mortality. Lifestyle modification, a fundamental point in weight reduction treatment, can be complemented by pharmacotherapy. Several clinical trials have shown a significant improvement in weight loss in obese patients using the anticonvulsant Topiramate compared to placebo. **Objectives:** The objective was to evaluate the effectiveness of topiramate in weight loss. **Methods:** A systematic search in MEDLINE and Cochrane CENTRAL, the retrieval period was from the establishment of the database to July 2024. Keywords such as topiramate, obesity, and weight loss were used. Prospective, placebo-controlled, randomized clinical trials (RCTs) in adult patients that used topiramate for the treatment of obesity, with placebo as active comparator, were included. Two reviewers independently screened the retrieved studies and extracted all data. Results were presented as weighted mean difference (WMD) with a 95% confidence interval (CI 95%). We conducted a random-effects model meta-analysis using Review Manager version 5.3, with prespecified subgroup analyses in case of heterogeneity. **Results:** Twelve included studies met the inclusion/exclusion criteria, accounting for 2,627 randomized patients. The dose of topiramate ranged from 100 to 300 mg/day, and all studies included a placebo arm. The analysis showed a weighted mean difference (WMD) of -5.57 (95% CI: -6.99 to -4.14; $p < 0.00001$), indicating a significantly greater weight loss with topiramate use compared to placebo. Heterogeneity was significant ($Tau^2 = 5.43$; $Chi^2 = 230.12$; $df = 11$; $P < 0.00001$; $I^2 = 95\%$), suggesting considerable variability among the studies. After the post-funnel model adjustment, seven studies were excluded, resulting in a WMD of -8.29 (95% CI: -8.38 to -8.20; $p < 0.00001$) with non-significant heterogeneity ($Chi^2 = 3.31$; $df = 4$; $P = 0.51$; $I^2 = 0\%$). **Conclusion:** These results reinforce the efficacy of topiramate in reducing weight in obese patients compared to placebo, with substantial statistical evidence of its benefit, particularly in relation to diabetes. However, further studies are necessary to confirm these findings and explore additional aspects of topiramate's effects on weight loss. **Keywords:** topiramate; weight loss; obesity.

DIABETES MELLITUS

1712

IMPACT OF TOPIRAMATE ON GLUCOSE LEVELS, BLOOD PRESSURE, AND WEIGHT LOSS IN DIABETIC PATIENTS

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Introduction: Diabetes mellitus requires effective management to prevent complications. Topiramate, an anticonvulsant, has shown potential benefits in improving glycemic control, reducing blood pressure, and promoting weight loss. **Objectives:** To assess the impact of Topiramate on hemoglobin A1c (HbA1c), fasting glucose, blood pressure (systolic and diastolic), and weight loss in diabetic patients. **Methods:** A meta-analysis of randomized controlled trials (RCTs) was conducted, including studies comparing Topiramate to placebo or other treatments in adult diabetic patients. Twelve studies were selected based on inclusion criteria. Data extraction and analysis were performed using a random-effects model, and results were presented as mean differences (MD) with 95% confidence intervals (CI). **Results:** Four included studies met the inclusion/exclusion criteria, accounting for 340 randomized patients. The analysis showed that Topiramate significantly reduced fasting glucose levels with a mean difference (MD) of -0.16 mmol/L (95% CI: -1.59 to -0.73; $p < 0.00001$), with moderate heterogeneity ($I^2 = 40\%$). Hemoglobin A1c (HbA1c) levels were significantly reduced with a MD of -0.61% (95% CI: -0.91% to -0.31%; $p < 0.0001$), with moderate heterogeneity ($I^2 = 49\%$). Topiramate significantly lowered systolic blood pressure with a MD of -5.88 mmHg (95% CI: -6.79 to -4.97; $p < 0.00001$), with low heterogeneity ($I^2 = 0\%$). Diastolic blood pressure was significantly reduced with a MD of -3.15 mmHg (95% CI: -4.42 to -1.88; $p < 0.00001$), with high heterogeneity ($I^2 = 74\%$). Additionally, the subgroup analysis for weight loss in diabetic patients showed a MD of -5.76 kg (95% CI: -7.76 to -3.77; $p = 0.0004$), with high heterogeneity ($Tau^2 = 3.31$; $Chi^2 = 18.32$; $df = 3$; $I^2 = 84\%$). **Conclusion:** Topiramate demonstrates significant efficacy in improving glycemic control, lowering blood pressure, and promoting weight loss in diabetic patients. These findings support its use for comprehensive diabetes care. Further research is needed to explore long-term effects and optimal dosing strategies. **Keywords:** topiramate; diabetes mellitus; fasting glucose.

ADRENAL E HIPERTENSÃO

1713

ACUTE ADRENAL CRISIS IN A PATIENT WITH TYPE 2 POLYGLANDULAR SYNDROME: CASE REPORT

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J.P.T., female, 52 years, with type 1 diabetes mellitus (DM1) for 40 years and Hashimoto's hypothyroidism for 20 years, using NPH insulin 8-8-8, regular 4-0-4 and levothyroxine 75 mcg. In January 2023, she began experiencing weakness, fatigue, vomiting, loss of appetite, unintentional weight loss of 20 kg and hypoglycemia (blood glucose test: 42 mg/dL). She was admitted on 03/28/2023: stable, acyanotic, afebrile, anicteric, dehydrated 2+/4+ and with a reduced of consciousness. BP: 80 x 51 mmHg, HR: 97. Exams: Na^+:127 mEq/L, K^+: 6.1 mEq/L. On 03/31/2023, cortisol: <1 ug/dL, and ACTH: 1,250 (RV: 46 pg/mL), normal blood count and infection screening. The treatment was intravenous hydrocortisone 300 mg/day and hydration (2 L/hour of saline solution 0.9%), with improvement of the condition and discharge on 04/22/2023, Na^+ 130 mEq/L, K^+ 4.2 mEq/L and BP 110 x 60 mmHg. In outpatient follow-up: anti-21-hydroxylase antibody: 37.7 (RV: <0.4 u/mL), anti-thyroglobulin (anti-TG) >100 u/mL, glutamic acid decarboxylase (anti-GAD) antibodies 239 (RV: <10 IU/mL), aldosterone 1.3 ng/dL (RV: 2.5-39 ng/dL) and renin 42 pg/mL (RV: 4-46 pg/mL). Currently taking prednisone 10 mg, fludrocortisone 0.1 mg, NPH insulin 10-10-6, regular 8-10-5-6 and levothyroxine 125 mcg. Type II polyglandular autoimmune syndrome (PAGS) is characterized by autoimmune primary adrenal insufficiency (PAI), DM1 and/or thyroid dysfunction. The manifestations of PAI are hyponatremia present in 90% of cases, hyperkalemia in 65%; in addition to anorexia, weakness, fatigue, weight loss, laboratory and clinical manifestations present in the patient. In the diagnosis of PAI, there is an increase in ACTH, a reduction in cortisol and a positive anti-21 hydroxylase antibody. The diagnosis of DM1 with positive anti-GAD antibodies and Hashimoto's hypothyroidism with positive anti-TG antibodies and anti-peroxidase antibodies confirm Type II PAGS. In 30% of cases, PAI occurs after DM1 and thyroid disease, as in this report. The treatment of acute adrenal crisis is with intravenous hydrocortisone 200-300 mg/day, hydration, and infection screening. Outpatient follow-up includes the use of glucocorticoids, mineralocorticoids, thyroid, and insulin replacement, as in this case. Early diagnosis and treatment of acute adrenal crisis significantly reduces morbidity and mortality. If this condition is clinically suspected, it is necessary to quickly initiate corticosteroid therapy, hydration, and control of precipitating factors. **Keywords:** polyglandular autoimmune syndrome; acute adrenal crisis; type 1 diabetes mellitus.

ENDOCRINOLOGIA DO EXERCÍCIO

1714

HYPERCALCEMIA DUE TO THE USE OF INTRAMUSCULAR VITAMIN D TREATED WITH HYDROXYCHLOROQUINE IN AN ANABOLIC STEROID USER: A CASE REPORT

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1. UNIVERSIDADE FEDERAL DA PARAÍBA (UFPB), JOÃO PESSOA, PB, BRASIL.

Case presentation: A 36-year-old man, bodybuilder since the age of 16, user of anabolic steroid testosterone undecanoate for 11 years and a cattle multivitamin complex concentrated in vitamins A, D and E, with type 2 diabetes mellitus for 5 years and recent systemic arterial hypertension. In October 2023, after a muscle strain and prolonged use of non-steroidal anti-inflammatory drugs, there was a change in his kidney function and hospitalization was indicated. At the time, the patient was maintained on conservative treatment when he began to present severe hypercalcemia refractory to clinical treatment, requiring renal replacement therapy. After investigation, the diagnosis of hypercalcemia secondary to vitamin D intoxication was confirmed, with serum levels of 300 ng/mL, due to the formation of diffuse granulomas in the areas of intramuscular injections of anabolic steroids with supraphysiological doses of vitamin D. Afterwards, despite undergoing hemodialysis, the patient's serum calcium rose again, with the suspicion that vitamin D was being released from the granulomas. Laboratory tests showed total calcium of 13.3 mg/dL, ionized calcium of 7.3 mg/dL, creatinine of 4.6 mg/dL and 25-hydroxyvitamin D above 150 ng/mL. Treatment was started with hydroxychloroquine, which was successful even without hemodialysis, stabilizing and maintaining monitoring of serum calcium levels in the endocrinology department. **Discussion:** Vitamin D intoxication can cause severe hypercalcemia, especially when associated with the use of high doses of vitamin D and anabolic steroids. The formation of granulomas in the injection areas leads to the persistent release of vitamin D due to the macrophages' activity, which can result in refractory hypercalcemia and severe renal complications. Although the use of hydroxychloroquine to treat this case is rare, it's supported in the literature as an alternative therapy in granulomas, possibly because it reduces the intestinal absorption of calcium by inhibiting the conversion of 25-hydroxyvitamin D into its active form. **Final comments:** This case highlights the rarity of hypercalcemia secondary to vitamin D intoxication treated with hydroxychloroquine in anabolic steroid users. Future research is essential to better characterize the treatment and the risks associated with the inappropriate use of steroids and vitamin supplements in supraphysiological doses. **Keywords:** anabolic-androgenic steroids; hypercalcemia; vitamin D.

DIABETES MELLITUS
1718

EFFICACY OF TIRZEPATIDE IN ACHIEVING THE COMPOSITE ENDPOINTS OF GLYCEMIC, BLOOD PRESSURE AND LIPID GOALS IN SURMOUNT-2

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Introduction: In the SURMOUNT-2 (SM-2) trial of adults with overweight/obesity and type 2 diabetes (T2D), tirzepatide (TZP), a once weekly GIP/GLP-1 receptor agonist, significantly reduced body weight (BW) in conjunction with a reduced calorie diet and increased physical activity. **Objective:** This *post-hoc* analysis assessed the proportion of participants achieving a triple end-point (TEP) composite of BP < 130/80 mmHg, non-HDL < 130 mg/dL, and three HbA1c thresholds of <7%, < 6.5% and < 5.7% at 72 weeks. **Method and materials:** Logistic regression with missing value imputed by mixed model repeated measures, using the efficacy estimate, assessed participants who achieved the TEP goals from SM-2, in the 10 mg (N = 312) or 15 mg (N = 311) TZP groups, *versus* placebo (PBO) (N = 315). **Results:** Overall baseline mean BW was 100.7 kg, BMI 36.1 kg/m^2, HbA1c 8.02%, BP 130.5/79.8 mmHg and non-HDL 132.5 mg/dL. For 15 mg TZP, 33.8%, 32.8%, and 25.9% of participants achieved the TEP composite *versus* 7.5%, 3.9%, and 0.7% of PBO (HbA1c <7%, <6.5% & <5.7% respectively) at 72 weeks. Findings for the TZP 10 mg group were similar to those observed in the 15 mg group. **Conclusion:** In this *post-hoc* analysis in people with T2D and overweight/obesity, higher proportion of participants receiving TZP achieved the TEP composite, compared to PBO. This suggests that TZP can help people with obesity and T2D achieve multiple clinical goals, in addition to meaningful weight loss, important for improving cardiometabolic health. Previously presented at ADA 2024. **Keywords:** tirzepatide; diabetes; body weight.

DIABETES MELLITUS
1720

ATYPICAL MANIFESTATION OF ANTI-GAD ANTIBODY SYNDROME IN A PATIENT WITH TYPE 1 DIABETES MELLITUS AND CEREBELLAR ATAXIA: A CASE REPORT

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Case report: A 36-year-old woman, with a previous history of type 1 diabetes mellitus, diagnosed at age 21 after diabetic ketoacidosis, evolving since then, with dozens of similar episodes. In the initial follow-up, the patient had a glycated hemoglobin of 13.3%, requiring adjustments to the basal-bolus insulin therapy regimen, stabilized at a dose of 1.2 UI/kg. Approximately 13 years after diagnosis, the patient developed frequent episodes of imbalances and falls, in addition to progressive and subacute muscle spasms. On physical examination, he presented a cerebellar ataxic gait, with poor balance and limb dysmetria. In investigation, brain MRI showed cerebellar atrophy disproportionate to age and in blood test was observed the presence of anti-GAD antibodies (ELISA) > 2,000 IU/mL (corresponding to the analytical linearity of the assay). Initial symptomatic therapy with baclofen was started, in addition to clinical follow-up for treatment with immunotherapy. **Discussion:** Anti-glutamic acid decarboxylase antibody (GAD) syndrome is a rare autoimmune condition. It is characterized by the presence of autoantibodies directed against the GAD enzyme – an intracellular enzyme expressed in neurons and insulin-secreting pancreatic β-cells. GAD enzyme plays a role in synthesizing the inhibitory neurotransmitter gamma-aminobutyric acid (GABA). The syndrome has been associated with multiple neurological manifestations, including Stiff-Person syndrome (SPS), limbic encephalitis and, less frequently, cerebellar ataxia. A history of DM1 is present in half of the cases and generally precedes neurological manifestations. Patients with DM1 frequently present autoantibodies, including anti-GAD antibodies, which are detected in generally low titers, at the initial stage of the disease, in 80% of patients, and do not have a direct pathogenic role in these cases. The presence of these autoantibodies in patients with associated neurological syndrome are higher and remain for a long period. **Final comments:** Anti GAD Antibody Syndrome becomes an important differential diagnosis to be considered in patients with DM1 and neurological manifestations. The presence of anti-GAD antibodies may be associated with a predisposition to autoimmune neurological complications, which require a specific therapeutic approach. In a context of a disease with a progressive and limiting nature, early recognition and adequate treatment of these manifestations are essential, aiming to improve prognosis. **Keywords:** diabetes mellitus; ataxia; anti-GAD.

ADRENAL E HIPERTENSÃO

1721

PRIMARY ADRENAL INSUFFICIENCY CAUSED BY INVASIVE NON-HODGKIN LYMPHOMA: A CASE REPORT

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Case presentation: M.M., a 54-year-old male, previously healthy, was admitted to the hospital due to progressive physical fatigue, anorexia, upper abdominal pain, fever, night sweats, and a weight loss of approximately 10 kg over two months. On admission, he presented with dehydration, pallor, and palpable splenomegaly. During hospitalization, episodes of hypotension and fever occurred. Laboratory tests showed hemoglobin 8.2 (RV 12-16 g/dL), leukocytes 4.140 (4.2% eosinophils) (RV 4000-11000/mm³), platelets 138.000 (RV 150000-400000/mm³), creatinine 2.21 (RV 0,7-1,1 mg/dL), urea 106 (VR 17-43 mg/dL), sodium 128 mEq/L (RV 136-145 mEq/L), potassium 5.4 mEq/L (RV 3,5-5,1 mEq/L). Abdominal MRI showed solid expansive retroperitoneal lesions bilaterally affecting adrenal beds, measuring up to 13.6 cm on the right and 12.6 cm on the left. Splenomegaly was also noted (major axis 17.2 cm). Further tests indicated morning serum cortisol 13.4 ug/dL (RV 7-25 ug/dL), ACTH 96 pg/mL (RV < 46 pg/mL), dehydroepiandrosterone 303 ng/dL (RV 800-5600 ng/mL), and normal plasma metanephrine and normetanephrine levels excluding the diagnosis of paranganglioma. Based on these clinical and laboratory findings, primary adrenal insufficiency due to bilateral adrenal infiltration was diagnosed considering insufficient elevation of serum cortisol in a context of acute stress. The patient received a 100 mg of intravenous hydrocortisone followed by maintenance therapy of 50 mg intravenously every 6 hours, resulting in significant symptom improvement. Biopsy confirmed diffuse large B-cell non-Hodgkin lymphoma. The patient is now under hematology care for chemotherapy. **Discussion:** Adrenal insufficiency as the initial manifestation of lymphoma is exceedingly rare, with few documented cases globally. Various types of lymphoma, including Hodgkin's and non-Hodgkin's B- or T-cell origin, have been reported. Patients typically present with bilateral adrenal enlargement and nonspecific symptoms, which may initially be attributed to other causes. Most studies suggest that 20 to 35 percent of patients with bilateral adrenal involvement have at least partial adrenal insufficiency and benefit from glucocorticoid replacement therapy. While some patients show adrenal function recovery post-chemotherapy, overall disease-free survival remains low. **Final comments:** Despite its rarity, lymphoma should be considered in the differential diagnosis of adrenal insufficiency associated with adrenal gland enlargement. **Keywords:** lymphoma, non-Hodgkin; adrenal insufficiency; adrenal glands.

NEUROENDOCRINOLOGIA

1722

SUSPENSION OF SURGICAL APPROACH FOR SOMATOTROPINOMA AFTER TUMOR REDUCTION BY LANREOTIDE USE: A CASE REPORT

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Case presentation: V.A.H., female, 53 years old, reported headache, intense sweating, jaw pain, and an increase in shoe and ring sizes over the past five years. She also complained of nasal voice, nocturnal snoring, and changes in her visual field. She had hypertension, pre-diabetes, and arthropathies. Magnetic resonance imaging (MRI) of the sellar region showed a solid expansile lesion measuring 2.4 x 1.8 cm, compressing the optic chiasm with possible hemorrhagic material measuring 1.4 x 1.2 cm. Visual field testing revealed left superior quadrantanopia. Laboratory tests showed: GH 40 ng/mL (reference value < 8), IGF-1 832 ng/mL (reference value 71-290), free T4 1.66 ng/dL (reference value 0.85-1.50), TSH 1.13 mcUI/mL (reference value 0.48-5.6), with other hormone levels within normal limits. Based on these findings, a diagnosis of acromegaly was established, and Lanreotide 120 mg monthly was initiated. After 8 months of regular medication use, the patient was called by the neurosurgery service to undergo transsphenoidal resection of the pituitary macroadenoma. Preoperative tests showed a significant reduction in GH (5.47 ng/mL) and IGF-1 (493 ng/mL), free T4 1.4 ng/dL and TSH 0.81 mcUI/mL, as well as a considerable decrease in the tumor mass on imaging. Given the significant tumor reduction and clinical and laboratory improvement, it was decided to maintain pharmacological treatment with a somatostatin analog. **Discussion:** Acromegaly is a chronic systemic disease resulting from excessive production of GH and IGF-1, with treatment goals including hormonal normalization and tumor mass reduction. For most patients, transsphenoidal resection is the therapy of choice. However, the use of somatostatin analogs can be considered, especially in settings where surgical availability is delayed, to reduce morbidity and mortality from hormonal hypersecretion. This patient showed a satisfactory response to pharmacological treatment, leading to the suspension of the surgical procedure and continuation of treatment with Lanreotide, with clinical, laboratory, and imaging follow-up every six months. **Conclusion:** Early diagnosis of acromegaly is directly related to the patient's chance of cure. Although surgery is the first-line treatment, the use of somatostatin analogs can be considered as adjuvant therapy or first-line treatment in selected cases, with variable success rates. **Keywords:** acromegaly; pituitary macroadenoma; somatostatin analog.

OBESIDADE

1723

EVALUATION OF GLYCEMIC, BLOOD PRESSURE, AND LIPID CONTROL IN WOMEN WITH OBESITY AND TYPE 2 DIABETES MELLITUS IN A SPECIALIZED CLINIC FOR EXCESS WEIGHT MANAGEMENT

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1. HOSPITAL GERAL ROBERTO SANTOS, SALVADOR, BA, BRASIL; 2. ESCOLA BAHIANA DE MEDICINA E SAÚDE PÚBLICA, SALVADOR, BA, BRASIL.

Introduction: Obesity is characterized as a chronic inflammatory condition associated with insulin resistance and metabolic dysfunction, contributing to an increased risk of cardiovascular diseases and the development and worsening of type 2 diabetes mellitus (T2DM), systemic arterial hypertension (SAH), and dyslipidemia. **Objectives:** To describe the frequency of metabolic risk variables outside therapeutic targets in women with obesity and T2DM in an Obesity Clinic. **Methods:** This descriptive and analytical study was conducted using medical record data from 53 women with obesity and T2DM treated at an Obesity Clinic, in Salvador/BA, between 2009 and 2024. The laboratory variables studied were fasting glucose (FG), glycated hemoglobin (HbA1c), total cholesterol (TC), HDL-c, LDL-c, and triglycerides (TG). The clinical variables were blood pressure (BP) and previous diagnosis of SAH. Lipid, blood pressure, and glycemic targets were based on the Brazilian Guideline Update for Dyslipidemia and Atherosclerosis Prevention (2017), the Brazilian Hypertension Guideline (2020), and the Brazilian Diabetes Society Guideline (2023), respectively. **Results:** The average age was 57 ± 11 years. None had LDL-c, HDL-c, TG, BP, HbA1c, and FG values simultaneously within targets. Of the 53 patients, 12.2% (n = 6) had intermediate cardiovascular risk (CVR), 83.7% (n = 41) high risk, 4% (n = 2) very high risk, and none had low risk. Regarding the targets, 89.8% (n = 44) had LDL-c values outside the target (119.6 ± 41 mg/dL), 66.7% (n = 34) had HDL-c outside the target (49.8 ± 12.7 mg/dL), 37.7% (n = 20) had TG outside the target (143.2 ± 70.9 mg/dL), 37.7% (n = 20) had TC outside the target (197.1 ± 48.2 mg/dL), 62% (n = 31) had HbA1C outside the target (7.8 ± 1.9%), and 79.2% (n = 42) were hypertensive, with 52.1% (n = 25) having BP values above the recommended targets (SBP 141 ± 25.5 mmHg and DBP 79.4 ± 12.2 mmHg). Patients at high and very high risk had greater uncontrolled LDL-c targets compared to intermediate-risk groups (92.7%, 100%, and 66.4%, $p < 0.02$). The fasting glucose target was reached by 70.2% of the patients. **Conclusions:** Most women with obesity and T2DM in this study were outside one or more therapeutic targets. **Keywords:** obesity; diabetes; metabolic.

ADRENAL E HIPERTENSÃO

1725

METASTATIC NEUROENDOCRINE TUMOR WITH CUSHING'S SYNDROME DUE TO ECTOPIC ACTH PRODUCTION: ETOMIDATE PROTOCOL AND EMBOLIZATION AS THERAPEUTIC POSSIBILITIES

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Introduction: A 41-year-old man starts to experience abdominal pain in 2022. During an investigation, multiple liver nodules and a pancreatic cancer were found. The biopsy showed neuroendocrine tumor. The clinical presentation was diabetes, multiple vertebral fractures and recurrent hypokalemia suggested a Cushing's syndrome (CS) to ACTH production ectopic tumor, with salivary cortisol of 1,135 and 24-hour urinary cortisol of 113,336.3 mcg. For management CS ACTH-independent was made the Etomidate Protocol and the adrenal embolization. Protocol Etomidate carried out in an ICU (Intensive Care Unit) environment, with pre-procedure serum Cortisol parameters of 59.5 and post-procedure of 34.5. The patient with new elevations underwent left Adrenal Embolization on 2 occasions, the first attempt with a partial response, but the second attempt with Cortisol levels of 39.4 and after the procedure 19.2 and 24 hour urinary cortisol of 558 mcg. Due to disease progression and clinical refractoriness, the patient was subjected partial pancreatectomy and bilateral adrenalectomy. **Discussion:** Pancreatic neuroendocrine tumor (pNET) is rare. Moreover, it's an uncommon location neuroendocrine tumor. Additionally, 60%-70% of tumors are non-functional and asymptomatic, while our case involves a functional tumor with symptoms of CS. The treatment of metastatic pNETs secreting ACTH usually involves platinum-based chemotherapy, radiotherapy and nuclear medicine such as Lutetium. Depending on the tumor staging, a stage 4 metastatic NET of pancreatic origin and high grade, several therapies were used such as mFOLFOX, radiotherapy, lutetium and lanreotide. The patient was subjected to the Etomidate Protocol. Etomidate, by inhibiting 11-beta hydroxylase and the cleavage of the cholesterol side chain, promotes the reduction of cortisol. However, due to tumor progression and even the two embolizations were not sufficient, resulting in the need for adrenal removal as a last resort, but a valid one, given the importance of controlling symptoms for quality of life. **Final comments:** The management of patients with ACTH-producing neuroendocrine tumors is a clinical challenge that involves multiple therapeutic possibilities. Cases eligible for the etomidate or embolization protocol are intrinsically complex and these resources emerge as potential adjuvant alternatives that require better stratification and studies to expand their role and promote better incorporation into medical practice. **Keywords:** Cushing's syndrome; neuroendocrine tumor; ACTH.

DIABETES MELLITUS

1726

NON-KETOTIC HYPERGLYCEMIA-INDUCED HEMICHOREA AND HEMIBALLISM: A CASE REPORT

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An 81-year-old female patient with a 10-year history of type 2 diabetes mellitus (T2DM), grade 2 obesity for 8 years, and systemic arterial hypertension (SAH) for 15 years presented with dysarthria, difficulty in ambulation, and left-sided hemichorea and hemiballism lasting three months. The patient had irregular medication adherence. Initial laboratory tests revealed a normal complete blood count, HbA1c of 14.3%, and triglycerides of 438 mg/dL. Dietary adjustments were made, and hypoglycemic therapy was initiated with insulin glargine 20 IU/day, empagliflozin 25 mg/day, and metformin XR 1g/day. Treatment for hypertriglyceridemia with rosuvastatin 20 mg/day and SAH with losartan 100 mg/day was also started. The patient showed complete resolution of neurological symptoms within 45 days of treatment. Structural causes for neurological symptoms were ruled out, confirming non-ketotic hyperglycemia-induced hemichorea and hemiballism. Subsequent dose adjustments were made during follow-up visits. Currently, the patient is on empagliflozin 25 mg/day, in good general condition, independent in daily activities, adherent to dietary recommendations, with reduced triglycerides (264 mg/dL) and excellent glycemic control (HbA1c 5.4%). The occurrence of hemichorea-hemiballism in T2DM is a rare complication that primarily affects elderly and female patients, associated with high plasma glucose and HbA1c levels. The syndrome is characterized by the absence of structural abnormalities on imaging, excluding secondary causes such as stroke or infection. The pathophysiology involves non-ketotic hyperglycemia disrupting the blood-brain barrier and increasing blood viscosity, leading to ischemic changes and reduced gamma-aminobutyric acid (GABA) levels in the striatum, causing hyperkinetic disorders. The prognosis is generally favorable with glycemic control, emphasizing its importance in preventing recurrence in elderly patients with chronic diabetes and comorbidities. This case highlights the need to recognize non-ketotic hyperglycemia-induced hemichorea and hemiballism in poorly controlled T2DM among elderly patients. Prompt diagnosis and effective glycemic management are crucial for symptom resolution and prevention of recurrence. **Keywords:** ballism; chorea; hyperglycemia.

DIABETES MELLITUS

1729

ASSOCIATION OF TYPE 2 DIABETES MELLITUS AND CHANGES IN LUNG FUNCTION MEASUREMENTS IN PATIENTS TREATED AT THE REFERENCE PULMONOLOGY OUTPATIENT CLINIC IN SALVADOR – BAHIA

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Introduction: Type 2 diabetes mellitus is a disorder that causes microvascular and macrovascular changes in many organs. However, the potential complications of the disease in the lungs are less studied. Many studies suggest a greater decline in pulmonary function and in the diffusing capacity for carbon monoxide (DLCO) in patients with diabetes. Some publications also propose the existence of "diabetic pneumopathy", which induces pulmonary fibrosis and consequently leads to a restrictive disorder. In asthma patients, the prevalence of diabetes reaches 16% and appears to be associated with more frequent exacerbations, hospitalizations, and a lower quality of life. **Objectives:** To compare pulmonary function measures between asthma patients with and without type 2 diabetes mellitus (T2DM). **Methods:** This cross-sectional study utilized data from the electronic medical records of asthma patients aged ≥ 18 years treated between June 2022 and June 2023 at the Pulmonology Department of the Professor Edgard Santos University Hospital Complex in Salvador, BA. Descriptive statistics, Student's t-test, Mann-Whitney U test, Chi-Square test, and multivariate linear regression analysis were used. **Results:** The sample consisted of 101 patients with an average age of 57.4 years, predominantly female (72.3%), with an average BMI of 28.9. Of these, 30 (29.7%) had a diagnosis of T2DM. A history of current or past exposure to smoking (passive or active) or biomass burning was reported in 20 (66.7%) patients with T2DM and 30 (42.3%) patients without T2DM ($p = 0.025$). In the linear regression analysis, the presence of T2DM was a predictor of lower pre- and post-bronchodilator FVC percentages ($p = 0.044$ and 0.024, respectively). Multivariate linear regression analysis adjusted for gender, BMI, and smoking/biomass exposure showed that T2DM was associated with lower pre-bronchodilator FVC ($\beta = -7.970$, 95% CI: -15.72 to -0.223, $p = 0.044$) and post-bronchodilator FVC ($\beta = -8.286$, 95% CI: -15.577 to -0.994, $p = 0.027$) in patients aged ≥ 50 years. **Conclusion:** Patients with T2DM showed reduced pre- and post-bronchodilator FVC measures compared to patients without diabetes. This study has limitations, including sample size and observational study design. However, this research generates hypotheses that underscore the need for well-designed clinical trials to assess the potential epidemiological, clinical, and therapeutic implications of diabetes mellitus in asthma. **Keywords:** type 2 diabetes mellitus; asthma; respiratory function tests.

ADRENAL E HIPERTENSÃO

1730

HYPOKALEMIC PERIODIC PARALYSIS: UNCOMMON PRESENTATION OF PRIMARY HYPERALDOSTERONISM

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Introduction: Primary hyperaldosteronism is characterized by the excessive production of aldosterone by the adrenal gland, leading to arterial hypertension and hypokalemia. Hypokalemic periodic paralysis is a rare condition that causes episodes of muscle weakness or paralysis due to hypokalemia. **Case presentation:** A 50-year-old male from the interior of Bahia, married, and self-employed in the events sector, was hospitalized in October 2022 with paralysis in the lower limbs, which progressed upwards. The condition began after starting a diuretic. During hospitalization, after ruling out other causes, severe hypokalemia (K 2 mEq/L) and bradycardia with QT interval prolongation on the ECG were observed. Potassium was replaced both orally and intravenously, and the patient was discharged with instructions for endocrinological follow-up. Examinations showed aldosterone at 53.3 ng/dL and an aldosterone/plasma renin activity ratio (ALD/PRA) of 380. A total abdominal computed tomography (CT) scan performed in November 2022 revealed a hypodense lesion (-4HU) in the right adrenal gland, with enhancement after contrast, measuring 1.5 x 1.4 cm, suggestive of an adenoma. Post-suppression cortisol was 1.1 mcg/L. Screening for pheochromocytoma was not performed based on imaging findings. The patient had a history of difficult-to-control systemic arterial hypertension (SAH) and hypokalemia since 2020, and was preoperatively using five antihypertensive drugs, including spironolactone 200 mg/day and oral potassium supplementation. A partial right adrenalectomy was performed laparoscopically in June 2023, and three antihypertensive medications were discontinued immediately postoperatively. The patient returned to the clinic in July 2023 asymptomatic and with good blood pressure control. Post-surgical examinations in July 2023 showed: K 4.3 mEq/L, Na 139 mEq/L, creatinine 0.5 mg/dL. **Final comments:** This case highlights the importance of early diagnosis and appropriate management of primary hyperaldosteronism, especially in patients with resistant hypertension and/or hypokalemia. Hypokalemic periodic paralysis is a rare but potentially severe complication. Partial adrenalectomy was effective in controlling symptoms and improving the patient's overall clinical condition. However, complications resulting from high blood pressure levels may be permanent even after definitive surgical treatment. **Keywords:** hyperaldosteronism; hypokalemia; paralysis.

TIREOIDE

1731

REFRACTORY HYPOTHYROIDISM AND THE IMPACT OF POOR ADHERENCE TO TREATMENT: A CASE REPORT

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Case presentation: Female patient, 27 years old, with Graves' disease (GD) refractory to clinical treatment with thioamides, opted for radioactive iodine (10 mCi). After the procedure, the patient developed hypothyroidism, with TSH at 89.52 µUI/L (reference range 0.27-4.20) and T4L at 0.21 ng/dL (reference range 0.93-1.70). She started T4 replacement at 150 mcg/day, but required subsequent dosage adjustments, reaching 300 mcg/day. Despite this, elevated TSH levels persisted, along with clinical symptoms of hypothyroidism. An investigation for secondary causes of malabsorption was then initiated, including treatment for parasitic infections, upper gastrointestinal endoscopy, and screening for celiac disease, all of which were negative. An absorption test for T4 was performed, showing a pre-test T4L level of 0.33, which increased to 1.38 after administration of 1,000 mcg of levothyroxine. Therefore, malabsorption was ruled out, indicating poor adherence to treatment. **Discussion:** This is a case of refractory hypothyroidism following iodotherapy. Exogenous T4 absorption, metabolism, and action can be altered by drugs, such as ferrous sulfate, or by severe conditions, such as advanced liver cirrhosis. Additionally, gastrointestinal issues that hinder absorption or poor treatment adherence should be considered. The T4 absorption test is an alternative to help differentiate between true malabsorption and pseudo-malabsorption in persistent hypothyroidism. In this case, we used an established testing protocol where the patient was hospitalized and received a monitored dose of 1,000 µg of T4 on an empty stomach, with evaluations of T4L levels before the test and hourly for 4 hours. In the reported case, the maximum LT4 level of 1.38 occurred 2 hours after the test began. Normal absorption is defined as an increase in LT4 greater than 0.40 or T4 absorption greater than 60%. Thus, pseudo-malabsorption of T4 was confirmed as the cause of the refractory hypothyroidism. **Conclusion:** The management of refractory hypothyroidism requires a comprehensive and multidisciplinary approach. Evaluating treatment adherence, conducting hormonal absorption tests, and investigating gastrointestinal comorbidities are essential for accurate diagnosis. **Keywords:** Graves' disease; treatment adherence; hypothyroidism after iodine therapy.

DIABETES MELLITUS

1732

A DIAGNOSTIC OF TYPE 2 DIABETES MELLITUS (T2DM) DELAYED BY INSULINOMA: A CASE REPORT

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Case report: Man, 38 years old, obese (BMI 31.3 kg/m²), dyslipidemic and hypertensive for 10 years, with recurrent hypoglycemia for 1 year. There was sweating, malaise and mental confusion when glucose levels were below 30 mg/dL, reversed after food intake. He denied hypoglycemic drugs. Serum insulin (33 µIU/mL) and C-peptide (6.8 ng/mL) were inappropriately elevated during hypoglycemia (47 mg/dL). Anti-insulin antibodies were negative. Computed tomography, magnetic nuclear resonance and PET-CT with DOTATOC-68Ga did not locate any lesion. Endoscopic ultrasound revealed 1.5cm tumor adjacent to pancreatic head, interposed with duodenal wall. After tumorectomy, hypoglycemia was completely reversed. Findings were compatible with well-differentiated pancreatic neuroendocrine tumor, grade 2, with positive immunohistochemistry for Synaptophysin and Chromogranin A, Ki67 10%. Patient developed fasting hyperglycemia (127 mg/dL) and increased glycated hemoglobin (6.5%), so T2DM was diagnosed in the third month after surgery. Currently, under glyco-metabolic control with metformin and diet. **Discussion:** We present an obese, dyslipidemic and hypertensive patient, with hypoglycemia secondary to insulinoma, who developed T2DM after tumorectomy. The occurrence of this association is very rare. The etiology of diabetes may be secondary to intraoperative pancreatic injury, as in cases of insulinitis or traumatic pancreatitis. However, only tumor enucleation was performed. Histopathology also did not corroborate this etiology and pancreatic enzymes were normal. Our patient already had comorbidities typical of long-standing insulin resistance, such as central obesity, hypertension and dyslipidemia, components of metabolic syndrome. This alone increases the risk of T2DM by 5 times. We believe that insulinoma was a factor that delayed this diagnosis, making this case rarer due to the concomitant pathologies. As a hyperglycemic diet is commonly adopted before insulinoma removal in an attempt to avoid its symptoms, elevated glucose levels are common in early postoperative period. Despite this, our patient maintained changes compatible with T2DM. **Final consideration:** We report an unusual case of T2DM after resection of insulinoma in a patient with obesity and its complications. Considering the global morbidity and mortality impact of T2DM, it is important to be aware of the possibility of this diagnosis in risk individuals presenting high glucose levels, especially late after surgical treatment. **Keywords:** insulinoma; hypoglicemia; diabetes.

METABOLISMO ÓSSEO E MINERAL

1734

DENSITOMETRIC EVALUATION AND ASSESSMENT OF BONE MICROARCHITECTURE BEFORE AND AFTER WEIGHT LOSS THROUGH A KETOGENIC DIET IN A PATIENT WITH OBESITY

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Case presentation: Female patient, 41 years old, being followed up at the endocrinology department of a hospital in Rio de Janeiro, with a desire to lose weight. BMI 30.37 kg/m², weight 81.7kg and abdominal circumference 97 cm. This study analyzed the impact on bone density and microarchitecture upon intervention of a ketogenic, normoprotein and hypolipidic diet that used food substitutes, totaling around 500-800 kcal per day. Ketosis lasted around 3 months, with gradual reintroduction of the food groups over the following 3 months. Before starting the diet and 6 months afterwards, anthropometric and laboratory analyses were carried out, including CTX levels, bone densitometry with dual source X-rays (DXA method) and assessment of bone microarchitecture using high-resolution peripheral microtomography (HR-pQCT) using the X-treme CT device. **Results:** In 6 months, the patient lost 16.6 kg (BMI = 24.20 kg/m²), had an abdominal circumference reduction of 18.4cm and no significant laboratory changes. With regard to bone densitometry, there were no significant differences in the lumbar spine or total femur. CTX showed an increase of 83 per cent, still within the reference value. With regard to HR-pQCT, changes were identified in trabecular microarchitecture with a reduction in the number of trabeculae and an increase in trabecular thickness and separation between trabeculae in both the radius and distal tibia. **Discussion/conclusion:** Studies suggest that restrictive diets can lead to a discreet loss of bone mass, especially in the hip. The short-term increase in bone resorption markers, as observed in this case, may indicate a temporary increase in bone remodeling during adaptation to the diet. HR-pQCT is an advanced tool for a detailed assessment of bone mineral density and bone microarchitecture that is unaffected by overlapping tissues, providing three-dimensional information of the trabecular and cortical compartments separately. After analysis of the patient's data, we can conclude that the quality of the trabecular bone has worsened. However, it is worth highlighting that this is an isolated case with a short follow-up period and further studies are important to confirm the changes found regarding bone health. **Keywords:** obesity; ketogenic diet; high-resolution peripheral microtomography HR-pQCT.

NEUROENDOCRINOLOGIA

1736

THE IMPORTANCE OF EARLY DIAGNOSIS IN AUTOIMMUNE HYPOPHYSITIS: PREVENTING IRREVERSIBLE COMPLICATIONS – CASE REPORT

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Case report: A 64-year-old female with long-time arterial hypertension, rheumatoid arthritis (RA), and primary hypothyroidism due to Hashimoto's thyroiditis, regularly using methotrexate, folic acid, adalimumab, prednisolone, paroxetine, levothyroxine, and hydrochlorothiazide, reported in the last year continuous holocranial headache, of strong intensity and refractory to simple analgesics, also associated with reduced visual acuity first on the left eye, then right, gradually evolving to bilateral blindness. She was referred to our Emergency Unit after worsening of headaches, generalized tonic-clonic seizures, and persistent bilateral blindness. A non-contrast cranial CT scan revealed an expansive sellar and suprasellar lesion, also showed by an MRI of the sella turcica, identifying thickening of the pituitary stalk, sellar and suprasellar lesion with 8mm of height, and characteristics suggestive of lymphocytic hypophysitis, without involvement of the optic chiasm. She presented laboratory and clinical criteria for panhypopituitarism and diabetes insipidus. Given MRI findings and autoimmune diseases history, lymphocytic hypophysitis was considered the main diagnostic hypothesis. Neurosurgical evaluation dismissed surgical intervention, with a good clinical outcome after conservative treatment with intranasal desmopressin 0,1 mg and an increase in the corticosteroid dose. She gradually showed improvement in headaches but maintained bilateral blindness. Seven months later, a new MRI of the sella turcica revealed an increase of the pituitary stalk thickness, with the lesion touching the optic chiasm. After neuro-ophthalmological evaluation, visual rehabilitation was ruled out due to optic nerve ischemia. Clinical management and regular outpatient evaluations were maintained but, because the growth of the lesion, neurosurgery is not ruled out. **Discussion:** Hypophysitis is a rare condition that can clinically and radiologically mimic pituitary masses, such as adenomas. Differentiation is important as management can be exclusively clinical. **Final comments:** This case demonstrates the complexity of managing Hypophysitis, presenting with multiple complications. Corticosteroid therapy provided partial symptom relief, but in this case the persistence of visual deficit with the inviability of the optic nerve was probably secondary to RA. We reinforce the need of an early diagnosis, and an integration of clinical and radiological data for the management of this condition. **Keywords:** hypophysitis; autoimmune; hypopituitarism.

ADRENAL E HIPERTENSÃO

1737

LATE-ONSET ADRENOLEUKODYSTROPHY

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Introduction: X-linked adrenoleukodystrophy (ALD) is a genetic disorder that affects lipid metabolism. It is caused by mutations in the ABCD1 gene, which encodes a protein essential for the degradation of very long-chain fatty acids (VLCFAs). The accumulation of these toxic fatty acids in various tissues leads to conditions such as adrenal insufficiency, leukodystrophy, and myeloneuropathy. **Case presentation:** L., a 36-year-old male teacher, had experienced weakness, fainting spells, anorexia, low weight, myalgia, and stunted growth compared to his seven siblings since adolescence. At the age of 19, he began to exhibit motor symptoms, including progressive spastic paraplegia, urinary sphincter incontinence, and worsening myalgia, particularly in the lower limbs. A neurologist suspected a genetic condition and referred him to a geneticist, who ordered exome analysis, resulting in a genetic diagnosis of ALD. In support groups, he learned about adrenal insufficiency and sought our endocrinology clinic. He brought recent test results showing elevated ACTH levels (893 pg/mL, reference 0-46) and serum cortisol of 8.0 mcg/dL; sodium 135 mEq/L; potassium 4.17 mEq/L. During the initial consultation, he presented with significant baseline and postural hypotension, fatigue, and proximal muscle weakness. We decided to start him on prednisone 5 mg, provide a stress dose card, and give additional guidance. He returned with significant improvement in symptoms; however, with ACTH 33.9 (0-46) and basal cortisol 9.0 mcg/dL, indicating possible overtreatment. We opted to reduce prednisone to 2.5 mg while maintaining clinical improvement and provided guidance for stress situations. **Final comments:** It is evident that the patient already had early signs of adrenal insufficiency, but difficulties in recognizing the pathology contributed to a delayed diagnosis. This delay significantly increases the risks, potentially fatal, especially in severe stress situations. Although there are currently no effective treatments for the disease, early diagnosis allows for the development of research exploring emerging therapies in the initial stages of the condition. **Keywords:** adrenoleukodystrophy; adrenal insufficiency; Addison's disease.

ADRENAL E HIPERTENSÃO

1738

TRABECULAR BONE SCORE IN ADRENAL INCIDENTALOMA: ASSESSING BONE QUALITY AND FRACTURE RISK

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Introduction: Growing evidence suggests an increased risk of fracture in patients with adrenal incidentaloma (AI) independent of bone mineral density (BMD) due to potential reductions in bone quality. However, data on Trabecular Bone Score (TBS) in this population is scarce. **Objective:** To investigate and compare BMD, TBS, and fractures frequency between patients with nonfunctioning adrenal incidentaloma (NFAI), mild autonomous cortisol secretion (MACS), and controls. **Methods:** This cross-sectional study included 45 NFAI (1 mg dexamethasone suppression test [DST] ≤ 1.8 µg/dL), 30 MACS (1 mg DST > 1.8 µg/dL), and 47 controls with normal adrenal imaging. BMD was measured using dual-energy X-ray absorptiometry; TBS, categorize as normal (≥1.350), partially degraded (1.201-1.350), and degraded microarchitecture (≤1.200), was assessed in the lumbar spine. Vertebral fracture was evaluated by spine X-ray. The 10-year absolute risk of major and hip fractures was predicted using the FRAX® tool for the Brazilian population, then adjusted with TBS data. **Results:** There were no significant differences between AI (NFAI and MACS) and controls groups regarding age, gender, ethnicity, menopause status, or body mass index. However, smoking frequency was higher in the AI group (22.7% *vs.* 4.4%; $p = 0.009$). Both groups showed similar BMD values at the spine, femoral neck, and femoral total. Normal, partially degraded, and degraded microarchitecture by TBS were also similar between AI and controls (38.7% *vs.* 42.2%; 46.2% *vs.* 42.2%; 14.7% *vs.* 15.6%, $p = 0.89$), respectively. Even after adjusting the FRAX score with TBS, the predicted 10-year absolute risk of hip and major fractures remained statistically similar between the AI and control groups. The frequency of vertebral and non-vertebral fractures was similar between the AI and control groups (6.8% *vs.* 12.5%, $p = 0.66$ and 23.9% *vs.* 27.5%, $p = 0.68$), respectively. Interestingly, TBS exhibited an inverse correlation with 1mg DST ($r = -0.229$; $p = 0.048$), suggesting a potential link between cortisol levels and bone microarchitecture. Analyses comparing NFAI and MACS groups revealed lower BMD and Z-scores at most skeletal sites in the MACS group compared to NFAI. **Conclusion:** TBS may not be a reliable tool for identifying patients with AI at increased risk of fracture. Further research is needed to explore the underlying mechanisms linking cortisol secretion and bone health, particularly in the context of differentiated AI subtypes (NFAI *vs.* MACS). **Keywords:** adrenal incidentaloma; trabecular bone score; bone mineral density.

OBESIDADE

1739

FEXARAMINE ATTENUATES INTESTINAL DYSBIOSIS IN MICE FED A HIGH-FAT DIET

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Introduction: The intestinal microbiota plays a fundamental role in physiological homeostasis, influencing host function and microbial growth. Changes in the composition of the microbiota are associated with dysbiosis, which can result in intestinal damage, glucose intolerance and insulin resistance. The farnesoid X receptor (FXR) is an important regulator of intestinal microbiota signaling, with potential impact on metabolic health. **Objective:** The present study aimed to analyze the effects of fexaramine (intestinal agonist FXR), in modulating the intestinal microbiota of mice fed a high-fat diet. **Materials and methods:** 40 males C57Bl/6 mice, three months old, were divided into groups that received a control diet (C-10% lipids) or a high-fat diet (HF-50% lipids), pre-treatment period lasting 12 weeks. After this phase, the animals began the treatment period in groups C and HF with fexaramine (FEX), via orogastric gavage at a dosage of 5 mg/kg of body mass, for 3 weeks (no 17369, Cayman Chemical Company, USA) diluted in 0.2% DMSO/PBS. The groups that did not receive the treatments received only the diluent, 0.2% DMSO/PBS by orogastric gavage. Plasma analysis, intestinal histology, glucose metabolism, 16S rRNA gene expression, and tight junction bile acid gene expression were performed. The entire experimental protocol was approved by CEUA under number 015/2019. **Results:** The administration of fexaramine resulted in a reduction in body mass, improvement in glucose tolerance, reduction in plasma lipid concentrations and modulation of the composition of the intestinal microbiota, with an increase in the abundance of *Lactobacillus* sp. and *Prevotella* sp., and a reduction in the abundance of *Escherichia coli*. Furthermore, the gene expression of FXR-Fgf15, Tgr5-Glp1 and Cldn-Ocldn-Zo1 in the ileum was increased. **Conclusion:** The results indicate that fexaramine has potential in improving dysbiosis, intestinal tight junctions and inflammation in mice fed a high-fat diet. The modulation of the intestinal microbiota and the regulation of genes related to intestinal and metabolic function suggest that fexaramine may be a promising strategy for the treatment of metabolic conditions associated with dysbiosis. **Keywords:** fexaramine; dysbiosis; FXR intestinal agonist.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1740

PITUITARY HYPERPLASIA SECONDARY TO ESTROGENIC THERAPY IN A TRANSGENDER WOMAN

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Introduction: Gender-affirming hormone therapy (GAHT) is used for gender identity adequation. Pituitary hyperplasia (PH) occurs in heterogeneous settings and remains under-recognized. **Case report:** A 29-year-old female transgender self-initiated hormonal therapy in 2018 with high doses of estrogens and progesterone. In 2020, in a primary health care unit the algestone-estradiol association was kept and spironolactone 50 mg/day started. In 2022, she experienced galactorrhea and laboratory tests detected an increased prolactin (PRL) > 200 ng/dL (Detection limit) and pituitary magnetic resonance showed PH. She was referred to endocrinology in July 2023. Laboratory tests showing prolactin > 200 ng/dL and estradiol 795.1 pg/mL. At this time, transdermical estradiol (1.5 mg/day) and spironolactone 100 mg/day were prescribed. During follow-up visits, spironolactone was discontinued due to hypotension and cyproterone acetate 50 mg/day was initiated. Evolving with rates episodes of galactorrhea, decrease in prolactin and normal estradiol levels. Dopamine agonist therapy was offered and refused for personal reasons. She is still being monitored for hyperprolactinemia and PH. **Discussion:** In GAHT estradiol is preferred over conjugated estrogens or synthetic estrogens due to difficulty in monitoring. High levels of estrogens indicate a potential risk of venous thrombolic events (VTE). Cyproterone acetate has been associated with the development of meningioma and hyperprolactinemia. The systematic reviews did not provide sufficient evidence to suggest any testosterone-lowering medications had a better safety profile in terms of outcomes. Measuring prolactin levels is indicated in the presence of symptoms of hyperprolactinemia. PH occurs in heterogeneous settings and remains under-recognized. Pituitary enlargement can be a consequence of physiological condition like pregnancy, pathological situations like hypothyroidism and medications, including estrogen, and can be difficult to diagnose since there are no explicit guidelines. **Conclusion:** Due to stigma surrounding GAHT, transgender often taken hormones without proper supervision, resulting in high hormones doses and associated risk. Current guidelines still lack evidences regarding incidence and management of PH. Further research on the long-term outcomes of hormonal therapy is necessary to improve the healthcare for transgender population. **Keywords:** pituitary hyperplasia; gender-affirming hormone therapy; estrogen.

METABOLISMO ÓSSEO E MINERAL

1741

OUTPATIENT SURGERY FOR PRIMARY HPT GUIDED BY THE SEQUENTIAL DETERMINATION OF IPTH DURING THE PROCEDURE

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Primary hyperparathyroidism (HPTp) is caused by an inappropriate increase in the secretion of parathyroid hormone (PTHi), leading to hypercalcemia. The definitive diagnosis of hyperparathyroidism is made by the elevation of serum parathyroid hormone (PTHi), in patients with persistent hypercalcemia. The only curative treatment for primary hyperparathyroidism is surgery. For many years, parathyroid surgery required exploration of the 4 glands, because there were no reliable localization tests with good resolution and because of the possibility of multiglandular disease, which varies around 10%. With the use of PTH dosage during the procedure, HPT surgery can be performed in shorter surgical time, with less morbidity, avoiding hypocalcemia that can occur in exploratory surgery. This management, considered minimally invasive, allows this procedure to be carried out on an outpatient basis. We demonstrated the experience of a surgical endocrinology service, using transoperative PTHi guiding HPTp surgery, since 1997, with 759 patients. A hospital stay of up to 6 hours in 87 (11.5%) and in an overnight regime in 531 (70%). There was no need for readmission in any of these cases due to complications resulting from metabolic changes resulting from surgery. Minimally invasive surgery for primary hyperparathyroidism allows the procedure to be performed safely on an outpatient or near-outpatient basis. **Keywords:** Primary hyperparathyroidism; Outpatient surgery for primary HPT; Intraoperative PTH.

TIREOIDE

1742

DIFFUSE SCLEROSANT VARIANT OF PAPILLARY CARCINOMA AND RIEDEL THYROIDITIS - SAME MORPHOLOGICAL ASPECTS WITH DIFFERENT CYTOLOGY?

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This is a case report of a 41-year-old woman with an 8-month history of painful cervical mass and hardened consistency associated with occasional dysphagia for solids, suggestive of Riedel's thyroiditis (TR). Ultrasound of the thyroid was performed, which showed a heterogeneous pattern at the expense of dominant nodular formation occupying practically the entire right lobe. Fine needle aspiration puncture (FNAB) classified as Bethesda III, surgical treatment being indicated. The macroscopic appearance during the operation raised the suspicion of different lesions (lymphoma, differentiated and/or undifferentiated thyroid cancer), and an excisional biopsy was performed. Pathological examination revealed diffuse sclerosing papillary thyroid carcinoma. (Diffuse Sclerosing Variant Papillary Carcinoma, affecting the entire sample. Absence of angio-lymphatic invasion. Absence of perineural invasion. 1 mitosis in 2.0 square mm. Compromised surgical margin.). The total thyroidectomy was performed. When managing a patient with presumed Riedel's thyroiditis, it is important to consider malignancy among the differential diagnoses as the patient may present with similar symptoms. Any aspect that may be suspicious for malignancy should lead the patient to have a more exhaustive investigation until malignancy can be excluded, and often the threshold for differentiating between Riedel and a malignant thyroid disease may not be as clear even in the clinically or in pathology. **Keywords:** papillary sclerosing carcinoma; Riedel's thyroiditis; pathological anatomy of the thyroid.

ADRENAL E HIPERTENSÃO

1743

PHEOCHROMOCYTOMA: SUCCESSFUL APPROACH VIA VIDEO LAPAROSCOPY

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Case report: Female patient, 53 years old, hypertensive for 10 years, evolving with refractory hypertension associated with paroxysms of facial flushing, tachycardia, and recurrent pressure spikes for 6 years. In October 2023, she was referred to the emergency department with thoraco-abdominal pain, cyanosis of the extremities, and hypertensive crisis, being diagnosed with pancreatitis. An MRCP showed a left adrenal nodule measuring 3.3 cm. Laboratory evaluation showed urinary metanephrines at 447 (RV < 57), total metanephrines at 1,051 (RV < 205), normetanephrines at 604 (RV < 148). The patient was admitted to a hospital with an endocrinology service in January 2024, presenting with paroxysms, joint pain, orthostatic hypotension, and Raynaud's phenomenon. A CT scan with an adrenal protocol showed a left nodule of 3.6 x 3.3 cm (99 HU late phase and washout > 60%). Thyroid ultrasound showed nodules in the left lobe measuring 1.8 cm and 1.9 cm (TIRADS 3), and an echocardiogram showed ascending aorta ectasia, diastolic dysfunction, and left ventricular remodeling. As pre-surgical preparation, she received daily doses of doxazosin 32 mg, metoprolol 200 mg, amlodipine 10 mg, losartan 100 mg, and vigorous hydration. A left adrenalectomy was performed via video laparoscopy in February 2024 without complications by the urology service, with pathology confirming pheochromocytoma. The patient was discharged with controlled blood pressure levels, without paroxysms, using losartan 100 mg, amlodipine 10 mg, and HCTZ 25 mg. Follow-up showed no complaints, urinary metanephrines at 320.98 (RV < 1,000), cortisol at 17.5 mcg/dL, calcitonin at 2.0 pg/mL (RV < 5.0), Ca 11.0 (RV 8.8-10.6), TSH 5.03 (RV 0.4-5.6). **Discussion:** Pheochromocytomas are rare tumors, mostly benign (90%), characterized by autonomous catecholamine production. The patient described presented the classic triad, consisting of headache, profuse sweating, and palpitations. Proper preoperative preparation with alpha-blockade and volume expansion is essential for surgical treatment. Laparoscopic adrenalectomy was feasible as it was a small, unilateral, and non-invasive lesion. **Final comments:** It is important to consider the diagnosis of pheochromocytoma in cases of poorly controlled arterial hypertension associated or not with paroxysms. Treatment promotes an improvement in quality of life and blood pressure control. It is essential to investigate other endocrine disorders to rule out Multiple Endocrine Neoplasia (MEN). **Keywords:** endocrine neoplasia; pheochromocytoma; secondary hypertension.

OBESIDADE

1745

IMPACTS ON HEALTH FROM THE USE OF SEMAGLUTIDE FOR AESTHETIC PURPOSES

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Introduction: Glucagon-like peptide-1 (GLP-1) is an incretin hormone secreted in the intestine, responsible for increasing insulin secretion, reducing gluconeogenesis, stimulating lipolysis, and decreasing appetite. In this context, GLP-1 analogs, such as semaglutide, were developed to optimize the treatment of type 2 diabetes mellitus, improving glycemic control and promoting weight loss. Due to its effects, GLP-1 analogs began to be used off-label for the treatment of obesity. However, with the popularization of this information, the use of semaglutide by non-obese and non-diabetic patients solely for weight loss has become common, raising concerns about safety and long-term effects. **Objective:** To understand the risks of using semaglutide for weight loss in non-obese and non-diabetic patients. **Method:** This is a systematic review based on the PRISMA methodology, using 10 scientific articles published between 2020 and 2024, in journals indexed in the SciELO (Scientific Electronic Library Online) and PubMed databases. **Discussion:** In the relentless pursuit of the ideal body, semaglutide has gained popularity due to its anorexigenic properties. As society trivializes the indiscriminate use of this drug, often without medical guidance, its irregular use can cause a range of side effects, from nausea, abdominal pain, vomiting, diarrhea, and constipation to severe side effects like retinopathy. The hypoglycemic effect, although manageable in patients with Type 2 Diabetes, poses a significant risk for non-diabetics using it for weight loss, requiring careful monitoring. Furthermore, irregular use becomes more dangerous, making proper guidance on dosage and administration essential due to the potential for renal impairment and the risk of acute pancreatitis. **Conclusion:** It is observed that the effects of semaglutide vary considerably in individuals without an indication for its use. Reckless use, driven by aesthetic ideals and facilitated by access without a prescription, can result in severe consequences. Additionally, it is proven that these medications do not cure obesity but only assist in weight control, requiring a combination of physical activity and healthy habits. Therefore, supervision by professionals is crucial to mitigate the risks associated with inappropriate use of semaglutide and minimize long-term harm. **Keywords:** weight loss; glucagon-like peptide-1 receptor agonists; obesity.

ADRENAL E HIPERTENSÃO

1746

HYPOVOLEMIC SHOCK IN A PATIENT WITH NON-CLASSICAL ADRENAL HYPERPLASIA: A POST-MORTEM CASE STUDY

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Case presentation: A 54-year-old female patient reported experiencing prolonged precordial chest pain with a tight sensation for the past 2 years. In 2023, the patient sought care at the Emergency Care Unit due to a hypertensive crisis. Hours later, the patient passed away and was referred to the Death Verification Service (SVO) to determine the cause of death. In the autopsy, the external physical examination revealed a large amount of blood-tinged content from the nasal cavity. The internal examination showed a subgaleal hematoma in the occipital region and subarachnoid hemorrhage in the parietal and occipital lobes, with significant atherosclerosis in the basilar artery and the branches of the circle of Willis. The chest showed a significant pericardial effusion. The lungs exhibited diffuse bilateral congestion. The heart had concentric hypertrophy of the right ventricle and atherosclerosis in the coronary vessels. In the abdomen, there was a small volume of citrine ascites. The liver was congested with a granular parenchyma and areas of steatosis. The spleen was enlarged with reactive white pulp. The right kidney was reduced in size with an irregular, granular surface. The left kidney showed marked cortical and medullary differentiation with a shock pattern upon sectioning. The adrenal glands were topically located with emptied content indicative of shock, and the left adrenal gland exhibited nodular hyperplasia. In the pelvis, the uterus and adnexa showed no abnormalities. The macroscopic diagnosis at autopsy was hypovolemic shock due to pleurovisceral hemorrhagic syndrome, with hypertension and non-classical adrenal hyperplasia as contributing causes. **Discussion:** Non-classical adrenal hyperplasia (HAN) is a milder form of congenital adrenal hyperplasia (CAH), resulting from a partial deficiency of enzymes involved in cortisol synthesis, primarily 21-hydroxylase. This partial deficiency leads to insufficient cortisol production, which can result in an adrenal crisis that may directly contribute to the patient's hemodynamic instability. Additionally, patients with HAN can develop secondary hypertension due to excess androgen production and an imbalance in aldosterone levels, increasing the risk of hypertensive crises, especially in individuals with underlying heart conditions. **Final comments:** This case highlights the importance of the medical team being aware of the potential for severe clinical events triggered by contributing factors such as HAN. **Keywords:** hypovolemic shock; adrenal hyperplasia; hypertension.

TIREOIDE

1747

FUNCTIONING BONE METASTASES OF DIFFERENTIATED THYROID CANCER: A MULTIDISCIPLINARY AND PERSONALIZED APPROACH

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Case presentation: A 66-year-old male presented in June 2019 with hip pain, and a CT showed infiltrative bone lesions. Biopsy revealed bone metastases (BM) of follicular thyroid carcinoma (TC), and lab tests showed TSH suppression and high thyroglobulin (>5,000 ng/mL). He had a history of partial thyroidectomy in 2013, with a putative diagnosis of follicular adenoma. Completion thyroidectomy and additional treatment with 200 mCi of radioiodine (RIT) were performed. Post-therapeutic scan (WBS) showed uptake on multiple bones, lung nodules and cervical and mediastinal lymph nodes (LN). A year later he received additional 200mCi RIT, with WBS showing uptake on BM, mediastinal LN and lung nodules. In July 2023 he persisted with mild pain (ECOG 0) but hip lesions were considered irresectable. Cryoablation was offered but refused. PET-CT showed hypermetabolic lesions on the skeleton, mediastinal LN and lung nodules. He was also diagnosed with a brain metastasis. External radiotherapy (RxT) was then performed in the brain and hip. Because of structural progression and hip pain, in May 2024 he received dosimetry-based RIT (300 mCi), WBS showing uptake on the brain lesion, mediastinal LN, left adrenal gland and on BM. After one month he developed hypothyroidism and was started on levothyroxine, and also denosumab every 6 months. Genetic evaluation of the bone biopsy: no mutations were found on BRAF, NRAS, HRAS, NTRK. PD-L1 and PD-1 expression were negative. **Discussion:** After the lungs, bones are the second most common site of TC metastases, mainly affecting the spine and pelvis. Functioning metastases are rare, and RIT is preferred in such situations. In the present case, the progression to brain metastasis posed an additional challenge, and brain edema occurred despite the use of high doses of dexamethasone prior to RIT. Other therapeutic options for BM include surgery, RxT, percutaneous procedures, and kinase inhibitors. Antiresorptive agents, either bisphosphonates or denosumab, may be used, but no protocols have been defined for TC patients. **Final comments:** The occurrence of BM of TC negatively impacts the survival rate. Patients with radioiodine-avid lesions have better responses. A multidisciplinary and personalized approach is paramount to improve clinical outcomes. **Keywords:** thyroid carcinoma; neoplasm metastases; thyrotoxicosis.

MISCELÂNEA

1748

MEDULLARY NEPHROCALCINOSIS IN A PATIENT WITH MEN-2A WITH HIGH CALCITONIN AND LOW PTH LEVELS: A CASE REPORT

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Case presentation: Patient C.S.J., a 46-year-old female, was diagnosed with multiple endocrine neoplasia type 2A (MEN-2A) in 2009 following a referral for genetic screening due to a strong paternal family history. The presence of a mutation in the RET proto-oncogene was identified. Subsequent tests revealed medullary thyroid carcinoma (MTC) and parathyroid adenoma, leading to a total thyroidectomy and total parathyroidectomy in 2011. The patient continued follow-up in the endocrinology outpatient clinic. In 2016, she was diagnosed with metastasis of MTC to the liver. In 2017, she suffered a hemorrhagic stroke due to hypertensive crises, and bilateral pheochromocytoma (PHEO) was detected, leading to bilateral adrenalectomy in 2018. Subsequently, she was diagnosed with nephrolithiasis and medullary nephrocalcinosis. Currently, the patient has persistently high calcitonin, low parathyroid hormone (PTH), and experiences episodes of hypocalcemia, hypomagnesemia, and hypokalemia. She was hospitalized in March 2024 to correct electrolyte imbalances: calcitonin 5,561 pg/mL; PTH < 3 pg/mL; Ca: 7.8 mg/dL; K 3.09 mEq/L; P 4 mg/dL; Mg 1.5 mg/dL. She was referred for nephrology follow-up. **Discussion:** MEN-2A is a syndrome diagnosed by the occurrence of two or more specific endocrine neoplasms: MTC, PHEO, and parathyroid hyperplasia/adenoma, related to mutations in the RET proto-oncogene. Clinical manifestations start with MTC (>90%). Pheochromocytoma (40%-60%) is typically bilateral. This patient presented with parathyroid adenomatous lesion, a late finding, while gland hyperplasia is the most common and early lesion (15%-30%). Surgical treatment is based on total parathyroidectomy with autotransplantation. In this case, total parathyroidectomy was chosen, justifying the patient's low serum PTH levels and the indication for calcitriol use. Medullary nephrocalcinosis is not a reported finding associated with MEN-2A, with hyperparathyroidism being the main cause, followed by renal tubular acidosis. Since the parathyroidectomy, the patient has had low PTH and serum calcium levels. The patient self-administration of high doses of calcitriol, the magnesium depletion and the elevated calcitonin, causing tubulopathy, are three factors that may contribute to the renal manifestations. **Conclusions:** The absence of previous reports of medullary nephrocalcinosis associated with MEN-2A is noteworthy, emphasizing the need for further studies and the importance of this case report. **Keywords:** calcitonin; multiple endocrine neoplasia type 2A; nephrocalcinosis.

ADRENAL E HIPERTENSÃO

1749

METASTATIC CARCINOMA OF THE ADRENAL CORTEX: CASE REPORT

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1. HOSPITAL GERAL ROBERTO SANTOS, SALVADOR, BA, BRASIL.

Case presentation: G.B.S., a 27-year-old man, sought emergency care in August 2023 due to low back pain, weight gain, edema on the face, abdomen, and lower limbs, and elevated blood pressure levels. An abdominal CT angiography revealed a heterogeneous, vascularized mass with areas of necrosis and tumor thrombus in the right inferior vena cava, probably located at left adrenal gland, measuring 15 x 11.5 cm. Morning serum cortisol was 49.7 mcg/dL, aldosterone was 3.4 ng/dL, renin activity was 9.5 ng/mL/h, ACTH was < 5 pg/mL, and serum catecholamines and metanephrines were normal. In September 2023, the patient was referred to our Urology service. A left adrenalectomy (AD) with nephrectomy and splenectomy was performed. Endocrinology evaluation after AD identified a high risk of adrenal carcinoma, requesting follow-up CT scans. In March 2024, immunohistochemistry (IHQ) showed Ki-67 MIB-1 positivity in 40% and pathology (AP) confirmed an oncocytic pattern adrenal cortical carcinoma measuring 20 x 13 x 12 cm, along with thoracic and abdominal CT scans revealing multiple nodular images in the left pulmonary lobe, liver, splenic bed, and left kidney, suggesting secondary paraneoplastic processes. The patient was referred for chemotherapy in June 2024 and remains stable under joint follow-up with oncology. **Discussion:** Adrenal carcinoma is a rare malignant neoplasm with an incidence of 0.7-2.0 per million per year, predominantly in women, in those under 10 years and over 40 years of age. The presented case involves a young patient with a large tumor showing malignancy components from the initial diagnosis, such as size, necrotic areas, and hypercortisolism, which was revealed to be aggressive carcinoma after AP and IHQ results, with metastases in the thorax and abdomen even after adrenalectomy. Complete surgical resection can significantly prolong survival when detected in stages I and II; however, in this case, the patient had stage IV disease, worsening the prognosis. **Final comments:** Oncocytic adrenal tumors are rare entities, with few symptoms in the early stages, making early diagnosis difficult, and surgical treatment is the main approach. In this case, compressive symptoms arose related to the large mass size, and perhaps the delay in diagnosis and difficulty accessing oncology services may have contributed to the progression to metastases. **Keywords:** endocrine neoplasia; adrenal carcinoma; hypercortisolism.

METABOLISMO ÓSSEO E MINERAL

1750

HYPERCALCEMIA AS THE INITIAL MANIFESTATION OF CHOLANGIOCARCINOMA: A CASE REPORT

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Case presentation: J.P.F., 86 years old, was referred by a geriatrician to start corticosteroid withdrawal, which had been in use for a few months as a therapeutic test for polymyalgia rheumatica. Bone densitometry was requested, with L1-L4 0.249 (-2.3), femoral neck 0.585 (-3.7) and distal radius 0.664 (-3.3). Laboratory tests: calcium 12.7 mg/dL; albumin 3.4 g/dL; ionic calcium 6.8 mg/dL; PTH 8 pg/mL. The neoplasia screening procedure began, with protein electrophoresis, endoscopy, colonoscopy and bone scintigraphy, which results were considered within normal limits. Computed tomography of the total abdomen showed mild hepatomegaly with multiple hypodense lesions suggestive of secondary neoplastic involvement. A biopsy of the liver mass was requested, with positive values for antigens CK7(SP52) and CK19(A53-B/A2.26) consistent with the diagnosis of adenocarcinoma, most probably of biliodigestive tract, including intrahepatic cholangiocarcinoma. **Discussion:** A case of hypercalcemia in an elderly man was described. With the workup investigation, primary hyperparathyroidism was ruled out, which represents the cause of 50% to 60% of hypercalcemia manifestations. Approximately 31% of patients with elevated calcium have neoplasms. Humoral hypercalcemia of malignancy (HHM) may result from the development of bone metastases or the production of PTH-related peptides by tumor cells. The hypotheses of multiple myeloma and bone metastases were discarded, in addition to the main solid tumors that affect this age group, mostly described in the literature: squamous cell tumors (head, neck, esophagus, lungs, pancreas), kidney and bladder carcinoma. Hypercalcemia related to cholangiocarcinoma is not commonly found in the literature. Furthermore, the patient did not present the classic symptoms of bile duct cancer, characterized by jaundice, weight loss and abdominal pain, with the incidental finding of increased serum calcium being its initial manifestation, which is uncommon in carcinogenic processes with HHM. **Conclusion:** A case was reported of an 86-year-old man who presented with hypercalcemia as the initial manifestation of cholangiocarcinoma. This type of cancer is rare – approximately 3% of cases of gastrointestinal malignancies, with a prevalence of 0.01% to 0.46%. Associated with hypercalcemia is even more uncommon, hence the relevance of this case report. **Keywords:** hypercalcemia; malignancy; cholangiocarcinoma.

DIABETES MELLITUS

1751

INSULIN ASSOCIATED FAT NECROSIS – A RARE COMPLICATION - A CLINICAL CASE REPORT

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Introduction: Insulin associated fat necrosis is a rare complication of subcutaneous insulin administration, with few cases reported in literature. We report one of such rare cases. **Case report:** A 79-year-old Caucasian female presented to our hospital with a necrotic ulcer on her thigh. Her past medical history was relevant for type 2 diabetes mellitus, diabetic kidney disease G3bA2, hypertension, hypothyroidism and coronary artery disease. Her medication included single dose daily subcutaneous glargine (20 units), metformin 850 mg twice daily and dapagliflozin 10 mg daily. Two weeks before, the patient reported a painful localized swelling on her inner left thigh after insulin injections, with development of local inflammatory signs, and progressive worsening and ulceration, with no fever. On physical examination, her blood pressure was within normal range and she had no fever. A 3-cm wide necrotic ulcer was observed on her left inner thigh, with surrounding edema, redness and pain on compression. The analytical study showed no leukocytosis (8.21 x 10^9/L), no elevation of C-reactive protein (2.8 mg/L), and no elevation of myoglobin (136.7 ng/mL), which would suggest ischaemia. An ultrasound revealed extensive inflammation of subcutaneous adipose tissue (5cm wide x 2 cm deep), with a central collection with ulceration (26 mm x 12 mm). Considering the clinical features and association with insulin injection with no other evident etiology, a diagnosis of insulin associated fat necrosis was made. The necrotic tissue was surgically removed and drained and empiric antibiotherapy with Amoxicillin 875 mg + clavulanic acid 125 mg twice daily was started. The patient was instructed to change the insulin needles and the administration technique was reviewed. No microbiological agents were isolated in the removed tissue. The lesion had a complete healing after 2 months with no recurrence. **Conclusion:** Although rare, fat necrosis is an important complication of insulin injections, and clinicians should be aware of its existence. It can present with localized and persistent pain, which can mimic other diagnoses depending on its location. Treatment of this condition includes surgical excision and avoidance of insulin injections in the affected region. **Keywords:** fat necrosis; insulin; case report.

DIABETES MELLITUS

1752

DIGITAL TECHNOLOGIES IN TREATMENT OF TYPE 1 DIABETES MELLITUS IN A PUBLIC TERTIARY HEALTHCARE SERVICE – A PROSPECTIVE STUDY

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Introduction: Type 1 diabetes (T1DM) is marked by insulin deficiency, stemming from the destruction of pancreatic beta cells. The primary goal of drug therapy is to normalize glycemic parameters to reduce long-term complications. Currently, digital technologies have revolutionized T1DM management. This study evaluates Insulin Pumps, continuous glucose monitoring (CGM) system and mobile applications (APPs) aiding in carbohydrate counting. **Objective:** Assess the use of digital technologies in the treatment of patients with T1DM in a secondary Endocrinology outpatient clinic of Brazil's Unified Health System (SUS). **Methods:** A prospective observational cohort study was carried out with 90 patients diagnosed with TDM1, divided into four groups based on previous treatment. Group 1: patients using a fixed basal-bolus insulin schedule without digital technologies (control group); G2: carbohydrate counting with APPs; G3: patients using CGM and APPs; G4: insulin pump and APPs. The assessment included a personal satisfaction questionnaire, glycated hemoglobin (HbA1C) and fasting blood glucose (FG) at two moments: M1 (inclusion interview) and M2 (12 months later). The evaluation included: a questionnaire on personal satisfaction with the treatment and glycemic control, carried out using glycated hemoglobin (HbA1C) and fasting blood glucose (FG) at two moments: M1 (inclusion interview) and M2 (12 months later). **Result:** G2, 3 and 4 presented an average glycemic control (HbA1C and FG) closer to the goals related to a lower risk of chronic complications, when compared to G1. Comparing G3 with G1 ($p < 0,05$) and G4 with G1, in M2 ($p < 0,05$). However, when comparing the two moments of G3, HbA1C and GJ, $p < 0.05$ is noted, that is, statistical significance in the control of FG when using the method. This was not observed in G1, G2 and G4 when analyzed comparing M1 and M2. Regarding the degree of patient satisfaction, $p < 0.05$ was observed in G2 and G3 when comparing the degree of satisfaction in M1 and M2 with the control group. Among the groups, G4 was the most dissatisfied, in M1. **Conclusion:** the present study was able to positively correlate that, in a SUS outpatient clinic, the use of digital technologies in the treatment of TDM1 patients represented by G2, 3 and 4, present a more adequate average glycemic control when compared individually with G1. Furthermore, they are more satisfied with the treatment, except in G4, due to facing periods with difficulty accessing inputs. **Keywords:** digital technologies; insulin pump; continuous glucose monitoring.

NEUROENDOCRINOLOGIA

1753

USE OF THE DESMOPRESSIN-STIMULATED NORMALIZED ACTH/PROLACTIN GRADIENT DURING INFERIOR PETROSAL SINUS SAMPLING FOR THE DIFFERENTIAL DIAGNOSIS OF ACTH-DEPENDENT CUSHING'S SYNDROME

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Introduction: Inferior petrosal sinus sampling (IPSS) is the gold standard method for the differential diagnosis of ACTH-dependent Cushing's syndrome (ADCS), but it has a 5-10% false negative (FN) rate. The normalized ACTH/prolactin gradient during the procedure, stimulated by CRH, can correct these FN cases. Objectives: To evaluate the accuracy of the normalized ACTH/prolactin gradient stimulated by desmopressin during IPSS for the differential diagnosis of ADCS. Additionally, to assess the inter-petrosal sinuses ACTH gradient normalized by prolactin (PRL) for surgical tumor localization. **Patients and methods:** This retrospective study was conducted at a tertiary referral center from 2008 to 2024, involving 58 patients with ADCS who underwent IPSS with desmopressin 10 µg IV and additional PRL analysis. Fifty cases were diagnosed with Cushing's disease (CD) and eight with ectopic ACTH syndrome (EAS). The normalized ACTH central/peripheral (CEN/PER) gradient by PRL (normalized gradient [NORM]) was defined as the ratio of the peak CEN/PER ACTH gradient to the ipsilateral CEN/PER PRL gradient at the time 0' (Findling *et al.*, 2004). **Results:** Central CEN/PER ACTH gradient (0' > 2 or peak > 3) was found in 48 cases, all with CD. Ten cases lacked a central ACTH gradient, eight with EAS and two with CD (FN). In this case series, IPSS (ACTH) sensitivity and specificity were 96% and 100%, respectively. In CD cases, the CEN/PER PRL gradient (0') was 10.24 ± 37.90 (>1.8 in 81%) and 2.96 ± 0.90 (>1.8 in 100%) in EAS. The gradient NORM was higher in CD than EAS: 20.29 ± 53.79 *vs.* 0.57 ± 0.29. Using Findling/2004 criteria (CD > 0.8 and EAS < 0.6), all CD cases had > 0.8 (0.82-371.55) but 3/8 EAS had > 0.6 (0.65; 0.88; 1.00). Hereby, the best cutoff for the NORM gradient was > 1.1 with 94% sensitivity and 100% specificity. Only one pediatric case with a presumptive CD diagnosis lacked a defined central gradient by either the CEN/ACTH gradient or the NORM gradient. Lateralization occurred in all CD cases, 5 showing side inversion (0' *vs.* peak); surgical confirmation in 62% based on ACTH alone, but only 48% when using PRL-normalized lateralization**. Conclusions:** Despite the excellent accuracy of IPSS with desmopressin when analyzing only ACTH values, the use of PRL during the procedure improved the method by confirming the absence of a central gradient in EAS cases and correcting one FN CD case. However, PRL did not increase the accuracy of lateralization for surgical tumor localization. **Keywords:** ACTH-dependent Cushing's syndrome; inferior petrosal sinus sampling; Cushing's disease.

OBESIDADE

1754

ANTHROPOMETRIC AND METABOLIC PROFILE OF METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE (MASLD)

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Introduction: Metabolic dysfunction-associated steatotic liver disease (MASLD) is a spectrum of liver conditions that encompasses steatosis, inflammation (with or without fibrosis), and cirrhosis. MASLD can progress to hepatocellular carcinoma and is characterized by the accumulation of more than 5% lipids in hepatocytes. The estimated global prevalence of MASLD is approximately 30%, and among obese population, it is estimated to be 70%. **Objective:** To assess the prevalence and describe anthropometric and metabolic profile of MASLD. **Materials and methods:** Cross-sectional study conducted with 137 patients, 111 females (81.02%) and 26 males (18.97%), aged over 18 years, diagnosed with risk factors for the development of MASLD. Ultrasonography, elastography, laboratory tests, and anthropometric measurements including waist (WC), hip (HC), and neck circumferences (NC), waist-to-height ratio, waist-to-hip ratio, and electrical bioimpedance were performed. **Results:** Ultrasonography revealed a prevalence of 85.58% steatosis in women and 76.92% in men, while elastography indicated steatosis in 84.76% of women and 76% of men. Obesity is more prevalent among women (68.85%) compared to men (51.85%). There is a higher prevalence of diabetes in men (81.48%) compared to women (70.05%). Hypertension was present in 84,82% of women and 81,42% of men. The median of systolic blood pressure was 130 mmHg and the median of diastolic was 80 mmHg. 81.08% of women and 69.23% of men had dyslipidemia, with the average total cholesterol was higher in women (171 mg/dL) than in men (164 mg/dL). The average HDL was 42 mg/dL in men and 51mg/dL in women, and LDL 90 mg/dL in men and 103 mg/dL in women. The occurrence of metabolic syndrome is high in both sexes, according to IDF criteria (84,54% in women and 84,61% in men) and according to NCEP criteria (85,45% in women and 80,76% in men). WC and NC were higher in men (medians of 106.10 cm and 41.90 cm, respectively) compared to women (103.20 cm and 35.70 cm, respectively). HC was higher in women (108.5 cm) compared to men (101 cm). **Conclusion:** Our data emphasizes the significance of abdominal circumference as a key indicator of MASLD risk. The finding of larger neck circumference in men suggests a potential supplementary marker for clinical assessment. Additionally, the waist-to-hip ratio is confirmed as relevant in assessing MASLD risk. This study suggests that anthropometric measurements can be valuable predictors of MASLD. **Keywords:** hepatic steatosis; obesity; body composition.

OBESIDADE

1756

BINGE-EATING DISORDER PREVALENCE AND BMI CORRELATION IN A POPULATION OF MORBID OBESE CANDIDATES FOR BARIATRIC SURGERY AT A UNIVERSITY HOSPITAL

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Introduction: Binge eating disorder (BED) is considered the most common eating disorder in the general population, with an estimated prevalence ranging from 0.6% to 3.6%. BED is characterized by recurrent episodes of consuming a larger amount of food than most people would eat under similar circumstances, at least once a week, for three months or more, without compensatory behaviors to avoid weight gain. Although this disorder is not limited to obese patients, it is more common in individuals with a high BMI and its associated comorbidities, both clinical and mental health-related. **Objective:** To assess the prevalence of BED in individuals awaiting bariatric surgery and to evaluate the correlation between BMI (body mass index) values in groups with and without BED. **Methods:** This is an observational, descriptive, and cross-sectional study. One hundred patients aged between 18 and 60 years, of both sexes, undergoing follow-up at the obesity clinic in the endocrinology department of a University Hospital were recruited. The study participants completed the Questionnaire on Eating and Weight Patterns - 5 (QEWP-5), an instrument developed and validated for screening Binge Eating Disorder (BED) according to the DSM-5. Data were analyzed using Jamovi software, employing measures of central tendency for the BMI variable and the Mann-Whitney test to analyze BMI between groups of patients with and without BED. **Results:** BMI did not show a normal distribution according to the Shapiro-Wilk test ($p < 0.001$). The median BMI of the sample was 47.8 kg/m², with minimum and maximum values of 35.2 and 88.4 kg/m², respectively, and a standard deviation of 8.82 kg/m². The prevalence of BED in the sample was 10%, with a median BMI of 49.0 kg/m² for these patients and $p = 0.959$. **Conclusion:** The study indicated that 1 in 10 patients in the selected sample has BED. Data analysis did not show a significant discrepancy between BMI and patients with or without BED. However, given that individuals with BED are more likely to experience compromised surgery outcomes, it is essential that the clinical approach identifies this patient profile beyond anthropometric data to promote appropriate and effective treatment. **Keywords:** binge eating disorder; bariatric surgery; body mass index.

NEUROENDOCRINOLOGIA

1757

APPROPRIATE MANAGEMENT OF MICROPROLACTINOMA IN A YOUNG PATIENT WITH NON-SPECIFIC TREATMENT: CASE REPORT

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Case presentation: S.G.S., male, 29 years old, came for a consultation reporting fatigue for 4 years, a previous diagnosis of microprolactinoma and since then he had been taking testosterone undecylate 250 mg/mL quarterly. He had a history of hypothyroidism, which had been adequately treated, with normal TSH levels. He claimed that his asthenia had persisted even with controlled hypothyroidism, and denied previous treatment with dopamine agonists, mentioning only testosterone treatment prescribed since his diagnosis 4 years ago. He had a magnetic resonance imaging (MRI) scan of the sella turcica at diagnosis which showed a pituitary microadenoma measuring 0.5 x 0.4 cm, prolactin (PRL) 91 ng/mL, FSH 2.76 mUI/mL, LH 0.08 mUI/mL and total testosterone 85 mUI/mL. Hormone therapy with testosterone was suspended and new tests were ordered. There was an increase in the pituitary nodule lesion (0.7 x 0.4 cm), FSH < 0.2 mUI/dL, LH 0.33 mUI/mL, PRL 103.91 ng/mL and total testosterone 355.74 ng/dL. Cabergoline 1 mg/week was started. After 3 months, the patient showed clinical and laboratory improvement of hypogonadism and PRL levels of 1.71 ng/dL. **Discussion:** Hyperprolactinemia is a frequent cause of acquired hypogonadotropic hypogonadism, the main symptoms of which are decreased libido, asthenia, erectile dysfunction, loss of muscle mass, osteoporosis, gynecomastia and galactorrhea. Because lactotrophic adenomas are highly sensitive to dopamine agonists, the use of this class of drug is the therapeutic choice. However, the therapeutic plan initially proposed to the patient was the use of testosterone replacement therapy, which delayed effective treatment of the underlying cause of hyperprolactinemia. Although studies show that 95% of microadenomas do not increase in size during four to six years of observation, this patient was exposed to the risk of tumor enlargement, complications of maintaining hyperprolactinemia, and, in addition, this management led to inhibition of the hypothalamic-pituitary-testicular axis, increasing the patient's risk of infertility. **Final comments:** Treatment without the rigor of scientific evidence can cause harm to the patient. In this context, the treatment recommended for hyperprolactinemia with dopamine agonists generates a rapid, effective and beneficial response for the patient. **Keywords:** microprolactinoma; hyperprolactinemia; testosterone therapy.

MISCELÂNEA

1758

DOEGE-POTTER SYNDROME: CASE REPORT OF HYPOGLYCEMIA SECONDARY TO IGF-2-PRODUCING SOLITARY FIBROUS TUMOR OF THE PLEURA

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Case presentation: A 76-year-old male patient presented with hypoglycemia associated with adrenergic symptoms, paroxysmal episodes of coughing, dyspnea, and desaturation. After an episode of sensorium depression (capillary glucose 30), he was admitted to a tertiary hospital. Tests ruled out hyperinsulinemia (C-peptide 0.5 and insulin 0.5) and adrenal insufficiency (cortisol 12.7 and ACTH 62), with IGF-1 26 (reference range: 35 to 216) suggesting IGF-2-mediated hypoglycemia. Chest CT scan revealed an expansive lesion in the lower lobe of the left lung, without invasion of adjacent structures, measuring 14 x 14 cm. Treatment with corticosteroids was initiated due to suspected Doege-Potter syndrome, resulting in improvement of hypoglycemia. Biopsy and immunohistochemical study indicated a probable solitary fibrous tumor (SFT) of the pleura, confirmed after resection, measuring 21 x 18 x 8 cm. There was no recurrence of hypoglycemia even after corticosteroid withdrawal post-surgery, with no need for adjuvant treatment. After 6 months of follow-up, the patient showed no tomographic or clinical signs of recurrence. **Discussion:** SFT is a rare, usually benign neoplasm originating from serous tissue, accounting for about 5% of pleural tumors. This tumor can secrete IGF-2, characterizing Doege-Potter syndrome, a rare condition that occurs when there is inappropriate secretion of IGF-2 by solid tumors, leading to hypoinsulinemic hypoglycemia. IGF-2 binds to insulin receptors, triggering intracellular glucose uptake. Diagnosis can be challenging due to the difficulty in accessing IGF-2 assay kits. Thus, through reduced IGF-1 levels, suggestive clinical context and exclusion of other causes, a diagnosis of IGF-2-mediated hypoglycemia is made, with surgical resection of SFT being the treatment of choice for hypoglycemia. In this case, there was total improvement of these events after tumor removal. When surgery is not feasible, controlling hypoglycemia symptoms becomes crucial and can be achieved through increased carbohydrate intake, continuous glucose monitoring and glucocorticoid use. **Final comments:** Doege-Potter syndrome is a rare condition with high morbidity and mortality due to severe hypoglycemia episodes, posing a diagnostic challenge due to lack of awareness of the disease characteristics and low availability of IGF-2 assays. **Keywords:** hypoglycemia; IGF-2; Doege-Potter syndrome.

OBESIDADE

1759

BODY ADIPOSITY AND HEPATIC FIBROSIS DUE TO METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE

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Introduction: Abdominal adiposity and the presence of visceral fat have been associated with an increased likelihood of developing metabolic dysfunction-associated steatotic liver disease (MASLD). Furthermore, advanced stages of the disease (liver fibrosis) may be associated with greater adiposity. **Objective:** This study aims to verify the association between liver fibrosis and adiposity in the population at risk for MASLD. **Methods:** Adults with established risk factors for the development of MASLD were selected. Assessment of MASLD and degrees of fibrosis was performed by ultrasound (US-FLI) and ultrasound elastography. Quantitative assessment of fat mass was assessed using dual-energy radiological absorptiometry (DXA) and included fat mass index (FMI = total fat mass/height^2, kg/m^2), abdominal visceral adipose tissue (VAT, cm^3), and android-to-gynoid (A/G) percent fat ratio. **Results:** 134 participants were enrolled. All data are presented as median (IQR) or n (%). Age 66(57-70) years, women 111(82.8%). Adiposity Parameters: Waist-to-height ratio (WHtR) 0.65(0.57-0.71); BMI 31.45(27.8-36.15), FMI 13.61(10.13-16.39), VAT 1573(1181.5-2382) cm^3 and A/G 1.13 (1.02-1.23). The frequency of Liver Fibrosis (F≥2) was 36(27.1%); BMI > 30 kg/m^2 94(70.1%); WHtR>0.5 132 (98.5%); high FMI 103(91.9%); and A/G>1 122 (91.0%). The groups with and without fibrosis showed no differences in age, gender, A/G and FMI. However, participants with fibrosis had greater WHtR 0.67 (0.62-0.74), BMI 34.55 (28.90-38.62) and VAT 1972.5 (1407-2858) cm^3 when compared to participants without fibrosis WHtR 0.65 (0.57-0.71), BMI 30.85 (27.47-34.95) and VAT 1476.5 cm^3 (1120.75-2341.25), $p < 0.05$. **Conclusion:** This study demonstrated that the population with MASLD has a high frequency of obesity as shown by BMI (70.1%) and WHtR (98.5%) respectively. VAT assessed by DXA was associated with liver fibrosis due to MASLD. It was also observed that anthropometric adiposity indices (BMI and WHtR), quick and low-cost instruments are also associated with liver fibrosis. **Keywords:** fat mass; body adiposity; MASLD.

DISLIPIDEMIA E ATEROSCLEROSE

1762

FAMILY CHYLOMICRONEMIA SYNDROME: NEW PATHOGENIC MUTATION

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Case presentation: J.O.S., female, 50 years old, diagnosed with diabetes mellitus at the age of 35 and receiving insulin therapy 2 years later, associated with mixed dyslipidemia, with triglycerides persistently above 2,000 mg/dL, regardless of glycemic control, and without significant reduction with use of fibrate and high potency statins. The patient also had asymptomatic cholelithiasis, chronic diarrhea, and atrophy of the pancreatic parenchyma on MRI cholangiography. According to the risk calculator of the Atherosclerosis Department of the Brazilian Society of Cardiology, the patient had very likely familial chylomicronemia syndrome (FCS), with positive screening for genetic testing. A DNA sample extracted from a buccal swab was then collected and sent for genetic panel research for hypertriglyceridemia. The homozygous chr8:19,954,142 C>CT variant was found in the LPL gene, a pathogenic mutation not previously described in the literature. **Discussion**: FCS is a rare metabolic disorder, with a monogenic cause, which may be related to a mutation in the LPL gene or in other genes that encode proteins involved in LPL activity. Manifestations include hypertriglyceridemia, abdominal pain and/or acute pancreatitis, hepatosplenomegaly, eruptive xanthomas, lipema retinalis, neurological manifestations, and impaired quality of life. However, the severity and age at which these manifestations appear may be different depending on the mutation present, especially new ones. Clinically, it may be impossible to distinguish FCS from multifactorial chylomicronemia syndrome, and genetic research is essential for diagnosis, as FCS does not usually respond to conventional therapy for hypertriglyceridemia. The only drug currently approved by Anvisa that is effective in reducing triglycerides in FCS is volanesorsen, an inhibitor of APOC3 synthesis, a regulator of the LPL-independent pathway in triglyceride metabolism. **Final comments**: There are more than 200 known mutations related to the development of FCS. However, the mutation found in this case had not yet been described. Knowledge of pathogenic genetic changes is of great importance not only in understanding the pathology itself, but also as a way of guiding new therapeutic strategies, through the research and development of new drugs targeted at such defects. **Keywords:** dyslipidemia; family chylomicronemia syndrome; mutation.

METABOLISMO ÓSSEO E MINERAL

1763

OSTEOPETROSIS WITH PROGRESSION TO HEARING LOSS: A CASE REPORT

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Case report: A 39-year-old female patient was referred from the orthopedics department with a history of multiple fractures since the age of four. Lumbar spine and hip X-rays showed diffuse increased bone density; vertebral bodies with preserved height and sclerosis of their endplates, notably in L1, L2, and L3 ("Rugger-Jersey vertebrae"); bone discontinuity in the left greater trochanter, associated with cortical bulging; morphostructural changes in the femoral necks and heads and acetabulums, with flattening of the structures; and diffuse loss of corticomedullary differentiation of the femoral diaphyses. The diagnosis of osteopetrosis was confirmed based on suggestive radiological changes, and screening for possible complications was initiated. Audiometry demonstrated profound mixed hearing loss in the right ear and mild hearing loss in the left ear. The patient progressed with worsening hearing loss, presenting with anacusis in the right ear and moderate hearing loss in the left ear. Renal imaging exams showed lithiasis and renal osteodystrophy. Additionally, she had chronic normocytic and normochromic anemia since childhood. She is awaiting an MRI for optic nerve evaluation. **Discussion:** First described in 1904 by Albers-Schönberg, a German radiologist, osteopetrosis is a rare hereditary entity that comprises the spectrum of sclerosing bone dysplasias. It is characterized by a defect in bone resorption by osteoclasts, resulting in abnormally dense but structurally fragile bone that predisposes to fractures. The estimated incidence depends on the type of inheritance: 5 in 100,000 individuals in the autosomal dominant type and 1 in 250,000 live births in the autosomal recessive type. In addition to bone involvement, the invasion of osteopetrotic bone into the medullary cavity and the extrinsic compression of adjacent structures can cause complications in the hematological, neurological, ophthalmological, and other systems. The diagnosis is suggested by specific radiographic findings, and genetic testing can help classify the subtype. Treatment is multidisciplinary and involves various subspecialties. In certain pediatric forms, hematopoietic stem cell transplantation is a viable option. **Conclusion:** Due to the rarity and heterogeneity of the disease, it is necessary to be aware of its forms of presentation. Early diagnosis allows for the investigation and management of complications, reducing morbidity and increasing quality of life. **Keywords:** osteopetrosis; sclerosing bone dysplasias; hearing loss.

OBESIDADE

1764

EPIDEMIOLOGICAL ANALYSIS OF THE OBESITY'S PROFILE AND ITS SURGICAL TREATMENT IN BRAZIL BETWEEN 2013 AND 2023

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Introduction: Obesity is characterized by excess body adipose tissue, as a result of greater food intake and lower caloric expenditure, which can cause various health problems. The diagnosis is defined by the World Health Organization (WHO) in the presence of a body mass index (BMI) equal to or greater than 30 kg/m². One of the treatments for obesity is to reduce the stomach's storage capacity and food absorption. The main forms of this procedure are gastric bypass surgery and vertical sleeve gastroplasty. **Objectives:** To describe hospitalizations due to obesity and its surgical treatments (gastric bypass and vertical sleeve) in Brazil between 2013 and 2023. **Methods:** This is a descriptive, ecological and retrospective epidemiological study that used data from the Hospital Information System from Unified Health System (SIH/DATASUS). The variables used were: procedure, annual hospitalizations, region and average value of hospitalizations. **Results:** During this period, there were 117,037 hospitalizations for obesity, with an annual average of 10,640. Between 2019 and 2020, there was a 68.37% decrease in the number of hospitalizations. The Southern region recorded the highest number of cases (45.97%), while the Northern region had the lowest percentage (1.12%). Regarding surgical treatments, of the total of 74,370 hospitalizations, 99.31% were gastric bypass surgery and 0.69% were vertical sleeve gastroplasty. The annual average was 6,761 hospitalizations, with a notable drop of 83.11% between 2019 and 2020, the opposite of the expected growth trend in hospitalizations ($r \cong 0.973$). **Conclusion:** Given the growing prevalence of obesity and the estimate made by the World Obesity Atlas that, in 2035, 41% of the Brazilian adult population will be obese. It is noted that it is necessary to plan effective public policies to prevent the pathology, in addition to greater investment in alternative treatments for obesity, including the expansion of gastroplasty by the SUS. **Keywords:** obesity; treatment; epidemiology.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1765

ASSOCIATION OF ADVERSE CHILDHOOD EXPERIENCES WITH SELF-MUTILATION AND SUICIDE ATTEMPTS IN THE TRANSGENDER POPULATION TREATED AT TWO REFERENCE CENTERS IN THE STATE OF BAHIA: A CASE-CONTROL STUDY

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1. HOSPITAL UNIVERSITÁRIO PROFESSOR EDGARD SANTOS (HUPES), SALVADOR, BA, BRASIL.

Introduction: Adverse Childhood Experiences (ACE) can negatively impact quality of life and are eventually associated with less favorable physical and mental health outcomes in adulthood. Since traumas experienced in childhood can lead to depressive disorders, the trans population - in contrast to the cisgender population – may have a higher prevalence of behavioral dysfunctions such as self-harm and attempted suicide. **Objective:** To evaluate the correlation of ACEs with self-mutilation and attempted suicide in a transgender population treated in Bahia. **Methods:** A case-control study was carried out in which data was obtained through semi-structured interviews and completion of the ACE questionnaire by transgender individuals over the age of 18 who were treated at referral centers in Bahia between 2020 and 2024. The results were exported to Excel and analyzed using R-Studio (4.2.2). The Mann-Whitney U test and Fisher's exact test were used to associate ACEs with self-harm and attempted suicide. **Results:** The study involved 477 individuals, 261 of whom were trans men (54.7%), 200 trans women/travestis (41.8%) and 16 non-binary (3.3%). Of the total, 31.8% reported self-harm and 66% attempted suicide. With regard to adverse childhood experiences (ACE), 28.7% had 4 or more experiences, while 42.1% had no history of ACE. The presence of 4 or more ACEs was associated with a history of self-mutilation ($p = 0.006$). With regard to attempted suicide and self-mutilation, patients with no ACE, as well as those with 04 or more, were more likely to attempt suicide and self-mutilate than those with an intermediate number of ACE (between 01 and 03) ($p < 0.001$ and $p = 0.001$, respectively). **Conclusion:** Based on our findings, we found high rates of attempted suicide and self-mutilation in the analyzed population. It is notable that transgender patients with 4 or more ACEs have higher rates of self-harm and attempted suicide. On the other hand, those with no ACEs are also more likely to attempt suicide and self-harm, as opposed to what was expected. **Keywords:** transgender; adverse childhood experiences; suicide attempts.

TIREOIDE
1766

INSIDIOUS LATE POST-SURGICAL HYPOPARATHYROIDISM: CASE REPORT

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Case presentation: 42-year-old female patient underwent total thyroidectomy in March 2011 due to papillary carcinoma. In the immediate post-operative period, she presented transient cramps, with spontaneous improvement. After 20 days, exams showed: calcium (Ca): 9.2 (8.3-10.6 mg/dL); ionic calcium (Cai): 1.05 (1.12-1.32 mmol/L); phosphorus (P): 4 (2.5-4.8 mg/dL) and PTH: 30.3 (15-65 pg/mL). After 10 months, she underwent another surgery for a paratracheal nodule and received an ablative dose of radioiodine therapy in April 2012. The patient remained asymptomatic with normal exams and returned in August 2016, in the second month of the puerperium, reporting only asthenia with exams showing hypocalcemia, but normal PTH and vitamin D; it was prescribed calcium carbonate 1,250 mg/day, which she used for a short time. From 2017 to 2019 she maintained similar calcium levels, normal PTH and irregular use of calcium and vitamin D. At the beginning of 2024, she began to experience cramps, paresthesias, perioral tingling, tetany and palpitations, which made her go to the emergency room for two days in a row, where she was also medicated for anxiety. At the last visit, she was diagnosed with severe hypocalcemia (Ca: 6.7) and received intravenous calcium. At the clinic, she was prescribed calcium carbonate 1,250 mg 3 times a day and calcitriol 0.25 mcg 2 times a day; after that the symptoms disappeared and exams confirmed hypoparathyroidism. **Discussion:** The patient presented mild hypocalcemia, with normal PTH, for the first time, 4 years after total thyroidectomy which progressed insidiously and asymptomatically until the presentation of a severe condition, when post-surgical hypoparathyroidism was confirmed, 13 years after surgery, with no other attributable cause. Post-surgical hypoparathyroidism is well described and can be transient or permanent. It's main risk factors are total thyroidectomy, advanced age, Graves' disease, retrosternal goiter and thyroid cancer. Few studies point to radioiodine as a contributing factor. A few cases of late hypoparathyroidism have been published in the literature and the causes of this phenomenon are not fully understood, but some hypotheses are parathyroid atrophy, scar formation and progressive ischemia. **Final comments:** Late hypoparathyroidism is rare but also an important diagnosis to consider in any patient undergoing cervical surgery who presents with hypocalcemia. Calcium measurement should be routine after thyroidectomy. **Keywords:** hypoparathyroidism; thyroidectomy; hypocalcemia.

TIREOIDE
1767

ASSOCIATION BETWEEN GRAVE'S DISEASE AND THYROID CANCER: A CASE REPORT

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Case report: A 25-year-old female patient who had been complaining of amenorrhea for a year came to the endocrinology outpatient clinic. On physical examination, the thyroid gland was mobile, 2 to 3 times enlarged, without murmurs or fremitus, with a smooth surface and no lymph node enlargement. She also had some laboratory tests with her, which corroborated the initial diagnosis of metabolic syndrome and hyperthyroidism. She was started on metformin 500 mg, 2 tablets and methimazole 30 mg/day and after 1 year on the medication, she progressed with laboratory and clinical improvement. The thyroid USG showed an enlarged gland with a diffusely heterogeneous texture, showing a heterogeneous area, with cystic areas in between, with macro and microcalcifications, occupying the middle and lower 1/3, and it was not possible to affirm a nodular configuration. A fine-needle aspiration biopsy (FNAB) was then requested, which was positive for malignant papillary cancer (Bethesda VI). The patient underwent total thyroidectomy with neck dissection and was started on a suppressive dose of levothyroxine. **Discussion:** The association between Graves' disease (GD) and an increase in thyroid cancer has a mechanism that is not yet fully understood. It is understood that by stimulating thyroid growth, the TRAB antibody may also promote tumor development and invasion, through the growth of differentiated carcinoma metastases. In addition, case reports suggest a more aggressive behavior of the cancer in patients with GD, which leads many authors to opt for early thyroidectomy. Although the relationship between GD and thyroid carcinoma is not well established in the literature, it is a fact that GD makes the diagnosis and treatment of patients with carcinoma even more challenging. In patients with both pathologies, surgery is planned after the nodules have been diagnosed by ultrasound or FNAB. **Conclusion:** Therefore, early identification and proper management of thyroid nodules in patients with GD are crucial to improving clinical outcomes. **Keywords:** Grave's disease; thyroid cancer; papillary cancer.

OBESIDADE

1769

HOSPITALIZATION AS A TREATMENT OPTION OF SUPEROBESITY

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Introduction: The treatment of individuals considered super obese is challenging and sometimes limited to the use of surgical therapy for obesity. Thus, hospitalization as a treatment for obesity can be a therapy option for these individuals or even serve as a bridge to surgical therapy. **Objective:** To describe the effects on anthropometric parameters of inpatient treatment in super obese patients. **Methodology:** Cross-sectional study approved by the CAAE Research Ethics Committee: 65578822.1.0000.0057, carried out by collecting data from individuals, aged over 18 years, both sexes and BMI ≥ 50, hospitalized for obesity treatment, during the period from 2016 to 2022. **Results:** During this period, 65 patients with BMI ≥ 50 kg/m² were admitted, of which 65 were hospitalized for 3 months and 40 reached 6 months of hospitalization. On admission, the median BMI was 54 kg/m² (IQR: 51.6 -57.3 kg/m²). All were submitted to a hypocaloric diet (ranging between 500-1,500 kcal/day). At the end of 3 and 6 months, the percentage of weight loss of these individuals was 10.7% and 21.4%, respectively. The BMI was 10.7% at 3 months and 21.4% at 6 months, with a median BMI of 47.6 kg/m² and 42.1 kg/m² at the end of these periods. The median percentage of fat mass loss was 13.1% and 27.7% at 3 and 6 months and represented 67.8% and 72.6% of total weight loss at 3 and 6 months, respectively. After 3 months of hospitalization, 67.7% of patients with super obesity reduced their degree of obesity to III and 32.3% had no change. After six months of hospitalization, 25% had their obesity level reduced to II, 67.5% had their obesity level reduced to III and 7.5% had no reduction in their obesity level. **Conclusion:** Multidisciplinary treatment of obesity with intensive lifestyle modification in the hospitalization format is an efficient strategy for promoting weight loss in individuals with BMI ≥ 50 kg/m², average aggression of 21.6% of initial weight at the end of 6 months. Despite not being able to reduce BMI levels to normal values, the majority reached BMI < 40 kg/m² at the end of 6 months, reflecting the complexity of treating these individuals and the need for prolonged periods of hospitalization in this group. **Keywords:** admission; treatment; superobesity.

TIREOIDE

1770

ANALYSIS OF THE INCIDENCE OF HOSPITAL ADMISSIONS DUE TO THYROTOXICOSIS BETWEEN THE YEARS 2020-2023 IN BRAZILIAN REGIONS

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Introduction: Thyrotoxicosis is a condition marked by elevated levels of thyroid hormones, causing symptoms such as tachycardia, weight loss, and anxiety. In Brazil, analyzing the incidence of hospital admissions due to thyrotoxicosis is essential to understand its distribution and impact across Brazilian regions. This study aims to analyze the incidence of hospital admissions due to thyrotoxicosis in Brazil from 2020 to 2023, identifying regional patterns and influencing factors. **Objectives:** To analyze changes in the incidence of hospital admissions due to thyrotoxicosis in Brazilian regions between 2020-2023. **Methods:** A retrospective ecological study was conducted using the Hospital Information System (SIH/SUS) as the data source. The number of hospital admissions due to thyrotoxicosis was evaluated from 2020 to 2023 across Brazil's regions, calculating the number of admissions per region's population for each year to determine incidence rates and compare the obtained data. Absolute and relative frequency metrics were used for data analysis. **Results:** In the Northern Region, the incidence started at 0.08 per 100,000 inhabitants in 2020, increased to 0.143 in 2021, reached 0.183 in 2022, and ended at 0.149 in 2023, demonstrating a 129% growth from 2020 to 2022 with a slight decrease by 2023 to 0.149. In the Northeast Region, it recorded 0.132 in 2020, 0.192 in 2021, 0.231 in 2022, and ended at 0.240 in 2023, resulting in an 81.82% growth over the study period. In the Southeast, the indicator was 0.342 in 2020, 0.481 in 2021, 0.551 in 2022, and finished at 0.556 in 2023, showing a 62.57% growth. In the South, it was 0.219 in 2020, 0.253 in 2021, 0.258 in 2022, and 0.344 in 2023, demonstrating a 57.03% growth. In the Midwest, it was 0.182 in 2020, 0.186 in 2021, 0.248 in 2022, and 0.316 in 2023, characterizing a 73.63% growth. Thus, the Southeast presented the highest incidence of hospital admissions due to thyrotoxicosis in all analyzed years, possibly due to genetic factors, metabolic disorders, autoimmune diseases, and smoking. Overall, Brazil showed an average growth percentage of 80.76% for the indicator during the study period. **Conclusion:** After analyzing the data, it is concluded that there was an increase in the incidence of hospital admissions due to thyrotoxicosis in all regions of Brazil between the years 2020 and 2023. Therefore, improved strategies for early diagnosis are necessary to prevent disease progression and reduce the incidence rate. **Keywords:** thyrotoxicosis; incidence rates; Brazil.

DIABETES MELLITUS

1771

EFFECT OF TIRZEPATIDE ON KIDNEY PARAMETERS IN PEOPLE WITH EXCESS BODY WEIGHT AND TYPE 2 DIABETES: A POST-HOC ANALYSIS OF THE SURMOUNT-2 TRIAL

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Introduction: Tirzepatide (TZP), a glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1 receptor agonist, has shown kidney protective effects in people with type 2 diabetes (T2D) at high risk for cardiovascular disease. In the SURMOUNT-2 (SM-2) trial in people with obesity or overweight with T2D, at 72 weeks TZP significantly reduced body weight by up to 15.7%, HbA1c by 2.22%, and systolic and diastolic blood pressure by 7.7 mmHg and 2.9 mmHg respectively. **Objective:** This *post-hoc* analysis assessed the potential impact of TZP *vs.* PBO on kidney parameters in SM-2 trial participants. **Methods and material:** Data from all participants randomly assigned to treatment were included (pooled TZP [10 and 15 mg], N = 623; PBO, N = 315). Assessments included CKD-EPI creatinine-cystatin-C-based eGFR (Cr-Cys-C-eGFR), and urine albumin-to-creatinine ratio (UACR). The change from baseline to week 72 was analyzed using mixed models for repeated measures with on-treatment data. **Results:** Baseline mean Cr-Cys-C-eGFR was 91.3 ± 19.5 mL/min/1.73 m². The estimated treatment difference (ETD) between pooled TZP groups and PBO on the change from baseline in Cr-Cys-C-eGFR was 0.0 mL/min/1.73 m² (95% confidence interval [CI] -1.7, 1.7; p = 0.993). TZP compared to placebo did not change Cr-Cys-C-eGFR at week 72 in participants with baseline Cr-Cys-C-eGFR < 60 mL/min/1.73 m² (p = 0.180) or ≥ 60 mL/min/1.73 m² (p = 0.714). Baseline median UACR was 13.0 mg/g (interquartile range 6.0-35.0 mg/g). UACR significantly decreased with TZP *vs.* PBO (ETD -31.1 %, 95% CI -40.9, -19.7, p < 0.001) and for those with baseline UACR ≥ 30 mg/g, the ETD was -55.2% (95% CI -68.5, -36.4; p < 0.001). **Conclusion:** In this *post-hoc* analysis SM-2 trial population of participants with obesity or overweight with T2D and preserved eGFR at baseline, TZP reduced albuminuria without adversely affecting eGFR. Previously presented at ADA 2024. **Keywords:** tirzepatide; diabetes; kidney disease.

OBESIDADE

1773

THE ASSOCIATION BETWEEN PRECOCIOUS PUBERTY AND CHILDHOOD OBESITY IN FEMALES: AN INTEGRATIVE REVIEW

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Introduction: Childhood obesity is a growing public health problem, associated with metabolic and endocrine complications, such as central precocious puberty (CPP), which occurs when secondary sexual characteristics develop before the age of 8 in girls due to the activation of the hypothalamic-pituitary-gonadal axis. Research suggests that metabolic and hormonal factors resulting from excess fat play a crucial role in the early activation of this axis. **Objective:** To describe the physiological and biochemical bases of the relationship between childhood obesity and CPP in girls. **Methods:** An integrative review was conducted using the SciELO, PubMed, and ScienceDirect platforms, with the descriptors "childhood obesity" and "precocious puberty" in Portuguese and English. Articles were selected after full reading, including those published between 2013 and 2023, in English and Portuguese, that associated female precocious puberty and childhood obesity. Case reports and studies focused solely on obesity in boys were excluded. **Results:** Six articles were selected. Leptin increases the expression of the Kiss1 gene and the activity of Kiss1 neurons, signaling energy reserves that can promote pubertal maturation. The identification of mTOR, AMPK, and SIRT1 as mediators of the metabolic control of Kiss1 neurons offers new perspectives for the management of pubertal disorders. Metabolic comorbidities associated with childhood obesity are the main cause of CPP. Childhood obesity inhibits AMPK, not suppressing the Kiss1 gene, which stimulates the development of CPP. The increase in adipocytes influences the development of insulin resistance and androgen production. Obesity generates a chronic inflammatory state that impedes the release of adiponectin, culminating in CPP due to leptin overexpression and adiponectin suppression. Although puberty in obese girls tends to be early, it also tends to progress slowly due to the reduction of LH pulsation. **Conclusion:** There is a very close relationship between CPP and childhood obesity in females, as demonstrated. Therefore, effective combat against childhood obesity is necessary to prevent the occurrence of precocious puberty and its consequences on child development. It is crucial that the government provides effective obesity treatments through the SUS and promotes parental awareness, aiming to reduce the incidence of precocious puberty in girls caused by obesity. **Keywords:** child obesity; early puberty; feminine.

TIREOIDE
1774

HOSPITALIZATION OF BRAZILIAN CHILDREN AND TEENAGERS FOR THYROID DISORDERS FROM 2013 TO 2023: A DESCRIPTIVE ANALYSIS BY ICD-10 CODES, AGE AND COUNTRY REGIONS

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Introduction: Thyroid disorders are a significant health concern among children and teenagers, characterized by nodules and neoplasms or abnormal circulating thyroid hormones due to thyroid dysfunction, gland destruction, or excessive exogenous hormone replacement. These disorders affect growth, metabolism, sexual development, cardiovascular health, and psychological well-being, among other issues. Early diagnosis is crucial to avoid long-term adverse effects, as treatment is typically effective. **Objective:** To describe the regional and age distribution of hospitalizations for thyroid disorders of Brazilian children and teenagers from 2013 to 2023. **Methods:** This observational, cross-sectional, retrospective, and descriptive study used data from the SUS Hospital Information System (SIH/SUS) from January 2013 to December 2023. It covered patients aged 19 years or younger hospitalized for thyroid disorders (ICD-10 E00-E07). Variables included hospitalizations, ICD-10 code, country region and age. The data were normalized by population according to age group and region and multiplied by 100,000 to obtain the prevalence. **Results:** From 2013 to 2023, there were 2,705 hospitalization cases in Brazil due to thyroid disorders of patients aged 19 years or younger. Of these, Southeast and Northeast regions had the most cases, with 1,181 (43.7%) and 727 (26.9%) respectively. Comparing the prevalence by region, the hospitalizations caused by iodine deficiency (E00-E02) in North and Northeast were nearly 40% higher than the national average while hospitalizations by thyrotoxicosis (E05) were 63% and 43% lower in these regions. Other hypothyroidisms, non-toxic goiters, thyroiditis and other thyroid disorders (E03-E04,E06-E07) in North and Center-West had prevalence rates around 35% lower than the national average. Regarding age, the group aged 15 to 19 years (43%) was the most affected, while the age groups under 4 years had the fewest hospitalizations, with 21% combined. Despite covering only one year, the under 1 year age group had higher hospitalization rates than the 1 to 4 years group. **Conclusion:** The results on the distribution and prevalence of hospitalizations for thyroid disorders by region and age show notable regional variations. North and Northeast had higher hospitalizations due to iodine deficiency and lower for thyrotoxicosis. The 10 to 14 years and 15 to 19 years age groups were the most affected, with notable cases in the under 1 year group. **Keywords:** thyroid disorders; incidence; Brazil.

TIREOIDE
1776

PAPILLARY CARCINOMA OF THE THYROID WITH BRAIN METASTASES IN A YOUNG WOMAN: PRESENTATION OF A CASE REPORT AND LITERATURE REVIEW

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Presentation of the clinical case: The patient began endocrinology follow-up in 2018 due to Graves' disease (positive TRAb), detecting a neck nodule. Following thyroid scintigraphy and ultrasound, which revealed a non-uptake nodule in the right lobe, fine-needle aspiration biopsy (FNAB) was indicated, resulting in Bethesda III on three attempts. She underwent total thyroidectomy and cervical lymph node dissection, with histopathology diagnosing classic variant papillary carcinoma, follicular variant, and oncocytic variant, with capsular invasion, extrathyroidal extension, and lymphovascular invasion. Treated with radioiodine on 02/20/2019 (150 mCi), whole-body scan on 03/01/2019 showed uptake in the cervical and left scapular region. On 08/29/2019, ultrasound identified a solid nodule and suspicious lymph nodes, confirmed as metastatic papillary carcinoma by new FNAB. PET scan on 10/25/2019 revealed hypermetabolic uptake in pulmonary nodules and cervical and mediastinal lymph nodes. Another surgery on 01/06/2020 included selective cervical lymph node dissection and biopsy, with histopathology confirming metastatic papillary carcinoma. Another dose of radioiodine on 05/27/2020 (200 mCi) was followed by slight uptake in the right lung on whole-body scan on 07/09/21. New ultrasound on 03/17/22 revealed suspicious left lymph node. Cranial CT scan in November 2022 identified expansive lesions in the CNS, confirmed by MRI as brain metastases. Evaluated in January 2023, PCI was not recommended due to risk of intracranial hypertension. Underwent radiosurgery in the CNS between 03/30/23 and 04/27/23, initiated lenvatinib and palliative care, with follow-up for post-CNS MRI and cranial, abdominal, and thoracic CT scans, in addition to post-thyroidectomy hypoparathyroidism. **Discussion:** Patients with thyroid cancer generally have a good prognosis, especially in papillary carcinoma, where distant metastasis rarely occurs. However, in rare cases like this patient's, brain metastases do occur. The 10-year survival rate is high (82.6%), but managing brain metastases involves surgical resection, stereotactic radiosurgery, and radiotherapy, with craniotomies being beneficial in cases with up to three brain metastases (Tam *et al.*, 2018; Bernard *et al.*, 2019; Yoo *et al.*, 2022). **Final comments:** Brain metastasis in CDT is rare (<1%) and has a poor prognosis. Treatment strategies are not well-established, indicating the need for more studies and personalized approaches. **Keywords:** thyroid cancer; papillary carcinoma; brain metastases.

TIREOIDE

1777

PRIMARY DIFFUSE LARGE B-CELL LYMPHOMA OF THE THYROID: A CASE REPORT

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Case presentation: A 59-year-old male, diabetic and former smoker, reported hoarseness and dysphagia in July/2023, progressing to extrinsic compression of the trachea and recurrent laryngeal nerve that required hospitalization. Neck tomography showed an exuberant goiter with circumscribed involvement of the airways and a nodular image with signs of extrathyroidal invasion on the left lobe, measuring 36 x 35 mm, obliterating the ipsilateral pyriform sinus and bilateral cervical lymph nodes. Fine needle aspiration (FNA) was done, and cytology was compatible with Bethesda III. Head and neck surgeon indicated total thyroidectomy, performed in March 2024. Biopsy showed a poorly differentiated neoplasia, and immuno-histochemistry (IHC) confirmed the diagnosis of Diffuse Large B-Cell Lymphoma – Germinal Center. Staging tomography scans detected mild submandibular lymph node enlargement. Since then, the patient is under joint follow-up with Hematology and had six cycles of RCHOP (rituximab, cyclophosphamide, doxorubicin, vincristine and prednisone). Follow-up positron emission tomography (PET-CT) revealed an intraparotid lesion suggestive of a distinct biological process, awaiting biopsy. **Discussion:** Primary thyroid lymphoma (PTL) is an extremely rare malignancy that represents 1% to 5% of thyroid neoplasms and 1% to 2% of extra nodal lymphomas, with an annual incidence of 2 per 1 million individuals. It usually occurs in the 6th or 7th decade of life and affects more women than men in a ratio of 8:1. It manifests as a rapidly growing painless mass in the anterior cervical compartment, causing compressive symptoms, but without constitutional symptoms. Most patients are euthyroid. FNA has variable accuracy in the diagnosis of PTL. Core needle biopsy should be strongly considered in equivocal cases. The current case had surgery due to a large goiter with an indeterminate thyroid nodule with compressive symptoms. **Final comments:** Diffuse Large B-Cell Lymphoma is the most common subtype involving the thyroid gland. Clinically, it is difficult to distinguish PTL from anaplastic carcinoma, which in turn is more aggressive. With recent advances in treatment, PTLs have shown to be highly responsive to therapeutic interventions and have excellent overall survival rates. The treatment of choice involves chemotherapy (RCHOP) and/or radiotherapy. **Keywords:** lymphoma; thyroid neoplasms; thyroidectomy.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1778

THE ASSOCIATION BETWEEN ANOREXIA AND BULIMIA NERVOSA IN PREGNANT WOMEN: A LITERATURE REVIEW

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Introduction: Anorexia nervosa (AN) and bulimia nervosa (BN) are psychiatric eating disorders (EDs) that mainly affect women of reproductive age, associated with anxiety and perfectionism. During pregnancy, these EDs can pose significant risks to mothers and babies. In this sense, the objective of this work was to evaluate the maternal and fetal complications of AN and BN in pregnant women. **Methods:** This is a literature review of articles published in English between 2014 and 2024. It was searched in PubMed, LILACS, SciELO and ScienceDirect: ("anorexia" or "bulimia" or "eating disorder" or "pregorexia") AND ("pregnancy" or "pregnant" or "perinatal"). Case studies, qualitative studies and those that did not report maternal, fetal and neonatal systemic effects and/or pathophysiological explanations were excluded. **Results and discussion:** It was identified that around 5% of pregnant women are affected by AN and BN. For the baby, risks include slow fetal growth, low birth weight, small-for-gestational-age baby, microcephaly, and fetal death. For the mother, EDs can result in premature birth, hyperemesis, anemia, postpartum depression, miscarriage, antepartum hemorrhage, preeclampsia, and gestational diabetes. These effects are associated with the dysregulation of hormones such as cortisol, LH, FSH, leptin, in addition to nutritional deficiencies and electrolyte disorders. **Conclusion:** The results highlight the importance of awareness and early intervention in pregnant women with AN and BN, aiming to prevent serious complications for both mother and baby. It is essential that health professionals are aware of these EDs during pregnancy to ensure adequate monitoring and reduce the risks involved. **Keywords:** anorexia; bulimia; pregnant women.

TIREOIDE

1779

PROLONGED SUBACUTE THYROIDITIS AFTER COVID-19 IN A PATIENT WITH HASHIMOTO'S THYROIDITIS: CASE REPORT

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Case presentation: A 45-year-old female patient was diagnosed with Hashimoto's thyroiditis (HT) in 2003. In 2005, she went to the clinic taking Levothyroxine (LTX) 25 mcg/day, reporting neck pain and the following tests: TSH: 4.3 (0.55-4.78 uIU/mL); Free T4 (T4L): 0.91 (0.7-1.7 ng/dL); Anti-TPO: 946 (<35 IU/mL); Anti-TG: 104 (<60 UI/mL). In the following years, she had irregular follow-up. She returned in 2020, using LTX 100 mcg/day and reporting neck pain, thyroid enlargement, tremor, palpitations and insomnia, starting 15 days after COVID-19. Tests showed suppressed TSH and increased T3, T4L, Anti-TG, Anti-TPO, Thyroglobulin (TG), CRP and ESR. COVID IgM not reactive and IgG reactive. Thyroid USG/Doppler showed diffusely hypoechogenic, heterogeneous parenchyma, with increased volume and vascularization. Thyroid scintigraphy was not possible. LTX was reduced to 50 mcg/day and Prednisone 10 mg/day was prescribed for pain relief. Fifteen days later, T3 and T4L normalized, the other tests increased and LTX was increased to 75 mcg/day. In July 2020, TSH and free T4 were normal, TG and AntiTG decreased and AntiTPO increased. The pain continued until August 2020, the thyroid enlarged and compressive symptoms appeared, requiring low-dose corticosteroids for short periods at times. By the end of 2020 the dose of LTX was increased to 100 mcg/day. In February/2021 TSH, T4L, T3, TG, Anti-TG, glandular volume and vascularization were normal and only Anti-TPO was still high. She continued to have good control in subsequent years and in November 2023, she had a short episode of pain and thyroid enlargement, but with an increase in TSH and AntiTPO and a drop in T4L, and LTX was increased to 125 mcg/day. The patient is currently asymptomatic, euthyroid and with a slight goiter. **Discussion:** Despite the supposed low thyroid reserve due to old HT, the patient presented with subacute thyroiditis (ST) with severe thyrotoxicosis and prolonged neck pain. ST is associated with viral infections and some cases have been reported after COVID-19 infection, on average 14 days after the onset of symptoms. Eleven percent of patients hospitalized for COVID-19 developed thyrotoxicosis, but data on outpatients remains scarce and there are no reports of prolonged thyroid pain. **Final comments:** ST is a rare complication of COVID-19 and there are no publications in the literature of TS by COV SARs in patients with previous TH. **Keywords:** thyroiditis, subacute; post-COVID condition; hypothyroidism.

OBESIDADE

1782

ANALYSIS OF THE PREVALENCE OF LAPAROSCOPIC BARIATRIC SURGERY BY SUS IN BRAZIL

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Introduction: Obesity is a disorder represented by an excessive concentration of body fat which is harmful to health and has been growing significantly in most countries. In Brazil, according to the National Health Survey carried out by the Brazilian Institute of Geography and Statistics (IBGE), the number of obese people, represented by a body mass index (BMI) ≥ 30 kg/m², in individuals over the age of 20 increased from 12.2% (2002/03) to 26.8% in 2019. Thus, the Unified Health System plays a key role in tackling these conditions, with laparoscopic bariatric surgery emerging as an approach to treating obesity. The aim of this study was therefore to carry out an analysis of epidemiological studies on laparoscopic bariatric surgery by SUS in Brazil. **Materials and methods:** The epidemiological study analyzed data from the Department of Informatics of the Unified Health System (DATASUS), in which information on bariatric surgeries by videolaparoscopy was examined, analyzing authorizations for hospital interventions (AIH) approved by region according to the year and month of processing. The regions were: North, Northeast, Southeast, South and Midwest. The period totaled 4 years and 11 months, from 01/2019 to 11/2023, filtering according to the most recent date available in the system. We also used articles from the Google Scholar database with the descriptors "epidemiological studies" and "obesity" from 2020 to 2023, selecting specific journals according to their relevance to the development of the work. **Results:** When we analyzed the data from DATASUS, the number of bariatric surgeries via laparoscopy in the period from 01/2019 to 12/2023 in the country was 6,433 AIH approved for the procedure, with the Northeast and Southeast regions presenting the highest occurrences of surgical interventions, with statistics equivalent to 2,015 (31.3%) and 2,014 (31.3%), respectively. Taking the North and Midwest regions into account, the lowest rates of surgery were found, with 280 approvals in the North and 429 in the Midwest. In the South, 1,695 AIHs were approved. **Conclusion:** The analysis shows an increase in the number of procedures performed in Brazil from 2019 to 2023. In view of this, greater investment in health promotion and intervention strategies in the above-mentioned regions is of great importance in order to reduce the growth of obesity and consequently contribute to a reduction in hospitalizations, as well as promoting a better quality of life for individuals. **Keywords:** obesity; interventions; epidemiologic studies.

TIREOIDE
1784

THYROID DISORDERS RELATED TO IODINE DEFICIENCY: AN EPIDEMIOLOGICAL ANALYSIS OF THE BRAZILIAN NORTHEAST

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Introduction: Considered a public health issue, iodine deficiency affects approximately 2 billion people worldwide, resulting in negative health effects, especially in the production of thyroid hormones. The repercussions of iodine deficiency disorder (IDD) affect different age groups, races and sexes. Detailed epidemiological monitoring of the disease is essential for proposing new public policies to control it. **Objective:** This observational study analyzed the epidemiological evolution of thyroid disorders related to iodine deficiency in the Northeast. **Methods:** A survey was carried out of secondary data provided by DATASUS from the last ten years (2014-2023) on thyroid disorders related to iodine deficiency (ICD E018) in the Northeast region. The mortality rates, number of deaths and number of hospitalizations were stratified according to the sex and age group of the patients. The analysis was carried out using Excel, with absolute and percentage data. **Results:** During the period analyzed, Brazil had 2,591 hospitalizations and 35 deaths related to ICD E018. Of these cases, the Northeast accounted for 33.93% of all hospitalizations and 20% of deaths. The prevalent age group was 40 to 49 years old, with 201 cases, and 50 to 59 years old, with 165 cases. When comparing the sexes, women had a higher number of hospitalizations (712 cases) than men (167 cases). Looking specifically at the Northeast region, the three states with the highest prevalence of the disease, in order, were: Pernambuco, with 480 cases; Ceará, with 112 cases and Maranhão, with 98 cases. **Conclusions:** Despite advances in diagnosis and prevention, cases of IDD continue to be occasional in Brazil's public health system. In the Northeast, the highest percentages of prevalence and mortality from IDD are found, predominantly in adult women. Recognizing the wide range of factors that associate the disease with public health risks, and knowing that the main form of iodine consumption in Brazil is through food, it is necessary to consider better interventions that seek to control the treatment and distribution of iodine demographically, seeking early diagnosis of areas where it is deficient. **Keywords:** Iodine deficiency; Unified Health System; thyroid.

TIREOIDE
1785

EPIDEMIOLOGICAL ANALYSIS OF ADMISSIONS FOR THYROTOXICOSIS IN BRAZIL BETWEEN 2013 AND 2023

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Introduction: Thyrotoxicosis refers to the biochemical and physiological manifestations of excessive amounts of thyroid hormones. It may be associated with hyperthyroidism or occur in the absence of an increase in thyroid hormone secretion. Symptoms such as sweating, nervousness, palpitations, weight loss are associated with this pathology. Diagnosis is laboratory-based, consisting of TSH measurement, considered the most sensitive test for diagnosis and the most appropriate screening test to exclude thyrotoxicosis. **Objective:** To analyze the epidemiological profile of patients hospitalized for thyrotoxicosis in Brazil between 2013 and 2023. **Methods:** A descriptive, ecological, cross-sectional and retrospective epidemiological study was carried out on the profile of hospitalizations for thyrotoxicosis from 2013 to 2023 in Brazil. Data from the Hospital Information System of the Unified Health System (SIH/DATASUS) were used, analyzed by Microsoft Office Excel®. Variables included annual hospitalizations, Brazilian regions, age group, race/ethnicity and sex. **Results:** During the analyzed period, 6,985 hospitalizations for thyrotoxicosis were recorded. Of these, the Southeastern region recorded the highest percentage with 61.60% (4,303) of cases. The most affected age group was between 30 and 39 years old, representing 22.12% (n = 1,515). Regarding race/ethnicity, the brown population led with 32.58% (n = 2,231) of hospitalizations. In respect of gender, hospitalizations were more frequent among women, corresponding to 77.83% (n = 5,437) of cases. Concerning the nature of care, emergency hospitalizations predominated, totaling 65.22% (115,382) of cases. **Conclusion:** A predominance of hospitalizations due to thyrotoxicosis was found in the Southeastern region of Brazil. A greater number of cases were observed in women and in the age group of 30 to 39 years, suggesting the need for demographic investigations to obtain prevalence and support preventive measures. Furthermore, the high number of hospitalizations among brown people indicates the urgency of research into specific risk factors for this population. The fact that a large proportion of hospitalizations occur in the emergency room points to a possible medical search only when there are more serious symptoms, which suggests the need for more information on preventive measures for the population about thyrotoxicosis, aiming at earlier identification and treatment for a condition more favorable prognosis. **Keywords:** admissions; epidemiology; thyrotoxicosis.

DIABETES MELLITUS

1786

NEONATAL HYPERGLYCEMIA DUE TO DIABETES MELLITUS AS A VARIANT IN THE INSULIN GENE: A CASE REPORT

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Neonatal diabetes mellitus (NDM) is a heterogeneous group of severe hyperglycemic disorders in infants. It is a monogenic disorder characterized by the onset of hyperglycemia within the first six months of life. Its incidence ranges from 1 in 90,000 to 160,000 live births, making early recognition crucial for predicting clinical progression and guiding appropriate therapeutic management. Variants in the KCNJ11 and ABCC8 genes can be treated with oral sulfonylureas and account for 40% of these patients. Recently, variants in the insulin gene itself have been identified, responsible for 10% of NDM cases, and treatment involves insulin therapy. We present a case of permanent NDM due to the p.Gly32Val variant in the insulin (INS) gene and share our experience with diagnosis and follow-up. A male patient, first-born twin delivered at 35 weeks and 4 days of gestation, developed fever, vomiting, and decreased activity at 4 months of age. He was hospitalized in a tertiary care facility for clinical evaluation, where a significant increase in capillary glucose (HI) was noted upon admission. Arterial blood gas showed no criteria for diabetic ketoacidosis. During hospitalization, therapeutic management included hydration and NPH and regular insulin. Additionally, a COVID-19 infection was identified, requiring supplemental oxygen therapy, and he was discharged after 13 days. During the etiological investigation, the following laboratory tests were performed: Anti-insulin antibody 3.5 IU/mL (NR); Anti-GAD < 5.0 IU/mL (NR); Anti-Islet Antibodies 4.7 IU/mL (NR); HbA1c 7.5% and C-peptide 0,29 ng/mL. With a hypothesis of permanent NDM, genetic sequencing revealed a p.Gly32Val (c.95G>T) heterozygous variant in the INS gene (possibly pathogenic). Genetic analysis of the father and mother was normal, suggesting a de novo variant. The twin sister did not develop comorbidities. The diagnosis of NDM due to a variant in the insulin gene was confirmed, and the patient continued degludec and aspart insulin (0,8 U/kg/day) with appropriate growth and neuropsychomotor development. NDM should be differentiated from other causes of dysglycemia in the neonatal period, such as hyperglycemia secondary to medications (corticosteroids, beta-adrenergic agents), sepsis, and parenteral glucose administration. Persistent insulin-dependent hyperglycemia lasting more than 7-10 days should raise suspicion of a monogenic etiology and prompt the request for genetic sequencing. **Keywords:** neonatal diabetes mellitus; hyperglycemic disorders; insulin gene.

OBESIDADE

1787

PREVALENCE OF OBESITY IN ADULTS IN THE BRAZILIAN NORTHEAST: AN ANALYSIS OF THE LAST 5 YEARS

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Introduction: Excess weight is a serious public health problem, as it predisposes to the development of chronic non-communicable diseases (CNCDs), which are usually associated with increased morbidity and mortality and hospital costs. In Brazil, regions with greater socioeconomic fragility, such as the Northeast, have higher rates of obesity, an endocrine disorder influenced by sociodemographic and behavioral factors, responsible for metabolic disorders and increased cardiovascular risk in adults. It is therefore necessary to study the prevalence of obesity in the northeastern population in order to effectively target strategies to solve this problem. **Objective:** To analyze the prevalence of obesity among Northeasterners aged between 20 and 59 in the last 5 years. **Methods:** This is a retrospective, detailed and descriptive study based on secondary data obtained from the Hospital Information System of the Unified Health System (SIH/SUS), in which the rates and hospital costs of obesity in the states of the Northeast region were broken down and compared. Based on the analysis, the 20-59 age group was selected, from April 2019 to April 2024. **Results:** Given the data analyzed, the Brazilian Northeast presented approximately 23.6 million overweight adults. Pernambuco was the state with the highest prevalence of obesity, with around 31.6% of the total in the Northeast, followed by Paraíba, with 20.1%, and Rio Grande do Norte, with 12.3%. This data may also justify the increase in costs for hospital services in the state of Pernambuco, which has spent more than 5 million reais in the last five years on hospitalizations due to complications from obesity in the age group analyzed. **Conclusion:** Obesity is a nutritional and metabolic endocrine disorder that is very prevalent in the Brazilian population in the northeast, and is even more significant in the state of Pernambuco. It is therefore essential to carry out more specific studies into the risk factors that directly contribute to the disproportionate distribution between the federations. Through these, it would be possible to optimize nutritional and physical interventions effectively, reducing the risks of developing metabolic, lipid and glycemic disorders that generate high costs for Brazilian health. **Keywords:** obesity; Northeast; Unified Health System.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1788

IMPACT OF PROLONGED USE OF SCREENS ON SELF-PERCEPTION OF BODY IMAGE AND ON DEPRESSION AND ANXIETY TENDENCIES IN TRANSGENDER ADOLESCENTS ATTENDED AT REFERENCE CENTERS IN THE STATE OF BAHIA: A DESCRIPTIVE-COMPARATIVE STUDY

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Introduction: Gender dysphoria occurs when the incongruity between biological sex and gender identity generates significant psychological distress. Data from the literature show that prolonged use of screens can impact body image and is related to negative mental outcomes. The safe screen time recommended by the Brazilian Society of Pediatrics for the adolescent age group is less than 3 hours a day. **Objective:** To analyze the impact of prolonged use of screens on self-perception of body image and on anxiety disorder or depressive disorder diagnostic trends in transgender adolescents treated in reference centers in the state of Bahia. **Methods:** This is an observational, cross-sectional and descriptive-comparative study with 34 transgender pubescent children and adolescents attended at a reference center in Bahia. The Child Anxiety Screening Questionnaire (QTAI-C) was applied with a cutoff point for anxiety disorder ≥ 25, and the Childhood Depression Inventory (CDI) was applied with a cutoff point for possible depressive disorder ≥ 17 in addition to a sociodemographic form, from which the variables screen time, self-image influenced by screen time, age and gender identity were isolated. For descriptive analysis, frequency and central tendency calculations were used. For comparison, logistic regression was performed using SPSS®. **Results:** 34 adolescents were interviewed, with an average age of 16 years (±5.75). 52% identified as transgender men, 44% as transgender women and 2.94% as non-binary. Regarding screen time, 58.82% of teenagers spent more than 3 hours a day using social networks and 70.58% stated that the time spent on social networks influences the way they see their own bodies. However, no statistical significance was found between screen time and the variable of self-perception and body image ($p = 0.511$). There was also no association between screen time and depression ($p = 0.356$) or anxiety ($p = 0.787$) scores. **Conclusion:** Based on the data analyzed, more than half of the population uses screens for a prolonged period of time and around ¾ consider that its use is harmful to the perception of their self-image. However, there was no statistically significant correlation between screen time and negative mental health outcomes, such as anxiety and depression. **Keywords:** gender dysphoria; transgender; body image.

ENDOCRINOLOGIA PEDIÁTRICA

1789

EPIDEMIOLOGICAL ANALYSIS OF DIABETES MELLITUS AMONG CHILDREN AND ADOLESCENTS IN NORTHEAST BRAZIL OVER THE LAST DECADE

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Introduction: Diabetes mellitus is a metabolic syndrome resulting from a defect in insulin secretion and/or action. In the pediatric age group, it represents one of the most important chronic diseases, with a growing incidence worldwide. Type 1 diabetes mellitus is a chronic disease frequently initiated in childhood. Type 2 diabetes mellitus, more common in adults, is increasing in incidence among children. **Objective:** To investigate the epidemiological profile of diabetes mellitus among children and adolescents in Northeast Brazil from 2013 to 2023. **Methods:** This is an epidemiological, observational, descriptive, cross-sectional study, where data on hospitalizations due to diabetes mellitus among children and adolescents were collected from the SIH/SUS-DATASUS. The variables selected were: year of care, type of care, hospitalization regime, state, gender, race, and age group. **Results:** During the study period, 25,546 hospitalizations due to diabetes mellitus were recorded among children and adolescents in the Northeast. Of these, 23,862 (93.41%) occurred as emergency care, although in 19,577 (76.64%) cases the hospitalization regime was ignored. The years with the highest incidence were 2021, with 2,676 cases (10.48%); 2022, with 2,668 cases (10.44%); and 2023, with 2,620 cases (10.26%). The most affected states in the Northeast were Pernambuco, with 5,280 cases (20.66%), and Bahia, with 6,827 cases (26.73%). The mixed-race population was the most affected, with 14,441 cases (56.60%). Females presented 14,456 cases (56.56%) while males presented 11,090 cases (43.44%). The most affected age groups were 10 to 14 years, with 9,356 cases (36.61%), and 15 to 19 years, with 7,130 cases (27.91%). After analyzing the reported cases, it was found that 222 (0.86%) resulted in death. **Conclusion:** It is concluded that the prevalence of diabetes mellitus in childhood is growing in the Northeast, especially in the most populous states, showing a significant number of hospitalizations. The most affected age group is between 10 and 19 years, with no considerable discrepancy between genders, with a higher incidence in the mixed-race population. Care is predominantly emergency-based, requiring intensified measures to reduce mortality. **Keywords:** diabetes mellitus; epidemiological profile; pediatric endocrinology.

DIVERSIDADE, EQUIDADE E INCLUSÃO

1792

EVALUATION OF PREDICTORS FOR DESIRE TO HAVE CHILDREN IN TRANS ADULTS TREATED AT 2 REFERENCE CENTERS IN BAHIA

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Introduction: Cross-sex hormone therapy (CSHT) and gender-affirming surgeries (GAS) have an impact on the fertility of transgender individuals, prompting reflections on their desire to have children. The desire for parenthood in transgender individuals seems to be similar to cisgender individuals. Despite the irreversible consequences on fertility, surgical satisfaction and quality of life after gender affirmation surgery are generally positive, with significant improvements in psychological and sexual well-being. Furthermore, adverse childhood experiences (ACEs), common in the transgender population, influence reproductive and health decisions in adulthood, highlighting the need for adequate support during transition and reproductive planning. **Objective:** Describe and correlate the desire to have children with ACEs and the desire for sex reassignment surgery. **Materials and methods:** The data was collected at two reference centers for trans people in Bahia, using a data collection form and the translated ACE questionnaire (Adverse Childhood Experiences) for the adult trans population treated at these centers. Fisher's exact test was used to associate the desire for sexual reassignment and the desire to have children; and the Kruskal-Wallis test was used to associate ACEs and age with the same outcome. **Results:** Data was collected from 122 trans women and travestis, 39% of whom did not wish to have children, 9% had not yet decided, 48% wished to have children and 4% already had children. The median age of the population was 27 (interquartile range 23 to 35). Among the 101 who wanted to have sex reassignment surgery, 38% wanted children, 10% did not want children, 47% had not yet decided and 5% already had children. Among the 121 participants who answered the ACE, 40% had no adverse childhood experiences, 7% had one, 11% had two, 11% had three and 31% had 4 or more adverse experiences. No statistically significant association was found between the number of adverse events in the ACE and the desire to have children ($p = 0.420$). No statistically significant result was found between the desire for reassignment surgery and the desire for a child ($p = 0.901$), nor between age and the desire to have a child ($p = 0.208$). **Conclusions:** Although in our sample no associations were observed between the desire to have children and having sex reassignment surgery, ACEs or age, almost half of trans women and travestis of our sample wanted to have children. **Keywords:** desire to have children; transgender; predictors.

DIABETES MELLITUS

1794

INFLUENCE OF SOCIOECONOMIC PROFILE ON GLYCEMIC MANAGEMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS IN AN ENDOCRINOLOGY OUTPATIENT CLINIC

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Introduction: Diabetes mellitus is a chronic condition that requires multifactorial treatment. Knowing the patient's socioeconomic profile is essential to maintain good glycemic management. **Objective:** To evaluate socioeconomic factors that may interfere with the glycemic management of patients treated at an endocrinology outpatient clinic. **Patients and methods:** This is an exploratory descriptive study. Data were collected by interviewing patients with type 2 diabetes who were invited to participate while waiting for consultation. The investigator filled out a questionnaire, based on the Summary of Diabetes Self-Care Activities Questionnaire, which contained the following information: age, sex, education, and family income. In addition, they were asked about their dependence on the Brazilian public health system, how long they were diagnosed with diabetes, their knowledge about glycated hemoglobin, and how they classify their health. Data were analyzed using descriptive statistics with relative frequencies. Bivariate analyses were tested using Pearson's Chi-square test. 64 patients were interviewed. The research was approved by the institution's Ethics Committee. **Results:** The average age of patients is 62.8 years; 64.1% are female; 34.4% have primary education, 42.2% have secondary education, and 15.6% have higher education. The predominant family income is between 2 and 4 basic salary (64.1%); 87.5% depend on the public health system for health monitoring; 64.1% have been diagnosed with diabetes mellitus for more than 10 years; 68.8% do not know what glycated hemoglobin means; 53.1% classify their health as regular. When correlating dependence on the public health system and self-rated health, half of the patients who depend on the health system stated that they were in good health, with no statistical difference ($p = 0.179$). 11,1% of the patients with none or primary education knew what glycated hemoglobin means, while 45,9% of patients with secondary or higher education had this knowledge ($p = 0.003$). **Conclusion:** Most patients interviewed had low education, low family income, and reported depending on the public health system. Also, education level influenced knowledge about glycated hemoglobin. These factors may be negatively influencing glycemic management. Health professionals must carry out structured anamnesis, as we observed with our questionnaire, to prescribe therapies and educational actions that adapt to the socioeconomic reality of patients. **Keywords:** glycated hemoglobin; diabetes mellitus type 2; socioeconomic conditions.

TIREOIDE

1795

PERIORBITAL RASH SECONDARY TO METHIMAZOLE USE: A CASE REPORT

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Case presentation: A 68-year-old female patient with thyrotoxicosis due to Graves' disease began treatment with methimazole 20 mg/day. Two days after starting the medication, she developed an erythematous rash and periorbital itching without associated edema or scaling. An antihistamine was prescribed, and she was re-evaluated after one week, showing slight improvement of symptoms. It was decided to reduce the methimazole dose to 15 mg/day and prescribe 20 mg of Prednisone for seven days, resulting in almost complete improvement of the rash and resolution of local itching. **Discussion:** Antithyroid drugs have been used for more than half a century in the treatment of Graves' disease. Thionamides are used to reduce the synthesis of thyroxine (T4) and triiodothyronine (T3) by interfering with the formation phases of these hormones. The side effects related to thionamides are varied, with skin lesions among the most frequent adverse reactions. Characterized as pruritic urticarial lesions or macular rash, these lesions usually occur early, on average three weeks after starting use. In the reported case, the patient presented skin lesions only two days after starting the medication, with the chronology and affected area being uncommon presentations. Antihistamines are a good therapeutic option for cutaneous reactions related to methimazole. If the condition persists, methimazole replacement can be considered, but there is cross-sensitivity in more than 50% of patients. Additionally, adverse reactions related to methimazole are dose-dependent. The difference in the incidence of skin lesions when comparing doses of 15 mg and 30 mg varies from 20.5% to 31.9%, respectively. Skin lesions can also be an initial manifestation of vasculitis, an adverse reaction to methimazole that can progress with greater severity. Therefore, it is essential to follow up patients with such lesions to identify this condition early. **Final comments:** Adverse reactions to antithyroid agents often lead to the discontinuation of the medication. Fortunately, in the reported case, it was possible to manage the symptoms adequately with dose reduction and symptomatic treatment alone. For safe and effective treatment, it is important to know and identify adverse reactions to methimazole early, as well as to institute appropriate symptom treatment, aiming to continue antithyroid therapy as safely as possible. **Keywords:** hyperthyroidism; methimazole; side effect.

DIABETES MELLITUS

1796

ADMISSIONS FOR DIABETES MELLITUS IN BRAZIL: AN EPIDEMIOLOGICAL SURVEY

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Introduction: The International Diabetes Federation estimates that, by 2045, the number of cases of diabetes mellitus (DM) will exceed 628.6 million worldwide and, according to the same global organization, Brazil already occupied, in 2018, the fourth position on the world stage of people affected by DM. Complications of DM are frequent when metabolic control is inadequate, increasing the number of hospitalizations due to decompensation or the effects of a continuous state of hyperglycemia. **Objective:** To describe hospitalizations for DM by region and year of care in Brazil. **Methods:** A study was carried out descriptive and cross-sectional, with quantitative analysis of secondary data on hospitalizations for DM, obtained through the DATASUS platform, from April 2020 to April 2024. Access to data was through the TABNET online platform, based on hospital admission authorizations (AIH), second year of processing, in the Hospital Information System (SIH/SUS). The data were filtered, for analysis, based on epidemiological indicators: total number of hospital admissions per year and by Brazilian region. **Results:** The last four years totaled 537,769 cases of hospitalization due to DM. A gradual increase was observed, with a peak in 2023, recording a total of 137,761 cases (25.61%) and, until April 2024, 35,105 cases (6.52%). number of hospitalizations, corresponding to 36.99% of the total, followed by the Northeast Region, with 31.57%. The regions with the lowest percentages of hospitalizations were, respectively: the Central-West Region, recording 6.88% of the total; the North Region, with 10.76%; and the South Region, with 13.78%. **Conclusion:** The last four years have seen progressive growth in the number of hospitalizations for DM in Brazil, especially in the Southeast and Northeast regions. The result indicates the current need to strengthen public policies that encourage, from Primary Care, the implementation of preventive actions, and monitoring of the disease in its initial stages, minimizing the risks of metabolic complications, commonly associated with the need for hospitalization and monitoring. Due to the comprehensiveness of therapeutic approaches, the training of the multidisciplinary team is essential for therapeutic success and maintenance of the patient's health. **Keywords:** diabetes mellitus; Unified Health System; epidemiology.

DIABETES MELLITUS

1797

HOSPITALIZATIONS FOR DIABETES MELLITUS OVER THE LAST 10 YEARS IN BRAZIL: A TEMPORAL ANALYSES

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Introduction: Diabetes mellitus is a chronic condition that affects millions of individuals globally, requiring continuous monitoring and treatment to prevent serious complications. Analyzing hospitalization data over the decade aims to identify regional trends, essential for understanding the dynamics of the disease and guiding future health policies. **Objective:** To analyze the variation between the number of hospitalizations for diabetes mellitus in the macro-regions of Brazil between 2013 and 2023. **Methods:** This study is a cross-sectional, descriptive, retrospective study with a quantitative approach, conducted using data collected from the SUS Hospital Information System (SIH/SUS) from January 2013 to December 2023. The study includes individuals aged 0 to 80 or more years from all regions of Brazil hospitalized for diabetes mellitus, under both elective and urgent care. To compare the regions, a hospitalization-to-population ratio (per 100,000 inhabitants) was used. **Results:** A total of 1,477,103 patients were hospitalized due to diabetes mellitus in Brazil during this period, with an average of 134,282 hospitalizations per year. The Southeast region had the highest number of cases with 526,027 (35.6%), while the Central West had the lowest, with 105,303 (7.1%). The highest number of hospitalizations was recorded in the years 2014 and 2015, with 139,819 and 138,435 cases, respectively. In 2020, there was the lowest number of hospitalizations during this decade, with a total of 124,646, probably related to the COVID-19 pandemic. However, during 2022 and 2023, the number of hospitalizations increased significantly, reaching an average of 137,733 cases per year. Comparing the average number of hospitalizations per 100,000 inhabitants per region from the period between 2013 and 2019 with the last two years (2022 and 2023), it was found that the Southern region initially had the highest hospitalization rates (78.3). However, this position is currently occupied by the Northern region, with rates of 88.3 cases per 100,000 inhabitants. The Southeast region consistently had the lowest hospitalizations per inhabitant in both periods. The Central-West region had a notable decrease from 69.8 to 58.8 and the Northeast region varied from 81.7 to 79.4 cases per 100,000 inhabitants. **Conclusion:** Hospitalizations for diabetes mellitus have increased in recent years. However, there are temporal differences in the pattern of hospitalizations when analyzed by region. **Keywords:** diabetes mellitus; hospitalizations; regions.

OBESIDADE

1798

PREVALENCE OF VITAMIN B12 DEFICIENCY IN ADULT PATIENTS UNDERGOING BARIATRIC SURGERY

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Introduction: Advances in bariatric surgery have brought a paradigm shift in the management of obesity, with benefits that extend beyond weight loss. However, nutritional deficiencies are an inherent postoperative problem and often require lifelong supplementation. Vitamin B12, also known as cobalamin, is one of the most common micronutrient deficiencies affecting this population. Vitamin B12 deficiency can cause megaloblastic anemia, peripheral neuropathy and depression. **Objective:** The scope of this research Is to look for a deficiency of vitamin B12 during 24 months of post-operation bariatric bypass surgery. **Methods:** This is a clinical, cross-sectional, retrospective and descriptive study of data from medical records of patients who underwent bypass bariatric surgery between 01/01/2017 and 12/31/2018. We assessed vitamin B12 levels during post-operative follow-up at 6th, 12th, 18th and 24th months. We consider vitamin B12 deficiency to be values ≤ 300 pg/mL. All patients, during follow-up, are advised to take vitamin B12 replacements, intramuscularly, when levels are lower than 300 pg/mL. **Results:** We evaluated a total of 77 medical records of patients who underwent bypass surgery. The prevalence of vitamin B12 deficiency at 6th, 12th,18th and 24th months was: 28%, 35%, 36% and 41%. Normal vitamin B12 values at 6th, 12th, 18th and 24th months were observed in: 72%, 65%, 64% and 59% of patients undergoing bypass surgery. **Conclusion:** The prevalence of vitamin B12 deficiency increases during the 24-month follow-up period, affecting 41% of patients. The deficiency occurs, even after instructions from the medical team for replacements. In fact, long-term follow-up is extremely important to avoid complications related to micronutrient and macronutrient deficiencies. **Keywords:** obesity; vitamin B12; bariatric surgery.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1799

IMPACT ANALYSIS OF MULTIPROFESSIONAL CARE AND HORMONAL THERAPY OVER ONE YEAR ON QUALITY OF LIFE AND MENTAL HEALTH OF TRANSGENDER PATIENTS

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Gender nonconformity has been studied for many years. Today, 3 million individuals identify as transgender and non-binary, with transvestites and trans women being the majority. The treatment of gender dysphoria has evolved over the years, with therapeutic approaches advancing and the need for a multidisciplinary team becoming indispensable in alleviating gender dysphoria. This is an observational, longitudinal epidemiological study where data was collected using the SF-36 General Health Quality of Life questionnaire, applied to transgender patients who began treatment at the gender dysphoria outpatient clinic. The study population consisted of 30 individuals who underwent hormonal therapy. From the comparative analysis of questionnaires evaluating the same individuals at least one year after starting cross-sex hormone therapy, initial findings showed a negative percentage variation in only three out of eight items, specifically related to social, emotional, and mental health aspects. Statistical analysis revealed significant differences in the scores of functional capacity and overall health status domains evaluated by the SF-36 questionnaire when comparing the same patient with at least a one-year interval since the initiation of hormonal therapy. When assessing the score of each questionnaire domain pre and post hormonal therapy regarding health perception, patients could choose from five health ratings between much better and much worse. In the contemporary scenario, comprehensive healthcare for transgender individuals has gained prominence. Hormonal therapy is often used to facilitate physical changes aligning with the desired gender identity, while multiprofessional care aims to provide comprehensive support, addressing not only medical but also psychological and social aspects. The study's findings reinforce the benefits of hormonal therapy in improving physical capacity and overall health status. By achieving a more congruent physical alignment, many transgender individuals feel more comfortable participating actively in their communities and social environments, promoting inclusion and integration. Hormonal therapy has the potential to positively influence the quality of life of transgender individuals. It is important to recognize that each person's experience is unique, and individual benefits may vary. Furthermore, a multidisciplinary approach is crucial to ensuring holistic and effective care. **Keywords:** transgender; hormonal therapy; gender dysphoria.

DISLIPIDEMIA E ATEROSCLEROSE

1801

BERARDINELLI-SEIP DIAGNOSIS DURING THE COURSE OF PAPILLARY THYROID CARCINOMA WITH LYMPH NODE METASTASIS

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Male patient, 28 years old, farmer, sought medical assistance after observing a nodule in the topography of the thyroid. FNAB was performed suggestive of malignancy. He underwent total thyroidectomy, which confirmed classic subtype papillary carcinoma, focal vascular invasion (<4 vessels), lymphatic invasion and lymph node metastasis (4/6), the largest of which was 7 mm. Later I had radioiodine. In addition, some dysmorphias were presented, such as facial lipoatrophy, muscular hypertrophy, hyperphagia and laboratory changes such as hypertriglyceridemia and hyperglycemia that draw attention. Family history, consanguineous parents, denied family history of thyroid cancer, previous exposure to ionizing radiation and lipodystrophy. On physical examination: acanthosis nigricans in the cervical and axillary region, generalized lipoatrophy with muscular pseudohypertrophy, absence of Bouchard's fatty ball, protrusion of the umbilical scar and presence of hepatomegaly 3 cm from the costal margin. Visible crease on the anterior surface of the thigh measuring 7 mm and BMI 27.8. In laboratory tests, Triglycerides: 305, LDL 30, HDL 45, GJ 111, HBA1C 6%, Leptin < 0.42 (VR 2.0-5.6), Insulin 40.8 (1.9-23), Indicate from HOMA 11.07. No abdominal USG or CT showed hepatosplenomegaly. Biopedance showed 44.2% muscle mass and 7.6% fat mass. The genetic test confirmed generalized congenital lipodystrophy type 2, with a homozygous pathogenic variant in the BSCL2 gene. Congenital generalized lipodystrophy (CGL), also called Berardinelli-Seip congenital lipodystrophy, is a rare, autosomal recessive disease frequently associated with parental consanguinity. Type 2 LGC is the second most common form of LGC, caused by mutations in the BSCL2 gene. Although type 2 LGC is a rare pathology, it is important to recognize the signs and symptoms for early diagnosis and intervention as delays predispose to irreversible organ damage. Treatment restricts the control of hyperlipidemia, diabetes and its complications. The recombinant leptin, metreleptin, has been shown to decrease hyperphagia, improve insulin sensitivity, cause hepatic steatosis, and improve the NASH score in biopsy specimens. However, its use in clinical practice is still limited due to its high cost. Patients with extreme insulin resistance have an increased prevalence of thyroid nodules, which may be a risk factor for thyroid cancer. Constant surveillance may benefit these patients. **Keywords:** generalized congenital lipodystrophy; papillary thyroid carcinoma; insulin resistance.

DIABETES MELLITUS

1802

SEVERE GASTROPARESIS AND EXOCRINE PANCREATIC INSUFFICIENCY IN A PATIENT WITH TYPE 1 DIABETES MELLITUS AND PRIMARY HYPOTHYROIDISM: A CASE REPORT

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Case presentation: Female patient, 20 years old, diagnosed with type 1 diabetes mellitus (DM1) and primary hypothyroidism at the age of seven, developed chronic diarrhea and abdominal distension. The patient, weighing 37 kg, was prescribed 50 mcg of levothyroxine daily, equivalent to 1.35 mcg/kg. Laboratory tests indicated TSH: 489 UI/mL; T4L: 0,44 ng/dL, and imaging exams showed pleural and pericardial effusion, as well as a dilated gastric chamber with food remains. An upper endoscopy identified gastric ulcers without anatomopathological findings of atrophic gastritis or celiac disease. Under the hypothesis of exocrine pancreatic insufficiency (EPI), further complementary exams were conducted, which showed: faecal elastase-1 level of 112 mcg/g (normal value: > 200 mcg/g); non-reactive anti-tissue transglutaminase IgA antibody; non-reactive anti-endomysial IgA antibodies; B12 vitamin: 970 ng/L. Based on these findings, pancreatin 25,000 IU was initiated before each meal, and the dose of levothyroxine was increased to 200 mcg (5.4 mcg/kg), both of which resulted in the resolution of the chronic diarrhea and the normalization of the thyroid function. **Discussion:** Studies indicate that EPI can occur in patients with DM1 due to pancreatic tissue atrophy, leading to reduced secretion of digestive enzymes. In this particular case, the gastrointestinal condition led to a thyroid hormone absorption deficiency which caused decompensation of the hypothyroidism. Symptoms such as chronic diarrhea, steatorrhea, weight loss, and malnutrition were consistent with the patient's presentation. The diagnosis is frequently confirmed using the faecal elastase-1 exam and is commonly treated with pancreatic enzymes supplementation, such as the pancreatin, which significantly aids in symptom relief and nutrient absorption. **Final comments:** This case highlights the coexistence of decompensated DM1 with EPI, which emphasizes the need for increased clinical attention and research on the interaction between DM1 and EPI, as well as the importance of early diagnosis and an integrated approach in managing these conditions. **Keywords:** exocrine pancreatic insufficiency; diabetes mellitus, type 1; gastroparesis.

NEUROENDOCRINOLOGIA

1803

GLUCAGONOMA SYNDROME ASSOCIATED WITH NECROLYTIC MIGRATORY ERYTHEMA

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Case presentation: A 32-year-old female patient was referred to the outpatient clinic after sixteen months of painful and itchy erythematous plaques that initially affected her feet, but later spread throughout her body. The lesions evolved with hardened, bronze-colored areas and crusts. She also had loss of eyebrows, eyelashes and hair, blepharitis, and nail dystrophy. She had received several treatments (for misdiagnoses of scabies, tinea and even pemphigus). Within the last year, she had been diagnosed with diabetes mellitus and received oral antidiabetic drugs. The patient reported weight loss of 39 kg and anemia (hemoglobin 5.9 g/dL), and was admitted for investigation. Biopsy of skin lesions showed nonspecific spongiotic dermatitis, parakeratosis and superficial lymphomononuclear infiltrate. Abdominal computed tomography revealed a heterogeneous mass in pancreatic tail and thrombosis of the left common iliac vein. Glucagonoma was suspected and serum glucagon level was 522 pg/mL. The patient underwent caudal pancreatectomy with excision of a 7.0 x 6.5 x 5.5 cm tumor. The anatomopathological examination confirmed well-differentiated grade 1 neuroendocrine tumor (NET). Immunohistochemistry demonstrated expression of cytokeratins, chromogranin A, synaptophysin, and CD56. Ki-67 was present in 1% of cells. Calcium and basal pituitary hormone measurements were performed to rule out concomitant primary hyperparathyroidism as part of multiple endocrine neoplasia type 1 (MEN1). Six months after surgery, the patient presented complete remission of skin lesions, good glycemic control despite not using any antidiabetic drugs, weight gain, improvement in anemia, and a new glucagon dosage of 191 pg/mL. **Discussion:** Glucagonoma is a rare pancreatic NET characterized by increased secretion of glucagon, leading to the emergence of glucagonoma syndrome, which clinical features include: weight loss, hyperglycemia, necrolytic migratory erythema (NME), glossitis, anemia, diarrhea and venous thrombosis. Diagnostic confirmation includes glucagon measurement (generally > 500 pg/mL) and imaging. As up to 10% occur in the context of MEN1, associated tumors must be screened. The therapy of choice is surgical resection, which is curative in 30% of cases. In advanced disease, the use of somatostatin analogues is indicated. **Final commentaries:** Timely recognition of NME and glucagonoma syndrome allows early diagnosis, improving patient prognosis and survival. **Keywords:** neuroendocrine tumors; necrolytic migratory erythema; glucagonoma.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1804

EFFICACY OF METFORMIN MONOTHERAPY *VERSUS* METFORMIN WITH INOSITOL IN POLYCYSTIC OVARY SYNDROME: A SYSTEMATIC REVIEW OF RANDOMIZED CLINICAL TRIALS

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Introduction: Affecting about 16% of women of reproductive age, polycystic ovary syndrome (PCOS) is an endocrine disorder characterized by hyperandrogenism, chronic anovulation, and polycystic ovarian morphology. Although not included in the diagnostic criteria, insulin resistance (IR) plays a crucial role in the pathophysiology of PCOS, making metformin, an insulin sensitizer, the cornerstone of the therapeutic approach for this disorder. In this context, recent studies highlight the effectiveness of inositol in the treatment of PCOS, as it acts on insulin signaling pathways and helps regulate ovulation. Inositol improves ovarian function, reduces the LH/FSH ratio, lowers serum androgens, increases SHBG, and decreases total and free serum testosterone. **Objective:** This study aims to synthesize the results of PCOS treatment with inositol and compare them to those obtained with metformin, evaluating various clinical and metabolic outcomes. **Materials and methods:** This PRISMA review included women with PCOS aged 18 to 45 years, excluding those undergoing in vitro fertilization. Randomized clinical trials in English from the last five years were analyzed. The search in PubMed and BVS initially identified 32 articles, of which 7 were selected after the removal of duplicates and screening of titles and abstracts. After full-text reading, 3 trials were included. Data extraction included participant characteristics, interventions, outcomes, and methodological quality assessment, qualitatively synthesizing the efficacy of metformin monotherapy *versus* metformin with inositol in the treatment of PCOS. **Results:** Three articles comparing metformin monotherapy to the combined use of metformin and inositol (n = 250) were evaluated, conducted in two different countries: one in Iran (n = 53) and two in India (n = 197). The group treated with combined therapy showed improvement in menstrual cycle regularity and FSH levels in all analyzed trials. Comparing the two groups, there was a significant difference in the overall mean acne score in only one study (p = 0.004) and in the mean LH levels in only one study (p = 0.002). **Conclusion:** The use of combined inositol and metformin therapy in the treatment of PCOS improved menstrual cycle regularity and reduced FSH levels, leading to a better quality of life for patients. There is also evidence of this intervention's impact on acne and LH levels. Thus, combined therapy emerges as a promising therapeutic alternative for patients with PCOS. **Keywords:** polycystic ovary syndrome; inositol; metformin.

ADRENAL E HIPERTENSÃO

1805

MALIGNANT PHEOCHROMOCYTOMA WITH ATYPICAL MANIFESTATION IN A PATIENT WITH PULMONARY TB

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Female patient, 27 years old, nurse, referred to the endocrinology outpatient clinic for an adrenal incidentaloma. Diagnosed with Pulmonary Tuberculosis and, during the investigation, a CT scan of the chest and later of the abdomen was performed, which revealed "a predominantly hypodense solid expansive formation with heterogeneous uptake with central areas of necrotic cystic degeneration and peripheral uptake with vascular structures in between, well delimited, located in the left adrenal topography, measuring approximately 9.0 x 10 x 11.3 cm". The patient only reported weight loss, which recovered after starting treatment with tuberculostatics. She denied previous comorbidities. Investigation began with measurement of urinary Metanephrines with result > 5,000 mcg/24 h (VR 104-718). Preparation with alpha and beta blockade was carried out and sent for adrenalectomy surgery + left partial nephrectomy. The anatomopathological examination was compatible with pheochromocytoma with a PASS score of 10 points, indicative of an aggressive biological component. After the procedure, the patient evolved well, however the post-surgical control CT showed "pulmonary nodules with a secondary neoplastic appearance" and in the liver "three nodular images in segment IV, the largest measuring 1.1 x 1.1 cm". A MIBG scintigraphy was performed, which observed "Diffuse hyperuptake in both lungs, whose correlation with tomography also demonstrates the presence of multiple pulmonary nodules, with a high probability of representing secondary lesions of neoplasia of neuroendocrine origin." Dosage of urinary catecholamines, noradrenaline 123.33 mcg/24 h (VR < 97 mcg/24), adrenaline 6.14 mcg/24h (VR <27 mcg/24h) and dopamine 122.52 mcg/24 h (VR < 500 mcg/24 h). Pheochromocytomas are catecholamine-secreting neuroendocrine tumors that originate from chromaffin cells of the adrenal medulla. Only 10% of pheochromocytomas are malignant. There is still no histological or molecular marker that helps predict metastatic potential. The diagnosis of malignancy is given by the identification tumor deposits in tissues that normally do not contain chromaffin cells. The clinical course is highly variable, with five-year survival rates ranging from 12%-84%. For asymptomatic patients, expectant management may be considered due to the indolent course in some subgroups, where treatment-related side effects may exceed the potential benefit of therapy. **Keywords:** adrenal incidentaloma; pheochromocytomas; pulmonary tuberculosis.

NEUROENDOCRINOLOGIA

1806

LONG TERM FOLLOW-UP OF NON TUMORAL GH EXCESS IN A PATIENT WITH CARNEY COMPLEX

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Introduction: Carney complex (CNC) is rare a syndrome characterized by pigmented lesions affecting skin and mucosa, myxomas, psammomatous melanotic schwannomas and endocrine tumors that involve the adrenals (primary pigmented nodular adrenocortical disease – PPNAD), Sertoli cells, somatotrophs, thyroid, and ovary. The genetic basis of CNC is mainly represented by mutations in Protein Kinase CAMP-Dependent Regulatory Type I Alpha (PRKAR1A). The most prevalent pituitary disturbance is GH excess. **Case:** A 40-y-old male presented with adrenarche at age of 7y (Tanner G1P2, normal bone age). At 13 years of age he was seen by an endocrinologist due to weight gain, obesity, and short stature. At a physical examination, he had clinical signs of Cushing's syndrome. Laboratory work up confirmed ACTH-independent hypercortisolism. MR showed bilateral micronodular adrenal glands, leading to adrenalectomy. Diagnosis: PPNAD. DNA sequencing of the candidate gene showed a 10 BP deletion at nucleotide 243-252 of exon 3 of PRKAR1A. During follow-up, image exams showed testicular nodule calcifications and bilateral orchiectomy was eventually performed at 40 years of age (Sertoli Cell Tumor). No cardiac myxomas have been found. Two small thyroid nodules appeared in ultrasound (0.6 and 0.2 cm) but have not been biopsied (stable). MRI scans of sella have shown progressive enlargement of the pituitary without nodular lesions. Somatotropic axis evaluations have shown increased IGF-1 since age 28 years, and IGF-1 levels between 1.22 ULN and 2.18 ULN without a defined trend to increase. GH levels have been non suppressible on several OGTTs. No features of acromegaly or its comorbidities have appeared. Most recent evaluation; GH:3.4 ng/L; IGF-1: 1.22 ULN. **Discussion:** GH hypersecretion in CNC has a prevalence of 30%-75%, but acromegaly has been detected at ≤ 20%. In the absence of clinical manifestations and a surgical target, a watch and wait approach with periodic visits, image and hormonal assessments was adopted. It would be reasonable to start pharmacological treatment if a patient develops clinical features of acromegaly but no defined pituitary tumor is found. On the other hand, the finding of a pituitary tumor at MRI would favor surgical treatment as the primary approach. **Final comments:** Our no treatment approach to GH excess in this patient with CNC has been successful in the last 12 years since those GH axis abnormalities first appeared. **Keywords:** GH hypersecretion; Carney complex; PRKAR1A.

DIABETES MELLITUS

1808

TIRZEPATIDE FOR DIABETES MELLITUS: PROPERTIES AND THERAPEUTIC USES

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Diabetes mellitus (DM) is a global disease with major risk factors including poor dietary habits, sedentary lifestyle, and obesity. Its treatment is closely linked to physical activities, dietary reeducation, and antidiabetic medications aimed at achieving therapeutic glycemic targets. However, many antidiabetic drugs are associated with hypoglycemia and weight gain. This study aims to highlight the qualities and applicability of tirzepatide in DM treatment. A systematic literature review was conducted based on the PRISMA methodology, using databases SciELO, MEDLINE, and PubMed, selecting 18 articles from 2021 to 2024. Initial studies published between 2018 and 2020 demonstrated that tirzepatide, as shown by the SURPASS program results, is the first dual GLP-1/GIP receptor agonist approved by the FDA and Anvisa. There is consensus in the literature regarding the improvement of pancreatic beta-cell function markers when the medication reduces metabolic demand caused by insulin secretion, thus decreasing stress and dysfunction of these cells. Tirzepatide, in both monotherapy and combined therapy, showed better efficacy indices than several antidiabetic drugs such as dulaglutide, insulin degludec, glargine, and semaglutide 1mg. It significantly reduced glycated hemoglobin, body weight, and fasting glucose levels without increasing the risk of hypoglycemia and improved cardiovascular risk factors like blood pressure, hepatic fat, visceral fat accumulation, macroalbuminuria, and cholesterol levels, with a safety profile similar to GLP-1 receptor agonists. Gastrointestinal manifestations (nausea, diarrhea, and vomiting) were the predominant adverse events, typically mild to moderate, which may lead to lower treatment adherence, similar to what is observed with GLP-1 agonists, which have an adherence rate of around 50%. Based on the above, tirzepatide presents consistent evidence regarding the reduction of glycated hemoglobin, weight, and glycemic control without posing a risk of hypoglycemic episodes and has a considerable safety profile, making it a potentially beneficial drug in DM management. **Keywords:** tirzepatide; treatment; diabetes mellitus.

METABOLISMO ÓSSEO E MINERAL

1811

RELATIONSHIP BETWEEN WEIGHT LOSS AND BONE MASS LOSS IN PATIENTS AFTER BARIATRIC SURGERY

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Introduction and objective: The number of bariatric surgeries (BS) has increased throughout the world. However, evidence of the negative impact of BS on bone health has also increased. Weight loss is one of the factors related to post-BS bone changes, since reducing the load on the bones can induce compensatory increases in the remodeling of this tissue, and several studies, but not all, propose a direct relationship between the intensity of weight loss and bone loss. In this study, we selected patients seen at our obesity outpatient clinic between January and March 2024 who had undergone bone densitometry (DXA) approximately one year after undergoing BS, and we checked bone mineral density (BMD) and weight loss presented in this study period, in order to evaluate this relationship. **Results and discussion:** 33 patients were included, all female, aged between 31 and 64 years (average of 48.84) at the time of the BS. The overall average percentage of excess weight lost (PEWL) was 66.9%. DXA was performed on average 15.75 months after surgery. 22 patients, with a mean age of 45.45 years and a mean PEWL of 67.8%, had adequate BMD. 9 patients, with a mean age of 55.22 years and a mean PEWL of 62.23%, presented a reduction in BMD, without criteria for osteoporosis. 2 patients, with a mean age of 57.5 years and a mean PEWL of 78.45%, had osteoporosis. All used multivitamins, and patients in the groups with normal bone mass and osteoporosis also used cholecalciferol. It is worth noting that the average age of the patients was considerably lower in the group with normal BMD, however it was similar between the other two groups. In our sample, therefore, the intensity of bone mass loss was more directly related to age than to the percentage of weight lost. This result is possibly related to the fact that post-BS bone disease has a multifactorial etiology, including factors such as abnormalities in calciotropic and intestinal hormones, in addition to being influenced by the existence or absence of previous bone abnormalities. **Conclusion:** weight loss is a factor in BMD loss, but not the only one, and it is necessary to identify these other possible factors for the prevention and management of bone disease in patients undergoing SB. **Keywords:** bone mineral density; bone densitometry; bariatric surgeries.

OBESIDADE

1813

THE CHILDHOOD OBESITY AS A RISK FACTOR FOR EARLY PUBERTY IN CHILDREN: A SYSTEMATIC REVIEW

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Introduction: Childhood obesity is currently a serious public health issue worldwide. Data from the World Obesity Federation (2024) indicate that half of Brazilian children will be obese by 2035. Concurrently, childhood obesity is directly linked to the incidence of central precocious puberty (CPP), suggesting a nutritional impact on the hypothalamic-pituitary-gonadal (HPG) axis. Therefore, understanding obesity as a risk factor for CPP is crucial given its prevalence in society. **Objectives:** To categorize childhood obesity as a risk factor for early puberty in children. **Methods:** This systematic review without meta-analysis searched PubMed and the Virtual Health Library using the keywords "Obesity" AND "Puberty, Precocious". Filters included "free full text", publication date from 2019 to 2024, and "human studies". The research followed PRISMA protocol guidelines. Articles with available full texts indexed in the mentioned databases and concurrently addressing both themes were included. Studies not centrally focused on the relationship between the topics or that were reviews were excluded. **Results/Discussion:** Initially, 89 articles were identified; after screening titles and abstracts, 11 texts were reviewed. The review, based on observational studies, emphasizes the significant link between childhood obesity and CPP. Both overweight and obesity in childhood were associated with earlier puberty milestones in girls and partially in boys. Additionally, both peripheral and central fat accumulation appear to affect the HPG axis, inducing early puberty. Shi *et al.* (2022) demonstrate that obesity promotes metabolic changes related to substances like leptin and insulin, which may impact the HPG axis and contribute to fine-tuning puberty. Liu *et al.* (2021) observational study lists that overweight or obese children are nearly twice as likely to develop CPP compared to normal-weight children. Furthermore, in all studies analyzed, such as Liu *et al.* (2022) and Wei *et al.* (2020), there is confirmation that the causal relationship between obesity and early puberty remains poorly understood in boys. **Conclusion:** It is concluded that childhood obesity is a predisposing factor for early puberty in children. Thus, with the increasing rates of childhood obesity worldwide, concerns about the increasingly early onset of puberty rise. More conclusive studies are needed to clarify this relationship in males. **Keywords:** obesity; early puberty; child.

NEUROENDOCRINOLOGIA

1815

GIANT INFILTRATIVE PROLACTINOMA: CASE REPORT

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Case presentation: Woman, 33 years old, with a history of spontaneous galactorrhea that began at 16 years of age, secondary amenorrhea at 18 years of age and severe headache. During the investigation, hyperprolactinemia (serum prolactin greater than 1,000 ng/mL) was evident. On contrasted magnetic resonance imaging of the pituitary gland, an expansive lesion was seen, infiltrating the sphenoid sinus and posterior ethmoidal cells, promoting sphenobasilar osteolysis, with lowering of the pituitary gland and apparent posterior ethmoid cerebrospinal fluid fistulization, in close contact with the optic nerves and with the cavernous sinus bilaterally, measuring approximately 5.0 x 2.5 x 4.0 cm. Patient without visual field impairment and without loss of other pituitary axes. Normal IGF-1 (insulin-like growth factor type 1) levels. Treatment with cabergoline was started, in increasing doses, reaching 7 mg per week, due to the difficulty in normalizing prolactin. After 6 years of treatment, the reduction in prolactin reached levels close to normal in 2022, when she became pregnant, and we reduced the dose to 3.5mg per week. The pregnancy was carried out with hypertensive disease and gestational diabetes under control, vaginal delivery was uneventful, and the conceptus had no congenital malformations detected. **Discussion:** Despite the atypical, infiltrative and inflammatory nature of the image, the initial significant hyperprolactinemia and the difficulty of normalization with high doses of cabergoline lead to the main hypothesis of giant prolactinoma resistant to treatment with dopaminergic agonist, but with a delayed laboratory and imaging response, reaching levels that allowed conception, and with a reduction in the cellular component of the tumor. **Final comments:** Patient reaching normal prolactin levels after delivery with gradual dose reduction of cabergoline (currently 5 mg per week); evaluating the possibility of debulking to allow greater dose reduction, taking into account the exposure time to high doses of cabergoline. **Keywords:** prolactinoma; cabergoline; osteolysis.

ADRENAL E HIPERTENSÃO

1816

WHEN THE HEART SUFFERS, REMEMBER THE ADRENAL: INVERTED TAKOTSUBO SYNDROME, COULD IT BE PHEOCHROMOCYTOMA?

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Case presentation: A 65-year-old male patient was admitted to the cardiology emergency unit of a quaternary hospital with a diagnosis of myocardial infarction (MI) and cardiogenic shock. The patient experienced chest pain after physical exertion the day before. His past medical history was notable for hypertension, diabetes, hypothyroidism and smoking. Troponin levels showed an upward trend, and electrocardiogram reveled non-ST-elevation MI. Cardiac catheterization revealed no coronary arteries obstruction, but ventriculography indicated globally reduced left ventricular (LV) systolic function characterized by apical hyperkinesia and basal hypokinesia, consistent with inverted Takotsubo syndrome (TS). Computed tomography scan of the abdomen, performed due to abdominal distension, reveled a 8.4 x 6.6 x 6.8 cm left adrenal mass, with heterogeneous attenuation of 30 HU. Magnetic resonance imaging demonstrated hypersignal on T2 in the same place. Plasma normetanephrine levels were 1.5 times the upper limit of normal, supporting the diagnosis of pheochromocytoma (PHEO). Pre-surgical preparation included alpha and beta-blockers, followed by adrenalectomy. Pathological examination of the excised lesion was consistent with PHEO. **Discussion:** Takotsubo syndrome (TS), also known as broken heart syndrome, is a reversible cardiomyopathy that mimics MI. It is usually preceded by physical or emotional stress, with PHEO being a potential trigger. TS occurs in approximately 17% of patients with PHEO, is more common in younger women and is characterized by a severe condition, with hemodynamic instability, higher risk of complications and recurrence, and could be the first clinical manifestation. The diagnosis is made by ventriculography showing LV dysfunction with apical ballooning and basal hyperkinesia (classic and most common pattern), but it can present an atypical or inverted pattern, characterized by apical hyperkinesia and basal hypokinesia, as in the case described, and it is more common in patients with PHEO (prevalence of 30% *versus* 2.2% in TS due to other causes). Surgical removal of the PHEO prevents recurrences of the cardiac condition. **Final comments:** When encountering TS, particularly with an inverted pattern, it is crucial to consider PHEO as a possible etiology, given its significant morbidity and mortality, as well as the potential of surgical cure. **Keywords:** pheochromocytoma; Takotsubo syndrome; adrenal incidentaloma.

DIABETES MELLITUS

1817

DEMENTIA AND METFORMIN IN DIABETIC PATIENTS: A META-ANALYSIS

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Introduction: Dementia, characterized by cognitive decline across various domains, is predominantly represented by Alzheimer's disease. With an aging population, there is a significant increase in the incidence of dementia, impacting public health and the economy. Insulin resistance, common in type 2 diabetes, is associated with neurodegeneration, becoming a risk factor for dementia. Recent studies suggest that metformin, a common medication for type 2 diabetes, may have neuroprotective effects and reduce the risk of dementia. **Methods:** This review was performed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. A meta-analysis was conducted on studies examining the association between metformin use and the prevalence of dementia in diabetic patients. Electronic databases PubMed and SciELO were used to search for studies associating metformin use with dementia. The search was limited to humans and used the following medical subject headings and keyword search terms: (cognitive OR dementia) and (metformin). **Results:** Of the 696 records initially identified, nine studies were included in the meta-analysis, totaling over 1 million patients. The analysis revealed a statistically significant reduction in the prevalence of dementia among patients treated with metformin, with a relative risk of 0.85 (95% CI 0.74-0.99, p = 0.03), representing a 15% reduction in the risk of dementia. **Discussion:** The results are consistent with previous studies suggesting a protective effect of metformin against dementia. However, there are heterogeneities in the studies, such as drug dosage, patient follow-up, and characteristics of the studied populations. Some studies point to adverse effects of metformin, such as increased metabolic stress and vitamin B12 deficiency, but their conclusions may be limited by factors like diagnostic error and unassessed comorbidities. **Conclusion:** The meta-analysis demonstrated a beneficial effect of metformin in reducing the risk of dementia in diabetic patients. However, more randomized and controlled studies are needed to confirm these findings and better evaluate the adverse effects of metformin on the development of dementia. **Keywords:** metformin; dementia; type 2 diabetes mellitus.

NEUROENDOCRINOLOGIA

1818

HYPOGLYCEMIA TRIGGERED BY MUNCHAUSEN SYNDROME AFTER SUCCESSFUL PARTIAL PANCREATECTOMY FOR INSULINOMA

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Introduction: Insulinoma is a rare, insulin-secreting pancreatic neuroendocrine tumor, most commonly benign, solitary, sporadic, well differentiated and with a slight female predominance. The investigation of hypoglycemia requires a fasting test to exclude, among other causes, factitious hypoglycemia. **Clinical case:** A 27-year-old woman was admitted to the emergency room after seizure by hypoglycemic crisis (capillary blood glucose < 55 mg/dL). She had recurrent episodes of adrenergic/neuroglycopenic symptoms since the age of 14, occurring during fasting, with improvement after eating. After confirming Whipple's triad, a fasting test showed hyperinsulinemic hypoglycemia. Abdominal magnetic resonance showed a 1.4 cm nodule in the pancreas tail. Distal pancreatectomy was performed, confirming the diagnosis of insulinoma by immunohistochemistry. There was brief remission of the hypoglycemic episodes once they recurred two weeks later. As imaging tests did not show new pancreatic lesions, somatostatin analogue was begun, resulting in improvement for a few more weeks. Due to recurrent hypoglycemia and new seizures, she required continuous intravenous infusion of glucose during hospitalization. A new fasting test revealed hyperinsulinemic hypoglycemia. Auto-immune hypoglycemia was also excluded by negative anti-insulin antibodies. Insulinomatosis was also considered as potential etiology, but review of surgical specimens excluded this hypothesis. After 4 months of hospitalization, due to suspicious behavior, a review of her personal belongings revealed insulin vials and needles for injection. The patient confessed to applying insulin to simulate the symptoms, also revealing a history of childhood trauma and previous suicide attempts. After psychiatric evaluation, borderline personality disorder was identified, and Munchausen syndrome was considered. Since then, the patient did not require intravenous glucose with no recurrence of hypoglycemia. **Conclusion:** The investigation of hypoglycemia can be challenging, requiring appropriate diagnostic protocols. Even in patients who appear to have a well-defined diagnosis, as in our case with anatomopathological confirmation of insulinoma, it is always important to rule out factitious hypoglycemia. The incorrect diagnosis can lead to inappropriate invasive and surgical procedures with definitive consequences, such as exogenous pancreatic insufficiency and insulin-dependent diabetes mellitus. **Keywords:** hipoglicemia; insulinoma; Munchausen.

ADRENAL E HIPERTENSÃO

1819

UNILATERAL ADRENAL INFARCTION: A POTENTIAL COMPLICATION OF SEVERE COVID-19 INFECTION DURING PREGNANCY

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A 34-year-old woman presented in April 2024 with severe right flank pain radiating to the back, fever, nausea, and vomiting. Computed tomography (CT) revealed right renal lithiasis and a lobulated, heterogeneous, expansive process in the right adrenal gland with peripheral calcifications measuring 4.8 x 3.8 cm. She was treated for nephrolithiasis and underwent further evaluation of the adrenal incidentaloma. Biochemical evaluation ruled out pheochromocytoma and mild autonomous cortisol secretion. On physical examination, she did not exhibit signs of Cushing's syndrome or postural hypotension. Given the radiological characteristics of the lesion, she underwent right adrenalectomy in May 2024. Histopathological examination revealed extensive chronic diffuse infarction, fibrosis, and foci of calcification, forming 6.5 x 6.0 cm mass. The remaining adrenal gland represented approximately 20% of the total gland and showed no evidence of malignancy. Due to this unexpected histopathological finding, a directed medical history was obtained to identify possible causes of unilateral adrenal infarction. The patient reported that in 2020, she was pregnant and was hospitalized at another institution with a diagnosis of severe COVID-19 infection, and delivered a stillborn baby at 37 weeks gestation. She denied any history of thromboembolic events or previous miscarriages. Laboratory tests for thrombophilia were initiated. Unilateral adrenal infarction (UAI) is considered a rare clinical event, with unknown incidence rates. It is associated with hypercoagulable states, including pregnancy, thrombophilia, and severe SARS-CoV-2 infection. Notably, adrenal insufficiency is uncommon in these cases. The diagnosis and etiology of UAI can be challenging, and the appropriate therapeutic approach remains unclear. This case report highlights situations that may increase the occurrence of this clinical condition and encourages further research to establish more precise diagnostic and treatment algorithms. **Keywords:** adrenal; unilateral adrenal infarction; pregnancy.

NEUROENDOCRINOLOGIA

1820

EFFICACY AND ADVERSE EVENTS OF ADJUVANT STEREOTACTIC RADIOTHERAPY IN CUSHING'S DISEASE PATIENTS

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Introduction: Stereotactic radiotherapy (SRT) fractionated (FR) or in a single dose (radiosurgery, RS) may be indicated as adjuvant treatment in Cushing's disease (CD) in cases with remaining postoperative lesion aiming to control tumor volume and hormonal abnormalities. **Objectives:** To evaluate the efficacy (hormonal and tumor control) as well as frequency and type of adverse events of SRT in patients with CD who were submitted to previous pituitary surgery(s). Secondarily, differences in outcomes will be evaluated in relation to the radiotherapy subtype (FR *vs.* RS). **Patients and methods:** Retrospective study was performed in a single reference center. Between 1998 and 2023, 44 patients with CD, median/range of 31 years (11-71; at diagnosis), 84% female, underwent SRT. Of these 44 cases, 64% (n = 28) had macroadenomas at diagnosis (10-52 mm), with 39% having adjacent invasions. SRT was indicated adjuvantly after surgical failure in 59% of cases (n = 26) and in 41% (n = 18) after recurrence. Before SRT, pituitary MRI showed visible tumor in 77% (n = 34) of cases, heterogeneous uptake in 5 and absence of tumor in 5 cases. FR was performed in 22 cases (50%) and the other half of the patients underwent RS. The median dose used was 2,500 cGy (1,200-6,000). After SRT, the average follow-up was 92.4 ± 70.2 months. **Results:** Hormonal remission, defined by the normalization of 24-hour urinary free cortisol without the use of medication, occurred in 60% of cases, 18 months (2-77) after SRT. Until remission was achieved, 65% of patients used some medication, the majority being ketoconazole followed by cabergoline. Tumor control, defined by stability or reduction in tumor diameter by MRI, occurred in 89% of cases. Regarding adverse events, isolated or combined hypopituitarism occurred in 45% of cases, 28 months (3-108) after SRT, with GH followed by LH/FSH deficiencies being the earliest and most prevalent types. Meningiomas were detected in two cases after SRT. One case had a radiological diagnosis of radionecrosis 8 years after SRT. There was no significant difference between efficacy and hypopituitarism between the two forms of SRT (FR and RS). **Conclusions:** Post-surgical adjuvant SRT in this series of patients with CD showed an important effect on tumor control and hormonal control in 60% of cases. No differences were found between fractionated or single-dose SRT, although this study was limited by a relatively small sample size. **Keywords:** Cushing's disease; radiotherapy; radiosurgery.

ENDOCRINOLOGIA PEDIÁTRICA

1821

CASE REPORT: A RARE COEXISTENCE BETWEEN CONGENITAL ANALBUMINEMIA (CAA) AND CHOPRA-AMIEL-GORDON SYNDROME (CAGS)

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Case presentation: Male patient, 14 months old, non-consanguineous parents, with congenital analbuminemia (CAA) due to a pathogenic heterozygous deletion in the ALB gene and a pathogenic heterozygous variant in the gene associated with Chopra-Amiel-Gordon syndrome (CAGS). Maternal history of controlled hypertension and gestational diabetes. Born at 34 weeks and 5 days due to intrauterine growth restriction and fetal distress, with a birth weight of 1885g. Developed neonatal epilepsy due to hypoxic-ischemic encephalopathy, severe dysphagia, requiring 45 days in the neonatal ICU. Laboratory findings showed hypocalcemia, hypoalbuminemia, hypoproteinemia, dyslipidemia, and genetic abnormalities. Referred to the rare disease outpatient clinic after hospital discharge, where he has been followed up to the present. **Discussion:** This is a rare case of CAA (1:1,000,000), a condition that occurs without ethnic or sex predilection, associated with CAGS, an ultra-rare autosomal dominant disease. The diagnosis was confirmed by identifying a 5.3 Mb deletion at locus 4q13.3 and a pathogenic heterozygous variant in the ALB gene. CAA results in low albumin levels, leading to complications such as edema and dyslipidemia with elevated LDL. The association with CAGS, indicated by delayed neuropsychomotor development, intellectual disability, speech delay, and facial dysmorphism, makes the case more complex and increases susceptibility to infections, nonspecific ophthalmologic and cerebral abnormalities. Clinical management includes intravenous calcium infusions due to episodes of hypocalcemia, cardiac monitoring due to the high risk of cardiovascular events, levothyroxine administration for congenital hypothyroidism, antiepileptics for seizure control, vitamin D and iron supplementation, and tube feeding due to severe dysphagia. Differential diagnosis includes conditions associated with hypoalbuminemia, such as glomerulonephritis, nephrosis, ascites, systemic lupus erythematosus, intestinal lymphangiectasia, and protein-losing enteropathies. **Final comments:** This report highlights the clinical manifestations, diagnostic methods, therapeutic management, genetic aspects, and pathogenic variants of a rare case of coexistence between CAA and CAGS. Emphasis is placed on increasing the suspicion of the condition to promote early diagnosis and appropriate management to provide quality of life for the patient. **Keywords:** congenital analbuminemia (CAA); Chopra-Amiel-Gordon syndrome (CAGS); rare coexistence.

NEUROENDOCRINOLOGIA

1822

CHRONIC PERIPHERAL NEUROPATHY IN LIMBS SECONDARY TO INSULINOMA: A CASE REPORT

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Case presentation: A 16-year-old male patient had frequent muscle spasms and progressive lower limbs (LL) paresis for a year, along with nighttime confusion and aggressiveness, resolved by IV glucose. He had no sensory or sphincter abnormalities, but electromyography indicated motor polyneuropathy in the LL. Abnormal serum insulin and C-peptide levels during hypoglycemia confirmed an insulinoma diagnosis, identified via endoscopic ultrasound (2.2 x 1.3 cm) at the pancreatic body-tail transition. Surgical removal (enucleation) and abdominal lymph node resection revealed a grade 2 neuroendocrine tumor, resolving hypoglycemia and spasms. Two years post-op, the patient reports persistent reduced LL muscle strength and partial improvement in peripheral neuropathy. Tests also showed reduced compound muscle action potential amplitude and increased distal motor latencies in the ulnar nerves, with chronic neurogenic changes in muscles innervated by the ulnar and median nerves. **Discussion:** Pre-operative tumor study via non-invasive magnetic resonance imaging was insufficient to detect the peripancreatic and perisplenic tumor location. The diagnosis was provided by Endoscopic ultrasound, an invasive method with 75% sensitivity for localizing insulinomas. Prolonged and severe hypoglycemia can affect neurons, leading to ATP depletion, loss of ion homeostasis, excitotoxicity, and mitochondrial damage, impairing energy production within the axon itself. Histologically, it is unclear whether axonal degeneration or demyelination occurs first. Neuroglycopenia predominantly affects motor axons, resulting in distal axonopathy, as motor fibers are thicker and regenerate more slowly than sensory fibers. Clinical analyses suggest hypoglycemia caused the patient's peripheral neuropathy and led to neuronal death, as even after removing the causal factor, motor dysfunction persisted. Poor adherence to physiotherapy may have contributed to the chronic condition. Months of complex B supplementation did not relieve sensory or motor symptoms. **Final comments:** Chronic peripheral neuropathy secondary to insulinoma is rare, as is the predominance of symptoms in the lower limbs, with sparse literature on the topic. Prompt surgical diagnosis and treatment are essential to prevent permanent neural damage from hypoglycemia and ensure improved patient quality of life. **Keywords:** insulinoma; hypoglycemia; peripheral neuropathy.

NEUROENDOCRINOLOGIA

1823

BIOINFORMATICS EVALUATION OF 51 GENES INVOLVED IN PITUITARY ORGANOGENESIS IN PATIENTS WITH CONGENITAL HYPOPITUITARISM

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Introduction: In a cohort of patients with congenital hypopituitarism (CH) followed in a single Brazilian center, 20% presented molecular diagnosis screened by Sanger and Large-Scale sequencing (panel and exome). A bioinformatics approach in mice identified 51 genes involved in pituitary organogenesis, including cilia formation, amino acid metabolism and epigenetic regulation. **Objectives:** To evaluate 51 genes described by bioinformatics on available exomes of patients with CH using the Franklin by genoox platform to search for allelic variants responsible for the phenotype. **Methods:** Among 393 patients with CH, 220 remain in follow-up and 85 of them had available exomes for analysis. The libraries were prepared using Agilent and Roche kits and sequenced using Hi-Seq (Illumina). The variants were called following GATK best practices, using Haplotypecaller and genome Hg38 version. They were classified in the Franklin plataform (https://franklin.genoox.com/clinical-db/home) looking for allelic variants present in exonic regions, splicing sites and synonyms variants with a Minor Allele Frequency (MAF) < 1% selected from public databases: (American) gnomAD (https://gnomad.broadinstitute.org/) and (Brazilian) ABraOM (https://abraom.ib.usp.br/). Exomes that did not pass the platform's initial quality control and variants that did not reach an adequate confidence level (low/medium confidence: VAF < 50%) were excluded. The remaining variants were classified according to the ACMG criteria. **Results:** Among 85 exomes, 81 have been evaluated so far. The median age at the diagnosis was 12.2 years and the current one is 33.8 years. Out of 81 exomes, 16 did not pass the initial quality control. A total of 160 high-confidence variants, 94 were predicted to be benign, 19 probably benign and 47 Variants of Uncertain Significance (VUS) identified in the genes: *ADAMTS3, ARID1B, ARID2, ASXL1, ATG16L1, ATP11A, BRD2, CC2D2A, CHTOP, DHX35, EZR, JARID2, KAT14, KIFBP, MAD2L2, MBTD1, MORC2A, NSUN2, NPAT, NXN, PLXNB2, PRKAB1, PRRC2B, PSAT, RPGRIP1L, SH3PXD2A, SMG9, SPTBN1* in 29 patients. Of these, 5 families had members without CH carrying the same variants as the proband. In 7 patients, no variant was identified in the investigated genes. **Conclusion:** Among 65 patients with exomes evaluated, the bioinformatics approach was used to find genes potentially causing CH. No pathogenic variant was found and VUS will be segregated in families to promote a change in their classification. **Keywords:** congenital hypopituitarism; pituitary organogenesis; bioinformatics.

MISCELÂNEA

1824

BONE LESIONS AND HYPOGONADISM: A POEMS SYNDROME CASE REPORT

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Clinical case: A 68-year-old man presented a 5-year history of back pain and fatigue. During a previous examination, multiple bone lesions were identified and he was referred to our outpatient clinic for further investigation. On physical exam, he had bilateral symmetric gynecomastia with rarefaction of body hair and some hyperpigmented skin lesions with cutaneous angiomas, associated with global reduction of muscle strength. Except for a previous diagnosis of primary hypothyroidism, there was no additional relevant family or personal medical history. Additional exams showed hypogonadotropic hypogonadism, subnephrotic proteinuria, serum protein electrophoresis with a monoclonal peak of 0.5 g/dL in the gammaglobulin region, high serum free light chains (lambda 99.4 mg/L [reference range, 5.7-26.3 mg/L] and kappa 56.5 mg/L [3.3-19.4 mg/L]), serum immunofixation positive for IgG-lambda and a demyelinating motor-sensitive polyneuropathy on electroneuromyography. There was no anemia, renal dysfunction or hypercalcemia. Alkaline phosphatase was also normal. A bone marrow biopsy confirmed 60% involvement of plasma cells with lambda light chain restriction. A diagnosis of POEMS (Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal plasma cell disorder, Skin changes) syndrome was made. After evaluation by the hematology team, he was started on systemic chemotherapy. **Discussion:** Here, we present a rare disorder that is often underdiagnosed due to its varied and complex clinical manifestations. Endocrine abnormalities occur in 84% to 92% of cases during the disease's progression, with hypogonadism being the most common endocrinopathy, affecting 67%-89% of patients. This is followed by adrenal insufficiency (16%-33%) and elevated prolactin levels (5%-20%). Although hypothyroidism and diabetes mellitus are also common, their high prevalence in the general population excludes them from diagnostic criteria. **Conclusions:** This clinical case highlights the importance of considering POEMS syndrome as a differential diagnosis in patients presenting with endocrine abnormalities alongside other systemic issues to ensure accurate diagnosis and appropriate treatment. **Keywords:** POEMS syndrome; bone lesions; hypogonadism.

MISCELÂNEA

1825

PASIREOTIDE IN THE TREATMENT OF CUSHING'S DISEASE: SYSTEMATIC REVIEW

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Introduction: Cushing's disease (CD), the main cause of endogenous hypercortisolism in adults, results from pituitary adenomas that secrete adrenocorticotropic hormones (ACTH) or prolonged use of corticosteroids. The high morbidity and mortality of the pathology requires rapid intervention. Transsphenoidal adenomectomy is the preferred treatment. Non-surgical cases may use alternative therapies. Pasireotide, a somatostatin analogue drug, activates receptors present in many corticotroph adenomas and mitigates the production of ACTH, helping to control hypercortisolism. **Objective:** Evaluate the effectiveness of pasireotide in the treatment of CD. **Materials and methods:** A systematic review was conducted using the Cochrane database in 2024, employing the DeCS descriptors "Cushing's disease" and "pasireotide". These terms were combined using the boolean operator AND, resulting in identification of 14 scientific articles published in the last 10 years, with no language restrictions. **Results:** Pasireotide treatment for CD consistently improves symptoms and biochemical parameters over time. Long-term studies show significant reductions in urinary free cortisol (UFC) levels, with many achieving UFC control or normalization after months of therapy. Pasireotide reduces physical symptoms like facial flushing and skin stretch marks, enhancing patients quality of life. Additionally, sustained cortisol reduction leads to long-term decreases in body weight and diastolic blood pressure. In some studies, patients achieving total control of UFC showed clinically significant decreases in total cholesterol and LDL cholesterol, but even those patients who didn't achieve total control of UFC revealed reductions in weight, BMI, waist circumference. Studies have also reported normalized menstrual cycles and reduced hirsutism. Furthermore, hyperglycemia is the most common adverse effect of pasireotide, manageable with antidiabetic drugs. Other side effects cited include transient gastrointestinal discomfort (e.g., diarrhea, nausea), cholelithiasis, headache, bradycardia and elevation of liver enzymes. Pasireotide is a promising option for CD patients ineligible for surgery or unresponsive to other therapies, with well-understood safety and adverse effect profiles. **Conclusion:** Pasireotide is effective and well tolerated for the treatment of CD, improving symptoms and biochemical parameters over time. Despite presenting some side effects, these are well elucidated and can be managed. **Keywords:** Cushing's disease; pasireotide; hypercortisolism.

NEUROENDOCRINOLOGIA

1827

NEUROSARCOIDOSIS: A DIFFERENTIAL DIAGNOSIS OF SELLAR LESIONS

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Neurosarcoidosis (NS) is a rare disease, and its diagnostic criteria were systematized in 2018 by the Neurosarcoidosis Consortium Consensus Group. A 43-year-old woman was referred for evaluation of an expansive sellar lesion and hypopituitarism, both diagnosed during investigation of a subtle right-sided visual loss. Her medical history included left eye optic neuritis that manifested three years earlier. There was a recent episode of arthritis in large joints and weakness in the lower limbs, which resolved after a short course of corticosteroids. She also reported amenorrhea and a newly diagnosed diabetes. Laboratory tests revealed hypocortisolism, central hypothyroidism, and hypogonadotropic hypogonadism. Brain and orbital magnetic resonance imaging (MRI) showed a hyper-enhanced, diffusely enlarged, lobulated pituitary gland with extension towards the hypothalamus, circumferentially involving the right optic nerve, along with stalk thickening. The left optic nerve was thickened, with no clear evidence of continuity with the sellar lesion. Clinical and imaging findings suggested an inflammatory etiology. There was no noticeable skin involvement or peripheral lymphadenopathy. To further investigate, a chest tomography was performed, indicating mediastinal lymph node enlargement. Biopsy of one lymph node was positive for non-caseating granulomas and negative for acid-alcohol fast bacilli and fungi. Cerebrospinal fluid analysis was unremarkable. Serum IgG4 concentrations were negative, while the level of angiotensin-converting enzyme was slightly elevated. Given these findings, the presumptive diagnosis of neurosarcoidosis was made, and methotrexate was initiated due to the patient's uncontrolled diabetes, which limited the use of high-dose glucocorticoids. A follow-up MRI after two months of treatment revealed a reduction in pituitary size by 69%, indicating a positive initial response to therapy (one-year interval between images). When neurosarcoidosis is suspected, a careful evaluation is required to assess involvement of other organs (such as skin, lungs, or lymph nodes) while ruling out other possible diagnoses. As some neuroanatomical regions can make biopsy difficult or involve inherent risks, the most feasible site can be considered. This case illustrates the diagnostic challenge of neurosarcoidosis mimicking sellar lesions and underscores the importance of awareness among endocrinologists regarding this disease. **Keywords:** neurosarcoidosis; gland, pituitary; optic nerve diseases.

NEUROENDOCRINOLOGIA

1829

PLURIHORMONAL (TSH-GH-PROLACTIN SECRETING) PIT-1-POSITIVE PITUITARY MACROADENOMA WITH CURE AFTER PREGNANCY

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Case presentation: A 24-year-old female patient with a history of headache, galactorrhea and amenorrhea for 3 years, elevated prolactin (PRL) levels, and a 2.0 x 1.8 cm pituitary lesion was treated for 1 year at another institution with bromocriptine for suspected prolactinoma without response, and subsequently, was referred to a specialized service for surgery. At this time, she reported palpitations, heat intolerance, and enlargement of extremities, along with diffuse goiter, tachycardia, hypertension, and acromegalic facies on physical examination. Laboratory tests showed elevated free T4 (FT4), insulin-like growth factor type I (IGF-I) and PRL levels (FT4 2.8 ng/dL, IGF-I 2.9x the upper limit of normal, PRL 131.17 ng/mL), with a normal TSH (1.87 mUI/mL), confirming central hyperthyroidism and acromegaly. After diagnosis, methimazole and propranolol were started to control hyperthyroidism, and the patient underwent transsphenoidal surgery, which confirmed a pituitary adenoma positive for growth hormone (GH), TSH, and PRL. Post-surgery, she had a residual lesion of 1.7 x 1.6 cm with normalization of the thyrotrophic axis but maintained elevated IGF-I and PRL levels, leading to treatment with octreotide LAR and subsequently cabergoline, resulting in normalization of PRL but IGF-I levels remained elevated. During this time, she had an unplanned pregnancy, and all medications were stopped. After delivery, all laboratory tests normalized, and MRI showed no visible tumor. She currently remains with cure criteria 7 years after pregnancy. **Discussion:** Plurihormonal pituitary adenomas represent 10%-15% of all functioning pituitary adenomas. The most frequent hormonal associations are with prolactin and GH. They are known to be aggressive in terms of size, growth rate, invasiveness, and recurrence. There are no cases in the literature of plurihormonal PIT-1 adenomas that have shown clinical, radiological, and laboratory resolution after pregnancy. **Final comments:** Plurihormonal PIT-1 adenomas are rare tumors, and few cases of pregnancy have been reported in these patients. There are potential risks of the disease and its pharmacological treatments for both the child and the mother, highlighting the importance of contraception during investigation and treatment. The above case is the first described in the literature of a plurihormonal PIT-1 adenoma that was cured after pregnancy. **Keywords:** plurihormonal pituitary adenoma; PIT1 adenoma; pregnancy.

ADRENAL E HIPERTENSÃO

1832

LATE SURGICAL TREATMENT OF PRIMARY HYPERALDOSTERONISM: A CASE REPORT

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Introduction: Primary hyperaldosteronism (HpAPr) is characterized by excessive production of aldosterone by the glomerulosa layer of the adrenal gland cortex, independent of the renin-angiotensin system or hypothalamic-pituitary-adrenal axis. It is an endocrine disease that manifests itself as arterial hypertension that is difficult to control and associated with a higher incidence of cardiovascular events when compared to essential hypertension with the same blood pressure levels. In 75% of cases they are attributable to idiopathic adrenal hyperplasia or aldosterone-producing adenomas. For unilateral disease, surgery offers the possibility of biochemical-hormonal normalization and remission/improvement of hypertension, preferably through video surgery. The objective is to report the treatment by retroperitoneoscopic adrenalectomy of a patient with HpAPr and five high-risk pregnancies due to severe hypertension. In the last one, in 2019, she suffered from severe pre-eclampsia with intrauterine growth restriction, requiring an emergency cesarean. In the postpartum period, diffuse abdominal pain, with type B aortic dissection occurred. Endovascular correction, using endoprotheses in the thoracic aorta up to the celiac trunk and in the infrarenal aorta with extension to the iliac aorta. In 2022, hypertension and severe hypokalemia, confirms HpAPr. Retroperitoneoscopic left adrenalectomy was performed. The patient did well postoperatively with a reduction in the average daily antihypertensive maintenance doses. **Conclusion:** Primary hyperaldosteronism should be investigated in cases of resistant hypertension, however, a 10-year delay in diagnosis is estimated. In cases of unilateral production, retroperitoneoscopic adrenalectomy is a minimally invasive approach option, avoiding the establishment of target organ lesions. **Keywords:** hyperaldosteronism; posterior retroperitoneal adrenalectomy; complications of hyperaldosteronism.

OBESIDADE

1834

CASE REPORT: DIAGNOSIS OF POSTPRANDIAL HYPERINSULINEMIC HYPOGLYCEMIA WITH THE ASSISTANCE OF SUBCUTANEOUS DEVICE FOR CONTINUOUS GLUCOSE MONITORING

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Case presentation: A 40-year-old woman with prediabetes and previous Roux-en-Y gastric bypass 12 years ago as a treatment for class III obesity, with further complete weight regain, presented with a clinical history of tremors, palpitations, sweating, blurred vision, and weakness for 5 years. Episodes occurred within 3 hours after meals, improving after carbohydrate intake. During hospitalization, hypoglycemia was detected during the reported symptoms, with insulin levels (18.4 µU/mL) and C-peptide (3.01 ng/mL) within normal limits. A 72-hour fasting test showed no hypoglycemia, and contrasted abdominal MRI revealed no pancreatic abnormalities or suggestive insulinoma findings. Thyroid and adrenal function tests were normal. There was recent weight gain. Suspecting postprandial hyperinsulinemic hypoglycemia (PpHH), subcutaneous device for continuous glucose monitoring was implanted to assess interstitial glucose levels, with success on detecting periods of hyperglycemia followed by symptomatic hypoglycemia 1 to 2 hours after meals. Dietary modifications were made to increase fiber, protein, and complex carbohydrates intake while reducing simple carbohydrates, and acarbose 50 mg was started in the morning. Following these measures, there were no further episodes of hypoglycemia or recurrence of related symptoms. **Discussion:** Formerly known as late dumping syndrome, PpHH is a rare complication in bariatric surgery patients, occurring in 0.1% to 0.3% of cases, more commonly in those undergoing gastric bypass. It typically occurs 1 to 3 hours after a carbohydrate-rich meal and is associated with hypoglycemia, distinguishing it from dumping syndrome, which occurs earlier and is not associated with hypoglycemia. First-line therapy includes dietary adjustments and medications such as acarbose, which delays carbohydrate absorption. Pancreatic resection surgery is not recommended as there is no pancreatic hyperplasia. **Final comments:** Hypoglycemia in non-diabetic adults requires thorough investigation due to significant morbidity and potential neoplastic causes. With clinical history and glucose curve data, determining the etiology can be facilitated. In post-bariatric surgery patients, PpHH should be considered as a differential diagnosis, typically with good resolution with appropriate management. **Keywords:** postprandial hyperinsulinemic hypoglycemia; continuous glucose monitoring; bariatric surgery.

OBESIDADE

1836

ANALYSIS OF SOCIAL PROFILE AND LIFESTYLE HABITS ASSOCIATED WITH THE PREVALENCE OF CLINICAL SIGNS OF METABOLIC SYNDROME AMONG MEDICAL STUDENTS IN COMPARISON TO OTHER HEALTH-RELATED MAJORS

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Introduction: Metabolic syndrome (MS) represents a set of clinical and laboratory signs that lead to an increase in cardiovascular risk and the risk of developing type II diabetes mellitus. It is known that such comorbidities can be caused by unhealthy lifestyle habits, which, in turn, are a consequence of strenuous routines, such as the daily routine of medical students. **Objective:** the aim of this study is to analyze a possible association between the impact of these students' routines and the development of metabolic syndrome. **Methods:** this article is an analytical, observational, individualized and cross-sectional research, which sought to verify the prevalence and a possible association of clinical signs of MS with the routine and lifestyle habits of university students in Health-Related majors. Students duly enrolled in the 4th year of Health-Related majors were evaluated; students undergoing pharmacological treatment for obesity and pregnant students were excluded from the research. **Results:** after the analysis, it was not possible to establish a direct correlation between any of the Health-Related majors, including the medical one, and the signs of MS, although indirect associations were observed between certain indicators and the presence of these signs, such as *acanthosis nigricans* and an increased body mass index. **Conclusion:** despite the extensive workload and associated poor lifestyle habits, it was not possible to demonstrate a significant statistical correlation between the clinical signs of MS and Health-Related majors. Further investigation on this topic is needed, expanding the sample and using a research design with a higher level of evidence. **Keywords:** metabolic syndrome; obesity; diabetes mellitus; students; medicine.

NEUROENDOCRINOLOGIA

1837

EVALUATION OF PROLACTIN LEVELS IN WOMEN WITH BREAST TUBERCULOSIS: A MARKER FOR RECURRENCE RISK?

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Introduction: Tuberculous mastitis is a rare manifestation of tuberculosis, accounting for approximately 0.1% of surgically treated breast lesions. The predominance of cases in fertile-age and breastfeeding women, alongside the breast stimulation due to inflammation per se, raised an interest in examining prolactin (PRL) levels in those patients and correlating it with clinically important outcomes. **Methods:** This is a retrospective cohort study with 320 women with breast tuberculosis, from 2015-2024, who had PRL values measured throughout the follow-up. All patients had the diagnosis of tuberculous mastitis based on direct detection methods for the agent *Mycobacterium tuberculosis* or a positive therapeutic response to the rifampicin-isoniazid-pyrazinamide-ethambutol (RIPE) tablets after at least 9 months of treatment. Mann-Whitney U and chi-square tests were used to compare factors related to the chance of recurrence or cure after treatment. The $p < 0.05$ was considered statistically significant. **Results:** From the 320 patients, 41 (12,8%) had hyperPRL (PRL > 26,5 ng/mL, the upper limit of normality for the method). Of these 41 patients, 5 had macroprolactinemia, 9 prolactinomas (7 with micro and 2 with macroadenomas), 2 were pregnant and 1 was breastfeeding at initial evaluation, 1 became pregnant during treatment in the 8th month of RIPE. Considering only the women with hyperPRL, the mean initial PRL value was 66.08 (range, 27,8-279 ng/mL), the mean highest PRL level reached was 132,68 (27.8-687.1 ng/mL), 11 (26,8%) were treated with cabergoline (CAB) due to symptoms (i.e. galactorrhea, important breast pain or tenderness), and 19 (45%), 5 (12%), 2 (4%) had treatment response at 9, 12, 18 months of RIPE respectively. Among patients with more than one prolactin measured throughout follow-up and without CAB treatment 41% (7/17) normalized PRL. For the patients with hyperPRL, the initial PRL value did not statistically differ between recurrence and cure groups ($p = 0.36$). Moreover, no statistical difference was identified regarding the risk of recurrence between those who received or didn´t receive CAB treatment ($p = 0.24$) and those who normalized or didn´t normalize PRL levels throughout the follow-up ($p = 0.3$). **Conclusion:** HyperPRL is frequent in breast tuberculosis and should be treated when bothersome symptoms are present. However, it should not be seen as an isolated risk factor for recurrence risk. **Keywords:** hyperprolactinemia; tuberculous mastitis; granulomatous mastitis.

TIREOIDE

1838

CARDIOMYOPATHY DUE TO HYPERTHYROIDISM FROM GRAVES' DISEASE IN A YOUNG PATIENT

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Case presentation: A 37-year-old man presented with palpitations, sweating, weight loss, exertional dyspnea, and dizziness. He sought care from a reference cardiology service and was diagnosed with cardiomyopathy secondary to hyperthyroidism, specifically Graves' disease. During the investigation, other causes of cardiomyopathy were ruled out. Physical examination revealed a diffuse goiter and the absence of orbitopathy. Laboratory tests confirmed hyperthyroidism with suppressed thyroid-stimulating hormone (TSH), elevated free thyroxine, and positive thyroid receptor antibody. Echocardiography revealed eccentric left ventricular hypertrophy, moderate diastolic dysfunction, increased left atrial dimensions, and a high probability of pulmonary hypertension (pulmonary artery systolic pressure of 48 mmHg). Thyroid ultrasound showed an enlarged and heterogeneous gland consistent with diffuse thyroidopathy associated with goiter. Initial treatment included enalapril, carvedilol, and methimazole. The patient remained symptomatic for three months despite methimazole doses of 40 mg/day. With TSH still suppressed, definitive treatment with radioactive iodine was indicated. Three months after radioactive iodine treatment, the patient showed improvement in symptoms and thyroid function, characterized by weight gain, absence of dyspnea, and improved blood pressure levels. **Discussion:** This case highlights the atypical manifestation of hyperthyroidism in a young patient, without previous comorbidities, presenting with cardiomyopathy secondary to Graves' disease. Approximately 1% of patients with hyperthyroidism develop secondary cardiomyopathy, which can be a potentially lethal condition in the form of dilated cardiomyopathy. Graves' disease is the most common cause of hyperthyroidism associated with thyrotoxic cardiomyopathy, although the diagnosis is one of exclusion. Cardiac structural and functional changes are reversible upon achieving euthyroidism. Antithyroid drugs are the first line of treatment, but radioactive iodine might be an important option in refractory cases. **Final comments:** This case underscores the importance of investigating atypical manifestations of Graves' disease, such as cardiomyopathy, and early treatment to promote the reversibility of cardiac changes. Treatment with methimazole followed by radioactive iodine resulted in clinical and laboratory improvement for the patient. **Keywords:** Graves' disease; hyperthyroidism; cardiomyopathy.

OBESIDADE

1839

THE RELATIONSHIP BETWEEN OVERWEIGHT AND OBESITY AND THE SLEEP PROFILE OF CHILDREN AND ADOLESCENTS IN TWO CITIES IN THE SOUTH OF BAHIA, BRAZIL

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Introduction: Obesity in children and adolescents is a serious health problem, with a high financial cost in terms of treatment and its complications. In view of this, sleep quality has been shown to be an important factor associated with obesity. **Objective:** To identify the sleep characteristics children and adolescents with obesity in cities in the south of Bahia. **Materials and methods:** This was a case-control study in two cities in the interior of Bahia, between December 2022 and December 2023. The sample consisted of children and adolescents of both sexes, aged between 5 and 18 years. Anthropometric data was collected, such as body mass index (BMI), Abdominal Circumference (AC), Waist Circumference (WC) and the Children's Chronotype Questionnaire was applied to assess sleep quality. **Results:** The sample consisted of 250 children/adolescents, divided into 125 controls (eutrophic) and 125 cases (overweight/obese). 112 boys and 138 girls aged between 5 and 18 participated. With regard to sleep quality, girls (29.7%) had lower sleep quality than boys (18.8%). In addition, around half of the sample (50.4%) had a sleep time that was not recommended for their age group. When Total Weekly Sleep Time was analyzed, overweight individuals slept significantly less than normal-weight individuals (P = 0.008). However, sleep quality, recommended sleep time and sleep latency showed no significant differences between the groups. In relation to chronotype, older age was associated with a later Midpoint of Sleep on non-school days (P = 0.000), high BMI (P = 0.026), AC (P = 0.011) and WC (P = 0.006). In the morning/evening scale, 61.6% of the sample was of the afternoon type, with no cases of morning type. It was observed that the more afternoon-type children, the higher their BMI (P = 0.002), AC (P = 0.001) and WC (P = 0.003). **Conclusion:** In conclusion, children/adolescents who were overweight slept less than those who were normal weight. Thus, reduced sleep time is associated with overweight and obesity in children and adolescents in cities in the interior of southern Bahia. Therefore, it is necessary to carry out interventions to promote healthy sleep habits in this population group. **Keywords:** obesity; chronotype; children.

ADRENAL E HIPERTENSÃO

1840

APPROACH TO PHEOCHROMOCYTOMA IN THE UNIFIED HEALTH SYSTEM

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Male patient, 56 years old, farmer, referred to an endocrinologist due to a tumor in the right adrenal, seen on an abdominal CT, requested due to a complaint of pain in the right flank for 1 year. Previous diagnosis of epilepsy, resistant systemic arterial hypertension and type 2 diabetes mellitus. During a return visit, he presented with a paroxysmal crisis associated with a hypertensive peak, and was referred to the emergency room. He had metanephrine levels in 24-hour urine greater than 5,000 pg/mL, and normal levels of cortisol and androgens. The CT showed a solid lesion in the right adrenal, well-defined, low in fat (density of 41 HU), heterogeneous, measuring 10.4 cm x 9.9 cm x 9.3 cm, with an absolute "wash out" of less than 60%. Left adrenal gland unchanged. No evidence of other lesions suggestive of neoplasia or metastasis. The diagnosis of Pheochromocytoma was considered and a discussion was held between the endocrinology and urology teams, with hospitalization being decided for pre-operative preparation. After alpha and beta blockade, the patient was ready for adrenalectomy. The surgical procedure was uneventful. One month after surgery, the patient had glycated hemoglobin of 4.4%, normal home blood pressure measurement and did not report new paroxysm attacks. Pathology result compatible with Pheochromocytoma, without extra-glandular extension, absence of angio-lymphatic embolization and without perineural infiltration. New dosage of metanephrines in 24-hour urine one month after surgery within normal limits. Pheochromocytoma is a rare neoplasm, secreting catecholamines, more common in the fourth to fifth decade of life. In most cases, the tumor is discovered incidentally on imaging tests. Resistant systemic arterial hypertension and type 2 diabetes mellitus are directly related and may regress after removal of the neoplasm. The diagnosis of malignant pheochromocytoma is based on documentation of metastatic disease. Surgical removal does not always lead to a cure for the disease and the strategy for postoperative surveillance must be individualized. Untreated pheochromocytomas cause early mortality due to renal, cardiac, cerebral and vascular complications. Clinical preparation is essential for the success of surgical treatment, and to provide the patient with a better quality of life with a lower risk of complications. **Keywords:** pheochromocytoma; adrenal; catecholamines.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1841

46, XX TESTICULAR DISORDER OF SEXUAL DEVELOPMENT: A CASE REPORT

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Introduction: The diagnosis of 46 XX testicular sex differentiation disorder or the XX male syndrome is a rare genetic cause of infertility in phenotipic males. The sex-determining region Y (SRY) gene is found in the Y chromossome, that results in testicular development, testosterone production and a male phenotype. The main cause of this syndrome is the mistaken crossing over between the pseudo-autosomal regions of the X and Y chromosomes, leading to the formation of an X gamete with SRY. **Case description:** Male patient, 50 years old, born in Rio de Janeiro, married for 27 years, no children, with gynecomastia since the age of 20. He sought medical assistance at a basic health unit in 2014 to clarify his gynecomastia. The medical assessment revealed a micropenis, voluminous gynecomastia (Tanner V), bilaterally reduced testicle volume, hair thinning and a gynecoid pattern of pubic hair. Hypergonadotropic hypogonadism was characterized in the laboratory by high LH and FSH and repeatedly low testosterone levels, treatment with testosterone cypionate was started, metabolic monitoring and corrective surgery for the gynecomastia. Test results: Figure 1. Karyotype - GTG banding technique and karyotyping according to ISCN, 2013. Fluorescence *in situ* hybridization (FISH) technique using the SRY probe. The FISH technique identified two green signals corresponding to the centromere of the X chromosomes, as well as a red signal corresponding to the presence of the SRY region. **Conclusion:** 46 XX testicular sex differentiation disorder is a rare condition in which testicular development occurs in the absence of the Y chromosome. In the case reported, the patient in question already had clinical signs of hypergonadotropic hypogonadism associated with gynecomastia and infertility, which led the patient to seek medical attention late due to embarrassment related to gynecomastia. **Keywords:** hypogonadism; infertility; gynecomastia.

METABOLISMO ÓSSEO E MINERAL

1842

PRIMARY HYPERPARATHYROIDISM DUE TO PROBABLE GIANT PARATHYROID CARCINOMA: CASE REPORT WITH FATAL OUTCOME

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Case presentation: A 55-year-old female, admitted for investigation of progressive proximal muscle weakness in upper and lower limbs with bed restriction, weight loss, low-trauma fractures (right clavicle, costal arches and left arm), deformities and bone pain, softening tooth, hyporexia, constipation and dyspnea. On physical examination, she was emaciated, pale, dehydrated, using oxygen, bone deformities (clavicle, ribs and spine), palpable cervical mass on the left, and lower limb swelling. Laboratory investigation revealed corrected calcium 13.0 mg/dL (8.4-10.2), PTH 4,580 pg/mL (15-68.3), phosphorus 2.3 mg/dL (2.5-4.5), albumin 3.5 g/dL (3.5-5.0), 25OHD 11 ng/dL, ALP 917 U/L (46-126). Cervical tomography showed a solid mass measuring 7.6 cm x 5.9 cm x 6.4 cm, with cystic areas and coarse calcifications, in contact with the posterior aspect of the left thyroid lobe extending into the superior mediastinum, in contact with large mediastinal vessels; involving bilateral lymph nodes levels I and II. Chest tomography revealed rib cage deformity, heterogeneous expansive formations with soft tissue components in the thoracic bone framework, post-contrast enhancement, and lytic areas, reaching up 10.0 cm at the tenth right rib, suggestive of brown tumors. On abdominal ultrasound, bilateral staghorn renal stones were observed. Bone densitometry revealed forearm BMD 0.384 and *T-score* -5.6 and L1-L4 BMD 0.547 and *T-score* -5.3. Zoledronic acid and intravenous hydration were administered to control hypercalcemia. She was deemed ineligible for surgical resection by the head and neck surgery team and the patient had already refused surgical treatment. Calcimimetic therapy was initiated and palliative care were instituted. She died due to respiratory failure. **Discussion:** Parathyroid carcinoma is a rare cancer and causes 1% to 5% of primary hyperparathyroidism cases. It should be suspected in cases of calcium greater than 14 mg/dL and PTH greater than 5 to 10 times normal, renal and skeletal involvement, tumors greater than 3.0 cm and palpable cervical mass. **Final comments:** This case illustrates the impact of delayed diagnosis of hyperparathyroidism. Increased mortality risk is more strongly related to the size of the gland than to the calcium level and draws attention to the risk of respiratory failure in severe cases of hyperparathyroidism. Parathyroid carcinoma should be suspected if clinical manifestations are exuberant. **Keywords:** primary hyperparathyroidism; parathyroid carcinoma; respiratory failure.

ENDOCRINOLOGIA PEDIÁTRICA

1843

KLINEFELTER SYNDROME WITH HYPOPITUITARISM: A RARE ASSOCIATION

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Case presentation: A 10-year-old male, non-consanguineous parents, presenting global developmental delay, epilepsy, body dysmorphisms and short stature (116 cm; -3.85 SD). He was born as a late preterm at 36 weeks, appropriate for gestational age, uneventful pregnancy and no similar family cases. Required resuscitation in the delivery room due to cyanosis, hypotonia and absence of spontaneous breathing. Karyotype for investigation of genetic syndrome revealed 47,XXY Klinefelter syndrome (KS) (repeated and confirmed). Referred to investigate short stature (not compatible with KS) with endocrinology. On endocrinological examination, in addition to facial dysmorphisms, the patient was short (116 cm; -3.85 SD), Tanner stage G3P2, small testes (2 mL) and pubertal penis (6.5 cm). Laboratory investigation revealed hypopituitarism with deficiency of TSH, ACTH, and GH (TSH 3.28 µIU/mL (0.70-6.55), FT4 0.36 ng/dL (0.92-1.49), ACTH 14 pg/mL (>46), serum cortisol 1.4 µg/dL (5.3-22.5), IGF-1 60 ng/mL (68-316), FSH 18.5 mIU/mL (up to 0.9), LH 3.3 mIU/mL (1.5-9.3), total testosterone 427 ng/dL, GH stimulation test with clonidine peaking at 2.7 ug/L and delayed bone age (7 years with chronological age of 10 years old). Other tests were normal. Pituitary magnetic resonance imaging showed a reduced gland with a tapered stalk and an ectopic neurohypophysis at the level of the infundibulum. Replacement therapy with glucocorticoid and levothyroxine was initiated upon diagnosis, and approval for somatropin is pending from the health authorities. He was clinically well and with increased growth velocity. **Discussion:** KS is characterized by hypergonadotropic hypogonadism, small testes, tall stature, and neurocognitive impairment. In 80% of cases, the karyotype is 47XXY and 20% showing mosaicism or structurally abnormal X chromosomes. Pituitary size and weight may increase in some reports, possibly due to hyperplastic gonadotrophic cells, but in the case presented the gland was reduced. There are few descriptions of short stature and KS, possibly associated with an Xq isochromosome, however, we have not found an association between KS and hypopituitarism in the literature. **Final comments:** KS associated with hypopituitarism is extremely rare. This case highlights the need for further investigation in patients with KS presenting with unexpected phenotypes (e.g., short stature), with hypopituitarism potentially being one of the cryptic causes of short stature in these patients. **Keywords:** Klinefelter syndrome; hypopituitarism; short stature.

ADRENAL E HIPERTENSÃO

1844

PRECOCIOUS PUBERTY IN A 2-YEAR-OLD BOY DUE TO CONGENITAL ADRENAL HYPERPLASIA SECONDARY TO PARTIAL 11-BETA-HYDROXYLASE DEFICIENCY: A CASE REPORT

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Case presentation: A 4-year-old male was referred to endocrinology for suspected precocious puberty. Parents reported pubarche, fetid axillary odor, voice deepening, and muscle hypertrophy since age 2. He was born at term, with no complications or parental consanguinity, but has a paternal sister with congenital adrenal hyperplasia (CAH). Examination revealed high stature and weight (p > 97), prominent deltoid muscle, penile enlargement, and Tanner stage G1P5. A corticotrophin suppression test confirmed peripheral precocious puberty with bilateral adrenal hyperplasia (abdominal CT) and X-ray indicating a bone age of 13 years. Laboratory tests showed androstenedione 25 ng/mL (RR < 0,3), total testosterone 2,53 ng/mL (RR < 0,32), 11-deoxycortisol (compound S) 56 ng/mL (RR < 7,2) and cortisol 3,1 µg/dL (RR:6,2), with normal 17-alpha hydroxyprogesterone (17-OHP), suggesting CAH due to 11β-hydroxylase deficiency. Treatment with hydrocortisone was initiated, and an increase in LH indicated central axis activation, leading to the use of leuprolide combined with corticosteroid. This treatment, maintained until now (patient is 10), has regressed secondary sexual characteristics. **Discussion:** CAH due to 11β-hydroxylase deficiency is rare (5% of CAH cases) and involves mutations in the CYP11B1 or R448H genes. The deficiency prevents the conversion of 11-deoxycortisol to cortisol and corticosterone to deoxycorticosterone (DOC), causing elevated ACTH and androgens. This can lead to hypertension (HTN) and hypokalemia due to mineralocorticoid accumulation. It may present as premature adrenarche and advanced bone age, with potential virilization at birth in girls. Elevated plasma androgens with increased 17-OHP suggest 11β-hydroxylase deficiency, with high serum levels of 11-deoxycortisol, DOC, androstenedione, and testosterone, and low cortisol and corticosterone. Genetic testing confirms the diagnosis. Treatment involves glucocorticoid replacement; in this case, leuprolide was needed to inhibit the central axis. Follow-up includes measuring androgens, LH, and ACTH to monitor central axis activation and HTN risk. **Final comments:** Newborn screening does not detect rare CAH forms, underscoring the importance of prenatal testing for early diagnosis to prevent future issues like short stature and cardiovascular events due to HTN. This case presented clinical manifestations, diagnostic methods, treatment, and genetic aspects to raise suspicion of the disease in differential diagnoses. **Keywords:** precocious puberty; congenital adrenal hyperplasia; partial 11β-hydroxylase deficiency.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1846

ANALYSIS OF THE EFFICACY OF METFORMIN ON ITS OWN *VERSUS* IN COMBINATION IN NORMALIZING LH LEVELS IN PATIENTS WITH POLYCYSTIC OVARY SYNDROME

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Introduction: Polycystic ovary syndrome (PCOS) is a common hormonal disorder in women of reproductive age. One of its characteristics in pathophysiology is increased insulin resistance, which is why the use of metformin (MET) is widely established in its treatment. However, its use in combination with other therapies such as simvastatin, cabergoline, pioglitazone, and liraglutide may have a more significant effect on improving LH hormone levels, which are related to the regulation of ovulatory function and the production of sex hormones. **Objective:** Compare the effectiveness of monotherapy with MET *versus* combination therapy in decreasing serum LH levels. **Materials and methods:** A systematic review was conducted using the Cochrane database from July 1st to July 7th, 2024, employing the DeCS descriptors "polycystic ovary syndrome", "luteinizing hormone" and "metformin". These terms were combined using the boolean operator AND, resulting in identification of seven scientific articles published in the last four years, with no language restrictions. **Results:** The reviewed studies show that different therapeutic combinations have varied impacts on hormonal profiles in women with PCOS. Combined treatment with simvastatin and MET was more effective than monotherapy in reducing total testosterone levels, LH/FSH ratio, and LDL cholesterol. Additionally, the combination of MET and liraglutide was superior in correcting hyperandrogenemia and improving levels of LH, FSH, and progesterone. Meanwhile, the combination of MET with pioglitazone also showed advantages in improving LH levels, LH/FSH ratio, free androgen index (FAI), sex hormone-binding globulin (SHBG), and anti-Müllerian hormone, as well as postprandial glucose levels. Finally, MET combined with cabergoline significantly reduced LH and testosterone levels while improving FSH levels in patients with PCOS and hyperprolactinemia. **Conclusion:** Personalized combined therapies can offer more comprehensive management of PCOS symptoms, showing enhanced outcomes in normalizing LH levels and effectively modulating the hypothalamic-pituitary-ovarian axis compared to MET monotherapy. Furthermore, improvements in metabolic and reproductive symptoms associated with the condition have also been observed. However, there is an undeniable need for further studies, both in quantity and quality, to ensure more accurate results reflecting the presented reality. **Keywords:** polycystic ovary syndrome; luteinizing hormone; metformin.

DISLIPIDEMIA E ATEROSCLEROSE

1847

FAMILIAL CHYLOMICRONEMIA SYNDROME: CASE SERIES AND LITERATURE REVIEW

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Introduction: Familial chylomicronemia syndrome (FCS) is a rare genetic condition caused by mutations in the LPL, APOC2, APOA5, GPIHBP1 and LMF1 genes, resulting in extreme elevations in triglycerides. Clinically, it includes abdominal pain, pancreatitis, hepatomegaly, splenomegaly, eruptive xanthomas, and lipemia retinalis. **Objective:** Report 6 cases of FCS from a tertiary hospital in Ceará. **Discussion:** Analysis of the six patients with FCS revealed four patients with mutations in the LPL gene and two in the GPIHBP1 gene. The sample was predominantly women (66.7%) and included only one child. All patients were from the Northeast of Brazil, unrelated to each other, but one third had a history of parental consanguinity. The average age of the patients was 37.8 years, with a diagnosis of severe hypertriglyceridemia at an average of 20.6 years. Clinical manifestations varied, with patients presenting hepatosplenomegaly, eruptive xanthomas, diabetes and, in half of the cases, acute pancreatitis. The severity of the disease was evidenced by the high frequency of pancreatitis, with one patient having more than 20 episodes. Pregnancy was a risk factor for acute pancreatitis, requiring cholecystectomy in one case. Lipid parameters showed high levels of triglycerides (median 2,729 mg/dL), low HDL (median 22.8 mg/dL) and high total cholesterol (median 340 mg/dL). The average body mass index (BMI) was 20.8 kg/m². Five patients used a fibrate to treat hypertriglyceridemia, and only one used a statin. Treatments to reduce triglycerides were not effective. Other therapies, such as omega-3 fatty acids, lomitapide, and volanesorsen, are being studied to improve the management of FCS, with volanesorsen showing promising results in reducing triglyceride levels. The phenotypic diversity and complexity of management highlight the need for multidisciplinary approaches and continued research into more effective treatments. **Conclusion:** In conclusion, we report cases of FCS with pathogenic mutations in LPL and GPIHBP1, causing severe hypertriglyceridemia and increased risk of acute pancreatitis. The data reinforce the importance of early diagnosis and individualized management, with genetic evaluation for better family planning and prevention of serious complications. **Keywords:** hypertriglyceridemia; familial chylomicronemia syndrome; acute pancreatitis.

DIABETES MELLITUS
1848

EFFECT OF MELATONIN SUPPLEMENTATION ON GLYCEMIA IN INDIVIDUALS WITH INVERTED LIGHT-DARK CYCLE: A SYSTEMATIC REVIEW

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Melatonin is produced by the pineal gland at night and in darkness. Its rhythmic production modulates the synthesis and secretion of other hormones, such as insulin. The inversion of the light-dark cycle suppresses melatonin production, increasing the risk of insulin resistance (IR) and type 2 diabetes mellitus (DM2). The objective of the present study was to present the effect of melatonin supplementation on the blood glucose levels of individuals with an inverted light-dark cycle, such as night shift workers. The systematic literature review was carried out according to PRISMA guidelines, using searches in PubMed, Medline, LILACS and the Cochrane Library. The descriptors were: type 2 diabetes mellitus, melatonin, insulin resistance and night shift workers, predicted on the DeCS/Mesh platform. The inclusion criteria were: original studies, published between 2019 and 2024, whose methodology consisted of a randomized clinical trial, in humans, controlled by placebo. The exclusion criteria were: studies published in journals with qualifications below B3 and with a reliability level below 95%. Initially, 143 scientific articles were screened, and, after rigorous analysis of the material, 4 articles were selected. The first study concluded that the administration of 2 mg of melatonin for 12 weeks did not promote an improvement in IR in 12 night shift workers. The second demonstrated that supplementation with 10 mg of melatonin for 12 weeks did not cause significant changes in glycemic control in 17 men with DM2. There was also no positive effect on glycemia homeostasis in 34 patients with DM2, of both sexes, treated with 6 mg of melatonin for 8 weeks. A single study, carried out with 9 young, healthy men, demonstrated a significant improvement in glucose tolerance and insulin sensitivity after 3 weeks of administration of 2 mg of melatonin. Given the divergences, it is concluded that more studies are needed regarding the use of melatonin to combat hyperglycemia and the consequent treatment of IR and DM2 in individuals with an inverted light-dark cycle. An increase in the dose of melatonin administered, the number of participants, the diversity of the sample and the duration of future studies is suggested. It is hoped that further research on the topic will help in the prevention or treatment of IR and DM2 in individuals with a reversed light-dark cycle. **Keywords:** type 2 diabetes mellitus; melatonin; insulin resistance.

DIABETES MELLITUS
1849

HNF4A P.R63W MUTATION RELATED TO FANCONI SYNDROME: A RARE PRESENTATION WITH THE USE OF A DPP-4 INHIBITOR

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Case presentation: A 28-year-old female, born to non-consanguineous and healthy parents, with appropriate birth weight, presented with hypoglycemia and seizures since the neonatal period and delayed neuropsychomotor development. During early childhood, she was diagnosed with Fanconi syndrome (FS), investigated due to hypokalemia, hypophosphatemia, hypouricemia and metabolic acidosis. She developed short stature, hypophosphatemic rickets and bone fractures. At the age of 19, she was diagnosed with diabetes during routine exams initially treated with sulfonylurea. After one year, insulin was later introduced due to poor glycemic control. The patient lost follow-up for 5 years (from age 22 to 27) because of a history of drug addiction. During this period, without insulin therapy, she had two episodes of ketoacidosis in infectious contexts. She resumed follow-up in 2023, without micro or macrovascular complications of diabetes, on a low dose of insulin, but with frequent hypoglycemia and seizures. Exams showed insulin reserve (C peptide 2,4 ng/mL with blood glucose of 139 mg/dL), negative autoantibodies, chronic renal disease stage II and no signs of liver dysfunction or nephrocalcinosis. It was considered the hypothesis of monogenic diabetes type 1 (HNF4-alpha) due to de novo mutation. A genetic test confirmed the p.R63W mutation in HNF4A gene, which is a rare variant, with less than 30 cases described in literature until now. A dipeptidyl peptidase-4 (DPP-4) inhibitor was prescribed instead of sulfonylurea and insulin due to frequent hypoglycemia. She evolved with good glycemic control, without hypoglycemia and a glycated hemoglobin of 6.2%. **Discussion:** The relationship of the HNF4A p.R63W heterozygous mutation with FS was first described in 2014, with complete penetrance. This type of mutation can cause hyperinsulinemic hypoglycemia and macrosomia in the neonatal period, with progression in some cases to diabetes in early adulthood. The alteration in pancreatic beta cells is still poorly understood, but there is an impaired insulin secretion response, being increased in the neonatal period and reduced in adulthood. **Final comments:** This case demonstrates a rare variant of monogenic diabetes, characterized by an excellent response to the use of a DPP-4 inhibitor. This drug was preferred over sulfonylurea due to the presence of hypoglycemia and chronic kidney disease achieving optimal control of HbA1C and reducing the incidence of hypoglycemic episodes. **Keywords:** HNF4A; Fanconi syndrome; hypoglycemia.

TIREOIDE

1851

MACRO TSH AS A CAUSE OF ELEVATED TSH: CASE REPORT IN A 60-YEAR-OLD WOMAN

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Introduction: Macro TSH is a rare condition in which a TSH molecule binds to a protein, usually an immunoglobulin, forming a high molecular weight macromolecule that has poor renal clearence, accumulating in the plasma. This results in elevated serum TSH levels detected in laboratory tests. Despite the high levels, the TSH is inactivated in this complex, maintaining normal levels of free T3 and T4 and absence of symptoms. **Case report:** A 60-year-old female patient with a history of hysterectomy and dyslipidemia presented with elevated levels of TSH (24.06 uIU/mL) and normal free T4 (1.01 ng/dL) in a blood test. She had no symptoms of hypothyroidism, and her thyroid appeared normal on physical examination. After eight weeks, new tests showed a TSH of 17.70 uIU/mL, free T4 of 1.06 ng/dL, and anti-thyroid peroxidase and anti-thyroglobulin antibodies were negative. Ultrasound revealed a heterogeneous thyroid. With these results, subclinical hypothyroidism was suspected, and levothyroxine therapy was started at the dosage of 25 mcg. After eight weeks of treatment, the patient developed symptoms of malaise, hair loss, and palpitations. New tests showed a TSH of 12.76 uIU/mL and free T4 of 1.19 ng/dL. Given the therapeutic failure and new symptoms, laboratory interference in TSH was suspected. After excluding pre-analytical causes, macro TSH was considered and confirmed with a test showing 6.44% recovery after precipitation with polyethylene glycol (PEG). Levothyroxine therapy was discontinued, resulting in symptomatic improvement. **Discussion:** The patient had no symptoms of thyroid dysfunction, but laboratory tests suggested subclinical hypothyroidism, leading to levothyroxine treatment, which resulted in new symptoms. This indicated the need to investigate possible laboratory interferences. Excluding pre-analytical causes and considering the presence of macro TSH led to the diagnosis of this rare condition through the PEG test. Gel filtration chromatography is the gold standard method but is expensive and not widely available, while the PEG method is more accessible but lacks well-defined cut-off values. **Conclusion:** The diagnosis of macro TSH should be considered in patients with persistent elevation of TSH, normal free T4, and absence of thyroid dysfunction symptoms, especially in cases of therapeutic failure with levothyroxine. This diagnosis is essential to avoid inappropriate treatment and iatrogenesis. **Keywords:** Macro TSH; subclinical hypothyroidism; laboratory interference.

METABOLISMO ÓSSEO E MINERAL

1852

FAHR SYNDROME WITH EXTENSIVE INTRACRANIAL CALCIFICATIONS SECONDARY TO PSEUDOHYPOPARATHYROIDISM: A CASE REPORT

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Case presentation: Female patient, 58 years old, was admitted to the emergency unit after a first episode of supposed tonic-clonic seizures. She reported a previous history of muscle weakness and paresthesia affecting hands and feet 8 months prior. During work-up a computed tomography of the head was performed showing extensive symmetrical and diffuse calcifications affecting the centrum semiovale, subcortical white matter, cerebellum, basal ganglia and thalami. Laboratory tests showed a calcium level of 4.9 mg/dL (8.4-10.2); phosphorus 6.9 mg/dL (2.5-4.5) and PTH 111 pg/mL (<65). The diagnosis of Fahr syndrome secondary to pseudohypoparathyroidism was made. The tetany initially thought to be related to tonic-clonic seizures later proved to be secondary to hypocalcemia. This patient was initially resistant to calcium supplementation, with improvement after initiation of calcitriol 0.75 mcg/day, which was then tappered to achieve low-normal calcium and normal phosphorus levels. She was discharged using calcitriol 0.25 mcg/day and calcium 2g/day, with improvement in symptoms. She is currently followed-up at an endocrinology outpatient clinic, asymptomatic, appropriately using the prescribed medications. In recent follow-up tests, she presented 24-hour urine calcium of 46 mg/24 h; TSH of 4.52 mIU/L (0.4-4.3); free T4 of 1.34 ng/dL (0.7-1.8) and 25-OH-Vitamin D of 50.3 ng/mL. **Discussion:** Fahr syndrome is a rare neurological disorder characterized by bilateral and symmetrical calcifications, mainly in the basal ganglia, but also reported in the cerebral cortex, thalamus, hippocampus and dentate nucleus, secondary to a known etiology. Regarding endocrine disorders, PTH abnormalities are the most common causes, mainly hypoparathyroidism, and, more rarely, pseudohypoparathyroidism (PHP). PHP is a rare and heterogeneous group of metabolic disorders in which there is resistance of target tissues to PTH due to genetic mutations. In some cases, resistance to other hormones, such as TSH, is also observed. It is biochemically characterized by hypocalcemia, hyperphosphatemia, and high or normal PTH. **Final comments:** The association between Fahr syndrome and PHP is rare. The diagnosis of PHP must be based on clinical and biochemical characteristics, with symptoms of hypocalcemia being the most common manifestation. However, identification of the subtype through genetic tests, which are still poorly available, can provide information about the prognosis and guide management. **Keywords:** hypocalcemia; pseudohypoparathyroidism; Fahr syndrome.

NEUROENDOCRINOLOGIA

1853

INFERIOR PETROSAL SINUS SAMPLING WITH DESMOPRESSIN FOR THE DIAGNOSIS OF CYCLIC CUSHING'S SYNDROME: A CASE REPORT

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Cushing's syndrome (CS) is most often caused by an ACTH-producing pituitary tumor, but it can also result from ectopic ACTH production. Inferior petrosal sinus sampling (BIPSS) with human CRH stimulation is the gold standard for distinguishing between pituitary and ectopic ACTH sources. However, the necessity of hypercortisolemia for conducting the BIPSS CRH exam can be challenging in cases of cyclic CS, and CRH is also being withdrawn worldwide, including in countries like Brazil. Desmopressin (DDAVP) has emerged as an option to CRH. We present a case of cyclic Cushing's disease who underwent BIPSS with desmopressin (DDAVP). A 26-year-old previously healthy woman presented with a history of weight gain, violaceous striae on the abdominal region, fatigue, acne, myalgia, edema in the lower limbs, moon face, hair loss, and hirsutism. Initial laboratory investigation showed periods of ACTH-dependent hypercortisolism interspersed with normalization of free urinary cortisol (UFC) levels. Pituitary magnetic resonance imaging (MRI) showed a pituitary microadenoma (9 x 9 x 6 mm). The overnight 8 mg dexamethasone suppression test decreased the serum cortisol by over 80%. She underwent BIPSS with 10 mcg DDAVP but the UFC collected the day before was normal (51 µg/24h, reference range 36 to 137 µg/24 h). The BIPSS result was a central/peripheral ACTH gradient > 2 before stimulation and > 3 after DDAVP administration. A central/peripheral prolactin gradient >1.8 confirmed the correct placement of catheters in the inferior petrosal sinuses. The patient underwent transsphenoidal resection of the microadenoma, and immunohistochemical analysis confirmed a corticotroph tumor due to positive ACTH in 80%-90% and T-pit in 80% in neoplastic cells. The patient experienced clinical and laboratory improvement after surgery. DDAVP acts at V2 renal receptors, but not at V3 pituitary receptors in healthy individuals. However, there is a hypothesis that the V2 receptor is expressed in corticotroph tumoral cells, which allows DDAVP to stimulate ACTH secretion in Cushing's disease. Another mechanism suggested is DDAVP activity on overexpressed V3 receptors on corticotroph adenomas. Therefore, BIPSS with DDAVP may be performed to diagnose cyclic Cushing's disease, even during phases without increased ACTH and cortisol secretion. **Keywords:** cyclic Cushing syndrome; desmopressin; BIPSS.

TIREOIDE

1854

COMPLETION THYROIDECTOMY IN PATIENTS WITH DIFFERENTIATED THYROID CARCINOMA INITIALLY TREATED BY LOBECTOMY

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Introduction: The completion of thyroidectomy (CT) in patients with differentiated thyroid carcinoma (DTC) initially treated by lobectomy is still debatable. **Objective:** Our aim is to evaluate predictors of contralateral tumor at CT in a cohort of DTC patients initially treated with lobectomy. **Material and methods:** DTC patients who underwent CT after initial lobectomy were included. Demographic, clinical and oncological characteristics were documented through standardized questionnaires. **Results:** One hundred and thirteen patients were studied, 90 (79%) of whom were females, with mean age of 46 ± 14 years. The median tumor size at initial lobectomy was 2.5 cm (P25-P75 1.5-4.3), 24 (21%) were multifocal tumors at lobectomy and 16 (14%) had lymph node metastasis at the histopathological analysis. Presence of CDT at CT was observed in 27 (24%) of the patients, and 22 (81%) of them had multifocal disease at first surgery. The median tumor size at CT was 0.5 cm (P25-P75 0.3-0.7), and 16 (59%) of which were microcarcinomas. The groups with and without neoplasm at CT differed according to multicentricity (66% and 2.5%, respectively, $p < 0.01$) and to lymph node metastasis (33% and 5%, respectively, $p = 0.03$). After 7 years (P25-P75 4-13) of follow-up, 73 (70%) patients had excellent treatment response, 19 (18%) indeterminate response, 4 (4%) incomplete biochemical response and 9 (9%) incomplete structural response. **Conclusion:** The presence of CDT at CT occurs in one quarter of patients, and is predicted by multicentricity at first surgery and lymph node metastasis. **Keywords:** completion of thyroidectomy; contralateral tumor; predictors.

ENDOCRINOLOGIA PEDIÁTRICA

1855

EFFECTS OF PEDIATRIC SELF-CARE EDUCATION FOR PATIENTS WITH DIABETES MELLITUS I: A SYSTEMATIC REVIEW

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Introduction: Type 1 diabetes mellitus is a common chronic disease in childhood. Therefore, continuous and careful treatment is essential to reduce its impact. In this context, patient-centered self-care education emerges as a vital component as the level of understanding among children, adolescents, and their caregivers can influence disease prognosis. **Objective:** To investigate the scientific literature and understand the effects of health education focused on pediatric self-care in type 1 diabetes mellitus patients. **Methods:** A systematic review was conducted using the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA), searching Cochrane and PubMed databases. Inclusion criteria comprised: clinical trials, free full text, published in the last 5 years, in English, Spanish, or Portuguese. Keywords included: diabetes mellitus type 1, self-care, and child, identified through DeCS/MeSH, combined using Boolean operator AND. From 120 articles initially identified, after applying exclusion criteria (incomplete publications, duplicates, or irrelevant studies) and screening, the final sample was set resulting in 24 articles. **Results:** Evidence suggests that self-care education in children and adolescents with type 1 diabetes mellitus significantly improved glycemic control, reduced HbA1 levels, decreased incidence of acute complications, and increased treatment adherence, including proper insulin administration, ultimately leading to psychological and social benefits. Studies reported that personalized interventions tailored to age and patient needs also improved self-care skills, fostering greater confidence and autonomy in disease management. Younger children benefited from playful and interactive approaches, whereas adolescents preferred programs offering more independence, including video games, as a significant aid in learning. **Conclusion:** This study provides evidence suggesting that successful management of type 1 diabetes mellitus to minimize disease impact and improve quality of life in young patients depends on the education level of patients and caregivers. Effective education combined with multidisciplinary support tailored to specific patient needs indicates long-term metabolic control, translating into productive longevity and reduced complications in pediatric patients. **Keywords:** diabetes mellitus type 1; self-care; child.

NEUROENDOCRINOLOGIA

1860

GIANT MACROPROLACTINOMA WITH MULTIPLE CRANIAL NERVE COMPRESSIONS AND EPISTAXIS IN A YOUNG MALE PATIENT: RAPID RESPONSE TO LOW DOSE CABERGOLINE

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Case: A 23-y-old male first seen on consultation in May 2024 had a 2-y history of headaches and loss of temporal visual fields. Four months before he developed left eyelid ptosis and right eye proptosis, right trigeminal neuropathic pain and, more recently, epistaxis. He also complained of lack of development of his genitalia and sexual characteristics. On physical examination, he had a childlike appearance, left eyelid ptosis and mydriasis, right eye proptosis, bilateral oculomotor nerve paresis and bitemporal visual field loss. Tanner G2P3. Laboratory: Prolactin: 109,580 ng/mL, Testosterone: 0.08 ng/mL (2.49-8.36), Free Testosterone: 0.005 ng/dL (0.01-1.07), LH: 1.32 IU/L (1.7-8.6), FSH: 0.94 IU/L (0.27-4.2), FT4: 0.83 ng/dL (0.93-1.7), TSH: 5.3 mIU/L (0.27-4.2), IGF-1: 82 ng/mL (98-289). Cortisol was within the normal range. Serum calcium: 9.9 mg/Dl (8.3-10.6). MRI showed a large mass measuring 8.9 x 5.0 x 5.5 cm, occupying an enlarged sella turcica with invasion of both cavernous sinuses, circumferential involvement of the internal carotid arteries, supra-sellar extension compressing the optic chiasm and the medial portions of the temporal lobes, and inferior extension to the sphenoid sinus, clivus, posterior ethmoid cells, and partially obliterating the nasopharyngeal air column. **Diagnosis:** Giant macroprolactinoma with multiple cranial nerves compression and hypopituitarism. Patient was hospitalized to closely monitor treatment with cabergoline (initial dose 0.25 mg three times a week). Prolactin fell to 25,287 ng/mL (-77%) at 2 weeks and patient presented progressive and significant improvements in trigeminal pain, visual fields, left eyelid ptosis, and right eye proptosis. Levothyroxine replacement was also started (88 mcg/d). **Discussion:** Prolactinoma is the most common pituitary tumor, originating from lactotroph cells, that typically cause hyperprolactinemia that correlates with tumor size. Giant prolactinomas are rare and more common in men. Diagnostic criteria include size ≥ 4 cm, extrasellar extension, serum prolactin level ≥ 1,000 ng/mL, and exclusion of concomitant secretions of GH or corticotropin (ACTH). We present this dramatic case that showed a rapid and remarkable decompression on a very low dose of cabergoline. **Final comments:** This dramatic case of a giant prolactinoma emphasizes the high success rate of pharmacological treatment with cabergoline irrespective of size and compressive signs and symptoms. **Keywords:** giant macroprolactinoma; hypopituitarism; cabergoline.

OBESIDADE

1863

EFFECTS OF BARIATRIC SURGERY AND GLP-1 RECEPTOR AGONIST ON NON-FATAL CARDIOVASCULAR EVENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Bariatric surgery techniques and drugs analogous to GLP-1 have been used for weight loss, since the number of overweight people around the world has increased, a phenomenon explained by the epidemiological transition and changes in eating habits and increased sedentary lifestyle. In this meta-analysis, we will compare these two forms of treatment in an obese population of type II diabetics in relation to non-fatal cardiovascular events. **Objective:** Compare non-fatal cardiovascular events in between obese diabetic patients who underwent bariatric surgery and those who only used GLP-1 RA. **Methods:** PubMed, Embase and Web of Science databases were systematically reviewed to identify studies that compare the non-fatal cardiovascular events among patients who underwent bariatric surgery or utilized GLP-1 RA for diabetes treatment. Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines were followed. Statistical analyses were performed using R Software. Pooled rates were determined with a 95% confidence interval using a random-effects model. **Results:** The search yielded a total of 423 studies. After screening the papers, 417 were excluded because did not meet the eligibility criteria and 3 were excluded only after reading full text. Finally, 3 studies fit into the PICOTT framework including a total of 13,474 patients, which 6,737 undergone bariatric surgery and 6,737 used only GLP-1 RA. The result of pooled analysis favored bariatric surgery, as the odds ratio was 0.52 (95% CI 0.29-0.91), with a p-value = 0.022. **Conclusion:** These results suggest that bariatric surgery is less related to non-fatal cardiovascular events compared to GLP-1 receptor agonists in the studies analyzed. **Keywords:** bariatric surgery; GLP1-RA; cardiovascular events.

TIREOIDE

1864

AMIODARONE-INDUCED THYROTOXICOSIS IN A PATIENT WITH ATRIAL FIBRILLATION AND HEART FAILURE: A CASE REPORT

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Case presentation: A 36-year-old male patient with atrial fibrillation and heart failure (LVEF of 19% due to tachyarrhythmia), irregularly using rivaroxaban and amiodarone, was admitted with progressive asthenia, sweating, loss of appetite, diarrhea, and weight loss. Tests indicated hyperthyroidism: TSH < 0.01 (normal range: 0.34-5.33) and free T4 1.85 (normal range: 0.61-1.12). He started treatment with methimazole and a beta-blocker. Thyroid scintigraphy with technetium showed low uptake, strongly suggesting type 2 amiodarone-induced thyroiditis. In this case, methimazole was discontinued, and prednisone was introduced, resulting in rapid clinical improvement. **Discussion:** Amiodarone is a class III antiarrhythmic drug. It has been used as a primary alternative for the treatment of ventricular arrhythmias, particularly atrial arrhythmias. Among its main side effects are thyroid dysfunctions induced by its use. Patients on amiodarone may develop both hypothyroidism and thyrotoxicosis. Type 1 amiodarone-induced thyrotoxicosis (AIT) occurs in patients with nodular thyroids or in those with latent Graves' disease exposed to excess iodine triggered by the use of this drug. Type 2 AIT results from a destructive process of the follicular cells induced by amiodarone and the release of preformed hormones into the bloodstream. Treatment for type 1 AIT is done with thionamides, and for type 2 AIT, with glucocorticoids. In the reported case, the initial suspicion of type 1 AIT was revised to type 2, resulting in more effective treatment with prednisone. **Final comments:** This case illustrates the complexity of amiodarone-induced thyrotoxicosis (AIT) and the need for accurate diagnosis and treatment. The switch from methimazole to prednisone, following diagnostic review, resulted in clinical improvement, highlighting the importance of adjustments based on new clinical and laboratory data. **Keywords:** thyrotoxicosis; amiodarone; hyperthyroidism.

TIREOIDE
1865

HYPOKALEMIC PERIODIC PARALYSIS AS AN INITIAL PRESENTATION OF GRAVES' DISEASE: A CASE REPORT

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Case presentation: L.J.S., a 33-year-old man with no prior health issues, experienced foot edema and myalgia three months ago. After a month, he developed sudden paralysis of the lower limbs, which ascended to the trunk and upper limbs, leading him to seek emergency neurological care. Admission tests revealed potassium levels of 1.5 mEq/L, prompting the initiation of potassium replacement therapy. The patient reported sweating, weight loss, and tachycardia over the past six months. The following tests were ordered, and he was referred to endocrinology: TSH 0.002 UI/mL; T4-L 2.34 ng/dL; Anti-TPO 60 UI/mL; TRAB 10.79 UI/L; thyroid ultrasound showed diffuse volumetric increase and diffuse textural changes in the gland. He was diagnosed with Hyperthyroidism due to Graves' disease (GD) and hypokalemic periodic paralysis (HPP). Treatment with radioactive iodine (I^{131}) 20 mCi was initiated. Subsequently, methimazole and Propranolol were added, and after six months, the patient developed hypothyroidism with no new episodes of paralysis. TSH 140.62 UI/mL; T4-f 0.25 ng/dL; T3 10 ng/dL; Na 146; K 4.4 mEq/L; Ca 9.4 mEq/L. Methimazole and propranolol were discontinued, and Levothyroxine 50 µg was introduced, reaching a dose of 100 µg in three months. **Discussion:** Hypokalemic periodic paralysis (HPP) is a potentially lethal complication of thyrotoxicosis and a rare complication of GD. Although GD is more common in women, HPP is more common in men, typically occurring in the 3rd to 4th decade of life and in Asians. Pathogenesis is related to decreased muscle strength due to increased intracellular shift, which is mediated by the thyroid hormone action on the Na-K-ATPase pump. Hyperinsulinemic situations or strenuous exercise often trigger this condition. The KCNJ2 and KCNJ18 genes have been associated with HPP, with the latter linked to Caucasian Brazilians. Treatment involves correcting hypokalemia, using beta-blockers to control sweating symptoms, investigating the underlying cause, and maintaining a euthyroid state to prevent the recurrence of HPP. Antithyroid drugs, radioactive Iodine, or thyroidectomy are options. In this case, treatment with Iodine was chosen due to the patient's low socioeconomic status, clinical severity, and easy access to a nuclear medicine center. **Final comments:** HPP is a rare but significant complication in hyperthyroid patients. Quick diagnosis is crucial for initiating treatment to prevent cardiorespiratory complications and symptom recurrence. **Keywords:** hypokalemic periodic paralysis; Graves' disease; hyperthyroidism.

TIREOIDE
1866

CASE REPORT: RARE CASE OF AUTOIMMUNE HEMOLYTIC ANEMIA DEVELOPED AS A CONSEQUENCE OF GRAVES' HYPERTHYROIDISM

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Case presentation: W.S., 33 years old, female, from Missão Velha-CE. The patient was admitted to the service of the São Vicente de Paulo Hospital and Maternity in February 2024, with a previous diagnosis of Graves' disease (GD) and autoimmune hemolytic anemia (AIHA), on discontinued use of methimazole prior to undergoing radioiodine therapy two weeks before. Upon admission, presented a drop in general condition, nausea, loss of appetite and tachycardia. Laboratory results indicated a severe hemolytic crisis, with erythrocytes at 1230000/mm^3, hemoglobin 4.3 g/dL, hematocrit 12.7%, anisocytosis, hypochromia and polychromasia. In addition, ultra-sensitive TSH at 0.02 microIU/mL, free T4 at 1.87 ng/dL, testing for anti-cell antibodies (ANA) with a reactive nucleus and titer of 1:160, positive direct Coombs and positive PAI and haptoglobin of 2 mg/dL. Thyroid scintigraphy shows topical thyroid, exhibiting global hyperavidity in intensity, without focal areas of hyperuptake. The recommended course of action was to resume the use of methimazole 20mg/day and pulse therapy with methylprednisone 1g for 3 days. After hemodynamic stabilization with improvement in symptoms and signs of anemic crisis and thyreotoxicity, the patient was discharged. Continuation of corticosteroid treatment with oral prednisone 1 mg/kg/day was prescribed, in addition to an indication of return to the endocrinology and hematology outpatient clinics. **Discussion:** The patient's anemia appears as a complication of GD. However, hyperthyroidism is normally associated with increased oxygen demand, resulting in increased erythropoietin function, so the pathophysiology of the hemolytic crisis in GD is not fully understood. The main possibility involves the participation of TSH receptor autoantibodies cross-reacting with the surface of erythrocytes, that is, autoimmune processes related to thyrotoxicity. Although GD is normally associated with hematological changes, the combination with AIHA is a rare case. **Final considerations:** Both cases of hyperthyroidism and hemolytic crisis were alleviated with treatment with corticosteroids and methimazole, relieving symptoms and increasing hemoglobin levels without blood transfusions, which strengthens the possibility of an association between autoimmunity and the patient's condition, given the common involvement of a second autoimmune disease when a previous one has already developed. **Keywords:** Graves' disease; autoimmune hemolytic anemia; thyreotoxicity.

METABOLISMO ÓSSEO E MINERAL

1867

ATYPICAL BEHAVIOR OF BONE REMODELING BIOMARKERS WITH THE USE OF ROMOSOZUMAB IN OSTEOPOROSIS AFTER ROUX-EN-Y GASTRIC BYPASS: A CASE REPORT

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Case presentation: A 46-year-old male underwent Roux-en-Y gastric bypass in 2020. In 2021, he developed a Genant 2 vertebral fracture (T7), which was not diagnosed in time, resulting in the use of glucocorticoids (GC) for over a year (betamethasone 10 mg/week and prednisone 20-40 mg/day). After 11 months, MRI showed multiple vertebral fractures (T8, T9, T11, L1, L2), and 3 months later, he suffered a femoral neck fracture. Bone densitometry (Dec/2022): BMD/Z-score L2-L3 (0.820/-3.3); femoral neck (0.659/-2.6). Basal cortisol: 0.5 mcg/mL, suggesting chronic GC use. PTH: 94 pg/mL; 24h urinary calcium: 79. Additional tests ruled out other secondary causes of osteoporosis. Bone markers: osteocalcin (OC): 4 ng/mL; CTX: 0.409 ng/mL; P1NP: 67 ng/mL; ALP: 148 U/L. Due to the high risk of new fractures, romosozumab (RMZ) 210 mg/month for 12 months and GC tapering were chosen. On RMZ: after 1 month, there was an increase in bone resorption markers (CTX: 1.820; ALP: 94 U/L), which was exponential in the next 3 months (CTX: 3.450 ng/mL); and an increase in bone formation markers at 1 and 3 months (P1NP: 148 and 528 ng/mL; OC: 142 and 176 ng/mL). Screening for bone neoplastic disease was negative. Despite the abnormal biomarker behavior, there was a significant 40% increase in lumbar bone mass after 6 months of treatment (BMD/Z-score L2-L3: 1.151/-0.8). **Discussion:** Bariatric surgery (BS) has been associated with a negative impact on bone metabolism. In this case, bone fragility was exacerbated by chronic GC use, leading to multiple fractures. Due to its dual effect (anabolism and antiresorptive), RMZ, a humanized monoclonal antibody against sclerostin, could be a strategy for managing GC-induced and post-BS osteoporosis, but there are no studies validating its use in these situations. In postmenopausal women and men with osteoporosis, RMZ use promotes an increase in P1NP and a decrease in CTX in the first 3 months, with improved BMD after 3 months, being more significant after 6 months. In this case, however, an unexpected increase in CTX levels was observed, which could compromise the anabolic window. Nevertheless, there was a significant improvement in lumbar BMD. **Final comments:** RMZ could be a good therapeutic option for treating bone disease after BS, but more studies are needed to understand the behavior of bone remodeling biomarkers in this population. **Keywords:** romosozumab; bone remodeling biomarkers; osteoporosis after Roux-en-Y gastric bypass.

ADRENAL E HIPERTENSÃO

1868

BEYOND KETOCONAZOLE: PRIMARY ADRENAL INSUFFICIENCY DUE TO ITRACONAZOLE

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Case presentation: A 52-years-old male was referred to Endocrinology to investigate adrenal insufficiency (AI). He had been treated for pulmonary tuberculosis in 2013 and was diagnosed with invasive pulmonary aspergillosis in 2022. He was then prescribed a long-term treatment with azole antifungals, starting with voriconazole for 3 months, followed by itraconazole for the next seven months. During treatment, he presented with weakness, decreased appetite, nausea, vomiting and weight loss (4 kilograms in 2 months). He also experienced hypotension, dizziness while standing and episodes of spontaneous hypoglycemia. Biochemical investigation revealed hyponatremia (Na 126 mEq/L), relative eosinophilia in his white blood cell count (686/mm^3), a markedly decreased 8 AM cortisol (1.7 mcg/dL) along with an increased adrenocorticotropic hormone (ACTH) level (61.4 pg/mL – reference range up to 46 pg/mL). An abdominal MRI has shown no adrenal abnormalities. Following intravenous hydrocortisone therapy, the patient presented significant symptomatic improvement, including weight gain, normalization of blood pressure levels and resolution of hyponatremia. **Discussion:** Azoles are commonly prescribed as first-line agents in the therapy of invasive fungal infections and it is known that when used for long periods of time they may inhibit adrenal steroidogenesis. Although this adverse effect is primarily recognized in the context of ketoconazole, any other drug in this class, including itraconazole, can cause AI, with a frequency ranging from 5% to 10% of patients treated. Itraconazole inhibits the CYP450-dependent enzyme 14-alfa-demethylase (CYP41A1) that catalyzes the first step in steroidogeneses and converts lanosterol to ergosterol and, subsequently, to pregnenolone. Pregnenolone is an essential component for many human glucocorticoid, mineralocorticoid and gonadal hormones. Adrenal suppression may also result from azole-mediated inhibition of CYP3A4 during concomitant administration of azole antifungals with oral, intravenous or inhaled corticosteroids, even when the antifungals are not prescribed in higher doses or for longer periods of time. **Final comments:** Patients who require prolonged antifungal therapy are often more vulnerable and signs of adrenal insufficiency can sometimes be mistaken for symptoms of their underlying disease. Therefore, it is crucial to identify the potential for AI in these patients to ensure appropriate, cause-specific management. **Keywords:** primary adrenal insufficiency; adrenal steroidogenesis inhibitors; azole antifungals.

TIREOIDE

1869

THYROID DYSFUNCTION INDUCED BY IMMUNOTHERAPY – CASE SERIES

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Case report 1: A 33-year-old female patient, diagnosed with stage IIB triple-negative infiltrating ductal carcinoma of the breast, received chemotherapy combined with immunotherapy. After the fifth administration, she developed fever and odynophagia. With no improvement after antibiotic treatment, laboratory tests showed TSH 0.001 mIU/L and free T4 1.54 ng/dL, leading to a diagnosis of thyroiditis. She was given symptomatic treatment and subsequently developed hypothyroidism with TSH of 48 mIU/L and free T4 of 0.36 ng/dL. **Case report 2:** A 34-year-old female patient, diagnosed with stage IIIA triple-negative infiltrating ductal carcinoma of the breast, received chemotherapy combined with immunotherapy. After the eighth administration, she developed dyspnea with moderate exertion and sinus tachycardia. Laboratory evaluation showed TSH 0.008 mIU/L and free T4 3.58 ng/dL, resulting in a diagnosis of hyperthyroidism. She began treatment with methimazole and, after two months, developed asthenia and constipation. Laboratory tests showed progression to hypothyroidism, with TSH 444 mIU/L and free T4 < 0.1 ng/dL. Levothyroxine replacement was initiated, with significant improvement four weeks later. **Case report 3:** An 80-year-old male patient with stage III melanoma, operated on, received adjuvant immunotherapy. After three cycles, asymptomatic, he did not return for consultation. At the sixth cycle, he returned with asthenia and bradypsychia. Physical examination revealed myxedema. Laboratory tests showed TSH 141 mIU/L and free T4 0.32 ng/dL. Levothyroxine replacement was started at 100 mcg per day, progressively increasing to 125 mcg per day, with clinical improvement. **Discussion:** Checkpoint inhibitors, also known as immunotherapeutic agents, are widely used drugs in various types of malignant neoplasms. Their mechanism of action involves activating lymphocyte recognition of tumor tissue, which can lead to immune-induced dysfunctions in various systems, with endocrinopathies being among the most common. Due to the progression of the vast majority of cases to hypothyroidism, cases presenting with thyrotoxicosis require more frequent monitoring. **Final comments:** These cases demonstrate the need for serial evaluation of thyroid hormones and symptom surveillance in patients undergoing immunotherapy, to enable early diagnosis and treatment, thereby preventing major complications. **Keywords:** thyroid; immunotherapy; hypothyroidism.

OBESIDADE

1870

CORRELATION OF OBESITY, OVERWEIGHT, DIETARY AND PHYSICAL HABITS WITH THE DEVELOPMENT OF DIABETES MELLITUS IN BRAZILIAN STATES

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Introduction: According to the WHO, obesity is defined as a chronic and multifactorial disease that leads to health risks. Social aspects, sedentary lifestyles, and excessive consumption of high-fat and high-calorie foods contribute to this condition. Researches indicate that diabetes is the primary complication of obesity and its prevalence is directly related to the increase in obesity. Therefore, it is necessary to use national health surveys to assess Brazil's health patterns and describe the distribution of risk factors associated with the analyzed population. **Goal:** To correlate obesity, overweight, dietary, and physical habits with the development of diabetes mellitus in Brazilian states. **Materials and methods:** This quantitative and retrospective study analyzed 2023 data from the *Vigilância de Fatores de Risco e Proteção para Doenças Crônicas por Inquérito Telefônico* (VIGITEL) from the *Ministério da Saúde*. Five charts served as evaluation criteria: overweight, obesity, soda, ultra-processed food consumption, and physical inactivity. Those charts identify which capitals repeatedly ranked among the 10 cities with the highest results. Additionally, DATASUS data was collected on the number of people with diabetes mellitus in 2023 in Brazilian states and regions, along with theoretical support. **Results:** Based on VIGITEL data, it was observed that Fortaleza overlaps with three of the five criteria, ranking among the 10 capitals with the highest rates of physical inactivity, overweight, and obesity. However, the capital that stands out the most is Manaus, with the highest indices of soda consumption, ultra-processed foods, inactivity, and obesity, covering four of the five factors. This demonstrates the predominance of unhealthy habits, resulting in increased weight in these cities. Additionally, with DATASUS data, it was found that Amazonas and Ceará rank third in the highest percentage of diabetes mellitus in their regions, indicating a high prevalence of this comorbidity in states whose capitals have a predominance of obesity. This condition is related to diabetes in these areas, highlighting a connection between both. **Conclusion:** Therefore, it is confirmed that unhealthy habits influence obesity rates, and a correlation with diabetes has been observed mainly in the state of Amazonas. Hence, it is crucial to continue monitoring the population through health surveys and to implement effective public intervention policies. **Keywords:** overweight; national health surveys; risk factors.

METABOLISMO ÓSSEO E MINERAL

1871

HYPOPARATHYROIDISM SECONDARY TO HYPOMAGNESEMIA IN A PATIENT ON PROLONGED USE OF POLYMYXIN B: A CASE REPORT

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1. HOSPITAL ARTHUR RAMOS, MACEIÓ, AL, BRASIL.

Patient, male, 20 years old, victim of a motorcycle collision with a minibus on 12/14/2023. He was admitted to a reference hospital in Maceió-AL and underwent orthopedic surgery due to an open fracture of the tibia and fibula in the left lower limb. During treatment, he developed pulmonary contusion, severe anemia, sepsis, compartment syndrome in the left lower limb, deep vein thrombosis and pulmonary thromboembolism. Additionally, he underwent multiple orthopedic and vascular surgeries, and faced several surgical site infections. Throughout the treatment, prolonged prescription of antibiotics was necessary, especially Polymyxin B. This resulted in sustained hypomagnesemia and secondary hypoparathyroidism. Polymyxin B, despite its effectiveness in treating serious infections, can lead to hypomagnesemia due to renal toxicity. This toxicity affects the renal tubules and results in excessive loss of magnesium through urine, in addition to interfering with the transport of magnesium in the renal tubules, reducing the reabsorption of this electrolyte back into the blood circulation. The interaction between magnesium and parathyroid hormone is crucial for calcium homeostasis and bone health. Magnesium deficiency, in turn, may predispose to the development of secondary hypoparathyroidism, as occurred in this clinical case. This case highlights the challenges faced in managing a patient after severe trauma and multiple complications, including infections and electrolyte disturbances associated with prolonged use of antibiotics, particularly Polymyxin B. Sustained hypomagnesemia and hypoparathyroidism, resulting from renal toxicity induced by this antibiotic, highlight the critical need for meticulous electrolyte monitoring during intensive treatment. Deeply understanding pharmacological interactions and potential adverse effects of medications is crucial to mitigating serious complications and optimizing patient care in challenging clinical settings such as this. Integrated and multidisciplinary management, together with continuous monitoring, are essential to achieve better outcomes and ensure the patient's complete recovery. **Keywords:** hypoparathyroidism; hypomagnesemia; Polymyxin B.

NEUROENDOCRINOLOGIA

1872

A CASE REPORT: EVOLUTION OF A MICROPROLACTINOMA TO SYMPTOMATIC MACROPROLACTINOMA DURING PREGNANCY

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1. HOSPITAL UNIVERSITÁRIO PEDRO ERNESTO, RIO DE JANEIRO, RJ, BRASIL.

Case presentation: A 36-year-old female patient presented with symptoms of galactorrhea, headache, and secondary amenorrhea. Initial prolactin level was greater than 200 ng/mL. Admission pituitary magnetic resonance imaging (MRI) showed a 0.7 x 0.5 x 0.6 cm adenohypophyseal lesion with hyperintensity on T1 signal. Treatment with cabergoline 1 mg per week was initiated. After 5 months of treatment, patient returned pregnant to the outpatient clinic, when cabergoline was interrupted. At the 29th week of gestation, patient referred headache and left temporal hemianopsia. A new MRI showed a 2.0 x 1.4 x 1.6 cm lesion, with supra and infrasellar extension, but without touching the optic chiasm. Cabergoline 1 mg was then reintroduced, visual field testing (campimetry) was requested, and patient will be monitored monthly. **Discussion:** The enlargement of microprolactinomas occurs in approximately 2.4% of pregnancy cases. Management during this period is primarily clinical due to physiological elevation of prolactin levels. Headache and visual field changes are alarming signs for imaging exams. Dopaminergic agonists are the first line drug for prolactinomas. They are routinely discontinued upon pregnancy diagnosis, mainly in microprolactinomas. Therefore, their use should be individualized based on clinical history and tumor size, with regular monitoring and active surveillance for alarm symptoms. **Final comments:** The progression from microprolactinoma to macroprolactinoma during pregnancy is rare. Pituitary tumor growth might have occurred because patient used cabergoline for a short period of time. Regular follow-up and active surveillance are crucial for early symptom detection, facilitating appropriate treatment and preventing associated complications. When indicated, cabergoline became an option to bromocriptine during pregnancy by many centers. **Keywords:** prolactinoma; pregnancy; cabergolin.

METABOLISMO ÓSSEO E MINERAL

1874

ONCOGENIC OSTEOMALACIA: CASE REPORT OF SINONASAL PHOSPHATURIC MESENCHYMAL TUMOR

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1. UNIVERSIDADE DE FORTALEZA, FORTALEZA, CE, BRASIL.

Case presentation: a female patient, aged around 43, began to suffer from bone pain, muscle weakness and several fractures of the ribs and femoral head. She denied any previous pathologies, use of medication or climacteric conditions. Initial physical examination revealed only muscle weakness. Laboratory tests showed hypophosphatemia, hyperphosphaturia and normal seric calcium, parathormone and vitamin D levels. The hypothesis of oncogenic osteomalacia was raised, but imaging tests showed no tumor, nor was it possible to measure fibroblast growth factor 23 (FGF 23). The patient was treated with calcitriol and oral phosphate without improvement and progressed to difficulty standing and walking. Ten years after the first consultation, she presented herself with epistaxis and a CT scan of the sinuses showed an irregular mass in the left sinus and 99mTc-SESTAMIBI scintigraphy showed irregular uptake of the radiotracer in the same region. She was submitted throw surgery and the pathology report showed a low-grade spindle cell lesion and immunohistochemistry showed that it was a benign lesion of an unclassifiable nature, which could be classified as a nasal hamartoma. After surgery, the patient progressed with great clinical improvement, walked again and normalized her phosphate seric levels. **Discussion:** Osteomalacia is classified as calciopenic or hypophosphatemic, and the latter may be mediated by FGF-23 produced by mesenchymal tumors, which are generally benign and located mainly in the appendicular skeleton, being extremely rare in the head and neck. This syndrome is called oncogenic hypophosphatemic osteomalacia (OOH), caused by a tumor secreting high levels of FGF 23, which reduces phosphate reabsorption by the proximal tubule and generates hyperphosphaturia. The most common clinical manifestations are bone pain, multiple fractures and muscle weakness, which can progress quickly. Laboratory tests show hypophosphatemia, elevated alkaline phosphatase and normal levels of calcium, parathormone and vitamin D. Diagnosis is made by FGF-23 dosage associated with tumor detection in imaging tests, but it can take years, so OOH should be suspected when the patient presents with hypophosphatemia and hyperphosphaturia of unknown cause. **Final comments:** OOH is a rare syndrome in which surgical removal of the tumor is essential. **Keywords:** oncogenic osteomalacia; mesenchymal tumor; hypophosphatemia.

METABOLISMO ÓSSEO E MINERAL

1875

ONCOGENIC OSTEOMALACIA: CASE REPORT OF SINONASAL PHOSPHATURIC MESENCHYMAL TUMOR

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1. UNIVERSIDADE DE FORTALEZA, FORTALEZA, CE, BRASIL.

Case presentation: A female patient, aged around 43, began to suffer from bone pain, muscle weakness and several fractures of the ribs and femoral head. She denied any previous pathologies, use of medication or climacteric conditions. Initial physical examination revealed only muscle weakness. Laboratory tests showed hypophosphatemia, hyperphosphaturia and normal seric calcium, parathormone and vitamin D levels. The hypothesis of oncogenic osteomalacia was raised, but imaging tests showed no tumor, nor was it possible to measure fibroblast growth factor 23 (FGF 23). The patient was treated with calcitriol and oral phosphate without improvement and progressed to difficulty standing and walking. Ten years after the first consultation, she presented herself with epistaxis and a CT scan of the sinuses showed an irregular mass in the left sinus and 99mTc-SESTAMIBI scintigraphy showed irregular uptake of the radiotracer in the same region. She was submitted throw surgery and the pathology report showed a low-grade spindle cell lesion and immunohistochemistry showed that it was a benign lesion of an unclassifiable nature, which could be classified as a nasal hamartoma. After surgery, the patient progressed with great clinical improvement, walked again and normalized her phosphate seric levels. **Discussion:** Osteomalacia is classified as calciopenic or hypophosphatemic, and the latter may be mediated by FGF-23 produced by mesenchymal tumors, which are generally benign and located mainly in the appendicular skeleton, being extremely rare in the head and neck. This syndrome is called oncogenic hypophosphatemic osteomalacia (OOH), caused by a tumor secreting high levels of FGF 23, which reduces phosphate reabsorption by the proximal tubule and generates hyperphosphaturia. The most common clinical manifestations are bone pain, multiple fractures and muscle weakness, which can progress quickly. Laboratory tests show hypophosphatemia, elevated alkaline phosphatase and normal levels of calcium, parathormone and vitamin D. Diagnosis is made by FGF-23 dosage associated with tumor detection in imaging tests, but it can take years, so OOH should be suspected when the patient presents with hypophosphatemia and hyperphosphaturia of unknown cause. **Final comments:** OOH is a rare syndrome in which surgical removal of the tumor is essential. **Keywords:** oncogenic osteomalacia; mesenchymal tumor; hypophosphatemia.

NEUROENDOCRINOLOGIA

1876

GENETIC STUDY AND CLINICAL PROFILE OF 15 YOUNG PATIENTS WITH PITUITARY NEUROENDOCRINE TUMOR

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1. SANTA CASA DE MISERICÓRDIA DE SÃO PAULO, SÃO PAULO, SP, BRASIL.

Introduction: The interest in the pathophysiology of pituitary neuroendocrine tumors (PiNETS) is increasing, especially concerning the genetic origin of such tumors. Identifying specific mutations can provide important information about clinical characteristics, prognosis, aggressiveness, invasiveness, and even the possibility of response to standard pharmacological treatment. The aim of this study was to analyze the clinical profile and perform a genetic study of possible hereditary pituitary tumors. **Materials and methods:** A cross-sectional and observational study was conducted with 15 patients aged up to 25-yrs-old with pituitary tumors, followed in a specialized outpatient clinic of a tertiary service. A genetic panel composed of next-generation sequencing of 19 genes related to hereditary adenoma (*AIP, CABLES1, CDKN1B, DICER1, GNAS, GPR101, MAX, MEN1, NF1, PIKCA, PRKARIA, SDHA, SDHAF2, SDHB, SDHC, SDHD, SF3B1, USP48, and USP8*) was performed. **Results:** Of the 15 patients, eight (54%) were female, and seven (46%) were male. The average age at diagnosis was 17 yrs-old (range 8-24). None of the patients had a positive familiar history for neuroendocrine tumors. MRI showed lesions with an average size of 2.45 cm (ranging from microadenomas to up to 7.2 cm). Regarding the underlying condition diagnosis, 10 (66.6%) had prolactinoma (prolactin levels at diagnosis ranged between 88 and 8,005 ng/mL), three (20%) had Cushing's disease, one had a clinically non-functioning adenoma (6.7%), and one had gigantism (6.7%). Six prolactinomas were well-controlled with low-dose of cabergoline; two maintained persistently elevated prolactin levels (1,126 and 284 ug/L) despite doses higher than 3.5 mg/week, and two were at the beginning of follow-up. One patient with Cushing's was in the first appointment at the time of collection, and the other two persist with remission criteria after transphenoidal surgery. The only patient with gigantism, diagnosed at 14 years old, required two transsphenoidal surgeries and has maintained good clinical and laboratory control of the disease with Octreotide LAR. The study for pathogenic or probably pathogenic variants of the analyzed genes was negative in all patients; in a single 19 years-old female patient with a prolactinoma measuring 0.8 cm in its largest axis, a variant of uncertain significance was found in the SDHD gene. **Conclusion:** No pathogenic or probably pathogenic variants were evidenced in the studied sample. **Keywords:** neuroendocrine tumors; pituitary adenomas; familial pituitary adenoma.

ENDOCRINOLOGIA PEDIÁTRICA

1877

CARTILAGE-HAIR HYPOPLASIA, A RARE DISEASE AS A DIFFERENTIAL DIAGNOSIS OF BONE DYSPLASIAS: A CASE REPORT

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1. FACULDADE DE MEDICINA DE SÃO JOSÉ DO RIO PRETO (FAMERP), SÃO JOSÉ DO RIO PRETO, SP, BRASIL.

Case presentation: A 6-year-old male patient was referred to the endocrinology service due to disproportionate short stature, with a suspected diagnosis of hypochondroplasia. Clinical examination revealed sparse scalp hair, prominent forehead, facial features reminiscent of ectodermal dysplasia, disproportionate short stature (Z-score < -3 and upper/lower segment ratio of 1.46), lumbar hyperlordosis, brachydactyly with ligament laxity, bow legs, and flat feet. Laboratory investigations showed normal thyroid function and calcium profile, with normal IGF-1 levels and GH stimulation test. Radiographs of the lower limbs demonstrated irregularities in the trabecular bone of the tibia and femur. Bone age assessment revealed a skeletal age of 3 years. The patient was born full-term with short stature, without complications during gestation, and non-consanguineous parents. Next Generation Sequencing (NGS) panel analysis identified 2 pathogenic variants in the RMRP gene, specifically n.-23_-12dup and n.181G>A, confirming the diagnosis of cartilage-hair hypoplasia (CHH). **Discussion:** CHH is a rare autosomal recessive disorder caused by mutations in the RMRP gene located on chromosome 9p13.3. This gene plays a crucial role in RNA processing and cell cycle control; therefore, pathogenic variants lead to gene dysfunction and disruption of normal cellular division. Skeletal abnormalities characteristic of CHH include metaphyseal dysplasia, short stature with short limbs, lumbar lordosis, brachydactyly, and ligament laxity. Hypoplastic hair is the primary extra-skeletal finding. Individuals with CHH have an increased predisposition to malignancies and immunodeficiencies. Most patients exhibit impaired cellular immunity, with clinical symptoms typically manifesting in early childhood and the potential for severe complications such as severe combined immunodeficiency (SCID). Regarding malignancies, there is a higher incidence of hematologic and dermatologic neoplasms, particularly non-Hodgkin lymphoma and basal cell carcinoma. Macrocytic anemia, autoimmune diseases, and gastrointestinal involvement may also be present. **Final comments:** This case report describes a rare disease that represents a differential diagnosis with bone dysplasias, thus emphasizing the importance of prompt investigation and genetic testing when suspicion arises. Early diagnosis can significantly enhance patient quality of life and facilitate genetic counseling for families. **Keywords:** cartilage-hair hypoplasia; skeletal dysplasia; short stature.

TIREOIDE
1878

ZENKER'S DIVERTICULUM SIMULATING A TI-RADS 5 THYROID NODULE

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Case presentation: A 70-year-old female presents for follow-up of thyroid nodules. An ultrasound (US) examination of the thyroid gland revealed a mixed nodule, predominantly solid, isoechoic, with peripheral and inner calcifications, wider than taller, with mildly lobulated margins, located in the upper/middle third of the left lobe, measuring 2.0 x 0.7 x 1.5 cm, with only peripheral vascularization on color Doppler. The nodule was stratified into category 5 by the Thyroid Imaging Reporting and Data System (TI-RADS). Fine needle aspiration (FNA) was then performed, and cytology was negative for neoplastic cells, showing squamous epithelial cells amidst spores and pseudo hyphae of Candida sp. Discussing these findings with the radiologist who performed the FNA, he suggested that the nodular image was, in fact, a Zenker esophageal diverticulum. **Discussion:** Zenker's diverticulum (ZD) is a projection of the mucous layer of the esophagus by pulsion into Killian's triangle, an area of weakness between two muscles, the cricopharyngeal and the thyropharyngeal. The described prevalence of ZD is between 0.01 and 0.11%, being more common in men and producing symptoms such as dysphagia, regurgitation, chronic cough, weight loss and dysphonia. On US, the ZD has characteristics of a nodular, solid, hypoechoic image, with a mixed appearance and oval shape, with protrusion of the esophageal wall and almost located in the left lobe of the thyroid gland. Both on physical and on US examination, the similarities with a thyroid nodule may make it more difficult to distinguish between a ZD and a true nodule. A detailed ultrasound examination combined with an esophagram are paramount for a correct diagnosis. In our case, the cytological findings corroborated the esophageal origin of the "nodule". **Final comments:** In the follow-up of a thyroid nodule, questioning of digestive and cervical compressive symptoms should be part of the routine. The hypothesis of ZD must be raised if there is a dynamic change in the size of the cervical mass. On US examination, the presence of layers in the nodule is observed and when the patient swallows, there is movement of the thyroid and the diverticulum in relation to each other. Furthermore, if FNA is performed, an experienced pathologist can flag the misunderstanding to the attending physician. **Keywords:** thyroid nodule; Zenker diverticulum; fine needle biopsy.

TIREOIDE
1882

CORRELATION BETWEEN TI-RADS, BETHESDA AND CHAMMAS CLASSIFICATIONS OF THYROID NODULES SUBMITTED TO FNA IN A SERVICE IN ARACAJU

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Introduction: Thyroid nodules are common findings in the population. Most of these nodules are benign and, if malign, nearly 95% are well differentiated carcinomas. For this reason, the chance of malignity must always be ruled out, and therefore, a range of methods have been created to estimate the probability of malignancy and not submit the patients to invasive and unnecessary procedures. In 2017, the American College of radiology suggested the TI-RADS classification, an ultrasound-based scale in which, depending on the nodule characteristics, offers a classification regarding the suspicion degree of this nodule. Before this, there was the Chammas and cols classification, which suggested in a 2005 a method that distinguished the nodules according to the degree of vascularization. **Objective:** The present study seeks to identify a correlation between the Bethesda, TI-RADS and Chammas systems in a medical service in Aracaju. **Materials and methods:** Initially, a descriptive analysis was carried out, then we obtained the frequencies and percentages for the qualitative variables, and for the quantitative variables the mean, standard deviation and minimum and maximum values were calculated. In the inferential analysis, the "chi-squared test" was used to evaluate the relationship between TI-RADS, Chammas and Bethesda classifications. We used THE R CORE TEAM, 2024, version 4.3.2. **Results:** There were 210 patients available, aged between 16 and 88 years old (average age of 54.6 years old). In the Chammas classification, there was a prevalence of category III with 157 cases (73.7%). In TI-RADS, category 3 prevailed with 74 cases (34.6%), followed by category 4 with 71 cases (33.2%). Regarding the Bethesda classification, category 2 predominated with 111 cases (52.6%). We observed a significant association between the Chammas and TI-RADS ($p < 0.001$), and those with TI-RADS index 2 or 3 had majorly a Chammas III result (89.6% and 80.8%, respectively). Among those classified as TI-RADS 5 (50%), the majority were Chammas IV. There was no significant association between the TI-RADS and Chammas systems with the Bethesda classification. **Conclusions:** We could observe that the Chammas and the TI-RADS classifications presented a good correlation, which demonstrates that the Chammas classification can still serve as a factor to be considered in the decision to request FNA. However, we did not observe correlation between both classifications and the results of the Bethesda. **Keywords:** thyroid nodules; FNA; ultrasound.

NEUROENDOCRINOLOGIA

1883

ACROMEGALY WITH HYPERPROLACTINEMIA DUE TO PITUITARY STALK COMPRESSION – A CASE REPORT IN WESTERN AMAZON

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1. HOSPITAL DAS CLÍNICAS DO ACRE, RIO BRANCO, AC, BRASIL.

Case presentation: A 59-year-old male patient, hypertensive and dyslipidemic, presented to the urology clinic with a complaint of erectile dysfunction that began 3 months ago. Laboratory tests showed elevated prolactin levels (178 ng/mL), testosterone (311 ng/dL), follicle-stimulating hormone (FSH: 4.3 mU/mL), and luteinizing hormone (LH: 2.1 mU/mL). MRI of the sella turcica revealed a pituitary macroadenoma (2.8 cm) compressing the left cavernous sinus, raising the possibility of a macroprolactinoma, and he was referred to the endocrinology clinic for treatment. Physical examination revealed signs of acromegaly, primarily increased extremities. Thus, the diagnosis of acromegaly and hyperprolactinemia due to pituitary stalk compression was considered, as the patient's clinical manifestations and tumor size were not compatible with the serum prolactin level. The endocrinology team ordered additional tests that showed elevated growth hormone (GH: 13.1 ng/mL) and insulin-like growth factor type 1 (IGF-I: 521 ng/mL), confirming the clinical diagnosis of acromegaly with probable hyperprolactinemia due to pituitary stalk compression. The patient was then referred for surgical removal of the tumor and continues to be followed by the endocrinology team. **Discussion:** Acromegaly is a rare condition resulting from GH hypersecretion, leading to hepatic stimulation for IGF-1 secretion, which in most cases is related to a pituitary adenoma that is purely GH-secreting or mixed, causing the clinical manifestations of the disease. Its prevalence is estimated at 1:140,000-250,000 and is more frequently diagnosed in middle-aged adults, with an average age of 40 years, affecting both men and women equally. **Final comments:** Through a thorough physical examination and the request for specific complementary tests, early diagnosis of acromegaly is possible, allowing for first-line treatment, which is surgical, to reduce cardiovascular, respiratory, metabolic, musculoskeletal, neurological, and neoplastic comorbidities resulting from persistent excess of GH and IGF-1. **Keywords:** acromegaly; pituitary adenoma; hyperprolactinemia.

NEUROENDOCRINOLOGIA

1884

PITUITARY ADENOMA IN A NATIVE FROM WESTERN AMAZON: A CASE REPORT

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1. HOSPITAL DAS CLÍNICAS DO ACRE, RIO BRANCO, AC, BRASIL.

Case presentation: Male patient, 30 years old, indigenous, with no prior comorbidities, reports an insidious onset over one year of persistent headache that does not improve with conventional analgesics, associated with fatigue, progressive vision loss, ocular pain, and alternation between irritability and drowsiness. He sought medical attention, where mydriasis and ophthalmoplegia were observed, with no motor or sensory deficits and preserved level of consciousness. Magnetic resonance imaging (MRI) showed a large pituitary macroadenoma extending to the sella, infracellar, clivus, and suprasellar regions, larger on the left side, with a solid-cystic appearance on the left of indeterminate nature. Hormonal testing revealed prolactin levels greater than 2000, while other levels were suppressed or within normal limits. He was evaluated by neurosurgery, who initiated cabergoline 1 mg and indicated surgical resection via transsphenoidal hypophysectomy. After surgery, the patient developed clinical and laboratory signs of pituitary insufficiency, necessitating hormonal replacement with corticosteroids, thyroid hormone, desmopressin, and testosterone, progressing favorably with hospital discharge. **Discussion:** Pituitary adenomas (PAs) comprise 10%-15% of all intracranial lesions, with the most common tumor in the sellar region being the PA. Its classic triad includes severe headache, visual disturbances, and decreased level of consciousness, potentially accompanied by nausea and vomiting, or it may remain asymptomatic. Suggestive clinical findings include a set of endocrinological changes typical of hypothyroidism and adrenal insufficiency. MRI of the sellar region is crucial for diagnosis, staging, and helps determine the area to be resected during surgery. The preferred method is endoscopic transsphenoidal resection, associated with hormonal replacement therapy, and in cases of recurrence, radiotherapy may be utilized. **Final comments:** PAs are rare and can cause complications that compromise the patients' quality of life; even with small growth, they can result in compression and damage to adjacent structures, leading to pain and visual deficits. Therefore, it is important to suspect pituitary tumors in patients with unexplained headaches, associated with visual abnormalities or endocrinopathies, aiming for early diagnosis and surgical excision when necessary. **Keywords:** pituitary adenoma; indigenous; Western Amazon.

ENDOCRINOLOGIA PEDIÁTRICA

1886

CONGENITAL HYPERINSULINISM DUE TO PATHOLOGICAL VARIANT IN THE ABCC8 GENE: A FAMILY DIAGNOSIS

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Congenital hyperinsulinism (CHI) is a rare clinical and genetically heterogeneous condition characterized by persistent hypoglycemia due to inappropriate insulin secretion by pancreatic beta cells. To date, alterations in 15 genes responsible for regulating insulin secretion have been identified as causes of CHI. We present the case of a patient with CHI referred to our institution due to diagnostic and therapeutic difficulties. **Case report:** A 6-year-old female patient presented with hypoglycemia (30 mg/dL) on the second day of life, treated with oral glucose and breastfeeding. From the 9th month of life, she began experiencing behavioral change episodes lasting 20 to 30 minutes. At 18 months, she had a generalized seizure episode. Neurological evaluation was performed, and therapy with valproate was initiated until the age of 5. At 4 years old, after another seizure, she was taken to the emergency room, where her blood glucose was found to be 35 mg/dL and her insulin level was 4.6 µIU/mL, establishing the diagnosis of hyperinsulinemic hypoglycemia. She was referred to our institution in 2023, and therapy with diazoxide was initiated, showing good clinical response. To identify the etiology of CHI, Sanger sequencing of the KCNJ11 and ABCC8 genes was performed, identifying the p.Glu1506Lys (c.4516G>A) variant in the ABCC8 gene in heterozygosity, classified as pathogenic. First-degree relatives were also subjected to genetic study, and the same alteration was identified in her father, aunt, and paternal cousin. A history of episodes suggestive of hypoglycemia in childhood was noted in the affected relatives. The proband's father is currently showing glucose intolerance (fasting blood glucose 105 mg/dL). **Conclusion:** Although pathological variants in the ABCC8 and KCNJ11 genes are among the most common causes of CHI, the diagnosis remains a challenge, and delays can lead to ineffective therapies and neurological sequelae. This case reinforces the importance of molecular diagnosis of the index case not only to guide patient treatment but also to define diagnosis, therapy, and counseling for the family. **Keywords:** congenital hyperinsulinism; hyperinsulinemic hypoglycemia; ABCC8 gene.

METABOLISMO ÓSSEO E MINERAL

1887

CLINICAL CASE OF ONCOGENIC OSTEOMALACIA DUE TO FGF-23 PRODUCING TUMOR: FROM DIAGNOSIS TO DEFINITIVE TREATMENT

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Case presentation: A previously healthy 43-year-old female patient presented with generalized bone pain, muscle weakness, and polyarthralgia, progressively worsening over 1.5 years. Physical examination revealed significant muscle weakness and atrophy without bone deformities. Laboratory tests showed hypophosphatemia (1.2 mg/dL, reference range 2.5-4.5), elevated alkaline phosphatase (302 U/L, reference range 30-120), and normal levels of 25-hydroxyvitamin D, PTH, and total calcium, with borderline tubular reabsorption of phosphate (85%, reference range 85%-95%). Multiple fragility fractures were identified. There was no personal or family history of hypophosphatemia. Calcitriol and phosphorus supplementation were recommended. Elevated FGF-23 levels (293 RU/mL, reference range ≤ 180) suggested hypophosphatemic osteomalacia mediated by FGF-23. The patient denied previous intravenous iron infusion, supporting the diagnosis of tumor-induced osteomalacia. PET-CT using 68 Ga-DOTATATE located a hypermetabolic lesion in the right gluteus maximus. MRI confirmed a lobulated formation in the same area, measuring 1.9 x 1.8 x 1.5 cm. The patient underwent surgical resection of the lesion with margin clearance and was discharged without phosphorus supplementation. At follow-up, she reported improvement in muscle weakness and generalized pain, with normal phosphatemia (3.1 mg/dL) on the 13th postoperative day. Histopathology revealed a phosphaturic mesenchymal tumor. **Discussion:** Oncogenic osteomalacia is a rare paraneoplastic syndrome caused by FGF-23 secretion. Chronic hypophosphatemia should raise suspicion for this diagnosis. In this case, it took 1.5 years from symptom onset to definitive treatment. Considering the average diagnosis time ranges from 2.5 to 28 years, this case was diagnosed early. Early diagnosis was facilitated by initial hypophosphatemia detection, access to specialized services, and PET-CT with 68 Ga-DOTATATE, the most accurate imaging modality for locating the primary site and guiding surgical treatment, the only potentially curative option. **Final comments:** Successful localization using somatostatin analog-based imaging suggests this may be the ideal imaging modality, as the tumor is usually small and can be located anywhere in the body. **Keywords:** osteomalacia; oncogenic osteomalacia; FGF-23 producing tumor.

TIREOIDE

1888

LOSS OF VISUAL SUPPRESSION WITH ONSET OF DIPLOPIA AFTER RETROBULBAR TRIAMCINOLONE TREATMENT FOR GRAVES' ORBITOPATHY

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Case presentation: M.R.S., female, 54 years old, diagnosed with hyperthyroidism, presented to the clinic in 2006 with right upper eyelid retraction. At the time, Graves' orbitopathy was suspected and investigated with computed tomography, visual field testing, and evaluation of extraocular muscle function. All test results were normal, and surgery was recommended for correction of the eyelid retraction, which was successful. In 2023, the patient returned with bilateral exophthalmos, worse in the right eye, eye movement pain, eyelid retraction, ocular congestion, right upper eyelid lagophthalmos, lower third corneal exposure keratopathy, restrictive strabismus in upward gaze, decreased sensitivity on visual field testing, and severe enlargement of the right medial rectus and inferior rectus muscles on orbital computed tomography. Clinical activity score (CAS) = 5. Retrobulbar depot corticosteroid injection of 1 mg per eye was administered weekly for 4 weeks with symptom improvement observed; however, clinical activity parameters persisted. This is the reason why we opted for pulse therapy. The patient experienced resolution of ophthalmic symptoms but developed diplopia in primary gaze position, which persisted despite high prism correction. **Discussion:** Management of Graves' orbitopathy should consider the varied clinical phenotypes for treatment decisions. In this case, absence of diplopia prior to treatment was due to cerebral suppression of binocular image from severe strabismus. Improvement in extraocular muscle movement and reduction in strabismus resulted in disappearance of cerebral suppression and subsequent onset of diplopia. **Final considerations:** Treatment challenges in Graves' orbitopathy stem from the diversity of presenting symptoms and those emerging during therapy. In this case, diplopia onset signifies improved extraocular muscle function, necessitating corrective measures. Ongoing monitoring is crucial to adjust interventions based on evolving symptoms, aiming to alleviate diplopia in primary gaze for potential strabismus surgery. **Keywords:** Graves ophthalmopathy; hyperthyroidism; triamcinolone.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1889

COMPARATIVE ANALYSIS OF HEMATOCRIT, GLUCOSE AND HIGH-DENSITY LIPOPROTEIN (HDL) LEVELS IN TRANSGENDER MEN ON GENDER-AFFIRMING HORMONE THERAPY ON SHORT AND LONG-INTERVAL TESTOSTERONE REGIMENS

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Introduction: In transgender men (TM) on gender-affirming hormone therapy (GAHT) an increase in hematocrit (Ht) and worsening of metabolic parameters is often observed. A strategy to manage elevated Ht is to switch from short interval regimens of testosterone to formulations that provide lower and less fluctuating serum levels (transdermal gel or undecanoate). Although favourable results were demonstrated with this approach in cisgender men on hormone treatment there is limited evidence comparing GAHT regimens. **Objective:** To compare hormone, Ht, HDL, and glucose levels between long-interval (LONG) and short-interval (SHORT) testosterone regimens in TM treated at a specialized center for transgender health care on regular GAHT in a tertiary hospital. **Materials and methods:** 82 TM were included, 35 in the LONG group (testosterone undecanoate every 10 or 12 weeks) and 47 in the SHORT group (testosterone cypionate or testosterone esters every 14 or 21 days). In the LONG group, 22 TM previously on short regimen transitioned to undecanoate, and their data were sub-analyzed (SHORT-LONG). **Results:** There were no differences between the groups regarding age, BMI, FSH, estradiol, Ht, HDL, and glucose levels. The LONG group had lower testosterone levels than the SHORT group (571.6 ng/dL *vs.* 716.3 ng/dL; p = 0.0449). LH levels were significantly lower in the LONG group (3.489 mUI/mL *vs.* 8.220 mUI/mL; p = 0.0146). In the SHORT-LONG group, there was a tendency towards higher Ht (47,56% *vs.* 48,72%; p = 0.055). **Conclusion:** The rationale behind switching from shorter to long interval regimens is that testosterone effect on hemoconcentration and metabolic variables could be dose dependent. Although we demonstrated significantly lower testosterone levels in the LONG group, Ht was not lower in the SHORT-LONG group as would be expected. This result may have been due to selection bias, once clinicians may have switched regimens in attempt to reach more favourable Ht levels in isolated cases in this group. The small sample size of the SHORT-LONG group may have limited the final analysis. Another limitation of this study is its retrospective nature. A randomized controlled trial would be crucial for a robust conclusion. Nevertheless, the present study provides real-life insights into the daily routine of specialized outpatient transgender health care services, pointing to a possible management strategy in patients with unfavourable parameters. **Keywords:** gender-affirming hormone therapy; hematocrit; testosterone.

OBESIDADE

1890

ASSOCIATION AMONG BODY MASS INDEX (BMI) AND METABOLIC HEALTH INDICES

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Introduction: Obesity is a major risk factor for chronic diseases, including lipid changes and insulin resistance (IR), which predisposes to diabetes mellitus (DM). The objective of this study was to evaluate, if the body mass index (BMI) is related to changes in lipid profile, glucose metabolism, and IR, in subjects without evidence of metabolic diseases. **Methods:** Using the database of a clinical laboratory, we studied the relationship of BMI [weight (kg)/height (m^2)], with: glucose (G), insulin (I), Tri, Hchol, non-HDL cholesterol (non-Hchol), and the equations that estimate IR: HOMA-IR: glucose (mg/dL) x insulin (mcIU/mL)/405, Insulin/Glucose ratio (IGR): insulin (mcIU/mL)/glucose (mMol/L); and Triglyceride-Glucose index (TyG): Ln [triglycerides (mg/dL) x glucose (mg/dL)/2]. Subjects were 20-65 years, who measured fasting G, I, and lipid profile in the same day. Were excluded hospitalized, those using medications to treat DM, dyslipidemia, or other medications that could alter G, I, or lipids, those with blood glucose over 200 mg/dL, and ALT, or creatinine above the reference range. For the statistical study the Shapiro Wilk test was performed to assess if the variables had a normal distribution. To evaluate the correlation with BMI, Spearman's non-parametric correlation test was used. The statistical significance level was $p < 0.05$. **Results:** After applying the exclusion criteria and subtracting outliers 270,135 records were selected to study, 75% female, with 39,9 ± 10.1 years. As the parameters did not present Gaussian distribution, the results are shown in median and 25th and 75th percentiles: IMC = 26.53 (23.80-29.91), G = 89.3 (84.2-95); I = 8.17 (5.52-12.8), Tri = 84 (62.9-116.5), Hchol = 54.1 (45.1-65), non-Hchol = 128.8 (106.8-151.3), HOMA-IR = 1.81 (1.19-2.75), IGR = 1.64 (1.12-2.40), Tyg = 8.23 (7.91-8.57). BMI showed a positive and statistically significant correlation with: HOMA-IR ($r = 0.44, p < 0.001$); I ($r = 0.43$, $p < 0.001$); IGR ($r = 0.42$, $p < 0.001$); TyG ($r = 0.27$, $p < 0.001$); Tri ($r = 0,25$, $p < 0.001$); G ($r = 0.18$, $p < 0.001$); non-Hchol ($r = 0.15$, $p < 0.001$); and age ($r = 0.07$, $p < 0.001$). BMI showed a negative and significant correlation with Hchol ($r = -0.28$, $p < 0.001$). **Conclusion:** In this population, higher BMI correlated with health parameters indicative of IR, even in subjects without evidence of metabolic disease. We conclude that subjects who have a higher BMI tend to change other biochemical parameters that indicate lower metabolic health, and IR. **Keywords:** body mass index (BMI); insulin resistance; obesity.

TIREOIDE

1894

INTRATHYROIDAL DOPAMINE-PRODUCING PARAGANGLIOMA: CASE REPORT

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Case presentation: A 57-year-old man with a 35-year history of progressive swelling in the neck presented with dysphagia to solids and liquids for the past year, accompanied by hoarseness and orthopnea. Personal medical history was negative for hypertension and unremarkable. At physical examination, blood pressure was normal and the thyroid had a large nodule with a hard consistency, without palpable neck lymphadenopathy. Thyroid ultrasound (US) showed a single, solid, markedly hypoechoic nodule with regular margins, without calcification, measuring 6.8 x 6.5 x 3.5 cm (ACR TI-RADS 4). Fine-needle aspiration (FNA) of the thyroid performed one and five years before at another institution revealed a colloid nodule. A new FNA at our institution diagnosed intrathyroidal paraganglioma (PG), with immunohistochemical analysis (IHC) positive for synaptophysin and chromogranin, and negative for thyroglobulin, calcitonin, and CEA. Laboratory tests showed elevated serum chromogranin A (324 ng/mL, reference range – RR < 93 ng/mL), normal levels of serum calcitonin, plasma metanephrine andnormetanephrine, and elevated plasma 3-methoxytyramine (6.8 nmol/L, RR < 0.1 nmol/L). An alpha-blocker was initiated and titrated for preoperative preparation, and the patient is awaiting surgical intervention. **Discussion:** Intrathyroidal PGs are extremely rare neuroendocrine tumors, typically originating from lower laryngeal paraganglia. The diagnosis is challenging due to their low prevalence and nonspecific histopathological characteristics that can be misinterpreted with other histotypes. There are fewer than 70 cases reported in the literature, with only one case of a potentially functioning intrathyroidal PG (with no laboratory confirmation reported). Initial diagnosis involves thyroid US and FNA with IHC. The standard treatment is surgical resection, and preoperative urinary or plasma metanephrines levels should be measured due to the risk of catecholamine release and hemodynamic instability during the procedure. Long-term follow-up is essential. **Final comments:** To the best of our knowledge, this is the first reported case of a dopamine-producing intrathyroidal PG. It highlights the diagnostic challenges, as it took nearly 35 years for diagnosis despite previous evaluations. Although the diagnosis of functioning intrathyroidal PG is rare, measuring metanephrines should be part of the investigation, even in patients without clinical signs of hormone production. **Keywords:** thyroid; paraganglioma; functional.

DIVERSIDADE, EQUIDADE E INCLUSÃO

1895

GENDER-AFFIRMING HORMONE THERAPY, BIRADS CLASSIFICATION AND BREAST DENSITY IN TRANSGENDER PEOPLE – 25 YEARS OF OUTPATIENT EXPERIENCE

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Introduction: Limited data exists on the impact of gender-affirming hormone therapy (GAHT) on breast density and BIRADS classification in transgender individuals. Additionally, there is scarce evidence on the differences in breast cancer development among transgender people, resulting in a lack of specific screening guidelines for this population. This study aims to describe 25 years of GAHT usage, breast density monitoring, and BIRADS results in a specialized tertiary transgender clinic. **Methods:** This retrospective cohort study observed 112 transgender patients aged 19 to 71 years who used GAHT at a Transgender Clinic. Inclusion criteria included the use of GAHT for ≥ 1 year and having undergone mammography or breast ultrasound for screening or clinical investigation. Patients with bilateral mastectomy or prior breast cancer diagnosis were excluded. Data from electronic records were analyzed, categorizing patients into transgender men and women. Clinical and demographic data were collected, including GAHT duration, breast density, and BIRADS findings. **Results:** Out of 112 initially screened patients, 75 met the inclusion criteria. The average age was 46 ± 11 years, comprising 55 transgender women (73%) and 20 transgender men (27%). Nine (12%) had a family history of breast cancer. The average age of GAHT onset was 25 ± 9 years, with an average duration of 21 ± 11 years. Fifty (67%) patients underwent gender affirmation genital surgeries. Sixty-six (88%) patients were classified as BIRADS 1-2, with 59 (79%) having breast density categorized as B or C. Over the study period, only three significant changes on BIRADS classification were observed in control images, resulting in biopsy indication. One (1%) transgender man progressed from BIRADS 1 to 3, and two (4%) transgender women - one progressed from BIRADS 2 to 4 and the other transitioned from 3 to 4. All three biopsies performed ruled out breast cancer. **Conclusion:** This study found no significant link between GAHT and changes in breast density or BIRADS classification in transgender patients. These findings provide valuable insights into the safety of hormone therapy for this population. However, further longitudinal studies are needed to assess the long-term effects of GAHT on breast health in transgender individuals, considering diverse demographic factors for more generalizable results. **Keywords:** gender-affirming hormone therapy; transgender; breast density.

DIABETES MELLITUS

1896

ACHIEVING THE TARGETS OF GLYCATED HEMOGLOBIN ACCORDING TO FUNCTIONAL STATUS IN ELDERLY PATIENTS WITH DIABETES: A CHALLENGE IN CLINICAL PRACTICE

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Introduction: Elderly patients with type 2 diabetes (T2D) exhibit significant heterogeneity due to comorbidities, frailty, cognitive impairments, and other factors. Therefore, treatment goals should be personalized based on individual functional status. **Objective:** To determine the functional status of elderly individuals with T2D and assess the achievement of glycemic targets according to this classification. **Material and methods:** Cross-sectional study including elderly T2D patients (≥65 years). Data including comorbidities, polypharmacy, diabetes complications, daily activity and risk of hypoglycemia were evaluated. The Endocrine Society (ES) classifies patients into three categories as follows: healthy, intermediate and severe with respective A1c targets of 7%-7.4%, 7.5%-7.9%, and 8%-8.5%, if patients were using drugs that may cause hypoglycemia or <7.5%, <8%, and <8.5% if they were not. Statistical analysis was performed using SPSS-IBM. Results are presented as mean ± standard deviation (SD), median [interquartile range], and n (%). **Results:** Seventy-seven patients aged 73 [69-79] years, diabetes duration 20.9 ± 10.6 years, 51 (66.2%) female were evaluated. The number of comorbidities was 2 [1-3], 68 (90.7%) had polypharmacy and none had end-stage medical conditions. According to ES criteria, 45 (58.4%) were classified as healthy, and 32 (41.6%) as intermediate. Among healthy patients, whether treated or not with drugs that may cause hypoglycemia, 7 (20%) and 5 (50%) met A1c goals, respectively, and for intermediate patients, A1c targets were achieved in 4 (15.4%) and 5 (83.3%), respectively. A greater number of healthy had A1c < 7% compared to intermediate patients (18 [40%] *vs.* 6 [18.8%], p 0.047). Among 24 (31%) patients with A1c < 7% *vs.* > 7%, there was no difference in the number of hypoglycemia (2.5 [1-13] *vs.* 1.5 [1-7], p = 0.590), insulin use (19 [79.3] *vs.* 42 [79.2%], p = 1.00), chronic kidney disease (12 [50%] *vs.* 23 [43.4%], p = 0.590), polypharmacy (23 [100%] *vs.* 45 [86.5%], p = 0.093), diabetes duration (21.63 ± 8.6 *vs.* 20.6 ± 11.4 years, p = 0.701), dose of insulin (UI/Kg/day) (0.49 ± 0.3 *vs.* 0.44 ± 0.3, p = 0.608) or age (75.5 [69.3-79] *vs.* 72 [68-79.5] years, p = 0.505). **Conclusion:** Although a small number of healthy patients achieved A1c goals, a large number had A1c < 7% not associated with hypoglycemia. Stratifying the functional status and achieving the recommended glycemic goals in elderly individuals are challenging and require a comprehensive evaluation. **Keywords:** type 2 diabetes; elderly; functional status.

TIREOIDE

1899

EPIDEMIOLOGICAL PROFILE OF THYROID DISORDERS DUE TO OIDINE DEFICIENCY IN THE STATES OF NORTHEAST BRAZIL FROM JANUARY2019 TO MAY 2024

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Introduction: Thyroid disorders can be associated with autoimmune, genetic, and environmental factors. Endemic goiter (or iodine-deficiency goiter) is the main thyroid disorder and is characterized by a decrease in the production and secretion of thyroid hormones. This reduction is due to an insufficient supply of iodine, the main component of thyroid hormones: T3 and T4. In Brazil, the Ministry of Health has implemented public policies for salt iodization to prevent these disorders. However, the Northeast region of the country still reports hospitalizations related to this health problem. **Objective:** To define the epidemiological profile of patients with thyroid disorders due to iodine deficiency in the states of Northeast Brazil, from January 2019 to May 2024. **Method:** A cross-sectional, descriptive, and quantitative study was conducted using data obtained from the Department of Informatics of the "*Sistema Único de Saúde*" (DATASUS). Data from January 2019 to May 2024 were analyzed, observing the distribution by sex, age group, color/race, and geographic distribution of patients hospitalized with thyroid disease associated with iodine deficiency in the Northeast region of Brazil. **Results:** During the evaluated period, 269 hospital admissions for thyroid disorders due to iodine deficiency were recorded in the Northeast. Pernambuco had the highest incidence, with 134 cases (49.8%), followed by Ceará, with 48 cases (18.2%). Notably, Rio Grande do Norte did not report any cases. Most of the hospitalized patients were in the 40 to 59-year age group (111 cases, 37.25%). Women were significantly more affected, accounting for 232 cases (77.85%). Regarding color/race, most individuals were brown, totaling 226 cases (75.4%), while in 38 cases (12.75%) this information was not recorded. **Conclusion:** Despite the implementation of salt iodization policies in Brazil, the persistence of the problem is still evident. Pernambuco recorded almost half of all cases of thyroid disorders in the Northeast, with women and brown individuals being the most affected. Although the epidemiological analysis did not highlight socioeconomic disparities, the data reinforce the need for awareness about adequate iodine consumption. These data underline the importance of monitoring and targeted interventions to reduce the incidence of these disorders in the region. **Keywords:** thyroid disorders; iodine deficiency; epidemiology.

METABOLISMO ÓSSEO E MINERAL

1907

CELIAC DISEASE AS A SECONDARY CAUSE OF PTH ELEVATION: CASE REPORT

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Case presentation: S.J.S., 58 years old, female, referred with a diagnosis of osteoporosis and a previous history of fracture in the left forearm after falling from her own height. In the initial evaluation, an increase in PTH was observed with normal levels of serum calcium and vitamin D (PTH = 168; calcium = 9.3; albumin = 4.3; ionic calcium = 4.6; 25 hydroxyvitamin D = 43.50), in addition to a reduced 24-hour calciuria (24-hour urine calcium = 27.80 mg/24 hours). The patient had recently been hospitalized with diarrhea and was under investigation of celiac disease. The tests confirmed celiac disease (Anti-Transglutaminase IGA = 156 U; endoscopic duodenal biopsy compatible with celiac disease). After 5 months of following to the gluten-free diet, there was a normalization of serum PTH levels (PTH = 58). **Discussion:** Primary normocalcemic hyperparathyroidism is characterized by an increase in parathyroid hormone (PTH) with normal serum calcium levels. To investigate this type of hyperparathyroidism, is essential an analysis that takes into account medical history, kidney function, vitamin D and phosphorus levels. It is necessary to rule out secondary causes of hyperparathyroidism, and celiac disease (CD) is one of them. **Final considerations:** Recognizing CD as a possible reason for the secondary increase in PTH in normocalcemic patients allows early diagnosis and treatment, resulting in better clinical outcomes and preventing complications. This case emphasizes the relevance of a comprehensive diagnostic approach, with the participation of gastroenterologists and endocrinologists. **Keywords:** celiac disease; hyperparathyroidism; normocalcemia.

DIABETES MELLITUS

1908

TIRZEPATIDE *VERSUS* SEMAGLUTIDE IN THE MANAGEMENT OF GLYCEMIA IN PATIENTS WITH TYPE 2 DIABETES AND OBESITY: A SYSTEMATIC REVIEW OF RANDOMIZED CLINICAL TRIALS

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Introduction: Tirzepatide is a dual glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1 (GLP-1) receptor agonist developed for the management of obesity. Recent studies have demonstrated significant results in glycemic control with tirzepatide. However, systematic evidence comparing its efficacy to semaglutide, a selective GLP-1 receptor agonist, is still lacking. **Objective:** This systematic review aims to compare the efficacy of tirzepatide *versus* semaglutide on glycemic control in patients with type 2 diabetes mellitus (T2DM) who also have obesity. **Methods:** This study focused on randomized controlled trials studying patients with T2DM and obesity comparing tirzepatide (5 to 15 mg) with semaglutide (1 mg) in glycemic control with no specific duration. Inclusion criteria encompassed open-access studies on human subjects with T2DM and obesity, with no restrictions on language, time, or country of publication. Exclusion criteria included studies with missing data or data derived from previous research. A search was conducted in PubMed, Embase, and Cochrane databases using the keywords "tirzepatide," "semaglutide," "type 2 diabetes," and "random" along with their entry terms. Article selection was performed independently by two reviewers during June 2024. Data analysis was conducted using Google Sheets. The Risk of Bias 2 (RoB 2) tool was utilized to assess the risk of bias in the included studies. **Results:** 682 articles were found, of which 7 were selected for analysis, encompassing a total of 4,298 patients. The analysis indicated that tirzepatide at doses of 10 mg and 15 mg provided superior glycemic control (measured by reductions in fasting serum glucose and HbA1c) in patients with T2DM and obesity compared to 1 mg of semaglutide. This effect was not observed with the 5 mg dose of tirzepatide. Adverse effects, particularly gastrointestinal discomfort, were more common with tirzepatide therapy across all doses compared to semaglutide. The RoB 2 tool revealed that three studies had some concerns, while four studies had low concerns. **Conclusion:** Tirzepatide at doses of 10 mg and 15 mg demonstrated a greater effect on glycemic control compared to semaglutide in patients with T2DM and obesity. However, the higher prevalence of adverse effects with tirzepatide should be considered when proposing this therapy for these patients. Further research is warranted to fully understand the benefit-risk profile of tirzepatide in this population. **Keywords:** type 2 diabetes mellitus; tizerpatide; semaglutide.

DIABETES MELLITUS

1909

THE EFFECT OF SODIUM-GLUCOSE COTRANSPORTER 2 INHIBITORS ON ECTOPIC FAT DEPOSITS IN PATIENTS WITH TYPE 2 DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Recent research suggests that sodium-glucose cotransporter 2 inhibitors (SGLT2i) may have an effect on body fat metabolism, potentially impacting the distribution and amount of adipose tissue by promoting the use of fatty acids instead of glucose as an energy source for body metabolism. **Objective:** This systematic review and meta-analysis aims to evaluate the potential of SGLT2i to reduce ectopic fat accumulation and mitigate its associated risks in patients with type 2 diabetes (T2D). **Methods:** This systematic review and meta-analysis was performed according to the PRISMA guidelines. PubMed, Embase, and Cochrane Library databases were systematically searched for randomized controlled trials (RCT) comparing the use of SGLT2i *versus* other therapies in the prespecified population. A random-effects model was used to calculate the mean differences (MD) with 95% confidence intervals (CI). Statistical analysis was performed in R Foundation for Statistical Computing software and a p-value of < 0.05 was deemed as statistically significant. **Results:** A total of 24 RCTs comprising 1,647 patients were included, of whom 834 were randomized to SGLT2i therapy. Follow-up ranged from 8 to 52 weeks. Out of the 834 patients in the intervention group, 452 (54.2%) received dapagliflozin, 236 (28.3%) received empagliflozin, 125 (15.0%) received ipragliflozin, and the remaining 21 (2.5%) took tofogliflozin. In the pooled analysis, SGLT2i therapy was associated with a significant reduction in visceral fat area (MD -19.12 cm^2; 95% CI -24.05 to -14.19; $p < 0.001$), visceral fat volume (MD -323.47 cm^3; 95% CI -449.30 to -197.64; $p < 0.001$), visceral/subcutaneous fat ratio (MD -0.08; 95% CI -0.13 to -0.02; $p = 0.007$), liver fat fraction (MD -2.86%; 95% CI -4.14 to -1.58; $p < 0.001$), triglycerides (MD -14.25 mg/dL; 95% CI -20.97 to -7.52; $p < 0.001$), HOMA-IR (MD -0.91; 95% CI -1.28 to -0.54; $p < 0.001$ and pancreatic fat fraction (MD -1.16%; 95% CI -1.65 to -0.66; $p < 0.001$), but not in epicardial fat volume (MD -10.82 cm^3; 95% CI -32.97 to 11.32; $p = 0.338$). **Conclusion:** Thus, our findings suggest that the use of SGLT2i could possibly be more widely employed in clinical practice as a way to reduce ectopic fat genesis and its associated risks in patients with T2D. **Keywords:** sodium-glucose cotransporter 2 inhibitors; type 2 diabetes mellitus; ectopic fat.

ENDOCRINOLOGIA PEDIÁTRICA

1910

PUBERTAL MANIFESTATIONS IN PEDIATRIC PATIENTS WITH MICROCEPHALY DUE TO ZIKA VIRUS

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Introduction: Congenital Zika virus syndrome is characterized in children by intracranial calcification, ventriculomegaly, and reduced brain volume, occurring after transplacental transmission from mother to fetus, following infection by the Aedes SSP. Over the years, major characteristics and clinical findings in these children have been observed, including hyperreflexia, seizures, ocular and auditory abnormalities, and arthrogryposis, alongside microcephaly. **Objective:** To describe the main endocrine manifestations identified in a series of cases of children with microcephaly due to Zika virus, followed at the outpatient clinic of a university hospital. **Materials and methods:** This is an observational, cross-sectional, quantitative study involving a sample of children born with microcephaly due to the Zika virus, who are in outpatient follow-up. **Results:** The study included 16 children, 9 girls and 7 boys, with an average age of 6.38 years. A total of 43.8% of the mothers underwent serology for the diagnosis of Zika virus infection, which was confirmed in 75% of cases in the first trimester of pregnancy. The first signs of puberty were noticed by parents in all cases, with the first pubertal sign being pubarche. Among the evaluated patients, 25% were diagnosed with true precocious puberty (TPP) and were already under treatment with GnRH analogs, while the others are still under investigation. Among the pubertal signs observed in boys, 37.5% presented with stage I gonads and 62.5% with stage II Tanner stage, with the same proportion observed for pubic hair classification. In girls, breast development was classified as Tanner stages I, II, and III in 66.6%, 22.2%, and 11.1%, respectively. In terms of hair distribution, girls were classified as stages I, II, III, IV, and V in 11.1%, 33.3%, 33.3%, 11.1%, and 11.1%, respectively. **Conclusion:** The present study concludes that the majority of the sample of children with microcephaly due to Zika virus exhibit early pubertal alterations. Among these alterations, the most common was early pubarche in both sexes, differing from the literature. This was first observed by parents, followed by axillary odor in boys and thelarche in girls. **Keywords:** puberty, precocious; Zika virus; microcephaly.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1911

ANDROGEN-PRODUCING OVARIAN TUMOR IN PREGNANCY – A CASE REPORT

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Introduction: Ovarian tumors are frequent during pregnancy, but they rarely produce androgens. If a female fetus is exposed to androgens, fetal virilization may occur. We describe the case of an androgen-producing(AP) borderline mucinous tumor diagnosed during a female fetus pregnancy. **Case report:** A 38-year-old woman, with no relevant medical history, was diagnosed with an AP ovarian tumor during a female fetus pregnancy. Five years before she had an unremarkable pregnancy. On her first ultrasound (US), at 5 weeks, a 67 mm right adnexal lesion was detected. Tumoral markers were negative. At 13 weeks, the lesion had grown to 68 x 53 x 74 mm and a MRI at 14 weeks confirmed the presence of a predominantly cystic multiseptated right adnexal formation, measuring 100 x 54 x 89 mm. Further tests revealed elevated levels of testosterone 1,039 ng/dL (ref. >56.9), androstenedione 10 ng/mL (ref. <4.10), inhibin A 128.5 pg/mL (ref. <92), normal levels of dehydroepiandrosterone sulfate (DHEAS) and 17-hydroxyprogesterone. She had discrete facial hirsutism with no other signs or symptoms. She was referred to our institution at 21 weeks. An US revealed normal fetal female genitalia and confirmed the presence of a 145 x 95 x 132 mm multilocular abdominopelvic neoplasm of possible ovarian origin, with indeterminate US characteristics regarding benignity/malignancy. Blood tests confirmed an elevation of total testosterone 10.70 ng/mL (ref. 0.08-0.48) and sex hormone-binding globulin (SHBG) 522.0 nmol/L (ref. 32.4-128.0), with normal levels of albumin, androstenedione, DHEAS, and LDH. A Sertoli/Leydig cell ovarian tumor was suspected. After considering the risks of fetal virilization and surgical management during pregnancy, the patient was treated with spironolactone for 3 weeks(maximum dose 150mg) and was surgically treated at 25 weeks, with no complications. Four weeks after surgery, testosterone levels had normalized (0.14 ng/mL) and SHBG remained high (496 nmol/L). Histology revealed a pT1c1 borderline mucinous tumor. The pregnancy is currently at 34 weeks, and the histology slides are being reviewed to confirm diagnosis. **Conclusion:** AP ovarian tumors are rare during pregnancy, and there are even rarer described cases of AP borderline mucinous tumors. Although medical options haven't been studied, spironolactone may be of use to prevent female fetus virilization when surgery is not considered. **Keywords:** borderline mucinous ovarian tumor; pregnancy; androgen-producing tumor.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1914

WHAT TO EXPECT WHEN YOU'RE NOT EXPECTING – A RARE CASE OF PREGNANCY IN HYPOGONADOTROPIC HYPOGONADISM – A CASE REPORT

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Introduction: Hypogonadotropic hypogonadism (HH) is an important cause of infertility. Hormonal replacement therapy in men is of paramount importance to avoid osteoporosis and anemia, and to treat decreased libido and erectile dysfunction. Adequate testosterone supplementation further reduces fertility by inhibiting central production of LH and FSH, suppressing the development of spermatozoa, and making the chances of a successful pregnancy virtually null. **Case report:** We describe the case of a 31-year-old man with HH, treated with testosterone, who had a biological daughter with no fertility treatment. His medical history was relevant for panhypopituitarism, treated with hydrocortisone 10 mg in the morning and 5 mg in the afternoon, levothyroxine 150 µg/day, intramuscular testosterone enanthate 250 mg every 4 weeks, and postoperative diabetes insipidus (DI) treated with desmopressin 0.06 mg thrice daily. At the age of 10, he was diagnosed with a supra-selar craniopharyngioma and panhypopituitarism with growth delay and was initially treated with hydrocortisone, levothyroxine and growth hormone. At 14-years-old, due to lesion growth with optic chiasm compression, he was submitted to pituitary surgery, with postoperative diagnosis of DI, which was treated with desmopressin, and HH, treated with testosterone enanthate. At the age of 18 he was transferred to our endocrinology consultation, and hypogonadism was confirmed (FSH 0.53 mUI/mL (ref. 1.50-12.40), LH 0.91 mUI/mL (ref 1.70-860), total testosterone 2.95 ng/mL), and treatment was adjusted. By the age of 31, he reported that his partner was pregnant despite no suspension of testosterone treatment and no fertility treatment. His blood tests revealed a total testosterone of 1.53 ng/mL (age adjusted ref. 2.80-8.00), SHBG 12.2 nmol/L (ref. 14.5-48.4), albumin 43.1 g/L, with a calculated free testosterone of 4.5ng/mL (ref. >6.5). After giving birth to a healthy female baby, a paternity test confirmed that he was indeed the biological father. **Conclusion:** Although fertility is virtually null in patients with HH treated with testosterone, with no reported cases in current literature to our knowledge, this case highlights that even in such conditions some fertility might be preserved. We hypothesize that a remnant of pituitary function might have been preserved, and it could have been enough to stimulate sperm development. Further tests are ongoing to evaluate fertility and sperm function in this patient. **Keywords:** hypogonadotropic hypogonadism; infertility; pituitary.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1916

GENDER DYSPHORIA – NON-CONFORMITY IN MONOZYGOTIC TWINS WITH KLINEFELTER SYNDROME

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Case presentation: F.S.C.B.N., 18 years old, male, identical twin, born and living in Teresina – PI, went to the endocrinologist wishing to undergo gender-affirming hormonal therapy, bringing a psychologist's report referring to gender dysphoria. Physical examination: long with predominance of the lower segment, measuring 183 cm, weight 49 kg and body mass index 14.8 kg/m²; the external genitalia revealed a male pattern of hair distribution, topical, firm testicles with reduced volume; laboratory tests with high levels of luteinizing hormone (39.4 IU/L), follicle stimulating hormone (106.3 IU/L) and total testosterone (221.4 ng/dL) compatible with hypergonadotropic hypogonadism. A karyotype was requested, and Klinefelter syndrome (47, XXY) was confirmed. The twin brother's evaluation showed the same physical characteristics (eunuchoid appearance and testicular atrophy) and the same laboratory pattern, with his diagnosis of Klinefelter syndrome confirmed by the karyotype; there was no gender incongruity. **Discussion:** Klinefelter syndrome (KS) is a genetic condition that affects 1:1,000 men characterized by the presence of a supernumerary X chromosome leading to changes such as micropenis, testicular atrophy, tall stature, gynecomastia and infertility. Gender identity refers to the individual and internal perception of oneself; When the individual has a strong and persistent identification with the sex opposite to that at birth, it is called gender incongruence and, if it causes suffering for more than 6 months: gender dysphoria. The understanding and approach to gender dysphoria evolved over the years, although there is still no explanation of what factors cause this process. Neuroanatomy, endocrinology and genetics do not explain the cause and point to environmental, biological and cultural interaction. Although most individuals with KS identify as male, gender incongruence has been reported in some studies. The Endocrine Society guideline (2017) shows that monozygotic twins have a concordance rate for gender incongruence while dizygotic twins do not, which suggesting genetic influence. Another publication showed that there was no agreement in monozygotic twins, suggesting environmental influence in the process. **Conclusion:** Two patients with identical genetic background, exposed to the same hormonal levels during pregnancy and similar hormonal profiles, may be discordant regarding gender identity, demonstrating that other factors must be involved. **Keywords:** gender dysphoria; Klinefelter syndrome; twins.

METABOLISMO ÓSSEO E MINERAL

1917

BONE DISEASE IN GLYCOGEN STORAGE DISEASE TYPE III: A CASE REPORT

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Case presentation: Male patient, 28 years old, presented hepatomegaly, hypoglycemia, and hypertriglyceridemia at birth. Following liver biopsy and genetic testing, he was diagnosed with glycogen storage disease type III. Referred to the Endocrinology clinic at HULW due to abnormalities in bone densitometry: Z-scores were -2.6 at L1-L4, and -0.8 at femoral neck and total femur. Denies previous fractures. Laboratory findings: Calcium 9.4 mg/dL, Phosphorus 3.0 mg/dL, Vitamin D 27.7 ng/mL, Glucose 53 mg/dL, HbA1C 5.6%, Albumin 4.8, and Urinary Calcium 122 mg/24 h (Volume 1,800 mL), Total Cholesterol 152 mg/dL, and Triglycerides 190 mg/dL. Currently on treatment with 14,000 IU/week of cholecalciferol and 500 mg/day of Calcium Carbonate. **Discussion:** Glycogen storage disease type III, also known as Cori disease, is a rare genetic disease of autosomal recessive origin, affecting metabolism due to deficiency of the glycogen debranching enzyme. This leads to accumulation of glycogen in the cytosol of cells, compromising the proper functioning of organs such as the liver and muscles. Bone abnormalities may result from the counter-regulatory mechanism to hypoglycemia, where glucagon increases the activity of glucose-6-phosphatase enzyme. This inability to convert glycogen into glucose leads to increased concentrations of pyruvate and lactate. Lactic acidosis associated with increased urinary calcium excretion releases calcium from bone into the bloodstream and alters kidney reabsorption capacity, leading to bone resorption and consequent bone mass loss. Treatment is based on dietary management, where proteins are the main energy source to prevent muscle catabolism, as the gluconeogenesis pathway remains intact. Additionally, regular supplementation with raw cornstarch may be considered to maintain normoglycemia. **Final comments:** Given the case presentation, monitoring of bone tissue in patients with glycogen storage disease type III is crucial, alongside maintaining an appropriate diet and supplementation with vitamin D and calcium. Early treatment is essential to prevent more severe bone damage. Considering the multisystemic nature of the disease, interdisciplinary support is important to optimize treatment and improve patient quality of life. **Keywords:** glycogen storage disease; Cori; bone.

ADRENAL E HIPERTENSÃO

1919

EARLY DIAGNOSIS OF ADDISON'S DISEASE IN A FEMALE PEDIATRIC PATIENT: A CASE REPORT

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Case presentation: Patient J.V.V.S., female, 10 years and 9 months old, was seen by a cardiologist after an episode of syncope and another episode with tonic-clonic movements and sialorrhea, with blood pressure of 100/70 mmHg. She was referred to endocrinology for evaluation of a possible glycemic disorder. The patient presented complaints of hypotension, asthenia, anorexia, abdominal pain, nausea, and vomiting. The tests performed revealed the following results: LDL 79 (Reference Value -RV- below 130); ACTH 109 (RV between 7 and 63); Basal Cortisol 5.7 (RV 5 to 23); Creatinine 0.67 (RV between 0.7 and 1.3); Fasting Blood Glucose 91 (RV between 70 and 100); Glycated Hemoglobin 5.3 (RV less than 7%); CBC - Normal Limits; AST 16 (RV 5 to 40); ALT 15 (RV 7 to 56); Triglycerides 274 (RV below 150); TSH 1.6 (RV 0.5 to 4.5). The patient was diagnosed with Addison's disease and treatment was initiated with 5 mg Meticorten, 1/2 tablet per day. Upon follow-up, the diagnosis was confirmed with the following results: ACTH 97; Cortisol 8.3; Potassium (K) 5.3 (RV 3.5 to 5.5); Sodium (Na) 138 (RV 135 to 145). Due to continued asthenia and hypotension, treatment was adjusted to 5 mg Meticorten, 1 tablet per day, and 0.1 mg Florinef per day. **Discussion:** The diagnosis is supported by literature indicating that Addison's disease, a form of primary adrenal insufficiency, is often autoimmune. Symptoms include weakness, loss of appetite, weight loss, hypotension, and skin hyperpigmentation. Although hyperpigmentation is a significant sign, studies show it is not always present, which can complicate diagnosis, as in this case. Other present symptoms, such as nausea and vomiting, can suggest acute abdominal disease, further complicating the diagnosis. Additionally, the classic triad of hyperpigmentation, hypotension, and hyponatremia is not always present, and symptoms may initially suggest a misdiagnosis of depression. Despite the literature indicating the difficulty of early diagnosis, this clinical case demonstrates that it was possible due to a thorough evaluation of the signs and symptoms and referral to endocrinology, enabling effective treatment initiation for the patient. **Final comments:** This case underscores the necessity of meticulous and continuous evaluation of patients. Early diagnosis and initiation of treatment were crucial for the patient's health. **Keywords:** adrenal; Addison disease; early diagnosis.

TIREOIDE

1921

USE OF LEVOTHYROXINE ABSORPTION TEST IN PATIENTS WITH TSH ELEVATION RESISTANT TO TREATMENT: EXPERIENCE OF A UNIVERSITY HOSPITAL

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Case presentation: Case 1: A 45 -year-old woman with hypothyroidism post-total thyroidectomy was on levothyroxine (LT4) replacement (1.92 µg/kg/day), with TSH 219 mU/L and FT4 0.2 ng/dL. Celiac disease was ruled out; upper gastrointestinal endoscopy showed mild diffuse chronic gastritis with positive *H. pylori*, which was treated; and empirical treatment for helminths was prescribed. LT4 was progressively increased until 2.11 µg/kg/day due to persistent TSH > 80 mU/L. Patient always referred regular use of LT4. An LT4 absorption test was performed using LT4 2,000 µg (FT4 dosages every hour for 6 hours), which demonstrated a 4.1 increase of FT4 levels. Case 2: A 26-year-old woman with congenital hypothyroidism was on LT4 replacement (2.30 µg/kg/day), with TSH 33.2 mU/L and FT4 0.66 ng/dL. LT4 dose was increased until 3.07 µg/kg/day. Celiac disease was ruled out, and upper gastrointestinal endoscopy showed no signs of atrophic gastritis (*H. pylori* negative). She received empirical treatment for helminths. TSH persisted > 60 mU/L. Patient related regular use of LT4. An LT4 absorption test was realized using LT4 1,320 µg, which demonstrated a 2.56 increase of FT4 levels. Case 3: A 63-year-old woman with hypothyroidism post-total thyroidectomy was on LT4 replacement (1.51 µg/kg/day), with TSH 36.25 mU/L and FT4 0.7 ng/dL. LT4 dose was progressively increased until 2.02 µg/kg/day, and uncontrolled hypothyroidism persisted (TSH 76 mU/L). Celiac disease was ruled out, and upper gastrointestinal endoscopy showed no signs of atrophic gastritis (*H. pylori* negative). She received empirical treatment for helminths. An LT4 absorption test with LT4 1000 µg demonstrated a 6.51 increase of FT4 levels from baseline to FT4 peak. **Discussion:** We presented three cases of pseudo-malabsorption of LT4 due to poor medication adherence. This condition must be considered if euthyroidism is not achieved with LT4 doses > 1.6-1.8 µg/kg/day. In the LT4 absorption test, it has been described in literature that at least 2.5 times increase in basal FT4 level may exclude malabsorption. **Final comments:** Although exclusion of LT4 malabsorption is always mandatory in cases of not-controlled hypothyroidism and high doses of LT4 replacement, our experience demonstrated that poor adherence to treatment was the cause in three cases described. LT4 absorption test was important to define diagnosis and unnecessary progressive increases in LT4 dosages. **Keywords:** levothyroxine absorption test; LT4 malabsorption; poor adherence.

DIABETES MELLITUS

1922

ILEAL INTERPOSITION WITH SLEEVE GASTRECTOMY FOR THE TREATMENT OF TYPE 2 DIABETES MELLITUS IN AN OVERWEIGHT PATIENT

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Case presentation: A 57-year-old female patient, diagnosed with overweight (BMI 27.54 kg/m²), systemic arterial hypertension requiring two classes of antihypertensives, steatotic liver disease associated with metabolic dysfunction, dyslipidemia on moderate potency lipid-lowering medication, and type 2 diabetes mellitus (DM2) for 9 years requiring high doses of insulin (2.1 U/kg/day), underwent ileal interposition with sleeve gastrectomy as part of a clinical study. Three months after surgery, she showed a weight loss of 21.7% (BMI 21.17 kg/m²), diabetes remission, normalization of blood pressure, and regression of dyslipidemia, leading to the discontinuation of all previously used medications. Currently, six years after metabolic surgery, she is taking metformin 1.5 g/day and has good glycemic control (HbA1c = 6.3%), maintaining normal weight without regain (BMI 21.70 kg/m²), and remains free from hypertension or dyslipidemia. **Discussion:** Diabetes and arterial hypertension are the main causes of hospitalization and mortality in Brazil, with DM being a significant predictor of mortality. Roux-en-Y gastric bypass surgery is well indicated for the treatment of DM2 with clinical treatment failure in patients with BMI > 35, due to significant weight loss and improved metabolic control. However, the indication and type of surgical treatment for patients with normal BMI, overweight, or grade 1 obesity who have poorly controlled DM despite clinical treatment are not well established. Ileal interposition with sleeve gastrectomy could be an option for surgical treatment of DM due to its greater potential for metabolic control and lower malabsorptive effect compared to bypass surgery. **Final comments:** This was the first patient in Brazil to undergo ileal interposition with sleeve gastrectomy in a study conducted in a public hospital aiming at metabolic control. This new surgical technique is a possible alternative for surgical treatment aiming at DM control and remission in patients with BMI < 35 and inadequate control with optimized clinical treatment. Further studies are being conducted and are necessary to confirm these data and to compare vertical gastrectomy with ileal interposition with other metabolic and bariatric surgical options. **Keywords:** ileal interposition; metabolic surgery; diabetes remission.

NEUROENDOCRINOLOGIA

1923

DIAGNOSIS OF DIABETES INSIPIDUS IN A PATIENT WITH TYPE 2 DIABETES MELLITUS: A CASE REPORT

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Case presentation: Patient V.S.S., male, 53 years old, was attended by the endocrinology team at AME Fernandópolis. He had been diagnosed with type 2 diabetes mellitus (DM) and was under treatment for 10 years with stable laboratory results. Currently, he presented complaints of polyuria, polydipsia, and cognitive deficits following physical trauma due to facial assault. Among the tests performed, a urine analysis revealed a specific gravity below 1.005 (below the reference value -RV-), slightly elevated sodium, and normal potassium levels. Further investigations included urinary and plasma osmolality tests, and pituitary MRI, which indicated decreased osmolality, increased signal intensity, and disruption of the pituitary stalk, respectively. A diagnosis of diabetes insipidus was made, and treatment with desmopressin (DDAVP) was initiated, resulting in improvement of symptoms. **Discussion:** The primary cause of diabetes insipidus (DI) is deficient secretion of antidiuretic hormone (AVP), known as central DI (CDI). This is often due to irreversible destruction of 80% of AVP-producing neurons, which can be congenital, acquired, or genetic in origin. Traumatic brain injury (TBI) is a leading cause of CDI. AVP deficiency leads to increased urine output, intense thirst, and increased fluid intake. Diagnosis involves measuring urine volume, plasma osmolality, serum creatinine, as well as water deprivation tests and neuroimaging, particularly MRI. Treatment includes fluid replacement orally or intravenously and pharmacotherapy with agents like DDAVP. **Final comments:** Patient V.S.S., diagnosed with post-traumatic central DI, showed significant improvement with vasopressin treatment. This case underscores the importance of thorough investigation in patients with stable DM and the use of appropriate tests for the effective diagnosis and management of diabetes insipidus, especially in the context of traumatic brain injury. **Keywords:** diabetes mellitus; diabetes insipidus; neuroendocrinology.

OBESIDADE

1926

IMPACT OF OBESITY ON INDIVIDUALS IN BRAZIL: A REAL-WORLD PATIENT AND PHYSICIAN SURVEY

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The World Obesity Federation reports 30% of women and 22% of men in Brazil have obesity. Data on the impact of obesity on work and health-related quality of life (HRQoL) among people living with obesity (PwO) is limited in Brazil. We aimed to describe demographics and clinical characteristics, including obesity class, and explore the impact of obesity on work productivity and HRQoL. Data were drawn from the Adelphi Real World Obesity Disease Specific Programme™, a cross-sectional survey including retrospective data collection from physicians and PwO in Brazil from May-October 2022. Physicians reported demographics and clinical characteristics for eight consecutively consulting adult PwO (participating in a weight management plan and/or presenting with a BMI ≥ 30 kg/m^2 at the time of data collection). PwO voluntarily completed a questionnaire detailing out-of-pocket costs, work impairment via Work Productivity and Activity Impairment Questionnaire (WPAI; scores range 0-100%, higher scores indicate greater impairment), HRQoL via Short Form 36 v2 Health Survey (SF-36v2, scores < 47 indicate impairment in specific domain) and sleep via Jenkins Sleep Evaluation Questionnaire (JSEQ; where 0 = no sleep problems, 20 = most sleep problems). Analyses were descriptive. Overall, 99 physicians (51% primary care, 39% endocrinologists, 10% cardiologists) reported data for 895 PwO of whom 379 self-completed a questionnaire. Mean (SD) PwO was age 43.1 (13.7) years, 61% were female, and 71% were White. Mean (SD) BMI at diagnosis and median (IQR) time since diagnosis was 36.0 (10.39) kg/m^2 and 8.6 (3.8, 26.7) months, respectively. Overall, 40% of PwO had Class 1 (BMI ≥30-<35kg/m^2), 23% Class 2 (BMI ≥35-<40 kg/m^2) and 11% Class 3 (BMI ≥ 40 kg/m^2) obesity, and 93% paid out-of-pocket for their obesity treatment. PwO reported a mean (SD) of 10.7% (13.1%) monthly income spent on medicine for weight and related health conditions, with 67% reporting that this had at least some impact on their monthly household income. WPAI: mean (SD) activity impairment was 31.4% (27.4%) and overall work impairment was 29.0% (28.3%) due to obesity. Mean (SD) SF-36v2 scores < 47 were: mental health 44.5 (9.7); role-emotional 45.9 (10.0); and social functioning 45.9 (9.7). Mean (SD) JSEQ score was 7.1 (7.0). Obesity impacts PwO work, HRQoL and finances, with most PwO paying out-of-pocket, thus impacting household budget. This highlights an unmet need for more effective and accessible disease management in PwO. **Keywords:** obesity; real world evidence; quality of life.

OBESIDADE

1929

AN ANALYSIS OF THE PREVALENCE OF OBESITY AND OVERWEIGHT IN HEALTH SCIENCE STUDENTS FROM AGRESTE PERNAMBUCO

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Introduction: Brazil has been experiencing significant changes in the nutritional profile of its population, which, combined with the academic workload, can negatively impact the lifestyle of health science students. Thus, this study aimed to verify the prevalence of overweight and obesity among health science students in the southern Agreste region, focusing on the city of Garanhuns. **Methods:** The research involved 357 health science students from public and private institutions located in the interior of the southern Agreste region. Data were collected using a self-completed digital questionnaire, covering course, occupation, height, weight, between the 1st and 10th semesters of college. Additionally, information was gathered on eating habits, physical activity, chronic diseases, and family history of obesity. The method combined both closed and open objective questions to gather data for the analysis on the association between BMI and the academic life of the participants. **Results and discussion:** Of the 357 respondents, 250 were women and 107 men. 52% did not engage in physical exercise, and 47% ate moderately, with fewer participants eating well or irregularly. The prevalence of diabetes or hypertension was low, while 50% of participants reported a family history of obesity. Among the men, there were changes in BMI: 47% classified as healthy at the beginning of their academic life, with 13% moving to the overweight. Physical activity was an important factor in maintaining weight, although BMI changes were common among those with overweight and obesity. Among men with grade 1 obesity, 50% maintained their classification, 22% moved up, and 27% reduced their weight. For those with grade 2 obesity, 60% changed their habits, resulting in a BMI reduction. Regarding women, the study revealed that at the beginning, some women were underweight, with half reaching a healthy weight. Among the 150 initially healthy, 21 moved to overweight, and 3 to underweight. In the overweight group, 11 of the 48 students moved to obesity, and 3 returned to a normal BMI. Among the 22 women with grade 1 obesity, 50% gained weight without changing classification. **Conclusion:** 70% of participants experienced changes in average weight. It is important to note that as academic life progressed, there were increases in BMI numbers. Additionally, results suggest that regular physical activity and healthy eating habits are crucial for a healthy BMI. **Keywords:** BMI; health science students; physical activity.

DIABETES MELLITUS

1932

CLINICAL EVALUATION OF DIABETIC FOOT AND PATIENT KNOWLEDGE ON FOOT CARE DURING HOSPITAL ADMISSION

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Diabetes mellitus (DM) is a widespread chronic disease globally, posing significant mortality risks. In Brazil, 15.7 million people were affected in 2019, with projections indicating a 55% increase by 2045. DM ranks sixth among the causes of death in Brazil and is among the top eight non-communicable chronic diseases. Approximately 25% of diabetic patients face lower limb complications, often leading to non-traumatic amputations. This study aims to assess the prevalence of foot complications among diabetic patients, evaluate their knowledge and preventive care regarding diabetic foot, and propose educational interventions for local care. Conducted between June 2023 and May 2024 at a teaching hospital, it focused on adults with type 1 or type 2 diabetes for over five years, excluding minors and non-consenting individuals. Neuropathic symptoms were assessed using the neuropathy score questionnaire (NSQ), categorizing patients by the presence of symptoms. Knowledge and preventive practices were evaluated through a tailored questionnaire. Clinical assessments included foot inspections, sensitivity tests, and risk screenings. Following evaluations, patients received guidance on self-examination and foot care. The results indicated a high prevalence of foot complications, correlating knowledge levels with complication incidence. Notably, 85% of diabetic amputations followed preventable ulcers. Self-examination rates were low (44%), contrasting with 62.3% reported in Malaysia. Only 36.25% underwent regular foot exams during medical visits. Common neuropathic symptoms included tingling (37%) and burning sensations (27%), alongside frequent skin changes such as onychomycosis (50%) and dryness (47.9%). Absent distal arterial pulses correlated with worse NSQ scores. In conclusion, enhancing patient awareness and education on self-examination and preventive foot care is crucial to reducing diabetic foot complications. Inadequate self-examination and infrequent medical foot checks underscore the need for intensified prevention efforts. Regular surveillance and medical follow-ups are essential for managing diabetic neuropathy, with healthcare providers playing a pivotal role in detecting vascular and neuropathic impairments and providing timely guidance to prevent severe complications. **Keywords:** diabetic foot; foot ulceration; diabetic foot hospitalization.

OBESIDADE

1933

ASSOCIATION BETWEEN EATING HABITS IN CHILDREN AND ADOLESCENTS WITH OVERWEIGHT AND OBESITY IN TWO CITIES IN SOUTHERN BAHIA

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Introduction: Obesity is a complex chronic disease that affects millions of adolescents and children worldwide, including Brazil, increasing the early risk of associated diseases. In this context, inadequate eating habits contribute to the rise of obesity in this age group. **Objective:** To evaluate the correlation between eating habits of children and adolescents with overweight and obesity attending Basic Health Units (BHU) in two cities in the interior of Bahia. **Methods:** This cross-sectional study included cases (overweight and obesity) and controls (eutrophy) conducted in 9 BHU from December 2022 until the end of 2023. Children/adolescents with physical disabilities, pregnant teenagers, and those underweight at the time of the survey were excluded. Anthropometric measurements were used to classify participants based on Body Mass Index (BMI) using z-score distribution charts by age for both female and male participants according to World Health Organization (WHO) recommendations. Two questionnaires were administered: sociodemographic and lifestyle data, and the Mediterranean Diet Quality Index for Children and Adolescents (KIDMED). The tests were completed by guardians or adolescents (aged 18 or older). **Results:** The sample consisted of 250 children and adolescents, with 44.8% boys and 55.2% girls, aged between 5 and 18 years. Comparatively, girls showed higher sedentary behavior (66.7%) than boys (49.1%). Individuals in the overweight/obesity group had significantly higher age, height, BMI, Abdominal Circumference (AC), cardiovascular risk, and parental obesity compared to eutrophic individuals. Regarding dietary patterns, the overweight group had lower adherence to the Mediterranean diet (72%) compared to the age-appropriate weight group (63.2%). Additionally, dinner time was significantly later in the overweight/obesity group. Correlation data revealed that lower KIDMED scores and later dinner times were associated with higher age, BMI, AC, and waist circumference (WC). **Conclusion:** It can be inferred that inadequate eating habits are related to overweight and obesity in the pediatric population using BHU in two cities in the interior of Bahia. **Keywords:** obesity; pediatric; eating habits.

NEUROENDOCRINOLOGIA

1934

EFFECT OF ANTI-NEOPLASTIC THERAPIES ON CARCINOMA AND AGGRESSIVE PITUITARY TUMORS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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1. UNIVERSIDADE ESTADUAL PAULISTA (UNESP), BOTUCATU, SP, BRASIL; 2. CHU DE LYON – HOSPICES CIVILS DE LYON (HCL), LYON, FRANÇA.

Introduction: Approximately 10% of the pituitary tumors can be classified as pituitary carcinomas (PC) or aggressive pituitary tumor (APT); both have high rates of non-responsiveness and recurrence after the usual treatment. **Objective:** To evaluate the tumor control obtained by anti-neoplastic therapies on treatment of PC or APT. **Methods:** A systematic review according to the Joanna Briggs Institute was conducted and reported according to the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses). We included studies that patients with PC or APT, and with non-responsiveness and/or recurrence after the usual treatment, undertaken one of the following therapies: Temozolomide (TMZ),Peptide Receptor Radionuclide Therapy (PRRT), Everolimus, Immune Checkpoint Inhibitors (ICIs), Lapatinib, Bevacizumab and Capecitabine plus Temozolomide (CAPTEM). Embase, Medline, LILACS, and CENTRAL were our databases. For the studies that included more than 3 participants (CSs), proportional meta-analyses were performed to calculate the overall frequencies (OFre) of complete remission (CR), partial remission (PR), stable disease (SD) and progressive disease (PD) according to the RECIST protocol classification. We used Stata Software 18, command "metaprop_one". **Results:** Eighty studies were included, the most frequent therapy used was TMZ (529 patients) followed by ICIs (31), Bevacizumab (14), PRRT (13), CAPTEM (12), Lapatinib (6), and Everolimus (5). Only 22 studies were CSs. For the TMZ, 14 CSs, 485 participants, the OFre of CR was 5% (95% Confidence Interval [CI] = 2% to 11%, 30 events), PR was 33% (CI = 29-37%, 159 events), SD was 32% (CI 28-36%, 153 events), and PD was 29% (CI 26-34%, 143 events). For ICIs, 3 CSs, 25 participants, the OFre for PR was 24% (CI = 11-44%, 7 events), SD was 12% (CI = 4-31%, 4 events), and PD was 67% (CI = 24-93%, 19 events), only one patient achieved CR. For PRRT, 3 CSs, 17 participants, the OFre of PR were 24% (CI = 9-49%, 4 events), SD was 18% (CI = 6-43%, 3 events), PD was 59% (CI = 35-79%, 10 events). Only two studies on bevacizumabe and CAPTEM were CSs, and due to paucity of data, the CIs were very imprecise. **Conclusion:** TMZ was the most described therapy, presenting good results for aggressive pituitary tumours. The ICIs were prescribed after TMZ failure, so their efficacy cannot be compared to TMZ, but they can be a good option as second line treatment. PROSPERO CRD4202127920, Fapesp – grant number 2021/14151-7. **Keywords:** aggressive pituitary tumors; pituitary carcinoma; anti-neoplastic therapies.

NEUROENDOCRINOLOGIA

1935

CUSHING'S SYNDROME, PSYCHIATRIC AND COGNITIVE SYMPTOMS: A SYSTEMATIC REVIEW OF CASE STUDIES

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1. PROGRAMA DE PÓS-GRADUAÇÃO EM PSICOLOGIA, PORTO ALEGRE, RS, BRASIL; 2. PROGRAMA DE PÓS-GRADUAÇÃO EM PSIQUIATRIA E CIÊNCIAS DO COMPORTAMENTO, PORTO ALEGRE, RS, BRASIL; 3. PROGRAMA DE PÓS-GRADUAÇÃO EM ENDOCRINOLOGIA, UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL (UFRGS), PORTO ALEGRE, RS, BRASIL; 4. PROGRAMA DE PÓS-GRADUAÇÃO EM ENDOCRINOLOGIA, UFRGS, IJUÍ, RS, BRASIL.

Introduction: Cushing's syndrome is a rare neuroendocrine condition characterized by chronic excess of cortisol with a wide range of signs and symptoms. Some observational studies indicate psychiatric manifestations, generally anxiety and depression, and also cognitive disturbances, generally memory. Interestingly, case studies might provide a wider range of data, allowing for exploring less prevalent or more severe clinically relevant symptoms. **Objective:** To map case studies reporting psychiatric and/or cognitive symptoms of Cushing's syndrome. Patients: 74 participants, 60 women (81%), with a mean age of 35.7 (SD 15.9), between 13 and 81 years old. **Methods:** This study is part of a systematic review conducted according to PRISMA 2020 and preregistered in Prospero (CRD42024433186). Searches of articles published in Portuguese, English and Spanish up to April 2024 were conducted in PsycInfo, Embase, PubMed, and Scopus databases. Two blinded researchers screened the data in Rayyan, and conflicts were resolved by a third. The inclusion criteria were case studies or series with patients with Cushing's syndrome that reported psychiatric and/or cognitive symptoms. The selected studies were tabulated in Excel. **Results:** 273 case studies were identified, and 66 were included. 26 from the United States and none from Latin America. Of the 74 patients, 71 (97.2%) detailed the cortisol measurement method. Additionally, 34 (46%) used MRI, 31 (41.9%) CT, and 16 (21.6%) used both. Regarding symptoms, 69 (93%) reported psychiatric complaints, including: 29 (39.2%) depression, 26 (35.1%) psychosis, 15 (20.3%) suicide ideation and/or attempts, 13 (17.5%) anxiety, 7 (9.5%) seasonal bipolar disorder/mania, and 6 (8.1%) fatigue. Moreover, 24 (32%) presented cognitive complaints in: 7 (9.5%) memory, 4 (5.4%) attention, and 14 (18.9%) general cognitive complaints. 19 (26%) presented psychiatric and cognitive symptoms together. **Conclusion:** This systematic review shows the recurrence of symptoms such as psychosis and suicide attempts, which are less reported in larger observational studies. Individualized clinical assessment and knowledge of these case studies are important for more efficient management of Cushing's syndrome. **Keywords:** Cushing's syndrome; cognition; psychiatric disorders.

NEUROENDOCRINOLOGIA

1936

CUSHING'S SYNDROME, PSYCHIATRIC AND COGNITIVE SYMPTOMS: A SYSTEMATIC REVIEW OF CASE STUDIES

RONI VIAN DA SILVA LHUL[1]; KATIÚSCA GOMES NUNES[2]; TOBIAS SKREBSKY DE ALMEIDA[3]; LETICIA SANGUINETTI CZEPIELEWSKI[4]; MAURO ANTÔNIO CZEPIELEWSKI[4]

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DIABETES MELLITUS

1937

EVALUATION OF METABOLIC CONTROL OF THE DIABETIC POPULATION SERVED AT THE ENDOCRINOLOGY OUTPATIENT AT A UNIVERSITY HOSPITAL IN RIO GRANDE DO NORTE

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Introduction: Type 2 diabetes mellitus (T2DM) is a chronic disease that results in persistently elevated blood glucose levels, leading to microvascular and macrovascular complications. Considered one of the major epidemics of the 21st century, diabetes affects millions of people and poses a significant challenge to health systems. Adequate metabolic control is essential to prevent such long-term complications and to improve the quality of life for these individuals. The assessment of this control is carried out through parameters such as glycated hemoglobin, fasting blood glucose, lipid profile, and other clinical indicators. Therefore, it is extremely important to conduct studies that investigate the efficiency of health services in caring for the diabetic population. In this context, we performed an analysis of glycemic and metabolic control of patients attended at the endocrinology outpatient clinic of a public university hospital in Rio Grande do Norte (RN). **Materials and methods:** The study population included patients of both sexes, aged between 40 and 65 years, diagnosed with type 2 diabetes and dyslipidemia, who attended the endocrinology outpatient clinic of a university hospital in RN, with complete and up-to-date laboratory tests for glycemic and lipid profile, totaling a sample of 200 patients over a period of 12 months. A cross-sectional, observational, non-interventional study with a descriptive quantitative approach was chosen, carried out through the analysis of archived medical records. Good glycemic control was considered as HbA1C values < 7%. The reference values for total cholesterol and fractions were: Total cholesterol ≤ 190 mg/dL, LDL ≤ 70 mg/dL, HDL > 40 mg/dL, and triglycerides ≤ 150 mg/L. **Results and conclusion:** The majority of patients had glycated hemoglobin, fasting blood glucose, and LDL levels above the recommended guidelines. Thus, the final sample totaled 152 individuals, predominantly female (73.7%) with an average age of 55.12 years. Glycated hemoglobin was > 7% in 57.9% of the patients, 26.3% had high total cholesterol, 70.4% had high LDL, and 40.8% had high triglycerides. The results of this study are consistent with those already found in the literature, where the majority of the diabetic population has glycemic and metabolic control above the target, necessitating the adoption of more effective measures. **Keywords:** type 2 diabetes mellitus; glycemic control; university hospital.

METABOLISMO ÓSSEO E MINERAL

1938

THE IMPACT OF TERIPARATIDE ON BONE MINERAL DENSITY IN BRAZILIAN PATIENTS WITH OSTEOPOROSIS AT HIGH RISK OF FRACTURES

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Introduction: Teriparatide, the first anabolic drug approved for treating osteoporosis, has demonstrated high effectiveness in preventing both spine and nonvertebral fractures worldwide. However, studies on its effects within the Brazilian population remain limited due to restricted access to the medication in the country. **Objective:** To evaluate the impact of teriparatide on bone mineral density (BMD) in Brazilian patients with osteoporosis at high risk of fractures. **Methods:** Medical records of 20 patients diagnosed with osteoporosis at a Brazilian tertiary hospital were analyzed. The cohort included 17 postmenopausal women and 3 men, with an average age of 75 years. Fifteen patients had previously received treatment with bisphosphonates, and 6 patients had experienced fragility fractures. The most common comorbidities included dyslipidemia (60%), systemic arterial hypertension (45%), history of smoking (40%), diabetes mellitus (35%), and overweight/obesity (35%). All participants received daily subcutaneous injections of teriparatide (20 µg). BMD measurements were obtained using dual-energy X-ray absorptiometry (DXA). Follow-up DXA scans were conducted within 6 months (3 patients), between 7-12 months (5 patients), and 13-24 months (4 patients) post-treatment, with scans compared at the same radiology clinic. **Results:** There was a statistically significant increase in lumbar spine (LS) BMD by an average of 7.09% ($p = 0.0054$) and femoral neck (FN) BMD by 1.99% ($p = 0.0425$) compared to baseline across all patients. Within the first 6 months of treatment, LS BMD increased by 7% ($p = 0.3709$) and FN BMD by 1.4% ($p = 0.3237$). Between 7-12 months, LS BMD increased by 9.5% ($p = 0.0099$) and FN BMD by 2.5% ($p = 0.0984$). From 13-24 months, LS BMD increased by 7.6% ($p = 0.1039$) and FN BMD by 3.8% ($p = 0.18718$). No fractures occurred during the study period, and no participants withdrew due to adverse effects. **Conclusion:** Teriparatide significantly increased BMD at both LS and FN sites in Brazilian patients with osteoporosis, with the most pronounced effects observed in the LS. Although trends of improvement were noted across all treatment periods, statistical significance was not consistently achieved, possibly due to the small sample size. These findings underscore the potential efficacy of teriparatide in the Brazilian population, emphasizing the need for further studies to comprehensively assess its effects. **Keywords:** teriparatide; osteoporosis; Brazil.

DIABETES MELLITUS

1940

IMPACT OF CONTINUOUS INSULIN INFUSION PUMP THERAPY ON GLYCEMIC CONTROL AND HYPOGLYCEMIA IN PATIENTS WITH TYPE 1 DIABETES MELLITUS TREATED IN A PUBLIC ENDOCRINOLOGY OUTPATIENT CLINIC

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Introduction: Diabetes mellitus is a highly prevalent disease globally and a significant cause of morbidity and mortality in Brazil. The IDF estimates 15 million adults in Brazil are affected, with a prevalence of 10.5%. In 2021, there were 564,249 cases of type 1 DM (T1DM), 80.4% in individuals ≥ 20 years old, ranking Brazil third globally in T1DM prevalence. Intensive insulin therapy is crucial for glycemic control and reducing macro and microvascular complications. However, despite advancements, many patients struggle to achieve normoglycemia, remaining at high risk for hypoglycemia and chronic complications. Continuous subcutaneous insulin infusion (CSII) systems are an effective strategy to improve glycemic control without increasing hypoglycemia risk, offering greater treatment flexibility and enhancing quality of life. Understanding patient profiles and disease progression is essential for improving glycemic control and reducing morbidity and mortality. **Objective:** To analyze the profile of adult T1DM patients using CSII in a public endocrinology clinic. **Materials and methods:** A descriptive, quantitative, retrospective study analyzing medical records of patients seen in a specialized clinic. Patients with a T1DM diagnosis using CSII, practicing carbohydrate counting and correction based on capillary glucose, were included. **Results:** Eleven patients were included, 10 females, aged 20-71 years (mean 28.18 years), with one patient diagnosed with Latent Autoimmune Diabetes in Adults (LADA). Mean BMI was 23.74 ± 1.96 kg/m². Median diabetes duration was 16 ± 6.4 years (range 4-26 years). Mean time to CSII initiation after diagnosis was 10 ± 7.11 years. Mean follow-up in our outpatient clinic was 5.7 ± 4.3 years. One patient had neuropathy, and none had macrovascular complications. Regarding other autoimmune conditions, 20% had hypothyroidism and 1 had Graves' disease. For HbA1c 63.63% had HbA1c ≥ 7% before follow-up (mean 7.83%). 72.72% have HbA1c < 7% (mean 7%). 83% of patients reported severe hypoglycemia during MDI and only 16% of them reported it after CSII. Time below target decreased from 7.1% to 4.3%. **Conclusion:** Only one patient had microvascular complications, but CSII was initiated after 25 years of diagnosis. Patients experienced a lower rate of severe hypoglycemic events after CSII pump therapy. With CSII, over 70% achieved HbA1c < 7%, demonstrating the tool's effectiveness in T1DM management. Specialized care is essential for optimal clinical outcomes. **Keywords:** diabetes mellitus; insulin infusion systems; hypoglycemia.

DIABETES MELLITUS

1941

ANALYSIS OF THE QUALITY AND QUANTITY OF SLEEP IN DIABETIC PATIENTS IN THE ENDOCRINOLOGY OUTPATIENT AT A UNIVERSITY HOSPITAL IN RIO GRANDE DO NORTE

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Introduction: Type 2 diabetes mellitus (T2DM) is a chronic disease that results in persistently high blood glucose levels, leading to microvascular and macrovascular complications. Although the relationship between blood glucose and T2DM is well established, there are still risk factors that have not been completely elucidated. Previous studies suggest that the quality and quantity of sleep may play a crucial role in glycemic control and the general health of patients with T2DM. However, the exact relationship between sleep disorders and diabetes has not yet been fully understood. Furthermore, as the literature on this topic predominantly covers population groups that are more homogeneous from an ethnic-racial point of view, we decided to evaluate sleep characteristics in a more mixed Brazilian diabetic population, treated at a university hospital. **Materials and methods:** The study population included patients of both sexes, without age restrictions, diagnosed with type 2 diabetes, who attended the endocrinology outpatient clinic of a university hospital in Rio Grande do Norte and who had complete and updated laboratory tests for the glycemic profile, totaling a sample of 50 patients. A cross-sectional study was used, in which the "Pittsburgh Sleep Quality Index" (PSQI) questionnaire was applied to quantify and qualify sleep according to its score, being stratified into good sleep quality (PSQI ≤ 5), moderate sleep quality (PSQI > 5 and < 9) and poor sleep quality (PSQI ≥ 9). In addition, anthropometric data and complementary exams were collected from medical records to obtain data relating to the glycemic and lipid profile. **Results and conclusion:** It was observed that 48.7% of patients had poor sleep quality, 23.1% had moderate sleep quality and only 28.1% had adequate sleep. Although 69.2% of patients had glycated hemoglobin above 7% and 59% had LDL above 70 mg/dL, there was no correlation between sleep quality, measured by the PSQI score, and metabolic variables. In conclusion, we noticed a high frequency of poor sleep quality in diabetic patients treated in a tertiary hospital, corroborating other studies in the literature. **Keywords:** type 2 diabetes mellitus; sleep quality; glycemic control.

MISCELÂNEA

1942

SARCOPENIA AND HEPATIC FIBROSIS DUE TO METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE

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Introduction: Some studies suggest an association between sarcopenia and the severity of metabolic dysfunction-associated steatotic liver disease (MASLD). However, this association is still controversial. **Objective:** This study aimed to assess the sarcopenia frequency in MASLD and its association with liver fibrosis. **Methods:** Adults with established risk factors for the development of MASLD were selected. Assessment of MASLD and degrees of fibrosis was performed by ultrasound (US-FLI) and ultrasound elastography. To assess sarcopenia, the SARC-F questionnaire (clinical suspicion ≥ 4) and SARC-F combined with *calf* circumference (<35 cm; SARC-*CalF35*), clinical suspicion ≥ 11; the Grip strength (kg) [reduced if < 27men and < 16 women] and dual energy X-ray absorptiometry – DXA (to quantify muscle mass) were used. Appendicular lean mass (ALM), representing the sum of lean mass at upper and lower limbs; appendicular lean mass index (ALMI: ALM/height^2). Sarcopenia if ALMI < 7.0 kg/m^2 men or < 5.5 kg/m^2 women. ALM was also adjusted for BMI (body mass index) and fat mass. **Results:** 125 participants were enrolled. All data are presented as median (IQR) or n (%). Age 62 (54-68) years, women 104(83.2%). The frequency of liver fibrosis (F ≥ 2) was 33 (26.4%), SARCF ≥ 4 30 (24.0%), SARC-*CalF35* ≥ 11 17 (13.6%), low strength 28 (30.1%), low ALM 24 (19.2%) and sarcopenia diagnoses using ALMI was 11 (8.8%). Comparing groups with (LF+) and without liver fibrosis (LF-), no differences were found in the amount of muscle mass assessed by unadjusted ASM or adjusted for height^2: LF- 7.56 (6.74-8.66) *vs.* LF+ 7.91 (6.65-8.86), p = 0.6; BMI: LF- 0.587 (0,534-0,671) *vs.* LF+ 0.546 (0,496-0,654), p = 0.18 or fat mass: LF- 19.79 (17.95-21.67) *vs.* LF+ 20.93 (18.05-22.94), p = 0.27. We also did not observe differences in relation to any of the parameters referring to the assessment of muscle strength or the frequency of sarcopenia between the groups. **Conclusion:** In our population, the presence of hepatic fibrosis due to MASLD was not associated with a greater frequency of sarcopenia when using the currently recommended criteria. **Keywords:** sarcopenia; MASLD; liver fibrosis.

MISCELÂNEA

1943

SARCOPENIA AND HEPATIC FIBROSIS DUE TO METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE

JORDANNA DE PAULA FELIPE MENDES[1]; RAUL DONIZETTI MORAES SILVA[1]; LIVIA PETRI MANÉA[1]; JENAINE ROSA GODINHO EMILIANO[1]; ROGÉRIO MARTINS DE OLIVEIRA[2]; HEVILA DE FARIAS PASSOS[1]; CARLOS ROBERTO MORAES DE ANDRADE JUNIOR[1]; MARIA AUXILIADORA NOGUEIRA SAAD[1]; PRISCILA POLLO FLORES[1]; DÉBORA VIEIRA SOARES[1]

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Introduction: Some studies suggest an association between sarcopenia and the severity of metabolic dysfunction-associated steatotic liver disease (MASLD). However, this association is still controversial. **Objective:** This study aimed to assess the sarcopenia frequency in MASLD and its association with liver fibrosis. **Methods:** Adults with established risk factors for the development of MASLD were selected. Assessment of MASLD and degrees of fibrosis was performed by ultrasound (US-FLI) and ultrasound elastography. To assess sarcopenia, the SARC-F questionnaire (clinical suspicion ≥ 4) and SARC-F combined with *calf* circumference (<35 cm; SARC-*CalF35*), clinical suspicion ≥ 11; the Grip strength (kg) [reduced if < 27 men and < 16 women] and dual energy X-ray absorptiometry – DXA (to quantify muscle mass) were used. Appendicular lean mass (ALM), representing the sum of lean mass at upper and lower limbs; appendicular lean mass index (ALMI: ALM/height^2). Sarcopenia if ALMI < 7.0 kg/m^2 men or < 5.5 kg/m^2 women. ALM was also adjusted for BMI (body mass index) and fat mass. **Results:** 125 participants were enrolled. All data are presented as median (IQR) or n (%). Age 62 (54-68) years, women 104(83.2%). The frequency of liver fibrosis (F ≥ 2) was 33 (26.4%), SARCF ≥ 4 30 (24.0%), SARC-*CalF35* ≥ 11 17 (13.6%), low strength 28 (30.1%), low ALM 24 (19.2%) and sarcopenia diagnoses using ALMI was 11 (8.8%). Comparing groups with (LF+) and without liver fibrosis (LF-), no differences were found in the amount of muscle mass assessed by unadjusted ASM or adjusted for height^2: LF- 7.56 (6.74-8.66) *vs.* LF+ 7.91 (6.65-8.86), p = 0.6; BMI: LF- 0.587 (0,534-0,671) *vs.* LF+ 0.546 (0,496-0,654), p= 0.18 or fat mass: LF- 19.79 (17.95-21.67) *vs.* LF+ 20.93 (18.05-22.94), p = 0.27. We also did not observe differences in relation to any of the parameters referring to the assessment of muscle strength or the frequency of sarcopenia between the groups. **Conclusion:** In our population, the presence of hepatic fibrosis due to MASLD was not associated with a greater frequency of sarcopenia when using the currently recommended criteria. **Keywords:** sarcopenia; MASLD; liver fibrosis.

TIREOIDE

1944

ANABOLIC STEROID-INDUCED GOITER: A CASE REPORT

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Introduction: Goiter, characterized by the enlargement of the thyroid gland, is frequently associated with either hypothyroidism or hyperthyroidism, though such an association is neither necessary nor obligatory. This case report highlights the rare association between anabolic steroids and the development of goiter, attributable to the stimulatory effect of testosterone on the synthesis and secretion of thyroid-stimulating hormone (TSH), given the presence of sex steroid receptors in the thyroid gland. **Case presentation:** A 43-year-old female patient with a history of non-toxic multinodular goiter (NTMG) presented to the endocrinology clinic in Itabuna-BA in 2023, complaining of an increase in anterior cervical region volume without local compressive symptoms. The patient was diagnosed with goiter in 2020, underwent aspiration for cosmetic relief in January 2022, and had a sleeve gastrectomy in June 2022, resulting in a 16 kg weight loss. Due to changes in body composition following weight loss, she sought medical advice in 2023 and was prescribed sublingual oxytocin 20 mcg/day, oxandrolone 5 mg twice daily, oral testosterone 5 mg/day, vaginal gestrinone 1 mg/day, oral finasteride 5 mg/day, and oral spironolactone 100 mg/day. After one month of medication use, the patient noticed an increase in goiter size and consulted an endocrinologist in March 2023. Discontinuation of the medications was advised. **Results:** Upon medication cessation, a reduction in NTMG volume was observed, confirmed by ultrasound performed in the same clinic, by the same operator, and using the same machine. The thyroid volume measurements were as follows: 14 cm^3 in December 2022 (post-relief aspiration and bariatric surgery), 21.4 cm^3 in March 2023 (during steroid use), and 7.4 cm^3 in November 2023 (after steroid discontinuation). **Conclusion:** This case underscores the potential impact of anabolic steroids on thyroid volume, demonstrating a significant reduction in goiter size upon cessation of steroid use. It highlights the necessity for careful monitoring of thyroid function and size in patients undergoing anabolic steroid therapy, particularly in those with pre-existing thyroid conditions. **Keywords:** goiter; anabolic steroid; ultrasound.

OBESIDADE

1945

LONG-TERM WEIGHT AND METABOLIC OUTCOMES AFTER GASTRIC BYPASS: RESULTS OF A COHORT WITH MORE THAN 10 YEARS OF SURGERY FROM A PUBLIC HOSPITAL IN THE FEDERAL DISTRICT, BRAZIL

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Introduction: Obesity is a growing public health problem and is closely related to other diseases. Bariatric surgery is currently its most effective treatment, providing sustainable weight loss. Most published literature reports on short and medium-terms outcomes, so long-term studies are still scarce. **Materials and methods:** We reviewed electronic medical records (EMR) of patients who underwent bariatric surgery 10 or more years ago in a reference public hospital in the Federal District between 2009 and 2013. Anthropometric and clinical factors such as weight, BMI, gender, age, weight loss, percentage of weight regain were evaluated as well as associated metabolic comorbidities such as arterial hypertension (HTN), type 2 diabetes mellitus (T2DM) and dyslipidemia. **Results:** A total of 85 patients were included (43 ± 11 years, 93% female). The average percentage of absolute weight loss at 10 years postoperative was 23% and the average percentage of excess weight loss was 58%. At 10 years, 60% of patients had lost ≥ 50% of their excess weight. At 10 years, 3.5% of patients had lost < 5% of their weight, 89.4% had lost ≥ 10% of their weight, 78.8% had lost ≥ 15% of their weight, 64.7% had lost ≥ 20% of their weight, and 21.2% had lost ≥ 30% of their weight. The average percentage of weight regain at 10 years was 14%. The total remission rate for HTN was 49% at 10 years, for T2DM was 58%, and for dyslipidemia was 62%. The recurrence rate for HTN was 20% at 10 years, for T2DM was 29% and for dyslipidemia was 12%. After surgery, all patients who used insulin remained off this therapy. **Conclusions:** Patients who underwent bariatric surgery 10 years ago or more maintained satisfactory weight loss benefits with goals within the expected range for obesity treatment. Furthermore, it was observed that the majority of patients exhibit complete or partial improvement in the described comorbidities after 10 years. **Keywords:** obesity; bariatric surgery; weight regain.

OBESIDADE

1946

EPIDEMIOLOGICAL PROFILE OF HOSPITALIZED CHILDREN AND ADOLESCENTS DUE TO OBESITY FROM 2013 TO 2023

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Introduction: Obesity is a pathological condition with multifactorial etiology, leading to chronic health complications and increased morbidity. It has reached pandemic proportions, with childhood obesity prevalence increasing eight-fold since 1975. This rise is linked to comorbidities traditionally seen in adults, such as type 2 diabetes mellitus, hypertension, dyslipidemia, and nonalcoholic fatty liver disease. This trend is also observed in Brazil. However, comprehensive data on the impact of obesity on pediatric hospitalizations remain limited. Studies suggest that childhood obesity may correlate with organ dysfunction, extended hospital stays, and potentially higher mortality rates in critically ill pediatric patients. Brazilian-specific data are lacking. **Objective:** This study aimed to determine the epidemiological profile of children and adolescents (aged 0-19 years) hospitalized for obesity in Brazil from 2013 to 2023. **Methods:** This observational, descriptive, cross-sectional, and retrospective study utilized data from the Hospital Information System (SIH/SUS) and the SUS Department of Informatics (DATASUS) covering the period from January 1, 2013, to December 31, 2023. The study population included patients aged 0 to 19 years hospitalized with a diagnosis of obesity. Variables analyzed included age, sex, race, and state of hospitalization. **Results:** A total of 1,021 cases were reported, with the highest incidence in 2018 (151 cases). Most cases were reported in the Southern region, predominantly in Paraná. Females accounted for 72.3% of cases, and 68.4% of patients were white. The age group with the highest prevalence was 15 to 19 years, accounting for 94.5% of cases. A steady increase in hospitalizations was observed until 2018. However, a decline in cases was noted from 2021 to 2023, likely due to the global impact of the COVID-19 pandemic. **Conclusion:** The findings indicate a significant rise in hospitalizations due to obesity among children and adolescents in recent years, with older children (15-19 years) at higher risk compared to younger cohorts. The marked reduction in hospitalizations during the COVID-19 pandemic across all regions suggests an impact from social distancing measures, warranting further investigation. Childhood and adolescent obesity is a critical public health issue, necessitating robust policies for effective management and intervention. **Keywords:** childhood obesity; Brazil; hospitalizations.

NEUROENDOCRINOLOGIA

1947

EFFICACY OF CHRONIC INTRANASAL OXYTOCIN ADMINISTRATION ON BEHAVIORAL AND SOCIAL SYMPTOMS OF AUTISM SPECTRUM DISORDER

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Introduction: Autism spectrum disorder (ASD) is characterized by neurodevelopmental atypias resulting in deficits in sociability, communication, and motor control. It is estimated to affect approximately 52 million people globally, leading to a loss of 7.7 million disability-adjusted life years. Oxytocin, known for regulating social behaviors, has garnered interest for its potential therapeutic effects as a pharmacological strategy in managing ASD. **Objective:** Evaluate the efficacy of chronic intranasal oxytocin (IN-OT) administration on the behavioral and social symptoms of ASD. **Methods:** This systematic review without meta-analysis was conducted based on the guidelines established by PRISMA. Electronic databases PubMed, Scopus, and EMBASE were searched using the descriptors "Autism Spectrum Disorder," "Autism," and "Oxytocin" in conjunction with Boolean operators. The search period included studies published from 2019 to 2024. Randomized Clinical Trials (RCTs) examining oxytocin as the primary intervention for ASD were included, excluding other thematic scopes, studies without a placebo group, or those with inadequate methodologies. Screening was performed by two independent and blinded reviewers. A standardized form was used to extract data from the included studies, and methodological quality was assessed using the Cochrane Risk of Bias Tool. **Results:** A total of 526 studies were identified. After removing duplicates and applying eligibility criteria, 19 studies were selected for the review. Chronic IN-OT administration was found to induce changes in the functional connectivity of the amygdala, associated with behavioral improvements such as reduced stress, repetitive behaviors, and avoidant attachment, potentially influenced by DNA methylation. Additionally, higher salivary oxytocin levels correlated with improvements in social symptoms of ASD, and increases in plasma levels of IL-7, IL-9, and MIP-1b after IN-OT treatment suggest a partial mediation of oxytocin's behavioral effects by cytokines. **Conclusion:** IN-OT demonstrated the ability to modulate brain regions involved in emotional and social processing, with a potential role for exogenous oxytocin in stimulating the endogenous production of this hormone. **Keywords:** autism spectrum disorder; intranasal oxytocin; oxytocin.

DIABETES MELLITUS

1948

ANALYSIS OF DIABETIC FOOT IN THE NORTHEAST: A COMPARISON WITH THE STATE OF PARAÍBA FROM 2019 TO 2023

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Introduction: Diabetic foot (DF) is a chronic complication of diabetes which can lead to amputation in up to 20% of ulcers. **Objective:** We aim to compare northeastern Brazil with Paraiba in screening and treatment of DF. **Methods:** We conducted an ecological time-series analysis on DF exam and treatment using secondary data from *Sistema de Informações Hospitalares* and *Sistema de Informação Ambulatorial*, from 2019 to 2023. The data analysis was done with SPSS, variables were: total of exams in DF, cost, number of cases and mortality rate in complicated DF. The main results are presented as mean ± SD and relative proportions. **Results:** 38.217 records of exams were identified and revealed that Paraiba corresponds to only 366 (approximately 0.01%) and Piaui had no data available. The regional monthly mean was 636.95 ± 578.6, while Paraíba had a significantly lower mean 6.1 ± 15.3. In terms of treatment of complicated DF, 49.604 records were identified representing a total cost to the *Sistema Único de Saúde* (SUS) of R$ 30.160.098,60, the prevalence increased 24,4%, but decreasing mortality rate in 31.8%. Regarding Paraíba, money spent was 10,7% of the regional total in a total of 3.903 cases, although the prevalence increased sharply by 42.7%, the mortality rate fell by 46.6%. **Discussion:** The volume of tests conducted in Paraíba is disproportionately low compared to the total number of studies carried out in the northeast region, representing only 0.01%. In this context, the state of Paraíba accounts for a marginal fraction of DF cases, corresponding to just 7.8% of the total prevalence in the northeast region. However, its expenditures constitute 10.7% of the total regional costs for treating complicated DF. This disparity underscores the significant burden that advanced stages of ulceration place on the SUS, leading to disproportionate expenses for a state with less regional prominence. Despite the increase in the number of complicated DF cases in Paraíba surpassing the regional average for the period, mortality rates have declined more significantly, possibly indicating improvements in treatment methods within the state. However, these advancements appear misaligned with prevention and control mechanisms, as the Paraíba incidence remains divergent and lower compared to the region. **Final comments:** Foot analysis should be included in the basic work-up for all diabetic patients as recommended in the Ministry of Health's line of care. **Keywords:** diabetic foot; chronic complications; public health.

ENDOCRINOLOGIA PEDIÁTRICA

1949

HOSPITALIZATION FOR DIABETES MELLITUS IN CHILDREN UNDER 10 YEARS OF AGE IN THE NORTHEAST REGION OF BRAZIL: ANALYSIS OF A CROSS-SECTIONAL STUDY

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Introduction: In Brazil, diabetes mellitus (DM) affects more than 15 million people, being the country with the highest number in Latin America and the fifth largest in the world. Furthermore, the proportion of individuals affected by the disease in increasingly younger age groups, such as children, is increasing, especially in developing countries. Despite this, data is limited for this population and there are, to date, no studies that have analyzed the number of hospitalizations among children in the last decade, especially in the Northeast region, where there is a greater lack and demand in public health. **Objective:** To analyze the number of hospitalizations for DM in the child population in the Northeast region of Brazil. **Methods:** This is an ecological, descriptive study, carried out using data from the SUS Hospital Information System (SIH/SUS – DATASUS) of the states in the Northeast region from 2014 to 2023. The population of this study are younger Brazilian children 10 years old, disregarding the sex and color/race of each person. The variables used were region and Federation Units, year of processing, age group and number of hospitalizations for diabetes mellitus. The data were analyzed using descriptive statistics for each year, age group and state of that region. **Results:** 8,307 hospitalizations due to DM were reported. Based on this, a slight oscillation was observed from 2014 to 2020, with an average of 758 (757.86) cases per year, and a considerable increase in subsequent years, with emphasis on the year 2023, with a total of 1,029 Notifications. Furthermore, it was possible to note the prominence of Bahia throughout the analyzed period, in which there were a total of 2,354 (28.34%) hospitalizations, followed by Pernambuco and Ceará, with 1,621 (19.51%) and 1,340 (16.13%), respectively, meaning that these three states together accounted for more than half of the notifications of hospitalizations due to diabetes mellitus (63.98%). Finally, the age group from 5 to 9 years old was the most predominant, totaling 4,759 (57.29%). **Conclusion:** There was a significant increase in the number of hospitalizations for DM in children under 10 years of age in the Northeast region in recent years. Furthermore, the prominence of the states of Bahia, Pernambuco and Ceará makes it possible to direct efforts to implement primary health care interventions in order to reduce this situation. **Keywords:** diabetes mellitus; children; Brazil.

OBESIDADE

1950

PHENOTYPE-BASED TREATMENT FOR OBESITY WITH A COMBINATION OF NALTREXONE AND BUPROPION: A CASE REPORT

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Case presentation: Female, 34 years old, with a history of emotional hunger, lactose intolerance and obesity in adolescence, came to the Endocrinology clinic in early 2024 due to difficulty of losing weight, being at her maximum weight of 75.80 kg, with 34% body fat (BF), 26.5 kg/m^2 body mass index (BMI) and 1,177 kcal/day basal metabolic rate (BMR). She reported progressive weight gain since the age of 25 and difficulty dealing with emotional challenges, including chronic anxiety, anhedonia and low self-esteem, which motivated her to start therapy a year ago. She had used bupropion, achieving emotional improvement, and liraglutide, resulting in a loss of 5 kg in 5 months, and discontinued both. Despite a balanced diet and intense training for many years, a reduced metabolism was identified in the calorimetry assessment. As a result, a weight loss strategy was developed based on obesity phenotypes, with liraglutide replaced by bupropion hydrochloride and naltrexone, as well as an interdisciplinary approach with a physical educator. The result, after 4 months, was a reduction in weight to 69.20 kg, CG to 30% and BMI to 25.4 kg/m^2, as well as an increase in BMR to 1,672 kcal/day. There was also an improvement in respiratory capacity, with an increase in volume of oxygen (VO2) from 2.49 to 3.85 mL/kg.min. As a result, there was a significant improvement in the patient's body composition and quality of life. **Discussion:** The stratification of obesity phenotypes – hungry brain, emotional hunger, hungry gut and slow burn - emerges as a strategy that personalizes the treatment of this condition in the face of heterogeneous responses to clinical treatment. In a case where emotional hunger and slow burn coexist, replacing liraglutide with bupropion hydrochloride and naltrexone, combined with psychotherapeutic interventions and physical activity, proved to be effective. While liraglutide is often used to suppress appetite in hungry gut, the combination of bupropion and naltrexone acts on both the emotional component and the regulation of satiety, and is beneficial for emotional hunger. Supporting physical activity helps to optimize metabolism. **Final comments:** The change in the treatment of obesity, supported by clinical evidence, emphasizes the importance of a personalized and interdisciplinary approach, considering its different phenotypes, especially in more complex cases. **Keywords:** obesity phenotypes; weight loss; clinical treatment.

TIREOIDE

1951

RECTAL LEVOTHYROXINE: AN ALTERNATIVE TREATMENT FOR REFRACTORY HYPOTHYROIDISM AND AN ALTERNATIVE DIAGNOSTIC TOOL FOR ORAL LEVOTHYROXINE MALABSORPTION

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24-year-old woman seeks an endocrinologist due to not controlled hypothyroidism. She reported hair loss, fatigue and heavy menstrual bleeding. Currently on 150 mcg oral levothyroxine (LT4). For her weight, it was a dose of 2,5 mcg/kg/day. Laboratory tests showed positive thyroid peroxidase antibody, TSH of 10.2 uIU/mL and FT4 of 0.8 ng/dL. The impression was autoimmune decompensated hypothyroidism and the LT4 dose was increased. The patient was followed for 2 years, reaching a dose of 250 mcg of LT4 without adequate control of the condition. She denied using medications that could interfere with the LT4 absorption and was taking it in a proper way. Upper digestive endoscopy and antibodies for celiac disease and atrophic gastritis were normal. She reported, in one of her last appointments, weakness, myalgia and diffuse edema. Laboratory revealed iron-deficiency anemia; TSH 383 uIU/mL and FT4 0.38 ng/dL. Although the initial investigation was negative, the suspicion of malabsorption remained. Due to the inability to perform the conventional absorption test of oral LT4, a prescription of rectal 250 mcg LT4 was done using vaginal applicators, along with intravenous iron hydroxide. Upon reassessment, she reported improvement in symptoms and laboratory tests showed resolution of the anemia and control of hypothyroidism. The plan is to use higher doses of oral LT4 to control the condition. Refractory hypothyroidism is defined as the inability to control the disease with LT4 doses 1.9 mcg/kg/day or higher. The main causes are poor adherence to treatment and gastrointestinal absorption disorders. Alternative methods of administration can be effective in bypassing critical points of gastrointestinal absorption. Rectal administration has been shown to be effective and safe in recent studies. In Brazil, the availability of only oral LT4 makes the treatment of individuals with malabsorption very difficult. This case presents both a diagnostic tool possibility for detecting malabsorption (when conventional absorption tests are unavailable) and an alternative treatment in situations of significant decompensation, with risk of progression to myxedema, as was this one. There is still a lack of evidence on the equivalence of doses in oral and rectal administration, on the most appropriate method of administration (this that we used or through dilution of the tablets and application in the form of an enema) and also on doses adjustments in case of diarrhea or constipation. **Keywords:** refractory hypothyroidism; rectal levothyroxine; malabsorption.

ENDOCRINOLOGIA PEDIÁTRICA

1952

INFANT MORTALITY FROM ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES – 2016 TO MAY 2024

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Introduction: Society is constantly changing socially and economically, as well as culturally in the face of globalization. This has had a significant impact on people's lifestyles and has contributed to an increase in the incidence of endocrine and metabolic diseases, such as obesity, diabetes mellitus and hypertension. Currently, it is estimated that 6.4% of the Brazilian child population is affected by chronic diseases, including those of endocrine origin. This prevalence is influenced by lifestyle factors and accessibility to health services. It has been observed that the age group most affected is children under 1, and the Northeast region has the highest mortality rate from these. This cross-sectional epidemiological study aims to analyze infant mortality from endocrine, nutritional and metabolic diseases in Brazil during the period from January 2016 to May 2024, also investigating its geographical distribution and possible changes over the years. **Objective:** To analyze data on infant mortality due to endocrine, nutritional and metabolic diseases in the period from 01/2016 to 05/2024 in Brazil. **Methods:** This is a cross-sectional epidemiological study analyzing infant mortality from endocrine, nutritional and metabolic diseases from 2016 to 05/2024, as well as their geographical distribution. **Results:** Analyzing the pre- and post-pandemic period, there was a reduction in the percentage of infant deaths from endocrine, nutritional and metabolic diseases. The year with the highest figure was 2017, with 384 deaths (29.8%), reaching 287 (22.2%) in 2023. This variation represents a reduction of 25% and may be related to the underreporting of other causes, to the detriment of COVID-19. In addition, in terms of the geographical distribution of these cases, the south and central-west regions are responsible for only 7% of deaths each. The region with the highest percentage was the northeast, with 35.9% of cases, which may be related to greater social inequalities. **Conclusions:** In conclusion, it is clear that although the number of infant deaths due to endocrinological, nutritional and metabolic diseases has decreased over the years analyzed, there should still be greater attention focused on this cause, especially in the northeastern state, since it has the highest percentage of mortality, requiring a better approach related to the social inequalities that affect infant health, so that this rate is increasingly reduced, showing better results over the years. **Keywords:** infant mortality; endocrine system diseases; nutritional and metabolic diseases.

ENDOCRINOLOGIA PEDIÁTRICA

1953

EPIDEMIOLOGICAL ANALYSIS OF HOSPITALIZATIONS OF PEDIATRIC POPULATION DUE TO THYROTOXICOSIS IN BRAZIL, 2019 TO 2023

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Introduction: Thyrotoxicosis is a clinical condition due to excessive amounts of circulating thyroid hormones. It can result from thyroid hyperfunction and other causes, such as excessive intake of thyroid hormones and thyroiditis. In the pediatric age group, the most common form of thyrotoxicosis is Graves' disease, which is prevalent in females and adolescents. Although the current recommended initial therapy is the use of antithyroid drugs, previous studies have shown an increased recurrence rate in pediatric patients, which highlights the need for epidemiological analysis of pediatric hospitalizations for this disease. **Objective:** To evaluate the epidemiological profile of hospitalizations of the pediatric population due to thyrotoxicosis in Brazil between 2019 and 2023. **Methods:** This is a descriptive, retrospective, observational, cross-sectional, and ecological epidemiological study conducted based on secondary data available in the Hospital Information System of the Unified Health System (SIH/SUS), from the Department of Information and Informatics of the Unified Health System (DATASUS), on hospitalizations due to thyrotoxicosis in the Brazilian regions, in the age group of 0 to 19 years, from 2019 to 2023. Data analysis was performed descriptively, discriminating characteristics such as age group, sex and race. **Results:** During the analyzed period, 231 cases of thyrotoxicosis were reported, most of which were in the 15-19 age group (54.9%), in brown individuals (44.1%) and females (80.9%). The year of 2022 recorded the highest number of cases (23.3%). Regarding the analysis of Brazilian regions, the Southeast region had the highest number of hospitalizations (50.6%), followed by the South (19%). The evaluation of the cases reported during the analyzed period revealed that only two cases resulted in death, indicating a low mortality rate associated with the condition, only 0.8% fatality. **Conclusion:** The epidemiological profile presented by the data analysis indicates a higher incidence in the Southeast and South regions of the country. In addition, specific patterns related to gender, race/skin color, and age were identified, which are relevant information for further studies and implementation of targeted interventions. **Keywords:** thyrotoxicosis; epidemiology; hospitalizations.

MISCELÂNEA

1954

EPIDEMIOLOGICAL PROFILE OF HOSPITALIZED MEN DUE TO PANCREATIC CANCER IN BRAZIL, 2019 TO 2023

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Introduction: Pancreatic neoplasm in its early stages usually does not cause the appearance of signs and symptoms. However, due to its late diagnosis and difficult detection, the mortality rate of this cancer is high. The causes of this disease are still unknown, but patients with certain risk factors are more likely to develop this tumor, such as smoking and type 2 diabetes mellitus. Furthermore, the incidence of this type of cancer increased over the study period, showing a higher incidence in different sex, race and age groups, requiring an analysis of the epidemiological profile of these cases. **Objective:** To analyze confirmed cases of pancreatic cancer in the male population in Brazil between the years of 2019 and 2023. **Methods:** This is a descriptive, retrospective, epidemiological study, carried out through the collection of secondary data on malignant neoplasm of the pancreas, available in the Hospital Information System of the Unified Health System (SIH/SUS), of the Department of Information and Informatics of the Unified Health System (DATASUS), from 2019 to 2023. The investigated factors included hospitalizations due to the pancreatic neoplasm and its total public spending, which were performed descriptively and tabulated in the Microsoft Excel platform. **Results:** After analyzing both sexes, from the period of 2019 to 2023, 75,193 cases of pancreatic cancer were identified, of which the Southeast region had the highest number of hospitalizations (N = 34,843), resulting in an expenditure of R$ 64,231,244.63. Delimiting the main approach, the disease in question was more prevalent in males (N = 37,7320), whites (N = 18,015) and in the 60-69 age group (N = 12,767). In men, the fatality rate increased progressively with age, ranging from 16.25% in the 20-29 age group to 96.65% in individuals aged 80 or over. During the analyzed period, the 2023 year had the highest number of notifications among men (N = 8,715). In total, 15,872 cases in men led to death, resulting in a fatality rate of 42% for the last 5 years recorded. **Conclusion:** The found epidemiological profile indicates a higher incidence in the Southeast region of the country. The mortality of pancreatic cancer varied significantly according to age, being higher in older individuals. Furthermore, specific patterns regarding gender, race and age were identified, which are relevant information for further studies and implementation of targeted interventions. **Keywords:** pancreatic cancer; epidemiology; hospitalizations.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1955

COSTS-HOSPITALIZATION FROM ENDOMETRIOSIS IN NORTHEASTERN BRAZIL DURING THE PERIOD OF 2019 TO 2023: EPIDEMIOLOGICAL ANALYSIS

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Introduction: Endometriosis is characterized by the presence of endometrial glands and stroma outside the uterine cavity with lesions commonly found in the pelvis, but can arise in several other areas, including the intestine and pleural cavity. Although endometriosis is a non-malignant and common process, ectopic endometrial tissue and resulting inflammation can cause menstrual pain, pain during sexual intercourse, chronic pain and infertility. In addition, it is a disease that affects women at different hormonal stages: premenarche, reproductive and postmenopausal. **Objective:** To analyze epidemiological data on endometriosis and government costs generated by hospitalizations in the northeast region of Brazil between 2019 and 2023. **Methods:** Descriptive, retrospective epidemiological study conducted by consulting secondary data on endometriosis in northeastern Brazil available in the Hospital Information System of the Unified Health System (SIH/SUS), part of the Department of Information and Informatics of the Unified Health System (DATASUS), from 2019 to 2023. Data analysis was performed descriptively regarding the values of hospital services, hospitalizations, average length of stay, age group, and race/color. **Results:** During the period analyzed, approximately 14,000 hospitalizations were identified in the northeast region, with the state of Ceará standing out with almost 3,000 hospitalizations. Regarding costs, the value of hospital inpatient services accounted for R$ 8,556,102.07 in expenses for the health system, with Ceará being the state with the highest hospital costs (R$ 1,729,930.24). Within the total number of hospitalizations, the average hospital stay was 2.5 days, with minimal difference between the averages in each state. Regarding age group, women aged 40 to 49 years represent the largest proportion of hospitalizations, reaching the mark of 6,700 hospitalizations. Finally, when evaluating the number of hospitalizations and the color/race parameter, it is possible to observe that brown people represent the largest number of hospitalization cases, accounting for approximately 10,000 cases. **Conclusion:** The epidemiological profile presented by the analysis of the data indicates a higher incidence in Ceará. Furthermore, it was noted that the disease is more prevalent in brown women aged 40 to 49, which makes it clear that there is a need for public health strategies to achieve early diagnosis, treatment and prevention. **Keywords:** endometriosis; epidemiology; Brazil.

DISLIPIDEMIA E ATEROSCLEROSE

1957

ANALYSIS OF COSTS AND HOSPITALIZATIONS DUE TO ATHEROSCLEROSIS IN BRAZILIAN REGIONS FROM 2019 TO 2023: EPIDEMIOLOGICAL STUDY

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Introduction: Atherosclerosis is a multifactorial process and is characterized by the deposition of fat, calcium and other elements in the artery walls, reducing their caliber and causing a blood deficit to the tissues irrigated by them. It is the main cause of cardiovascular diseases (CVD), such as acute myocardial infarction and stroke. Studies indicate that the prevalence of this disease is in patients aged between 50 and 70 years, male, hypercholesterolemia, smoking, systemic arterial hypertension, sedentary lifestyle, obesity and with a history of CVD in family members. **Objective:** To analyze the epidemiological profile and hospital expenses of hospitalizations due to atherosclerosis in Brazilian regions between 2019 and 2023. **Methods:** This is a descriptive, retrospective epidemiological study, carried out through the collection of secondary data on hospitalizations due to atherosclerosis and their hospital expenses obtained from the Hospital Information System of the Unified Health System (SIH/SUS), available at DATASUS, from 2019 to 2023 in Brazil. Different variables were descriptively analyzed in the research, such as: color/race, age group, sex, deaths and average length of hospital stay. **Results:** In the period analyzed, 131,012 hospitalizations due to atherosclerosis were reported, with 2023 registering the highest rate (N = 29,201; 22.2%). The disease was more prevalent in brown individuals (41.7%), in the age group of 60 to 69 years (33.5%) and in males (56.3%). Regarding the analysis of Brazilian regions, the Southeast region had the highest number of hospitalizations (48.6%), as well as the highest amount spent on hospital services (R$ 125,030,534) and professionals (R$ 21,085,629). Furthermore, this region had the highest number of deaths (n = 2,453), with the average length of stay in hospital being 7 days, with an average hospitalization cost equivalent to R$ 2,293. Regarding deaths, most occurred in the age group of 80 years and over (36.1%), with white individuals having the highest total expenditure on hospitalizations (R$ 131,350,424). **Conclusion:** It was shown that atherosclerosis has gender and age patterns consistent with those described in the literature. Furthermore, the predominance of the Southeast region as the Brazilian portion with the most hospitalizations and highest public spending warns of the need for further studies to assist in the development of targeted health policies. **Keywords:** atherosclerosis; epidemiology; Brazil.

DIABETES MELLITUS

1958

QUALITY OF LIFE IN DIABETIC INDIVIDUALS UNDERGOING RENAL REPLACEMENT THERAPY: A SYSTEMATIC REVIEW

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Introduction: Diabetes mellitus (DM) is a chronic condition with the potential to cause multiple health complications. Among these, diabetic nephropathy is a significant concern, often necessitating renal replacement therapy. This therapeutic intervention demands substantial modifications to the patient's daily routine and can significantly influence their overall quality of life. **Objective:** To analyze the panorama of national and international literature on the quality of life of individuals with DM undergoing renal replacement therapy. **Methods:** The review protocol was registered with PROSPERO: CRD42021231478; the PECO strategy was adopted, and the guidelines outlined by PRISMA were followed. The databases analyzed were: PubMed, Medline, LILACS, SciELO, IBECS, BRISA, BDENF and CUMED, up to February 2021 and available in all languages. MeSH-controlled descriptors were used. The search strategy was quality of life AND diabetes mellitus AND (Hemodialysis Units, Hospital OR Renal Dialysis OR Renal Insufficiency, Chronic OR Diabetic Nephropathies). At first, clinical trials were chosen as a criterion, but due to the low number of articles, observational studies were included. We used studies of people aged over 18, of both sexes, with DM and undergoing renal replacement therapy. Duplicate studies and those dealing with transplantation were excluded. The selected articles were analyzed descriptively and assessed for methodological quality (Loney instrument for cross-sectional studies, Newcastle-Ottawa Scale for cohort and case-control studies, and Downs and Black checklist for clinical trials). **Results:** This study comprised a total of 20 studies, the majority of which were assessed to be of moderate methodological quality. The studies were published between 1990 and 2019 and the sample size of individuals with DM undergoing renal replacement therapy ranged from 12 to 619. With regard to the type of DM, 7 studies included people with DM1 and/or DM2, 4 only those with DM2 and 9 studies did not provide information. As for the type of therapy, hemodialysis predominated. With regard to quality of life, there was a prevalence of low scores in the physical and mental component summaries, and high scores in the aspects of quality of life related to kidney disease. **Conclusion:** The findings suggest that the quality of life among individuals with diabetes mellitus undergoing renal replacement therapy exhibits variability across different population groups studied. **Keywords:** quality of life; diabetes mellitus; kidney disease, chronic.

ADRENAL E HIPERTENSÃO

1959

HYPERALDOSTERONISM IN A CHRONIC RENAL PATIENT: A CASE REPORT FROM AGRESTE MERIDIONAL

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Introduction: Primary hyperaldosteronism (PHA) causes secondary arterial hypertension (SAH) due to excessive production of aldosterone, potentially leading to chronic renal failure if left untreated. This case highlights a patient with severe SAH due to PHA, progressing to end-stage chronic renal failure and requiring dialysis. The objective is to emphasize the early identification and appropriate management of PHA to prevent irreversible renal complications. **Case description:** A 48-year-old male patient with a family history of hypertension, dyslipidemia, obesity, diabetes, and chronic kidney disease, had hypertension since the age of 20 without treatment. In 2018, weighing 120 kg, he sought a nutritionist to lose weight. Tests showed elevated nitrogenous waste, hypokalemia, and hyperglycemia. He was referred to a cardiologist, endocrinologist, and nephrologist and started treatment with antihypertensives and linagliptin. Investigations confirmed hyperaldosteronism. He was on omeprazole, valsartan, amlodipine, spironolactone, atenolol, paroxetine, atorvastatin, allopurinol, linagliptin, bezafibrate, and clonazepam. Tests revealed renin activity: 0.3, aldosterone: 42.9, urea: 128, creatinine: 3.26, uric acid: 8.21, albumin: 3.72, calcium: 9.08, potassium: 2.4, sodium: 142, creatinine clearance (24 h urine): 28.4, microalbuminuria (24 h): 2,893 mg, Anti-HCV and HBsAg: non-reactive, vitamin D: 19.5. The stress test was normal and the abdominal ultrasound showed incipient hepatic fatty infiltration, a small simple renal cyst on the left, and prostatic enlargement. He was hospitalized for investigation; valsartan was discontinued, and allopurinol adjusted due to renal function. Over five years, he progressed to advanced chronic renal failure, requiring hemodialysis. Currently, he uses several medications, and his blood pressure is controlled, with bimonthly follow-ups. **Final comments:** This case underscores the importance of early identification and appropriate management of PHA, which is often underdiagnosed. The patient, with multiple comorbidities and untreated hypertension since the age of 20, progressed to end-stage chronic renal failure, requiring hemodialysis. Managing comorbidities associated with PHA highlights the need for efficient screening and early intervention to prevent irreversible renal complications. A multidisciplinary approach is essential to optimize outcomes and prepare for kidney transplantation. **Keywords:** primary aldosteronism; secondary arterial hypertension; chronic renal failure.

DIABETES MELLITUS

1961

TECHNOSPHERE INSULIN IN THE TREATMENT OF TYPE 1 DIABETES MELLITUS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: The majority of patients with type 1 diabetes (T1DM) are not able to achieve optimal glucose control despite advances in insulin treatment options. Rapid-acting inhaled insulins like Technosphere Insulin (TI) offer a faster onset and shorter duration of action compared to traditional ultra-rapid insulins (URI), potentially improving adherence. However, the impact of TI on the treatment of T1DM remains controversial. **Objective:** We aimed to perform a comprehensive systematic review and meta-analysis on the efficacy of Technosphere Insulin (TI) compared to traditional ultra-rapid insulin (URI) in T1DM. **Methods:** We systematically searched PubMed, Embase, and Cochrane databases for randomized controlled trials (RCTs) that compared TI with URI in a basal-bolus regimen in patients with T1DM, and that reported any of the following outcomes: (1) change from HbA1c baseline; (2) change in body weight; and (3) overall and severe hypoglycemia. Statistical analysis was performed using Review Manager 5.4 software. P values < 0.05 were considered statistically significant. Heterogeneity was assessed with Cochran Q and I^2 statistics, a random-risk effect was used if $I^2 > 25\%$. The risk of bias was evaluated using the Cochrane Risk of Bias tool (ROBINS-II). **Results:** Three RCTs were included, involving 530 participants with T1DM, comprising 261 (49.2%) who were treated with TI and 269 (50.7%) who received traditional ultra-rapid insulin (URI, aspart and lispro). There were no significant difference between groups on change in HbA1c (MD 0.19; 95% CI -0.03, 0.41; p = 0.10; $I^2 = 54\%$). In terms of body weight change, the TI group exhibited significantly less variation (MD -1.06; 95% CI -1.65, -0.48; p = 0.0004; $I^2 = 0\%$) compared to the URI group. Adverse events such as overall hypoglycemia (RR 0.94; 95% CI 0.87, 1.02; p = 0.14; $I^2 = 78\%$) and severe hypoglycemia (RR 0.63; 95% CI 0.49, 0.82; p = 0.0004; $I^2 = 0\%$) were significantly more frequent in the URI group. The follow-up time ranged from 4 to 24 weeks. **Conclusion:** In this meta-analysis of randomized trials, the use of TI in patients with T1DM showed no difference in HbA1c, the other findings suggest that TI may offer advantages in terms of weight stability and lower incidence of hypoglycemic events over traditional URI. Further research with longer follow-up periods may be warranted to confirm these results and to evaluate long-term outcomes. **Keywords:** diabetes mellitus; insulin, short-acting; inhalation.

TIREOIDE

1962

HYPOTHYROIDISM IN PATIENTS WITH DOWN SYNDROME: WHAT DOES THE CURRENT LITERATURE SAYS?

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Introduction: Down syndrome (DS) is a genetic condition caused by the total or partial extra copy of chromosome 21. DS is associated with comorbidities, including endocrine disorders, such as thyroid dysfunction, a common abnormality in these patients. Hypothyroidism is the most prevalent thyroid dysfunction in patients with DS. Conceptualized as a hormonal deficiency characterized by a drop in the production of the hormones triiodothyronine (T3) and thyroxine (T4). **Objective:** To investigate the current scientific literature on the incidence of hypothyroidism in patients with DS. **Materials and methods:** Systematic review, guided by the question: "how hypothyroidism is most frequently reported in patients with DS", based on PRISMA and carried out between June and July 2024, using the Virtual Health Library (VHL) as a database and descriptors: "Down Syndrome", "Hypothyroidism", with Boolean operator AND, including articles from the MEDLINE database, with inclusion criteria: full and free text, from 2019 to 2024. 629 articles were found. With exclusion criteria: duplicate articles, unavailable in full or with thematic leak, the final corpus was 13 publications. **Results:** Scientific evidence states that endocrine disorders such as thyroid dysfunction, diabetes, short stature, infertility and obesity are more common in individuals with DS than in the general population, with subclinical hypothyroidism being the most common thyroid abnormality, followed by congenital hypothyroidism, overt hypothyroidism and hyperthyroidism. Peer-reviewed retrospective studies report a high incidence of hypothyroidism in infants with DS undetected by newborn screening. By longitudinally evaluating thyroid function testing (TFT) in a large population with DS, syndrome-specific reference nomograms for TSH, T3 and T4 were delineated, demonstrating persistently elevated TSH compared to non-syndromic children. Cytotoxic T lymphocyte-associated antigen 4 (CTLA-4) is one of the immune regulatory genes that correlates with Hashimoto's thyroiditis (HT). **Conclusion:** Early diagnosis and continuous monitoring of thyroid function in these patients is essential as metabolic and hormonal deficiencies can negatively impact the prognosis. Adequate monitoring allows early interventions, prevents complications and promotes healthy development and better well-being for patients with DS. **Keywords:** hypothyroidism; Down syndrome; metabolic disorders.

DIABETES MELLITUS

1963

COMPARISON OF BLOOD PRESSURE CONTROL BETWEEN PATIENTS WITH *VERSUS* WITHOUT DIABETES IN BRAZIL: AN ANALYSIS FROM THE GLOBAL ICAREME REGISTRY

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Introduction: Arterial hypertension and diabetes mellitus (DM) are two of the main risk factors for cardiovascular (CV) diseases. It is known that, in patients with DM, blood pressure (BP) targets are stricter than those recommended for patients without DM, according to current guidelines. However, whether this more intensive BP control in DM is followed in the routine clinical practice in Brazil remains to be clarified. **Objective:** The aim of this study was to analyze baseline data from participants included in Brazil in the iCaReMe study, a multinational, prospective, multicenter registry, and to compare BP control in patients with and without DM. **Methods**: Patients with a history of hypertension, DM, chronic kidney disease (CKD), or heart failure (HF) were eligible for inclusion in the registry. Patients were treated according to the local standards of care for each center. Baseline data were compared between the groups with and without DM, including comorbidities, demographics, and medications. The outcome variable of interest in this study was the proportion of patients with adequate BP levels in mmHg, being considered for this purpose the BP target < 130 x 80 mmHg. Sensitivity analyses were also performed with targets of < 140 x 90 mmHg and < 120 x 80 mmHg. Multivariate logistic regression models were done for co-variate adjustments. **Results:** Data from 463 patients with hypertension were evaluated, being 175 patients with and 288 without a history of DM. The mean age was 66.8 ± 11.2 years, 41.7% of participants were male, and 30.9% had a history of coronary artery disease (CAD). Patients with DM were older and also had a higher prevalence of CKD, CAD, and HF. The proportion of patients with BP < 130 x 80 mmHg was 45.0% among patients with *versus* 54.2% among patients without DM (adjusted *odds ratio* [OR] 0.64; 95% confidence interval [CI] 0.43-0.95; P = 0.028). Results were directionally consistent for BP goals < 140 x 90 mmHg (70.4% *versus* 74.0%, respectively; OR = 0.78; 95% CI 0.50-1.22) and BP < 120 x 80 mmHg (31.4% *versus* 35.0%; OR = 0.83; 95% CI 0.54-1.27). **Conclusion:** In a real-world registry in Brazil, despite having a higher prevalence of comorbidities and stricter BP goals according to the guidelines, individuals with DM were less likely to have BP within the target. Such data reinforce the need for educational actions focused on optimizing antihypertensive treatment in patients with DM, due to their high CV risk. **Keywords:** diabetes mellitus; hypertension; blood pressure goals.

OBESIDADE
1964

CROSS-SECTIONAL PROFILE OF PATIENTS TREATED IN A UNIVERSITY CLINIC SPECIALIZING IN CHILDHOOD OBESITY IN THE BRAZILIAN AMAZON (2018-2021)

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Introduction: The growing number of children and adolescents with obesity is worrying for well-known reasons: comorbidities such as asthma, type 2 diabetes mellitus, metabolic syndrome, hepatic steatosis and hypertension, etc. Several factors are associated with this global increase in the prevalence of childhood obesity observed in recent decades: family eating habits, increased consumption of ultra-processed foods, a sedentary lifestyle, etc. In this context, it is important to highlight the epidemiological profile of childhood obesity in populations from particular regions, such as the Brazilian Amazon, whose characteristics and eating behaviour seem to differ from those observed in more globalized urban centers. **Materials and methods:** This cross-sectional study was carried out using data from patients seen at the childhood obesity outpatient clinic of a medical specialties center at a university in the state of Pará. Prior to data collection, a Free and Informed Consent Form was signed for the use of the data and approval was obtained from the university's Research Ethics Committee (Registration No. 5.429.013). The data was collected from the medical records of all the patients (n = 165) seen over four years. All data was analyzed using R software, version 4.3.2. **Results:** Of the 165 patients seen at the childhood obesity outpatient clinic over this 4-year period, 99 (60%) patients were male, 75 (45%) patients aged between 6 and 10 years and 73 (44%) patients aged between 11 and 18 years were seen. There was a family medical history of obesity (n = 45 [7%]), diabetes mellitus (n = 17 [10%]), hypertension (n = 29 [18%]) and dyslipidemia (n = 25 [15%]). In addition, the majority of patients had a sedentary lifestyle (n = 100 [61%]), compared to those who reported having a physical exercise routine (n = 61 [37%]). In the anamnesis, 17 (10%) patients had pinching habits, 23 (14%) patients had hyperphagic habits, 30 (18%) patients reported both symptoms. According to their body mass index (BMI), 150 (91%) patients were in the ≥ 97th percentile. The presence of acanthosis nigricans was observed in 79 (48%) patients. Finally, 139 (84%) patients were classified as obese, 16 (10%) as overweight and 1 (1%) as eutrophic. **Conclusion:** the epidemiological profile of childhood obesity in the Brazilian Amazon appears to be similar to that observed in more globalized centers. **Keywords:** obesity childhood; Brazilian; Amazon.

OBESIDADE
1965

PREVALENCE OF OVERWEIGHT AND OBESITY IN CHILDREN AND ADOLESCENTS USING BASIC HEALTH UNITS IN THE CITY OF ILHÉUS – BAHIA

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Introduction: Obesity is a complex disease represented by the excessive accumulation of body fat that causes damage to the individual's health and its prevalence occurs in 10% to 15% of the pediatric population. In order to analyze the presence of obesity in children and adolescents, a complete anamnesis is required, including gestational and family history, anthropometry, physical activity, sleep patterns, social history and mental health of this population. **Objectives:** To assess the prevalence of overweight and obesity in children and adolescents using Basic Health Units in the city of Ilhéus – Bahia. **Materials and methods:** This is a cross-sectional prevalence study carried out in seven Basic Health Units in Ilhéus – Bahia. This study included pediatric population aged 5 to 19, attended between the months of January 2023 and February 2024. **Results:** The final sample for this study consisted of 775 children and adolescents aged between 5 and 19, 321 (41%) of whom were male and 454 (59%) female. The overall prevalence of overweight was 27.8%, with 16.2% being overweight and 11.6% obesity, and there was no significant difference between the sexes. The majority of participants reported adequate breastfeeding (94%). With regard to physical activity, more than half of the participants reported doing some kind of physical activity (61%). In addition, caesarean birth was found to be a correlating factor with overweight and obesity. The abdominal circumference/height ratio proved to be an effective tool for assessing cardiometabolic risk, being high in the majority of participants with obesity. Furthermore, screen time superior than 4h/day was more frequent among overweight and obese participants (62%). **Conclusion:** Considering this, can be concluded that the prevalence of childhood obesity in users of Basic Health Units in Ilhéus - Bahia was 11.6%, with the following risk factors: cesarean birth, absence or insufficiency of breastfeeding, abdominal circumference/height ratio, screen time superior than 4h/day and physical inactivity. **Keywords:** obesity; children; Ilhéus.

NEUROENDOCRINOLOGIA

1966

RAPID AND PROFOUND REDUCTIONS OF ANDROSTENEDIONE AND 17-HYDROXYPROGESTERONE WITH ONCE-DAILY ORAL ATUMELNANT (CRN04894) IN ADULTS WITH CLASSIC CONGENITAL ADRENAL HYPERPLASIA: INITIAL RESULTS FROM A 12-WEEK, PHASE 2, OPEN-LABEL STUDY

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Introduction: Atumelnant (CRN04894) is a potent, once-daily, orally bioavailable, nonpeptide, first-in-class competitive and selective melanocortin type 2 receptor (MC2R, or ACTH receptor) antagonist in development for the treatment of congenital adrenal hyperplasia (CAH) and ACTH-dependent Cushing's syndrome. **Objective:** To report initial results from an ongoing, open-label, dose-finding, phase 2 study of atumelnant in patients with CAH (NCT05907291). **Methods:** Patients (age ≥18-75, ≥16 years in USA) with classic CAH (21-hydroxylase deficiency) on a stable dose of glucocorticoid replacement (≥15 mg hydrocortisone equivalent) for ≥6 months were enrolled. Sequential cohorts received once-daily oral atumelnant (80 mg, 40 mg, or 120 mg) for 12 weeks. Key efficacy endpoints included change from baseline in early morning serum androstenedione (A4) and 17-hydroxyprogesterone (17-OHP) levels prior to glucocorticoid administration. **Results:** As of this analysis, 10 patients have been enrolled and dosed (atumelnant 80 mg, n = 6; 40 mg, n = 4): mean (range) age 30.8 (22-42) years; 50% female; mean (range) glucocorticoid dose 32 (20-40) mg/day (hydrocortisone equivalent). In the 80-mg cohort, 6 patients had completed 6 weeks of treatment, of whom 4 had completed the study; all 4 patients in the 40-mg cohort had completed 2 weeks of treatment. At baseline in the 80-mg cohort, mean (range) morning A4 level was 838 (116-2755) ng/dL (reference range [RR]: females 30-200 ng/dL; males 40-150 ng/dL). Mean A4 value was reduced by -91% at week 2 and -96% at week 12. There were no instances of A4 above ULN during atumelnant treatment. At baseline in the 80-mg cohort, mean (range) morning 17-OHP level was 9880 (4740-24,300) ng/dL. Mean 17-OHP value was reduced by -97% at week 2 and -94% at week 12. Two females in the 80-mg cohort menstruated for the first time in more than 2 years. Mean (range) baseline morning ACTH in the 80-mg cohort was 554 (155-1009) pg/mL (RR: 7.2-63 pg/mL); while modest variations were seen with atumelnant, no meaningful changes were observed. Reductions in A4 and 17-OHP were also observed in the 40-mg cohort at week 2. There were no serious or treatment-related adverse events. **Conclusions:** These data demonstrate rapid, profound, and sustained suppression of A4 and 17-OHP with once-daily oral administration of atumelnant 80 mg. Atumelnant was generally well tolerated. This ongoing study will further explore the safety and efficacy of various doses of atumelnant. **Keywords:** atumelnant; congenital adrenal hyperplasia; melanocortin type 2 receptor antagonist.

DIABETES MELLITUS

1967

COMPARATION BETWEEN EFFECTS OF ROUX EN Y GASTRIC BYPASS AND SLEEVE GASTRECTOMY ON REMISSION OF TYPE 2 DIABETES

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Introduction: Bariatric surgery is widely performed for the treatment of obesity, with Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) and Laparoscopic Sleeve Gastrectomy (LSG), also known as Gastric Sleeve, being the most commonly used techniques. In both procedures, remission of type 2 diabetes mellitus (DM2) is a positive consequence. Therefore, it is important to evaluate which of these procedures offers superior glycemic control for patients with DM2. **Objectives:** To determine which of the two surgical techniques, LRYGB or LSG, produces better clinical outcomes for DM2. **Materials and methods:** A systematic review was conducted in the Cochrane database from July 4th to 9th, 2024, using the DeCS descriptors "diabetes mellitus", "gastric bypass", and "laparoscopy" combined with the Boolean operator AND. This resulted in the identification of 25 scientific articles published in the last 4 years, with no language restrictions. Inclusion criteria for the study encompassed original research comparing surgical techniques in obese patients with type 2 diabetes, aged 20 to 55 years, with a BMI of 35 to 65 kg/m². Exclusion criteria included studies not aligned with the main theme, such as those involving patients who did not complete clinical treatment. Following evaluation, 10 studies were selected for inclusion in the review. **Results:** Regarding improvement in glycemic profile in patients undergoing bariatric surgery via LSG and LRYGB techniques, similar results were observed. However, LRYGB showed superior clinical support in long-term glycemic analysis, reduction in oral antidiabetic medication use, weight loss, physical functioning, and improvement in pancreatic β-cell function. The technique's greater effectiveness is related to the rapid delivery of undigested food to the small intestine, which increases the release of incretin hormones stimulating insulin secretion. Thus, the higher increase in these hormones postprandially generated a superior response for the bypass technique. However, due to sampling limitations and risk of bias, the analysis was deemed insufficient, indicating a need for further clarification on long-term pathophysiological aspects and techniques. **Conclusion:** Therefore, it can be concluded that LRYGB has shown greater efficacy in DM2 remission. However, the biological mechanisms leading to this improvement still need to be rigorously studied. Hence, the importance of future studies on these techniques should be emphasized. **Keywords:** diabetes mellitus; gastric bypass; laparoscopy.

OBESIDADE

1972

ANALYSIS BETWEEN EXCLUSIVE BREASTFEEDING AND PATIENTS WITH CHILDHOOD OBESITY SEEN IN A SPECIALIZED CLINIC FROM 2018-2021

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Introduction: In recent decades, there has been a worrying increase in childhood obesity, with approximately 340,000 children diagnosed in 2022. There are several associated factors, one of which is exclusive breastfeeding (EBF), which is considered an important postnatal factor, preventing or predisposing to obesity, depending on how long it is carried out, associated with the prevention of chronic non-communicable diseases. Breast milk is the child's first and best food, and it is recommended that it be started from the first hour after birth and continued until at least 6 months of age, when food should be introduced, associated with breast milk. **Objective:** In this context, it is important to show the frequency of the study sample according to the duration of breastfeeding, in order to analyze the possibility of a preventive relationship with obesity in groups with less than, equal to or more than 6 months of exclusive breastfeeding. **Methods:** This cross-sectional study was conducted using data from patients seen at a specialized medical clinic in the state of Pará. Prior to data collection, an informed consent form for data use was signed and approval for this work was obtained from the Research Ethics Committee of a university (Registration No. 5.429.013). Data were collected from the medical records of all patients (n = 165) treated over four years and analyzed using R software, version 4.3.2. **Results:** It was observed that the majority of patients, around 54 children, underwent SMA that was considered minimally satisfactory (6 months), with the rest of the sample mainly lasted less than this recommended interval. Furthermore, in the sample according to their body mass index (BMI), 150 (91%) patients were in the ≥ 97 percentile, but the mean (± standard deviation) for both BMI and waist circumference did not differ significantly between the groups with SMA of less than or equal to/greater than 6 months. **Conclusion:** Based on the data obtained in the study, the duration of breastfeeding did not have a significant effect on BMI and waist circumference in the sample analyzed, reinforcing the multifactorial nature of obesity. **Keywords:** obesity; childhood; breastfeeding.

OBESIDADE

1973

ASSOCIATION BETWEEN CHILDHOOD OBESITY AND SCREEN TIME: CROSS-SECTIONAL STUDY IN A SPECIALTY CLINIC (2018 TO 2021)

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Introduction: Childhood obesity is a worrying challenge facing modern society, with a significant increase in recent years, and its relationship with screen exposure has been widely studied. Evidence suggests that excessive screen time increases weight gain, in addition to increased energy expenditure, sleep deprivation, which causes important hormonal changes in appetite regulation and meal timing deregulation, and exposure to food industry advertising, especially for ultra-processed foods, which contribute to obesity. **Objective:** In this context, it is important to identify the excessive use of screens, such as digital devices and television, in this age group and its relationship with childhood obesity. **Methods:** This cross-sectional study was conducted using data from the first consultation of patients seen in a specialized clinic in the state of Pará. Before the data were collected, an informed consent for the use of the data was signed and approval was obtained from the Research Ethics Committee of a university (Registration No. 5.429.013). Data were collected from the medical records of all patients (n = 165) treated over four years and analyzed using R software, version 4.3.2. **Results:** In this series, one hundred and thirty-nine patients (84%) were diagnosed as obese, sixteen (10%) as overweight, and only one patient as eutrophic. In addition, the average screen time was analyzed according to the age of the patients, from two to eighteen years, which showed that it was above the recommended maximum of two hours, and varied far beyond that, regardless of the age of the patients, with an average consumption time of 3 to 8 hours, being highest in the sixteen-year-old age group with 8 hours. **Conclusion:** Therefore, in this study, the prevalence of excessive screen use appears to be a factor of significant concern in patients who are mostly obese, which may be a contributing and predisposing factor to this comorbidity. **Keywords:** obesity; childhood; screen time.

MISCELÂNEA

1974

LATE DIAGNOSIS OF TYPE 2 POLYGLANDULAR SYNDROME AND OTHER AUTOIMMUNE CONDITIONS: A CASE REPORT

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Case presentation: A 36-year-old female patient with a history of hypothyroidism complained of asthenia, unintentional weight loss, and amenorrhea starting more than a year ago, associated with the appearance of hyperpigmented lesions on the face and fingers. Physical examination revealed achromic macules in the left axilla, right fourth finger, perianal region, and around the vulva. These macules were well-defined, without signs of inflammation or repigmentation, characteristic of vitiligo. Considering the possibility of other autoimmune diseases, blood tests were requested. Primary adrenal insufficiency was confirmed with ACTH > 1,250 pg/mL (reference: 10-60 pg/mL), cortisol 0.4 µg/dL (reference: 5-25 µg/dL), autoimmune hypothyroidism with positive antibodies, TSH 86 µIU/mL (reference: 0.4-4.0 µIU/mL), and free T4 0.48 ng/dL (reference: 0.8-2.0 ng/dL), as well as hypergonadotropic hypogonadism with FSH 41.9 mIU/mL (reference: 4.7-21.5 mIU/mL) and LH 60.3 mIU/mL (reference: 5-20 mIU/mL). Type 1 diabetes mellitus (T1DM) was ruled out with HbA1c 5% and negative antibodies, along with the absence of hypoparathyroidism and pernicious anemia. Anamnesis and physical examination ruled out the diagnosis and previous history of candidiasis. The patient started glucocorticoid, hormone replacement with estrogen and progesterone, and levothyroxine dose adjustment, showing significant improvement in symptoms. **Discussion:** The main diagnostic hypothesis for this case is type 2 polyglandular syndrome (PAS II), also known as Schmidt's syndrome. Although PAS II is the most common among the three existing types, it has a very low prevalence and is characterized by the obligatory presence of Addison's disease, associated with autoimmune thyroid dysfunction and/or T1DM. Additionally, the absence of candidiasis makes the diagnosis of Type 1 PAS less likely. In this case, the patient presented the syndrome associated with other less frequent autoimmune diseases such as vitiligo and hypogonadism, as well as the absence of T1DM, which is the most frequent condition in this subtype. **Conclusion:** The clinical presentation of PAS II can be highly variable. Since patients with one autoimmune disease have a higher probability of developing other autoimmune conditions compared to the general population, suspicion should be considered even in atypical cases. This approach aims to avoid late diagnosis, thereby reducing morbidity and mortality and providing a better quality of life. **Keywords:** polyglandular syndrome; hypothyroidism; Addison's disease.

TIREOIDE

1975

MARINE-LENHART SYNDROME: AN UNCOMMON CAUSE OF THYROTOXICOSIS

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Case presentation: A 52-year-old female was diagnosed with hyperthyroidism due to Graves' disease (GD) and started treatment with thionamide. At diagnosis, her anti-TSH receptor antibody (TRAb) levels were 5.51 U/L (range < 1.75). Thyroid scintigraphy showed an enlarged thyroid gland, heterogeneous radioiodine uptake, a hot nodule in the transition of the middle and lower thirds of the left lobe (LL), a cold area in the upper pole of the LL, and heterogeneous distribution of radioiodine in the right lobe (RL). Iodine uptake was 57% in 24 hours (range, 8%-35%). The initial choice of therapy was thiamazole, which has been used for around 7 years, as the patient refused definitive treatment with radioiodine or surgery. However, there were several relapses whenever the medication was discontinued. Hence, after discussing with the patient, she was treated with 30 mCi of radioiodine. She developed hypothyroidism within 5 months after radioiodine and was started on levothyroxine. **Discussion:** The main cause of hyperthyroidism in iodine-sufficient areas is GD or diffuse toxic goiter. Marine-Lenhart syndrome (MLS) is defined as the coexistence of GD and autonomous functional thyroid nodules (AFTN). It is rare, estimated to occur in around 0.8%-2.7% of patients with GD. If antithyroid therapy is chosen as first-line treatment for GD, missed active nodules may result in failure of achievement of euthyroidism. On the other hand, if radioiodine therapy is chosen, these patients may require higher activities of I-131, as they are relatively radioiodine resistant. In the present case, antithyroid therapy alone did not achieve control, but the patient developed hypothyroidism with a single administration of radioiodine. **Final comments:** MLS is an uncommon cause of thyrotoxicosis that must be considered when faced with refractory GD or AFTN. Appropriate treatment must consider particularities of this syndrome. **Keywords:** thyrotoxicosis; radiotherapy; diagnostic imaging.

DIABETES MELLITUS

1976

ASSOCIATION BETWEEN THE USE OF ALOGLIPTIN (DPP-4I) PLUS VITAMIN D3 AND GLYCEMIC CONTROL IN A PATIENT WITH RECENT-ONSET TYPE 1 DIABETES (T1DM): CASE REPORT

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Case presentation: 22-year-old man, previously healthy, who was admitted, in May 2023, to the emergency room with severe Diabetic Ketoacidosis. After 24 hours, resolution criteria were presented. Under investigation, he was diagnosed with T1DM, Anti-GAD 163 IU/mL (VR < 10), Glycosylated Hemoglobin 15.1% and C-peptide 0.5 ng/mL (VR 0.81-3.85). The remaining antibodies were not reactants. Treatment with Insulin 1 UI/kg/day began. In June 2023, in addition to insulins, he started using Alogliptin 25 mg/day and Vitamin D3 5000 IU/day, being duly informed that the treatment of T1DM with Alogliptin and vitamin D3 was off-label and signed a consent form informed. Over the months, the patient had a significant reduction in insulin doses, no longer needing preprandial insulin, using only basal insulin before bed. At the time of this report, 14 months after diagnosis, he continued treatment with Alogliptin and vitamin D3, without any diabetes complication. The current dose of insulin therapy is 0,3 UI/kg/day, among these, ultra-rapid insulin 2-4 IU before breakfast, lunch and dinner only when eating carbohydrates. It presents C-peptide 0.39 ng/mL (VR 0.81-3.85), Glycosylated Hb 7.1% and Vit D 46 ng/mL. Serum levels of calcium and 25(OH) vitamin D remained normal and no side effects related to the use of Alogliptin were reported. **Discussion:** recent evidences suggests that DPP-4 inhibitors and vitamin D3 can exert synergistic anti-inflammatory and immunomodulatory properties when administered together in patients with new-onset autoimmune diabetes. It appears that both can decrease the inflammatory cytokine IL-6, modulating the Th1 immune response, and increase direct antiapoptotic effects on beta cells. Shortly after diagnosis, around two-thirds of individuals with T1DM present a phase of transient spontaneous clinical remission, also known as the "honeymoon phase", which is accompanied by a substantial reduction in exogenous insulin requirements. The association between alogliptin and other DPP-4i plus Vit D are capable of increasing the duration of the honeymoon phase, reducing daily insulin requirements and improving insulin control, without increasing the risk of hypoglycemia. **Final comments:** however, further and prospective trials must be conducted to confirm whether all classes of DPP-4i are beneficial, their safety and efficacy in these patients. **Keywords:** IDPP-4 plus vitamin D3; type 1 diabetes; alogliptin.

TIREOIDE

1977

SEVERE HYPOTHYROIDISM PRESENTING WITH MYXEDEMA HEART DISEASE AND STROKE MIMICS: A CASE REPORT

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1. UNIVERSIDADE ESTADUAL PAULISTA (UNESP), BOTUCATU, SP, BRASIL.

Case presentation: A 49-year-old male patient with a history of hypothyroidism and Diabetes mellitus (DM) since 2012 was referred to the emergency department with suspected stroke. He presented acute focal neurological deficit, seizure, and precordialgia. Stroke mimics was identified due to hypomagnesemia and severe hypothyroidism. Following electrolyte replacement, he achieved neurological recovery. Additional laboratory tests revealed signs of rhabdomyolysis, renal dysfunction, hyponatremia, mixed dyslipidemia, and low HDL. Echocardiogram showed pericardial effusion with hemodynamic repercussion, and drainage yielded 400 mL of fluid compatible with exudate. Endocrinology consultation revealed that the patient had discontinued levothyroxine treatment many years ago, presenting chronic facial edema and asthenia, and poorly controlled DM. Thyroid was reduced in size, with mixedematous facies, and laboratory tests showed TSH > 100 and undetectable free T4. Clinical-laboratory findings indicated severe decompensated hypothyroidism, with negative autoantibodies, but thyroid ultrasound revealing heterogeneous and atrophic parenchyma, suggesting Hashimoto's thyroiditis. After excluding other etiologies, pericardial effusion was attributed to myxedema heart disease. Initiation and gradual dose escalation of levothyroxine by 25 mcg every 3 days up to 125 mcg/day was recommended. The patient was discharged after 20 days with resolution of complications and improved thyroid function. Last evaluation showed TSH 1.56 and free T4 1.26, one month post-discharge. **Discussion:** Early recognition and proper management of decompensated hypothyroidism are crucial for preventing severe complications. In this case, besides myxedema heart disease and stroke mimics, initial rhabdomyolysis, dyslipidemia, and hyponatremia may be attributed to the condition. Additionally, poorly controlled DM likely contributed to hypomagnesemia and stroke mimics. Hashimoto's encephalopathy was ruled out due to absence of consciousness level alteration and reversal of deficits after electrolyte correction. **Final comments:** Patients with severe hypothyroidism may present with neurological symptoms mimicking stroke due to cerebral hypoperfusion, metabolic changes, and cardiovascular impairment. Myxedema heart disease is a rare but serious complication involving accumulation of mucopolysaccharides in pericardial tissue, leading to pericardial effusion and potential hemodynamic compromise. **Keywords:** severe hypothyroidism; myxedema heart disease; stroke mimics.

ADRENAL E HIPERTENSÃO

1978

FAMILIAL PRIMARY ALDOSTERONISM, A NEGLIGIBLE CAUSE OF HYPERTENSION IN YOUNG

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Case presentation: A 33-year-old female was referred to Endocrinology due to resistant hypertension (RT) and an MRI confirmed pontine stroke one year prior. RT was diagnosed at 18 years old. In between, she experienced two pregnancies with preeclampsia and difficult blood pressure control. Her parents are consanguineous (first cousins), and her mother also has RT with four strokes, the first occurring at age 38. Physical examination revealed blood pressure (BP) of 240/152 mmHg, with no other phenotypic abnormalities. Secondary causes of hypertension were investigated, and laboratory work-up showed low potassium levels (3.5 mEq/L), high aldosterone (12.9 ng/dL), and suppressed plasma renin activity (0.5 ng/mL/h) even during diuretic therapy, suggesting primary hyperaldosteronism (PA). Due to the familial background, a dexamethasone suppression test for aldosterone and cortisol was performed, with negative results. Abdominal MRI revealed diffuse bilateral adrenal hyperplasia. The patient's challenging BP control, coupled with the early presentation of a major adverse cardiovascular event, prompted the initiation of specific medical therapy and postponed adrenal catheterization. Daily administration of spironolactone 200 mg and nifedipine 20 mg achieved adequate BP control. **Discussion:** Familial hyperaldosteronism (FH) is rare, representing 5% to 10% of hyperaldosteronism cases. There are four known types of FH: (1) type I or glucocorticoid-remediable aldosteronism; (2) type II caused by germline CLCN2 pathogenic variants; (3) Type III caused by germline KCNJ5 pathogenic variants; and (4) Type IV caused by germline CACNA1H pathogenic variants. Diagnosis should be suspected in the presence of one or more of the following criteria: (1) hypertension before the age of 20; (2) family history of early onset hypertension or known PA; (3) personal or family history of stroke before 40 years of age; (4) massive adrenal hyperplasia. Given the patient's and her family's medical history, a presumptive diagnosis of FH has been established. Next-generation sequencing strategies are being employed to detect potentially undiscovered forms of autosomal inherited mineralocorticoid hypertension. **Final Comments:** It is paramount to increase awareness of rare forms of PA for cause-oriented management and proper genetic counseling. **Keywords:** resistant hypertension; familial primary aldosteronism; autosomal inherited mineralocorticoid hypertension.

DISLIPIDEMIA E ATEROSCLEROSE

1979

EVEROLIMUS-INDUCED PANCREATITIS IN A PATIENT WITH BREAST CANCER: A CASE REPORT

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Case presentation: A 47-year-old female patient with metastatic breast cancer undergoing Everolimus treatment presented with abdominal pain persisting for two months post-chemotherapy initiation, worsening significantly one day after admission. Abdominal palpation elicited intense pain. Abdominal CT revealed extensive inflammatory changes in the pancreatic head suggestive of acute inflammation (Balthazar 2, BISAP 1 criteria). Abdominal ultrasound showed no biliary tract dilation but indicated pancreatic head edema and adjacent adipose tissue hyperechogenicity. Laboratory findings indicated elevated levels of amylase and lipase. Additionally, total cholesterol was 770 mg/dL (reference: <200 mg/dL), HDL 81 mg/dL (reference: >40 mg/dL), LDL 202 mg/dL (reference: <100 mg/dL), and triglycerides were markedly elevated at 1,707 mg/dL, 1,681 mg/dL, and 2,607 mg/dL (reference: <150 mg/dL). Previous tests excluded hypertriglyceridemia. Treatment included initiation of a pancreatitis protocol, suspension of Everolimus, correction of hydro-electrolyte imbalances, and administration of lipid-lowering agents: rosuvastatin, ezetimibe, bezafibrate, and orlistat. The patient also developed hyperglycemia necessitating intravenous insulin via infusion pump to manage triglycerides and blood glucose, since the patient did not accept plasmapheresis. **Discussion:** Drug-induced acute pancreatitis (DIAP) is a rare cause, accounting for 0.1%-0.5% of acute pancreatitis cases. This case exemplifies Everolimus-induced AP, attributed to its inhibition of mTOR, resulting in side effects such as hyperglycemia, hypercholesterolemia, hypertriglyceridemia, and potential diabetes. Everolimus impedes Apo B-100 degradation, essential for LDL metabolism, and reduces lipoprotein lipase activity, elevating free fatty acids. Hypertriglyceridemia induces pancreatic damage via direct triglyceride action, increasing chylomicron clearance delay, raising capillary viscosity, and causing hypoxia and tissue injury. Pancreatic lipase hydrolyzing excess triglycerides exacerbates tissue damage by increasing free fatty acid accumulation. **Final comments:** This case underscores the necessity of considering drug-induced pancreatitis in chemotherapy patients, emphasizing rigorous monitoring and swift intervention to manage metabolic disturbances and prevent severe complications. **Keywords:** acute pancreatitis; hypertriglyceridemia; everolimus.

TIREOIDE
1980

QUANTITATIVE ANALYSIS OF THYROID CANCER CASES DURING THE PERIOD FROM 2022 TO 2024 IN THE NORTHEAST

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1. UNIVERSIDADE FEDERAL DA PARAÍBA, JOÃO PESSOA, PB, BRASIL; 2. HOSPITAL ALBERTO URQUIZA WANDERLEY, JOÃO PESSOA, PB, BRASIL.

Introduction: Thyroid cancer is the most common type of malignant neoplasm of the head and neck, with a higher estimated prevalence in women and an incidence age range that is not well established. Therefore, it is essential to outline an epidemiological profile at the regional level to direct effective prophylaxis. **Objective:** To quantitatively analyze cases of malignant thyroid neoplasms in the northeastern region, stratifying by state, sex, and age group. Methods: This is a cross-sectional and descriptive study, using secondary data provided by the DATASUS Oncology Panel from April 2022 to April 2024. The total number of cases and their stratification by state, sex, and age group were the variables collected in an Excel spreadsheet for statistical analysis. **Results:** The total number of cases in the northeast was 6,261 people. By state, 27% in Bahia, 19% in Ceará, 16% in Pernambuco, 10% in Paraíba, 10% in Rio Grande do Norte, 6% in Maranhão, 5% in Alagoas, 4% in Sergipe, and 4% in Piauí. Regarding sex, 86% were women and 14% men. In terms of age group, 2% were between 0 to 19 years, 7% between 20 to 29 years, 23% between 30 to 39 years, 24% between 40 to 49 years, 24% between 50 to 59 years, 16% between 60 to 69 years, 7% between 70 to 79 years, and 2% above 80 years. **Conclusion:** It is concluded that Bahia is the state with the highest number of cases in the Northeast. Additionally, the cases overwhelmingly affect females more than males. Furthermore, the most affected age group is mature adults, corresponding to ages between 30 to 59 years, with a cumulative frequency of 71% of cases. **Keywords:** epidemiology; thyroid cancer; endocrinology.

TIREOIDE
1981

METASTATIC DIFFERENTIATED THYROID CARCINOMA IN A PATIENT WITH HYPERTHYROIDISM: A CASE REPORT

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Female patient, 36 years old, attends a medical consultation with symptoms of hyperthyroidism. During the laboratory investigation presented TSH 0,01µUI/mL, free T4 3,25 ng/dL and normal TRAb. The thyroid ultrasonography detected multinodular goiter, one of which was TI-RADS-5 and measured 1,6 x 1,0 x 1,2 cm. It also revealed enlarged lymph nodes in the cervical region, suggestive of lymph node metastasis. Given the ultrasound report, it was requested a fine needle aspiration biopsy, which evidenced a papillary thyroid carcinoma (PTC) with lymph node metastasis. The patient underwent total thyroidectomy with neck dissection, histopathological evaluation confirmed the previous cytological diagnosis and adjuvant therapy with radioactive iodine at a dose of 150 mCi was indicated. After the ablative therapy, the whole-body scan (WBS) with 131-radioiodine demonstrated focal areas of high uptake in the anterior cervical region and lungs, compatible with lymph node and lung metastases. The patient developed negative WBS findings, and a gradual drop in thyroglobulin and antithyroglobulin antibody levels, in addition to normal CT scans of the cervical region and thorax. PTC is the most common type of differentiated thyroid carcinoma (DTC). In most cases, the patient keeps their normal thyroid function, and reports of PTC with hyperfunctioning nodules are rare. Metastasis has been observed only in 5% of PTC cases. In this report, a rare case of PTC with hyperfunctioning nodules and metastasis is described. Estimates indicate thyroid cancer to be the seventh most incident cancer in the Brazilian population during the 2023-2025 triennium. The rarity of the clinical presentation brought by this work can be highlighted through research on the PubMed site using the descriptors “Thyroid Cancer, Papillary”, “Hyperthyroidism” and “Metastasis”. Only 66 results were obtained, in the time range from 1965 to 2024, 24 of those are case reports. Thyroid carcinoma is a relevant disease and this report reaffirms the importance of conducting a detailed clinical investigation on all the patients, even if they do not have a high suspicion of malignancy. PTC with hyperfunctioning nodules and metastasis are extremely rare in literature. Although functioning thyroid nodules are rarely malignant, they should always be carefully evaluated to reject the suspicion of malignant neoplasm. **Keywords:** thyroid cancer, papillary; hyperthyroidism; metastasis.

DISLIPIDEMIA E ATEROSCLEROSE

1982

SEVERE HYPERTRIGLYCERIDEMIA SECONDARY TO TYROSINE KINASE INHIBITOR (NILOTINIB) USE IN CHRONIC MYELOID LEUKEMIA: A CASE REPORT

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Case presentation: A 29-year-old woman who received an allogeneic hematopoietic stem cell transplant in 2020 for chronic myeloid leukemia (CML) was in remission and being treated with nilotinib, a tyrosine kinase inhibitor (TKI). She had experienced severe cutaneous adverse reactions to imatinib, which led to the switch to nilotinib. Lab tests indicated that she had pre-diabetes (glycemia 113 mg/dL), uncontrolled hypothyroidism (TSH 13 µUI/mL, Free T4 1.0 ng/dL), and severe hypertriglyceridemia (HTG) with triglyceride levels at 3,607 mg/dL. Notably, she had no prior history of severe HTG before initiating nilotinib treatment. She presented with eruptive xanthomas on her right hip. A genetic panel testing for 45 mutations associated with HTG and pancreatitis returned negative results. She was started on levothyroxine 125 mcg and ciprofibrate at 100 mg, reducing triglyceride levels to 337 mg/dL within 60 days. No acute pancreatitis was observed. **Discussion:** This case suggests that nilotinib may have contributed to life-threatening hypertriglyceridemia, which improved with the use of ciprofibrate. While nilotinib is known to promote insulin resistance, it is not typically linked to hypertriglyceridemia. There have been reports in the literature associating severe fibrate-responsive HTG (2717 mg/dL) with TKI use; however, this association is infrequent, indicating that unknown factors might trigger HTG. Although uncontrolled hypothyroidism and pre-diabetes could partially explain the hypertriglyceridemia, levels exceeding 1,000 mg/dL are unexpected. In existing literature, patients on nilotinib often present with hypercholesterolemia rather than HTG, frequently requiring statins for cardiovascular protection. Our case contrasts studies showing either decreases or no significant changes in triglyceride levels with TKI treatments. We ruled out the most common mutations associated with HTG in our patient, reinforcing the connection between TKI use and hypertriglyceridemia. Nonetheless, the precise role of pre-diabetes and hypothyroidism in this CML patient using TKI remains unclear. **Final comments:** As illustrated in this case, metabolic disorders, including severe hypertriglyceridemia, should be regarded as potential adverse effects of TKI therapy in CML patients. Further research is necessary to enhance the management of these metabolic adverse effects. **Keywords:** hypertriglyceridemia; tyrosine kinase inhibitor; chronic myeloid leukemia.

DISLIPIDEMIA E ATEROSCLEROSE

1983

FAMILIAL PARTIAL LIPODYSTROPHY: CASE SERIES REPORT

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Case description: In a case series of 10 patients with genetically confirmed familial partial lipodystrophy (FPL), 90% were female, mean age 45.9 years, 50% with FPL type 2, 40% with type 3 and 10% with type 4. All had hypertriglyceridemia (mean 2,064.2 mg/dL). All patients had diabetes mellitus (DM) and were diagnosed with FPL after DM. They had a mean glycated hemoglobin of 10.9% (6.4-12.9%), with 6 patients (60%) on insulin therapy (mean dose 1.8 U/kg/day) and 8 (80%) with microvascular complications, as evidenced by the presence of albuminuria (isolated albumin-creatinine ratio between 297.5-6,202 mg/g) and renal function ranging from class G1 to G4. In addition, 9 out of 10 patients had liver disease associated with metabolic dysfunction. In the genetic test, the mutations found for type 2 FPL LMNA were chr1:156.136.936 A >G p.Asn466Asp, chr1:156.136.009 C > T p.Arg349Trp, chr1:156.136.984 C > T p.Arg482Trp and chr1:156.136.984 C > T p.Arg482Trp. Pathogenic variants for type 3 FPL in the PAARG gene are chr3:12.433.901 G > A p.Arg425His, chr3:12.417.017 G > T p.Arg378Met and chr3:12.406.013 A > AT p.Ser253Valfs. In type 4, variant VUS in PLIN chr15:89.673.236 G > A p.Pro75Leu. **Discussion:** Familial partial lipodystrophy (FPL) syndromes are rare syndromes with a prevalence of 1:1,000,000, of autosomal dominant inheritance, characterised by lack of peripheral adipose tissue and central accumulation, muscular hypertrophy, difficult-to-control diabetes and hypertriglyceridemia. There are 8 subtypes, of which type 2 and type 3 are the most common. There is considerable genetic and phenotypic heterogeneity, making diagnosis and treatment difficult. **Conclusions:** The diagnosis and management of FPL are challenging, emphasising the importance of early treatment to prevent recurrent pancreatitis and the premature development of cardiovascular disease. **Keywords:** partial lipodystrophy; hypertriglyceridemia; diabetes.

OBESIDADE
1984

QUANTITATIVE ANALYSIS OF OBESITY-RELATED HOSPITALIZATIONS IN THE NORTHEAST OF BRAZIL FROM 2022 TO 2024

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Introduction: Obesity is a chronic condition that has been increasing globally and represents a serious public health problem due to its multiple associated comorbidities. Being a complex condition, obesity requires a multifaceted approach for prevention and treatment, which includes lifestyle changes, medical support, and, in some cases, surgical interventions. In Brazil, the prevalence of this condition has been a cause for concern, necessitating a detailed analysis for the formulation of effective public policies. **Objective:** We aimed to determine the epidemiological profile of the population in the Northeast hospitalized due to obesity, stratified by state, age group, and race. **Methods:** This is a cross-sectional descriptive study. Secondary data from the Hospital Morbidity System of the SUS, available on DATASUS, were used, covering the period from April 2022 to April 2024. The variables analyzed were the absolute number of hospitalizations in the region and each state, the age, and race of the patients. **Results:** The total number of hospitalizations due to obesity in the Northeast was 2,887 people. Stratified by state, 32% were in Pernambuco, 15% in Bahia, 14% in Paraíba, 10% in Rio Grande do Norte, 10% in Ceará, 6% in Maranhão, 6% in Alagoas, 4% in Piauí, and 3% in Sergipe. Regarding age, 4% were between 1 to 19 years, 46% between 20 to 39 years, 46% between 40 to 59 years, and 4% between 60 to 79 years. As for race, 68% were mixed race, 11% had no information, 10% were white, 6% were black, and 6% were Asian. **Conclusion:** It was observed that the state of Pernambuco recorded the highest number of hospitalizations in the Northeast, more than double that of Bahia, which was in second place. Additionally, other characteristics with the highest percentage of hospitalizations due to obesity include the age group of 20 to 59 years and mixed race. **Keywords:** epidemiology; obesity; endocrinology.

OBESIDADE
1985

TIRZEPATIDE AND KIDNEY FUNCTION IN INDIVIDUALS WITH EXCESS BODY WEIGHT: A POST-HOC ANALYSIS OF THE SURMOUNT-1 TRIAL

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Introduction: The prevalence of chronic kidney disease due to obesity is rapidly increasing, but few proven effective therapies are available. Tirzepatide, a glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1 receptor agonist, has shown potential in attenuating the decline in the estimated glomerular filtration rate (eGFR) in people with type 2 diabetes (T2D) at high risk for cardiovascular disease. In the SURMOUNT-1 trial in people with obesity or overweight without T2D, tirzepatide significantly reduced body weight and blood pressure by week 72 (the primary endpoint) compared with placebo. This post-hoc analysis assessed the potential impact of tirzepatide compared with placebo on kidney function in SURMOUNT-1 trial participants. **Methods:** Data from all participants randomly assigned to treatment were included (pooled tirzepatide [5, 10, and 15 mg], N = 1,896; placebo, N = 643). Assessments included CKD-EPI creatinine- and cystatin-C-based eGFR (Cr-eGFR and CysC-eGFR, respectively), and urine albumin-to-creatinine ratio (UACR). The change from baseline to week 72 was analyzed using mixed models for repeated measures with on-treatment data. **Results:** Baseline mean Cr-eGFR was 98.1 ± 18.0 mL/min/1.73 m^2 and CysC-eGFR was 95.5 ± 19.1 mL/min/1.73 m^2; 27%-36% of participants had mean eGFR < 90 mL/min/1.73 m^2. Baseline median UACR was 6.0 mg/g (interquartile range 4.0-11.0 mg/g); 8.6% of participants had UACR ≥ 30 mg/g. The estimated treatment difference (ETD) between pooled tirzepatide groups and placebo on the change from baseline Cr-eGFR was -0.2 mL/min/1.73 m^2 (95% confidence interval [CI] -1.2, 0.9; p = 0.780). For CysC-eGFR the ETD was 3.2 mL/min/1.73 m^2 (95% CI 2.1, 4.3; p < 0.001). In the overall population, the ETD on the percent change in UACR was -8.4% (95% CI -14.7, -1.6; p = 0.017). In participants with baseline UACR ≥ 30 mg/g, the ETD was -42.3% (95% CI -60.8, -15.0; p = 0.006). **Conclusion:** Tirzepatide was associated with an increase in CysC-eGFR and reductions in UACR compared with placebo, suggesting possible renoprotective effects. These results warrant a long-term, prospective kidney outcome trial for people with obesity or overweight. **Disclosure:** Initially presented at Kidney Week 2023; Philadelphia, PA, USA; 2nd-5th November 2023. **Keywords:** tirzepatide; kidney; obesity.

OBESIDADE

1987

EPIDEMIOLOGICAL HOSPITAL SCENARIO OF HOSPITALIZATIONS DUE TO OBESITY FROM 2019 TO 2024 IN THE MACROREGIONS OF BRAZIL

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Introduction: Obesity is considered a public health problem due to its high prevalence in the population and its exponential growth, especially in the 20th and 21st centuries. In Brazil, it has already been included in the strategic action plan for tackling non-communicable chronic diseases (NCDs), as it is a component of the risk factors for heart, hypertensive, and metabolic diseases. **Objective:** To identify the profile of patients hospitalized due to obesity in the health macroregions of Brazil in the last five years. **Methods:** A descriptive and cross-sectional study was conducted with data obtained from the DATASUS platform in the SUS Hospital Information System (SIH-SUS), where hospitalizations due to obesity that occurred in Brazil between May 2019 and May 2024 were analyzed. **Results:** A total of 46,488 hospitalizations were reported, with the South and Southeast regions standing out, with 17,791 (38.2%) and 19,907 (42.8%), respectively. In contrast, attention is drawn to the North region with only 990 (2.1%) cases. Additionally, the age group of 34 to 44 years was the most affected, representing 35% of the cases. However, the mortality rate was higher in people over 80 years old, with 30.77%, which demonstrates the danger of this condition at this stage of life. In total, around 100 deaths were reported during this period, with the majority occurring between 45 to 54 years, with 29 (29%) cases. The average hospitalization cost was R$ 5,432.93, with an average of 2.7 days of hospitalization per patient. Although 41,388 hospitalizations were elective, there were 5,100 urgent admissions. Regarding gender, a substantially higher number of cases were observed in females, representing 86.8%, while males accounted for only 13.2%. The white race was the most affected, with 24,254 (52.1%) cases, while only 2 cases occurred among indigenous people. **Conclusions:** Most hospitalizations occurred electively, especially in the South and Southeast regions. Furthermore, female gender, middle-aged adults, and the white race stood out among the cases, despite the substantial mortality rate in the elderly over 80 years old. Thus, there is an urgent need for public policies aimed at the most affected groups to prevent hospitalizations due to the aggravation of obesity and to reduce the morbidity and mortality associated with obesity. **Keywords:** obesity; epidemiology; hospitalization.

DIABETES MELLITUS

1988

KETOSIS-PRONE DIABETES MELLITUS: A CASE REPORT

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Case report: A 61 years old male, without comorbidities, was admitted in the emergency room with decreased level of consciousness, preceded by polyuria, weight loss and polyphagia. Symptoms started a month prior admission. Lab tests showed pH of 7.08, bicarbonate of 1.6 mEq/L, blood glucose of 644 mg/dL, ketonuria. HbA1C was 10.7% (previous exam was 5,7%). He was transferred to the ICU due to diabetic ketoacidosis, to receive intravenous insulin infusion and other support measures. After stabilization, he was discharged with a NPH insulin prescription. During outpatient follow-up, preprandial blood glucose levels were around 180 mg/dL. He had negative glutamic acid decarboxylase antibodies (anti-GAD) and C-peptide of 1.1 ng/mL. Metformin 2 g/day was introduced and insulin decreased. After 6 months, HbA1c was 4.4% and glycemic control was at normal lower limits. In subsequent appointments, insulin was suspended, fasting blood glucose levels stabilized between 90-100 mg/dL and the patient was asymptomatic. **Discussion:** Ketosis-prone diabetes mellitus (KPD) is a rarely reported pathology, especially in Brazil, probably due to underdiagnosis. The A-β+ subtype (negative autoantibodies, positive beta-pancreatic function) is characterized by severe hyperglycemia of recent onset, with classic symptoms (polyuria, polydipsia and polyphagia) 4 weeks prior to diagnosis, associated with ketosis and early weaning from insulin. There are no gold standard tests to diagnose KPD, however anti-GAD and C-peptide may help differentiate it from type 1 diabetes mellitus. The case in question has a classic clinical course and common epidemiology of KPD (male, overweight, non-Caucasian, over 30 years of age). C-peptide levels were at the lower limit, measured during insulin use and a few months after the onset of the condition. Typically, C-peptide levels normalize after a few years. Those who maintain lower levels, tend to need insulin in the future. **Conclusion:** Recognizing KPD is essential, especially in adults who develop diabetes with ketoacidosis. C-peptide and anti-GAD are key exams as there is no autoimmunity or destruction of beta cells, but rather a transient failure of them in response to hyperglycemia. Glucagon secretion by alpha cells may be inadequate, decreasing ketolysis capacity. The pathophysiology remains unknown and may be related to G6PD deficiency and the reduced ability of beta cells to deal with oxidative stress, making them more sensitive to glucotoxicity. **Keywords:** diabetes mellitus; diabetic ketoacidosis; C-peptide.

DIABETES MELLITUS

1989

CARDIOVASCULAR RISK FACTORS IN PATIENTS WITH GESTATIONAL DIABETES MELLITUS

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Introduction: Gestational diabetes mellitus (GDM) is a frequent complication of pregnancy and, in addition to presenting increased risks for adverse pregnancy outcomes, women with a history of GDM are at up to 7 times greater risk of developing type 2 diabetes (T2D) and cardiovascular diseases later in life. Furthermore, increasing evidence indicates that women with a history of common pregnancy complications, including fetal growth restriction and preterm birth (often combined with low birth weight), hypertensive disorders of pregnancy, are at greater risk of cardiovascular disease later in life. in life, and these complications are also more frequent in GDM. **Objective:** To study the cardiovascular risk profile and other risk factors related to pregnancy present in a population of women with GDM in Brazil. **Methods:** This cross-sectional study examined data collected from a cohort of patients with GDM assessed from 2018 to 2024, treated at a high-risk prenatal clinic in Brazil's public healthcare system. **Results:** Overall, patients with GDM (N = 362), aged between 20 and 46 years (33.0 ± 5.6) and with an average pre-pregnancy BMI of 29.8 ± 5.55 were evaluated. In addition to GD, 20.1% were hypertensive, 7.2% had dyslipidemia, 46.4% had pre-gestational obesity, 1.9% were smokers and 53.6% were sedentary. With regard to pregnancy outcomes associated with future risk of cardiovascular disease, 10.2% had a premature birth, 6.1% had an SGA baby and 9.7% had pre-eclampsia. Furthermore, among the patients evaluated, 69.4% had 1 risk factor in addition to GDM, 15% had 2 risk factors, 5.1% had 3 risk factors and 1.5% of patients had 4 or more of these additional risk factors for GDM, therefore presenting a very high risk of CVD later in life. **Conclusion:** This study shows an important association of factors related to increased cardiovascular risk in a group of young women with GDM, highlighting the need for preventive interventions during pregnancy and postpartum follow-up to minimize these risks. Because pregnancy complications occur early in a woman's life, this provides a significant opportunity for primary prevention of CVD through lifestyle intervention or pharmacotherapy, as needed. **Keywords:** gestational diabetes mellitus; cardiovascular risk; adverse outcomes of pregnancy.

NEUROENDOCRINOLOGIA

1990

ATUMELNANT (CRN04894) INDUCES RAPID AND SUSTAINED REDUCTIONS IN SERUM AND URINE CORTISOL IN PATIENTS WITH ACTH-DEPENDENT CUSHING'S SYNDROME DURING A PHASE 1B/2A, SINGLE-CENTER, 10-DAY, INPATIENT, OPEN-LABEL STUDY

ALEJANDRO AYALA[1]; HENRIK ELENIUS[2]; RAVEN MCGLOTTEN[2]; CASEY MOORE[2]; YANG WU[1]; PETER TRAINER[1]; RICHARD SCOTT STRUTHERS[1]; ALAN KRASNER[1]; STEPHEN F. BETZ[1]; LYNNETTE K. NIEMAN[2]

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Introduction: Atumelnant is a once-daily, oral, nonpeptide, first-in-class, competitive, and selective melanocortin type 2 receptor antagonist in development for the treatment of ACTH-dependent Cushing's syndrome (ADCS) and congenital adrenal hyperplasia. **Objective:** To report preliminary data from a first-in-disease, dose-finding study of atumelnant in patients with ADCS (NCT05804669). **Methods:** Inpatients with active ADCS (24-h urinary free cortisol [CFU] >1.3x upper limit of normal [ULN 45 µg/d], ACTH >10 pg/mL) received atumelnant 80 mg once daily at 08.00 for 10 days (D1-D10), followed by a 4-day washout. Efficacy endpoints included CFU, and early morning cortisol (AM cortisol) and ACTH (AM ACTH, ULN 46 pg/mL). Daily questionnaires assessed adverse events (AEs) and symptoms of adrenal insufficiency (AI) and ADCS. **Results:** All 6 participants (4 men; 5 Cushing disease, 1 ectopic ACTH; median age 49.5 years [range, 34-55]) completed the study. Each participant developed biochemical AI (AM cortisol <5 µg/dL) after median 2 doses (range, 1-10), and started physiologic hydrocortisone (HC) add-back. Biochemical disease control (normal CFU and AM cortisol <5 µg/dL) was shown by D11 in all participants taking HC: baseline *vs.* D11 median CFU, 262 µg/d (range, 99-308) *vs.* 21 µg/d (4-51); median AM cortisol, 13.9 µg/dL (range, 10.7-18.1) *vs.* 1.4 µg/dL (1.0-4.7). This was associated with an increase in AM ACTH: median 46 pg/mL (range, 33-1088) *vs.* 68 pg/mL (40-4045). HC was stopped (median D13.5; range, D12-D18) when AM cortisol was ≥ 7 µg/dL. During atumelnant treatment, improved ADCS symptoms included: insomnia (4/4 participants), trouble concentrating (5/6), tiredness (4/5), anxiety (3/4), brain fog (4/6), and bloating (2/4); low testosterone (3/4), neutrophilia (3/3), and leukocytosis (2/2) resolved; and anti-hypertensive therapy was reduced (4/6). Of 5 participants with new headaches, 4 had anorexia and/or nausea; these symptoms generally improved with HC. Serious AEs included AI (expected/reported per protocol) and one non-treatment-related gastrointestinal bleed on D29. Minor transient increases were seen in serum creatinine (<1.2x ULN; n = 2) and alanine aminotransferase (<1.5x ULN; n = 2; both had preexisting steatosis). **Conclusions:** The first 6 participants with ADCS to receive once-daily, oral atumelnant experienced rapid lowering of serum and urine cortisol and improvement or resolution of some signs and symptoms of ADCS. Atumelnant was generally well tolerated. **Keywords:** atumelnant; Cushing's syndrome; melanocortin type 2 receptor antagonist.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1991

RELATIONSHIP BETWEEN OBESITY AND MENOPAUSAL SYMPTOMS: A SYSTEMATIC LITERATURE REVIEW

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Introduction: The increasing life expectancy of women has led to a growing population in climacteric. Simultaneously, obesity has become a global epidemic, affecting millions of women and influencing their health conditions. **Objective:** To evaluate the relationship between obesity and the severity and frequency of climacteric symptoms. **Materials and methods:** Systematic Literature Review in PubMed, Scopus, and Science Direct databases, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), using the descriptors: "Obesity," "Climacteric," "Menopause," "Signs and Symptoms." The PICO strategy was used in formulating the research question. Primary articles published in the last 10 years, without language restriction, addressing the topic were included. Articles that did not answer the research question were excluded. A total of 1,170 articles were found, of which 11 composed the final sample. The State of the Art through Systematic Review tool was used for the selection and analysis of the studies. Two independent reviewers conducted the search, data collection, and analysis. **Results:** All included studies demonstrated that obese women had more complaints during climacteric than eutrophic women. Vasomotor symptoms were the most prevalent in 72.7% of the studies. In 63.3% of the studies, BMI reduction improved climacteric symptoms, whose frequency and intensity increased with higher BMI. Additionally, 45.4% of the studies indicated that obesity could worsen sleep quality, increasing the prevalence of sleep apnea, contributing to the worsening of climacteric symptoms. Furthermore, 36.3% of the studies reported that obese women had a higher incidence of psychological symptoms during climacteric. Obesity was also associated with increased levels of systemic inflammation, amplifying climacteric symptoms and predisposing to other inflammatory conditions, as seen in 27.2% of the studies. Finally, 54.5% of the studies associated obesity with a higher risk of cardiovascular diseases in climacteric women, emphasizing the importance of weight loss interventions and metabolic management during this phase. **Conclusion:** Obesity is associated with a significant increase in the severity and frequency of climacteric symptoms. The results highlight the need for interventions focused on weight loss during climacteric and can support the development of public health policies for women's health care. **Keywords:** obesity; climacteric; menopause.

DIABETES MELLITUS

1992

ACUTE PANCREATITIS AS A COMPLICATION OF DIABETIC KETOACIDOSIS: A CASE REPORT

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Case presentation: A nineteen-year-old man presented with abdominal pain, constipation, and nausea, along with a history of polyuria the previous week. On examination, he appeared dehydrated, pale, confused, and underweight. Initial laboratory tests showed: pH 6.85 (reference range: 7.35-7.45), bicarbonate 3 mmol/L (reference: 22-29 mmol/L), pCO2 10 mmHg (reference: 35-45 mmHg), glucose 424 mg/dL (reference: 70-99 mg/dL), and ketonuria (+++). Anion gap was elevated at 39 mmol/L (reference: 3-11 mmol/L), and osmolality was 332 mOsm/kg (reference: 275-295 mOsm/kg). Abdominal and pelvic CT scan were normal. Additional laboratory findings included HbA1c 11.4% (reference: <5.7%), C-peptide 0.16 ng/mL (reference: 0.78-1.89 ng/mL), positive anti-islet antibodies, HDL 29 mg/dL (reference: >40 mg/dL), LDL 57 mg/dL (reference: <100 mg/dL), and triglycerides 266 mg/dL (reference: <150 mg/dL). By the fourth day of hospitalization, he continued to experience abdominal pain. Pancreatic function tests revealed elevated amylase (134 U/L; reference: 23-85 U/L) and lipase (492 U/L; reference: 0-160 U/L). A subsequent abdominal CT scan showed a small bilateral pleural effusion. He received hydration, glycemic control with insulin, and dietary therapy. Tests for celiac disease were negative, as well as autoimmune pancreatitis (IgG 4 negative). Abdominal ultrasound revealed homogeneous splenomegaly. He showed progressive improvement, was discharged with good glycemic control, and returned to outpatient care early without symptoms. **Discussion:** Diabetic ketoacidosis (DKA) is a metabolic disorder resulting from hyperglycemia and is the most common acute hyperglycemic emergency in diabetes mellitus. Acute pancreatitis (AP) is an initially sterile inflammation of the pancreas and peripancreatic tissues, inducing systemic inflammatory response syndrome (SIRS) with variable severity. Hyperglycemia and ketoacidosis promote systemic inflammation and oxidative stress, potentially damaging pancreatic tissues. Severe dehydration and electrolyte disturbances, typical in DKA, compromise pancreatic perfusion, exacerbating inflammation. **Final comments:** This case emphasizes the importance of promptly recognizing and managing diabetic ketoacidosis and its complications, including acute pancreatitis. Early diagnosis and intervention are critical to reducing morbidity and mortality, underscoring the need for comprehensive diagnostic and treatment strategies. **Keywords:** diabetic ketoacidosis; systemic inflammatory response syndrome; acute pancreatitis.

ADRENAL E HIPERTENSÃO

1993

EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS DUE TO PRIMARY SYSTEMIC ARTERIAL HYPERTENSION IN THE BRAZILIAN UNIFIED HEALTH SYSTEM FROM 2019 TO 2024

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Introduction: Primary systemic arterial hypertension (PSAH) is a circulatory system disorder with high prevalence in the adult population, whose progression in inadequately diagnosed and treated individuals is associated with high morbidity and mortality. **Objectives:** To analyze the epidemiological profile of hospitalizations due to PSAH in the SUS, from May 2019 to May 2024. **Methods:** A population-based, descriptive, and cross-sectional study was conducted using data obtained from the DATASUS platform in the Hospital Information System of SUS (SIH-SUS), addressing the population hospitalized due to PSAH in Brazil, from March 2019 to March 2024. The data were filtered for analysis based on epidemiological indicators: total number of hospitalizations, nature of care, average cost of hospitalization, average length of stay, and number of deaths. Additionally, hospitalizations were stratified by age group, sex, and race/color. **Results:** A total of 203,156 hospitalizations due to primary hypertension were reported, with the highest number occurring in 2022, with 39,386 (19.3%) cases. Furthermore, 94.2% of hospitalizations were urgent, and 3,603 deaths were recorded in total. Although the number of deaths increased proportionally with age, there was a 3.3-fold increase between those aged 30 to 39 years (62 deaths) and 40 to 49 years (205 deaths). In this regard, the age group over 80 years still accounts for these numbers, with a total of 1,216 (33.7%) deaths. The age group most affected by PSAH are those between 60 and 79 years old, with 87,301 (42.9%) cases. Among the most affected macro-regions, the Northeast predominates with 76,857 (37.8%) cases, followed by the Southeast with 65,035 (32%) cases, while the standout states were São Paulo (18.8%), Maranhão (16.3%), and Bahia (10.5%). It is also noteworthy that females were the most affected with 116,340 (57.2%) cases, and white people were predominant, with 51,497 (25.3%) cases. Moreover, the average cost per hospitalization was R$ 424.42, while the average length of stay was 4 days. **Conclusions:** Therefore, epidemiological analysis is essential for planning appropriate prevention and treatment policies for this condition in order to mitigate possible complications and prevent their aggravation. For this, early diagnosis measures are imperative, especially targeting the most affected groups. **Keywords:** epidemiology; arterial hypertension; hospitalization.

NEUROENDOCRINOLOGIA

1994

NAVIGATING THE DIAGNOSTIC PATHWAY FOR ACROMEGALY: INSIGHTS FROM A REFERENCE CENTER

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Introduction: Acromegaly is a disease caused by chronic excessive secretion of GH, usually by a pituitary adenoma. It is associated with increased morbidity and mortality, but clinical outcomes have improved in the last decades due to progress in the treatment. However, this disease remains largely underdiagnosed. **Objective:** To characterize the journey of the patients with acromegaly in our healthcare system before definitive diagnosis to identify strategies to decrease the underdiagnosis of this disease. **Patients and methods:** We interviewed the patients on active follow-up in our tertiary university center due to confirmed acromegaly and analyzed data on symptom presentation and the diagnostic journey. We registered the most important symptom that made patients seek medical care, the healthcare professionals initially consulted for the main symptom, those who suspected and who definitively diagnosed the condition. **Results:** Seventy-seven patients were included in the study. Female patients were diagnosed older than males (47.4 ± 13.7 *vs.* 40.1 ± 15.0, P = 0.042). The most common main symptoms were pain-related (headache, body, and joint pain), reported by 29% of patients, with headache alone reported by 21%. Among non-endocrinologists firstly sought for the symptoms of acromegaly, seventy-three percent were general physicians (36%), gynecologists (11%), neurologists (9%), rheumatologists (9%) and ophthalmologists (8%). Acromegaly was initially suspected by an endocrinologist in 57% of the cases, followed by general physicians in 10% and neurologists in 8%. Endocrinologists definitively diagnosed acromegaly in 94% of cases. **Conclusions:** These results suggest that continuing medical education should target general physicians, gynecologists, rheumatologists, neurologists, and ophthalmologists, who constitute 73% of the non-endocrinologists consulted by patients with acromegaly. The study also highlights that pain-related symptoms, particularly headaches, are the most important for bringing patients to health care. Further studies are needed to determine if the older age of female patients is a biological phenomenon or due to medical care access disparities. **Keywords:** acromegaly; diagnosis; pituitary adenoma.

DISLIPIDEMIA E ATEROSCLEROSE

1995

RECURRENCE OF KIDNEY DISEASE AFTER TRANSPLANTATION IN A PATIENT WITH FAMILIAL LECITHIN-CHOLESTEROL ACYLTRANSFERASE DEFICIENCY

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Woman, 33-years-old, in 2000, with hypertension, nephrotic syndrome, and familial lecithin-cholesterol acyltransferase (LCAT) deficiency (FLD) diagnosed by renal biopsy in 1993, repeated in 2000 with foam cells and lipid deposits in glomeruli. She presented with corneal arcus, hepatosplenomegaly, anemia, dyslipidemia with HDL (high-density lipoproteins) 5 mg/dL. In 2006, she started dialysis and received a kidney transplant from a living donor (brother) in 2011. She developed proteinuria again in 2013, and a biopsy of the transplanted kidney showed partial glomerular sclerosis with endothelial lipid deposition, podocyte degenerative changes, and multifocal tubular atrophy with mild interstitial fibrosis, compatible with recurrence due to FLD. Gradual deterioration of renal function from 2015, returned to dialysis in October 2020. Due to complications related to her advanced clinical condition and immunosuppression, she died in May 2021, at the age of 54. LCAT deficiency is a very rare autosomal recessive disorder caused by loss-of-function mutations in the gene on chromosome 16q22. LCAT performs the esterification of cholesterol in plasma and the maturation of HDL, and its deficiency is expressed in two syndromes: FLD and fish eye disease (FED). In FLD, both alpha and beta LCAT activities are lost, resulting in low HDL levels, corneal opacification, hemolytic anemia, proteinuria, and renal failure. The deposition of nephrotoxic and pro-inflammatory lipoprotein X (Lp-X) particles in the kidneys is the main cause of morbidity and mortality in FLD. In FED, only alpha LCAT activity is lost, allowing the esterification of cholesterol in LDL (low-density lipoprotein) and VLDL (very low-density lipoprotein), but not in HDL, thus presenting with corneal opacities and low HDL levels. The kidney in FLD shows focal segmental glomerulosclerosis, expansion and increased cellularity of the mesangium, irregular thickening of the glomerular capillary walls, and vacuolation of the glomerular basement membrane. Lipid analysis of glomeruli shows an increase in the amount of free cholesterol and phospholipids. The clinical presentation and renal biopsy are used for the diagnosis of FLD. Treatments include kidney transplantation, with the risk of recurrence in the graft. Recombinant LCAT replacement therapy, under development, aims to restore enzyme activity and reduce circulating unesterified cholesterol, improving the prognosis for patients. **Keywords:** lecithin-cholesterol acyltransferase; LCAT deficiency; kidney transplantation.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

1996

CLINICAL EFFECTS OF PUBERTAL BLOCKADE WITH GNRH AGONISTS IN TRANSGENDER ADOLESCENTS: A SYSTEMATIC REVIEW

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1. FACULDADE PERNAMBUCANA DE SAÚDE (FPS), RECIFE, PE, BRASIL.

Introduction: The suppression of puberty through the use of Gonadotropin-Releasing Hormone agonists (GnRHa) represents a crucial intervention for transgender adolescents, aiming to mitigate the development of unwanted secondary sexual characteristics. This systematic review, guided by the PRISMA methodology, synthesizes and critically evaluates the recent studies about the effects, security and results of the use of GnRHa in this specific population. **Objective:** Systematically review the clinical effects of pubertal blockade on adolescents using GnRHa. **Materials and methods:** The review followed the PRISMA protocol, using an extensive search strategy in the PubMed and SciELO electronic databases and utilizing the MeSH terms and keywords related to "Gonadotropin-Releasing Hormone", "Child", "Adolescent", "Gender Nonconform" and "Transgender Persons". In this review, clinical and observational studies, published between the years of 2019 and 2024 that investigated the impact of GnRHa in puberty and its effects were included. **Results:** After initial screening, 90 studies were founded, 14 meeting the inclusion criteria. The qualitative synthesis indicated that the GnRHa are effective in suppressing secondary sexual characteristics according to the biological sex attributed at birth. However, the main concerns include decreased bone mineral density via BMAD and Z-scores. It was observed that GnRHa monotherapy can reduce growth velocity during treatment, but without evidence of fractures and without significantly affecting the final height, as it is recovered after the start of testosterone therapy in young trans people. Nonetheless, in girls, recovery of final height needs to be optimized with estrogen after the use of GnRHa, which requires greater monitoring. Regarding cardiometabolic diagnoses or high blood pressure, there were no significant associations between GnRHa use, with the exception of one study that reported increased diastolic blood pressure in transgender male adolescents. **Conclusion:** This systematic review offers a comprehensive and updated synthesis regarding the use of GnRHa in transgender adolescents, demonstrating its benefits in puberty suppression and improvement of psychosocial well-being. The importance of a multidisciplinary and individualized approach to managing gender incongruity in this vulnerable population is reinforced. **Keywords:** gonadotropin-releasing hormone; transgender persons; adolescent.

DIABETES MELLITUS

1998

CONGENITAL GENERALIZED LIPODYSTROPHY TYPE 1 DUE TO PATHOGENIC VARIANTS IN AGPAT2 WITH TRIPLE HETEROZYGOSITY

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Case presentation: Case 1: Male patient presenting generalized scarcity of subcutaneous tissue, acromegaloid facies, pseudo-muscular hypertrophy, acanthosis nigricans, umbilical hernia, phlebomegaly, hepatosplenomegaly, uncontrolled diabetes mellitus, severe hypertriglyceridemia and metabolic steatotic liver disease, diagnosed at 7 months of age with congenital generalized lipodystrophy (CGL). Genetic study revealed CGL type 1 due to a pathogenic variant in AGPAT2, with triple heterozygosity – *chr9:136,676,681 C>G c.493-1G>C Heterozygosity (1 copy); chr9:136,677,440 C>T p.Ser100Asn Heterozygosity (1 copy); chr9:136,674,809 T>C c.589-2A>G Heterozygosity (1 copy)*. The patient died at 2 years and 6 months due to septic shock. **Case 2:** Female patient, attended at 6 months, identified through cascade screening, presenting phenotypic characteristics similar to her brother (case 1) and severe hypertriglyceridemia, and the same pathogenic variants as her brother, in triple heterozygosity. The mother, however, did not have a lipodystrophy phenotype despite presenting pathogenic variants in heterozygosity – *AGPAT2 – chr9:136,676,681 C>G c.493-1G>C Heterozygosity (1 copy); chr9:136,677,440 C>T c.299G>A Heterozygosity (1 copy)*. **Discussion:** CGL type 1 is the most common form of CGL. It is caused by mutations in AGPAT2, a gene that encodes the 1-acylglycerol-3-phosphate acyltransferase-β protein, which is essential in triglyceride synthesis within the adipocyte. Due to autosomal recessive inheritance, homozygous or compound heterozygous individuals will express the disease. However, until now, there is no description of triple compound heterozygosities as identified in the described cases. Considering the early comorbidities and death in one of the cases, it is possible that such a presentation is associated with greater severity. **Final comments:** This report uniquely presents a family with congenital generalized lipodystrophy type 1 due to pathogenic variants in AGPAT2 in triple heterozygosity, where patients exhibited severe manifestations of the disease within the first years of life. This may be related to a synergistic effect of double or triple AGPAT2 variants in heterozygosity. This finding underscores the importance of early effective therapeutic intervention in this condition. **Keywords:** congenital generalized lipodystrophy; triple heterozygosity; AGPAT2.

NEUROENDOCRINOLOGIA

1999

DIFFERENTIAL DIAGNOSIS OF PITUITARY LESIONS IN THE POSTPARTUM PERIOD

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A 23-year-old previously healthy female was admitted on the 11th day post-delivery due to worsening symptoms that began in the third trimester of pregnancy, including headache, weakness and bitemporal hemianopsia. A magnetic resonance imaging (MRI) scans demonstrated a well-defined, solid expansive lesion in the pituitary gland measuring 2.2 x 2.1 x 1.4 cm. This lesion displaced the pituitary stalk and optic chiasm superiorly, without signs of apoplexy. Laboratory evaluation indicated central hypothyroidism and secondary adrenal insufficiency. The patient remained stable during hospitalization and a transsphenoidal resection was performed with improvement in visual symptoms. Histopathological examination confirmed chronic lymphocytic hypophysitis. Lymphocytic hypophysitis represents the most common form of hypophysitis and is frequently associated with the postpartum period, implying an autoimmune etiology. Patients typically present with significant headache, with or without compressive symptoms, and hypopituitarism, most often involving ACTH and TSH deficiencies. The lesion is generally described as a homogeneous pituitary mass, predominantly affecting the adenohypophysis. Due to the rarity of the disease and its presentation resembling other pituitary pathologies, initial misdiagnosis as pituitary adenomas or Sheehan's syndrome is common. Differentiation via MRI is critical to facilitate accurate diagnosis and prevent unnecessary interventions, particularly to exclude macroadenomas. While macroadenomas present as an asymmetric pituitary expansion with heterogeneous contrast enhancement and pituitary stalk displacement, lymphocytic hypophysitis usually presents with symmetric gland expansion, homogeneous signal and contrast enhancement, sellar floor integrity preservation, neurohypophysis hyperintensity loss, and pituitary stalk thickening without displacement. Due to these diagnostic challenges, Gutenberg *et al.* proposed in 2009 a radiologic score to distinguish autoimmune hypophysitis from nonsecreting pituitary adenoma preoperatively, yielding a specificity of 99% and a sensitivity of 92%. In the reported case, the patient scored -8, consistent with a diagnosis of lymphocytic hypophysitis. We must consider the postpartum period as a particular phase of a woman's life. The patient's evaluation must be extremely thorough in order to rule out possible differential diagnoses. **Keywords:** hypophysitis; pituitary adenoma; postpartum period.

ENDOCRINOLOGIA PEDIÁTRICA

2002

1-HOUR POST-LOAD PLASMA GLUCOSE FOR THE DIAGNOSIS OF INTERMEDIATE HYPERGLYCEMIA AND TYPE 2 DIABETES IN CHILDREN AND ADOLESCENTS

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1. IRMANDADE DA SANTA CASA DE MISERICÓRDIA DE SÃO PAULO, SÃO PAULO, SP, BRASIL.

Introduction: Many individuals with intermediate hyperglycaemia (IH), including impaired fasting glycaemia (IFG) and impaired glucose tolerance (IGT), as presently defined, will progress to type 2 diabetes (T2D). According to the International Diabetes Federation (IDF) Position Statement, people with a 1-h G ≥ 155 mg/dL (8.6 mmol/L) during an oGTT are considered to have IH and people with a 1-h G ≥ 209 mg/dL (11.6 mmol/L) are considered to have T2D. There are few papers that analyze those findings in children/adolescents. So, our goal is to analyze the oGTT response in adolescents with overweight/obesity and describe the frequency of IH according to fasting glucose, 1-h and 2-h post-load. **Methods:** This study comprised 195 pubertal adolescents with overweight/obesity who underwent oGTT. They were classified into 3 groups: Group 1: Fasting glucose > 100 mg/dL, Group 2: 1-h post-load (1hG) ≥ 155 mg/dL and group 3: 2-h post-load PG (2hG) >140 mg/dL. The Homeostasis Model Assessment of Insulin Resistance (HOMA-IR), and Oral Disposition Index (oDI) were calculated. **Results:** No patient had diagnosis of T2D based on 2hG, but one patient would be diagnosed as T2D after 1hG. 16 (8.2%) patients had IFG, 10 (5.1%) had 1hG ≥ 155 mg/d L and 8 (4.1%) had IGT after 2hG. Compared to patients with normal oGTT, those in all 3 groups were older (p = 0.002, 0.022 and <0.001, respectively), had higher HOMA-IR (p = 0.031), but there were no differences in zBMI or waist/height ratio. Patients in groups 2 and 3, with higher 1 hG and 2 hG, had lower oDI value (p < 0.05), suggesting worse β-cell function. **Conclusion:** There is limited literature in children/adolescents indicating that an 1h post-load PG ≥ 155 mg/dL with NGT during an oGTT is highly predictive for detecting progression to T2D. However, our findings suggest worse β-cell function and that the same cut-offs could potentially be used in children/adolescents. Surprisingly, according to our research, the severity of obesity did not correlate with the presence of β-cell dysfunction and insulin resistance, a fact that could be associated with duration of disease progression instead of the anthropometric parameter. Further studies are needed to confirm these findings. **Keywords:** hyperglycemia; obesity; adolescent.

ENDOCRINOLOGIA PEDIÁTRICA

2003

ORAL GLUCOSE TOLERANCE TEST RESPONSE CURVES IN NONDIABETIC PUBERTAL CHILDREN WITH OVERWEIGHT/OBESITY

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1. IRMANDADE DA SANTA CASA DE MISERICÓRDIA DE SÃO PAULO, SÃO PAULO, SP, BRASIL.

Introduction: The oral glucose tolerance test (oGTT) is recommended for patients at risk for type 2 diabetes mellitus (T2D). The pattern of the glucose response curve during an oGTT could predict the risk of developing T2D. Nevertheless, there are limited reports describing this pattern of glucose response in nondiabetic children/adolescents with overweight/obesity. **Objective:** Our goal was to describe oGTT glucose response curves in this population and correlate them with insulin resistance index and anthropometric data. **Methods:** This study comprised 162 pubertal children with overweight/obesity, 49 boys and 113 girls, who underwent oGTT. They were classified as having a monophasic, biphasic, or incessant increase glycemic curves. The Homeostasis Model Assessment of Insulin Resistance (HOMA-IR), and oral Disposition Index (oDI) were calculated. **Results:** The mean (SD) chronological age was 12.7 (2.1) y. In accordance with ADA (American Diabetes Association), we diagnose no T2D in this group. Among them, 80 (49.4%) patients exhibited a monophasic glucose response pattern, 69 (42.6%) a biphasic and 12 (7.4%) an incessant increase in glycemic curve. Comparison between these groups revealed that those with a monophasic pattern had significantly lower zBMI (p < 0.001) and lower oDI values (p < 0.001), suggesting worse β-cell function. There were no differences in relation to HOMA-IR values between the 3 groups. **Conclusion:** Our findings suggest that adolescents with obesity who exhibit monophasic oGTT response pattern may be at higher risk for T2D, since they demonstrated worse β-cell function. **Keywords:** obesity; adolescent; hyperglycemia.

ENDOCRINOLOGIA BÁSICA

2004

THE INFLUENCE OF A GIPR SINGLE NUCLEOTIDE POLYMORPHISM IN THE HORMONAL REGULATION OF GLUCOSE HOMEOSTASIS

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Introduction: Incretin hormones are involved in glucose-stimulated insulin release related to nutrient ingestion. Glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) incretin effects in glucose homeostasis are widely described. The GIP receptor (GIPR) is expressed in pancreatic cells and promotes GIP-stimulated insulin secretion. A common single nucleotide polymorphism of GIPR, rs1800437 located on chromosome 19q13.32 results in the missense variation Glu354Gln with impaired GIPR function. **Objective:** To investigate whether the GIPR genetic variation Glu354Gln might influence glucose homeostasis. **Methods:** Blood samples were obtained from 12 healthy adults, before and at 30, 60, and 90 minutes post mixed meal for glucose and hormone curve analysis (insulin, glucagon, GIP, GLP-1 and amylin). Genomic DNA was isolated from peripheral blood and GIPR genotyping (rs1800437, C allele) was performed by polymerase chain reaction-restriction fragment length polymorphism. Results: Genotype frequencies for GG, GC and CC were 58.3, 33.3 and 8.3 % respectively. Comparison between wild-type individuals (GG, n = 7) and those carrying the C allele variant (C+ group; GC or CC genotypes, n = 5) revealed distinct hormonal curve trends, with elevated glycemic levels and insulin secretion and in C+ group. Basal serum glucose (88.8 ± 7 vs. 68.3 ± 9.7 mg/dL) and peak glucose levels (121.6 ± 3.6 vs. 84.3 ± 9.5 mg/dL) were significantly higher in C+ than in GG group, respectively ($P \leq 0.05$). Peak serum insulin levels (590 ± 155.5 vs. 290 ± 120 pg/mL, $P \leq 0.05$) as well as glucose and glucagon AUCs (8673 ± 186 vs. 6,859 ± 513 mg/dL, $P \leq 0.05$; 14955 ± 11286 vs. 4806 ± 1,565 pg/mL, $P \leq 0.05$, respectively) were also higher in C+ than in GG group. Additionally, elevated responses were more pronounced in the hormonal curves of the single homozygous individual (CC genotype). GIP, GLP-1 and amylin curve levels in a set of 9 individuals did not exhibit significant differences between the two groups. **Conclusion:** The presence of the C allele variant of the GIPR Glu354Gln, which is reported as impaired receptor function, is associated with changes in the basal and post-prandial glycemic curve and glucoregulatory mechanisms. These findings contribute to a more complete understanding of the impact of GIPR variant on glucose homeostasis, highlighting its potential implications in metabolic disorders. Keywords: glucose homeostasis; glucose-dependent insulinotropic polypeptide receptor; genetic polymorphism.

NEUROENDOCRINOLOGIA

2005

PAPILLARY THYROID CARCINOMA IN MULTIPLE ENDOCRINE NEOPLASIA TYPE 1: A CASE REPORT

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Case report: A 64-year-old female with a history of hypertension was referred for endocrinological evaluation due to suspected acromegaly, presenting with enlarged extremities, macrognathia, headaches and visual loss. Elevated levels of growth hormone (GH) and insulin-like growth factor 1 on multiple occasions prompted an Oral Glucose Tolerance Test with GH measurement, which confirmed hypersecretion of GH. A sellar lesion measuring 2.2 x 1.4 x 1.4 cm indicative of a GH-producing pituitary adenoma was identified on magnetic resonance imaging. Neurosurgery was scheduled to treat acromegaly. During follow-up, she exhibited elevated parathyroid hormone (PTH) levels of 393 pg/mL (15-68 pg/mL) and corrected calcium of 10.9 mg/dL (8,4-10,2 mg/dL). Subsequent tests confirmed primary hyperparathyroidism with PTH levels of 457 and corrected calcium of 10,8. Scintigraphy and ultrasound examinations excluded parathyroid gland lesions but revealed multinodular goiter. Fine-needle aspiration of a thyroid nodule yielded a cytological diagnosis of category V. Total thyroidectomy and left superior parathyroidectomy were performed, revealing papillary thyroid carcinoma (PTC) and a parathyroid adenoma. The patient has been diagnosed with Multiple Endocrine Neoplasia type 1 (MEN1) due to pituitary tumor and primary hyperparathyroidism, with pancreatic lesions excluded. She continues follow-up with Endocrinology, Head and Neck Surgery, and Neurosurgery while awaiting MEN1 genetic testing. **Discussion:** MEN1 is a rare autosomal dominant tumor syndrome primarily affecting the parathyroid glands, endocrine pancreas, and anterior pituitary. It results from mutations in the MEN1 gene located on chromosome 11q13, which encodes menin, a critical regulator of cell division, proliferation, and genomic stability. While PTC is not typically associated with MEN1, menin expression may be altered in some thyroid tumors. PTC is found in more than 25% of MEN1. **Final comments:** We reported a rare case of MEN1 associated with both PTC and nodular goiter. Speculation exists regarding a genetic link between PTC and MEN1. The simultaneous occurrence of these pathologies may be coincidental, given the relatively common prevalence of PTC. Additionally, there is conjecture that a new familial disorder, possibly caused by an unidentified genetic abnormality, could account for these concurrent conditions. Few cases have been reported to date, emphasizing the need for further research to elucidate their relationship. **Keywords:** papillary thyroid carcinoma; multiple endocrine neoplasia type 1; nodular goiter.

DIABETES MELLITUS
2006

DIABETES AND COVID-19: PROGNOSTIC FACTORS AND MORTALITY IN HOSPITALIZED PATIENTS

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Introduction: COVID-19 primarily affects the respiratory system with varying severity. Studies have shown that pre-existing comorbidities such as diabetes mellitus (DM) are associated with worse disease prognosis. **Objectives:** To assess the prevalence of DM among hospitalized COVID-19 patients, evaluate the laboratory and clinical profile of patients treated at a university hospital, and compare laboratory data, clinical outcomes, comorbidities, and mortality between patients with and without DM. **Methods:** Retrospective analysis of medical records of hospitalized COVID-19 patients. Approved by the Ethics and Research Committee (ERC). Demographic data, pre-existing conditions, laboratory and imaging exams, progression to invasive ventilation, acute kidney injury (AKI), dialysis, and fatal outcomes were collected from medical records. COVID-19 diagnosis was confirmed by positive tests from upper respiratory tract samples using polymerase chain reaction (PCR) or antigen testing. Inclusion criteria: adult patients hospitalized with COVID-19 infection. Exclusion criteria: chronic kidney disease requiring dialysis, terminal illness, pregnancy, incomplete medical records. DM diagnosis was based on medical record annotations or occasional blood glucose ≥ 200 mg/dL. Statistical analysis used SPSS software (IBM SPSS Statistics, Version 24, IBM Corporation, NY, USA) with descriptive statistics, mean, standard deviation for numerical variables, and proportions for categorical variables, Shapiro-Wilk test, Mann-Whitney test, and chi-square test. Significance level set at $p < 0.05$. **Results:** A total of 443 medical records were evaluated, 395 included, with 126 diagnosed with DM (31.9%). The mean age of DM patients was 64.38 ± 14.29 years, higher than non-DM patients, $p < 0.001$. There was an association between DM and initial estimated glomerular filtration rate, $p < 0.001$. However, D-dimer, PCR, and leukocyte count showed weak association. Hypertension and prior chronic kidney disease were associated with DM with p values of < 0.001 and 0.002, respectively. Chest CT did not show association with DM, $p < 0.391$. Outcomes such as invasive ventilation, AKI, dialysis, and death were statistically significant, $p < 0.001$. **Conclusion:** The prevalence of DM is high among hospitalized COVID-19 patients. The presence of DM worsens the prognosis of hospitalized COVID-19 patients as evidenced by associations with invasive ventilation, AKI, dialysis, and death. **Keywords:** diabetes; mellitus; diabetes mellitus.

DIABETES MELLITUS
2007

EFFECT OF SGLT-2 INHIBITORS ON EPICARDIAL FAT IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Sodium-glucose cotransporter-2 (SGLT-2) inhibitors are drugs widely studied and used in the treatment of type 2 diabetes mellitus (DM2). However, the effects of this drug class on the configuration of epicardial fat are still unclear. **Objectives:** To carry out a systematic review (SR) and meta-analysis (MA) of randomized clinical trials (RCTs) that addressed the action of SGLT-2 inhibitor drugs on epicardial adipose tissue (EAT) and other safety outcomes in patients with DM2. **Patients and methods:** This SR and MA adhered to PRISMA statement guidelines. We conducted a search across the Cochrane, Embase and PubMed databases to identify RCTs that compared the effects and safety of SGLT-2 inhibitors *versus* placebo and/or other hypoglycemic drugs on the reduction of EAT and other reported outcomes. Heterogeneity between studies was assessed using Cochran's Q test and the I^2 statistic, considering a P-value of less than 0.10 and $I^2 > 25\%$ to be significant. For statistical analysis, we utilized the RevMan software (5.4 Version) and performed pooled analysis, with standardized mean difference (SMD) or mean difference (MD), using a random-effects model, with a 95% confidence interval. **Results:** 362 articles were found from the search in the databases, and 5 were included in the final analysis, covering a total of 312 patients. SGLT2 inhibitors were used in 180 (57,7%) patients. There was no statistically significant difference in EAT [SMD: -0.74; 95%CI: (-1.59,0.10); p = 0.09] nor low-density lipoprotein (LDL) levels [MD: -0.20; 95%CI: (-10.14,9.74); p = 0.97] between the SGLT2 inhibitors and control groups. High density lipoprotein (HDL) levels were significantly higher in the SGLT2 inhibitors group compared to control [MD: 7.67; 95%CI: (2.71; 12.62); p = 0.002]. In relation to glycated hemoglobin (HbA1c) levels, there was a favoring of the SGLT2 inhibitors group compared to control [MD: -0.32; 95%CI: (-0.53,-0.11); p = 0.003]. **Conclusion:** There was no statistically significant difference in the EAT and LDL endpoints. However, a statistically significant difference was found in the reduction of HB1Ac and HDL levels, favoring the SGLT-2 group. **Keywords:** pharmacology; diabetes; adiposity.

TIREOIDE

2008

UNUSUAL T3-TOXICOSIS IN A PATIENT WITH GRAVES' DISEASE AND APPARENT SUBCLINICAL HYPERTHYROIDISM: A CASE REPORT

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Case presentation: A 43-year-old female presented with classic symptoms of thyrotoxicosis, including significant weight loss, asthenia, excessive sweating, insomnia, shaking, and a noticeable goiter. Physical examination confirmed an enlarged thyroid with palpable fremitus and an audible bruit over the gland. Notably, the patient did not report any visual disturbances or changes. Initial laboratory evaluations revealed suppressed TSH (<0.01 mIU/L), normal free thyroxine (FT4) levels (1.41 ng/dL, reference range 0.93-1.70), elevated total triiodothyronine (TT3) levels (401 ng/dL, reference range 80-200), and positive thyrotropin receptor antibody (TRAB) (>40 U/L). These findings led to a diagnosis of T3-toxicosis associated with Graves' disease. The patient was started on methimazole (MTZ) at a dosage of 20 mg/day. During follow-up, FT4 levels rose to 2.68 ng/dL, total T4 to 15.5 µg/dL (reference range 4.5-12.0), while TT3 levels further increased to 537 ng/dL, with persistent TSH suppression. The TT3/TT4 ratio was calculated to be significantly elevated at 34.6. In response, MTZ was increased to 30 mg/day, and the patient is currently awaiting definitive treatment with radioiodine. **Discussion:** T3-toxicosis is a well-recognized condition first documented in the 1970s. Approximately 80% of T3 is typically derived from the peripheral conversion of T4, with the remaining 20% directly secreted by the thyroid gland. However, in hyperstimulated thyroid states such as Graves' disease and toxic nodular goiters, the proportion of T3 secretion can increase to 30%-40%. The mechanisms underlying T3-toxicosis include: increased type 2 deiodinase expression, leading to enhanced intracellular conversion of T4 to T3 within thyroid tissue, and elevated organification of iodine in thyroglobulin regions, favoring T3 synthesis. T3-toxicosis can occur in 5%-30% of hyperthyroid patients, particularly in iodine-deficient regions. Clinicians must recognize T3-toxicosis, as it presents with pronounced thyrotoxicosis symptoms but can exhibit discordant laboratory results, complicating diagnosis and management. **Final comments:** Physicians should be vigilant for T3-toxicosis in patients with severe thyrotoxicosis symptoms and discordant thyroid function tests. Early recognition and appropriate adjustment of antithyroid medications, followed by definitive treatment options like radioiodine, are critical for effective management and improved patient outcomes. **Keywords:** T3-toxicosis; Graves' disease; hyperthyroidism.

DIABETES MELLITUS

2009

GENDER DIFFERENCES IN FUNCTIONALITY OF ELDERLY PATIENTS WITH DIABETES

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Introduction: The Short Physical Performance Battery (SPPB) is used to assess the functional capacity of elderly individuals and may contribute to the individualization of therapeutic goals for patients with type 2 diabetes mellitus (T2DM), maintaining autonomy and life quality. **Objective:** To analyze the differences in the prevalence of low physical performance (PP) assessed by the SPPB between genders in elderly patients with T2DM. **Materials and methods:** This cross-sectional study included patients aged over 65 with T2DM. Sociodemographic data were collected from medical records. PP was evaluated using the SPPB which includes balance, gait speed, and chair stand tests, categorized from disability to good performance based on scores (0-12). Low PP was also defined by the European Working Group on Sarcopenia in Older People (EWGSOP2) criteria as an SPPB score ≤ 8. Grip strength < 27 kgF (men) and < 16 kgF (women) indicated low muscle strength. Appendicular lean mass (ALM/m²) was measured using octapolar bioelectrical impedance, with low muscle mass < 7 kg/m² (men) and < 6 kg/m² (women) according to EWGSOP2 criteria. Limiting comorbidities were identified according to American Diabetes Association (ADA) and Endocrine Society (ES) definitions and compared between genders. Statistical analysis was performed using SPSS-IBM. Results are presented as mean ± standard deviation (SD), median [Interquartile range], and n (%). **Results:** Seventy-nine patients aged 73 [69-79] years with a diabetes duration of 20.7 ± 10.5 years were evaluated, 54 (68%) of whom were female, with a glycated hemoglobin (A1c) of 7.3 [6.8-8.1] %. The number of comorbidities was 4 [3-5] according to ADA definition, and 2 [1-3] according to ES definitions, with no difference between genders. Women had a lower SPPB score (7 [5-8] *vs.* 8 [6.5-10], p = 0.02) and a higher proportion low PP (33 (61.1%) *vs.* 9 (36%), p = 0.038) compared to men. There was no difference between genders regarding age, diabetes duration, A1c, categorization of SPPB performance and the frequency of low muscle strength and mass. **Conclusion:** Women with diabetes had lower SPPB scores despite no significant clinical and demographic differences, or reductions in muscle strength or mass compared to men. **Keywords:** physical performance; type 2 diabetes mellitus; Short Physical Performance Battery.

ENDOCRINOLOGIA BÁSICA

2012

TREATMENT OF HYPONATREMIA CAUSED BY INAPPROPRIATE SECRETION OF ANTIDIURETIC HORMONE WITH SODIUM-GLUCOSE COTRANSPORTER TYPE 2 INHIBITOR: CASE REPORT

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Case presentation: An 84-year-old male patient developed asymptomatic hyponatremia, sodium 126 mEq/L, clinically euvolemic, without dehydration or anasarca. Personal pathological history: subclinical hypothyroidism, prediabetes, chronic atrial fibrillation, esophagitis, hypertension. In addition, he had a past history of hyponatremia. He was taking levothyroxine 50 mcg, olmesartan 20 mg, nebivolol 5 mg, metformin 500 mg, domperidone 10 mg, vonoprazana 20 mg. Even after discontinuing the medications in use, except nebivolol and levothyroxine, sodium remained low. Adrenal insufficiency, decompensated heart failure, liver dysfunction, renal dysfunction (CKD-EPI estimated glomerular filtration rate above 90 mL/min/1.73 m^2), and diuretic use were ruled out. 24-hour urine osmolarity was 272 mOsm/kg/H2O, plasma osmolarity was 263.6 mOsm/L/H2O, and urinary sodium was 85 mEq/24h. Pulmonary tomography was performed, revealing fibrosing interstitial lung disease. Inappropriate Antidiuretic Hormone Secretion (SIADH) was suspected as a consequence of the interstitial lung disease. Fluid restriction of 800 mL/day for 5 days was advised, with no response, so it was decided to start empagliflozin 10 mg/day, with sustained improvement in sodium levels to within normal values in 3 days. **Discussion:** Given the case presented, after excluding other causes, we raised the diagnostic hypothesis of hyponatremia associated with SIADH due to fibrosing interstitial lung disease. According to randomized clinical studies, the use of sodium-glucose cotransporter 2 (ISGLT-2) inhibitor in SIADH was able to control natremia, by promoting osmotic diuresis through glycosuria. Based on these studies, empagliflozin 10 mg/day may be a safe and well-tolerated treatment option for correcting hyponatremia, since fluid restriction is often difficult to apply, in addition to the use of urea and vaptans being not easily accessible. This is particularly relevant in elderly patients with multiple comorbidities, as described, where treatment optimization is crucial due to the increased risk of complications related to hyponatremia. **Conclusion:** The case highlights the need for further research into the use of ISGLT2 in these patients, given its positive effects on cardiovascular and renal outcomes, empagliflozin may be a treatment option for outpatients with chronic SIAD. **Keywords:** SIADH; hyponatremia; SGLT-2.

METABOLISMO ÓSSEO E MINERAL

2013

INFLUENCE OF POLYPHARMACY AND COMORBIDITIES ON THE PREVALENCE OF FRACTURES IN WOMEN WITH POSTMENOPAUSAL OSTEOPOROSIS

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Introduction: Osteoporosis is common in the postmenopausal female population. Fragility fractures are the main consequences. Type 2 diabetes (DM), systemic arterial hypertension (SAH), depression and polypharmacy were described as factors related to fractures. **Objective:** To verify the association between comorbidities, polypharmacy, serum level of 25 hydroxyvitamin D (25 OHvit D) and osteoporotic fractures. **Casuistry and methods:** Observational, retrospective study with cross-sectional analysis of a sample of 179 medical records from 2015 to 2020 of the Calcium Metabolism Outpatient Clinic of local university. Fractured and non fractured groups were compared with Student's t-test or Mann-Whitney test for numeric variables and Pearson's chi-square test or Fisher's exact test for categorical variables. **Results:** Polypharmacy (use of five or more drugs) was present in 40.7% of patients. The presence of fractures was found in 73 patients (41%) and there was no association with comorbidities and polypharmacy (p = 0.304). There was no correlation between serum level of 25 OHvit D and fractures. The use of bisphosphonates and vitamin D was approximately 70% of the sample. An association was observed between the use of bisphosphonates and vitamin D and the occurrence of fractures, with P values = 0.016 and 0.041, respectively. **Conclusion:** The presence of comorbidities and polypharmacy is common in patients with osteoporosis, but no correlation with osteoporotic fractures was found. The treatment of osteoporosis with bisphosphonates and vitamin D was more common in the group of women with fractures, demonstrating the importance of an outpatient clinic specialized in diseases of bone metabolism, with a specific focus on treating patients with osteoporosis to prevent new fractures. **Keywords:** osteoporosis; polypharmacy; fractures.

NEUROENDOCRINOLOGIA

2014

PITUITARY APOPLEXY IN A PREGNANT WOMAN: AN ATYPICAL EVOLUTION OF PROLACTINOMA – CASE REPORT

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Case presentation: A 37-year-old woman diagnosed with Macroprolactinoma (pituitary lesion 1.7 x 1.6 x 1.3 cm, prolactin > 200 ng/mL) started treatment with cabergoline 1.5 mg/week. After 5 months of treatment, she referred cessation of galactorrhea and return of spontaneous menstrual cycles (prolactin: 20 ng/mL in the 5th month of treatment). At 7 months of treatment, she returned to the outpatient clinic referring to be pregnant, and cabergoline was interrupted. She continued regular follow up during pregnancy with guidance on warning signs (headache or visual changes). In the 30th week of pregnancy, she developed left superior lateral quadrantanopia, headache, dizziness, and hypotension. A new non-contrast magnetic resonance imaging of the sellar region revealed an increase in the lesion size (2.0 x 1.8 x 1.7 cm), with T1-hyperintense signal, blood level, displacing the optic chiasm, suggesting pituitary apoplexy. Evaluation of the corticotropic and thyrotropic axes confirmed secondary adrenal insufficiency (AI) (baseline cortisol 2.41 µg/dL), and normal thyroid function. Prednisone 5 mg/day and cabergoline 1.0 mg/week were prescribed. There was an improvement in symptoms and visual field. It was decided for a cesarean section at 39 weeks of gestation to avoid labor that could pose a risk of pituitary re-bleeding. The delivery was uneventful; the newborn had Apgar scores of 9/9 and weighed 3,500 g. Cabergoline 1.5 mg/week was restarted at discharge. Breastfeeding was not indicated due to the pituitary tumor volume and recent visual loss, with accordance of Obstetrics and Pediatric unit. **Discussion:** This clinical case presents an atypical evolution of prolactinoma in a pregnant woman, who developed symptomatic pituitary apoplexy and secondary AI. Outcomes related to prolactinoma during this period depend on pre-pregnancy factors: lesion size, prolactin level, and duration of medical treatment before pregnancy (at least 1 year). In this case, the patient had two criteria for a prognosis that warranted caution. **Final comments:** This case demonstrates the importance of adequate duration of medical treatment before pregnancy. Active surveillance for warning signs is effective in detecting complications and adjusting management. The return to cabergoline in such cases is mandatory. **Keywords:** prolactinoma; pregnant; pituitary apoplexy.

DIABETES MELLITUS

2015

SOCIAL DETERMINANTS IN ACUTE DIABETES COMPLICATIONS

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Introduction: More than 15 million Brazilians live with diabetes mellitus (DM). Of these, 75% use public health services for chronic and emergency care like hyperglycemic and hypoglycemic emergencies. The prevention of acute diabetes complications (ADC) is directly related to the quality of care. **Objective:** Locate and map the attendance of ADC in Public Emergency Care Units UPA and identify the characteristics of this population. **Materials:** This retrospective observational study was carried out between 2023 and 2024, by analyses of secondary data recorded by the Department of Health of the City. The population of this study was 2,667 persons of any age attended to the Emergency Care Units and registered with the International Classification were collected data from: age, gender, the sanitary district according to residential neighborhood and if the acute episode generated hospitalization. For further comparison, from each sanitary district, were collected data from the number of people registered, Glycated Hemoglobin (HBA1c) and the General Human Development Index (HDI), as well as the HDI for income, education and longevity domains. The data were analyzed with IBM SPSS Statistics v.29.0.0 computer program. The rate of ADC events was calculated per 100,000 habitants. The results were presented considering the sanitary districts of the neighborhood of residence. To evaluate the correlation between the rate of events and HBA1c levels and HDI, Spearman correlation coefficients were estimated. Significance values of $p < 0.05$. **Results:** The population had a mean age (years) of 56,1 ± 18,9, mean HBA1c (%) was 7,54 ± 0,13, mean HDI 0,797 ± 0,032, 51,4% were woman, 67,8% and 32,2% had hyperglycemic and hypoglycemic complications respectively. The ADC events rate was 129/100.000 habitants. This rate was higher for those ≥ 60 years old. The correlation between the rate ofADC events and HBA1c was not significant. There was an inversely correlation between the number of ADC events and HDI income domain for all ADC events (Spearman Coefficient -0,83, p = 0,003). **Conclusions:** The number of acute complications of each sanitary district is related with the social characteristics of its population, especially related to the income characteristics. Older people are at higher risk as well. Investments in medical care and education focused on each sanitary district can be crucial to concentrate the efforts to improve the quality of health care for these population. **Keywords:** diabetes; acute complications; social determinants.

OBESIDADE

2016

EFFECTS AND SAFETY OF GLP-1 ANALOGS IN OVERWEIGHT OR OBESE ADULTS WITH BIPOLAR DISORDER: A SYSTEMATIC REVIEW

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1. AFYA – FACULDADE DE CIÊNCIAS MÉDICAS DA PARAÍBA, CABEDELO, PB, BRASIL.

Introduction: Overweight and obesity are diseases characterized by an excessive increase in body fat, increasing the risk of disease. GLP-1 analogs are emerging as an option for overweight and diabetes, therefore, it is crucial to evaluate their efficacy and safety in patients with bipolar disorder (BD). **Objective:** To analyze the efficacy and safety of GLP-1 analogs in overweight or obese patients with BD. **Methods:** The study is a systematic review of the literature which followed the PRISMA protocol checklist, using the guiding question: "what are the effects and safety of using GLP-1 analogs in overweight or obese adults and BD?", formulated according to the PICO method. Consequently, the searches were carried out through MEDLINE, Cochrane Library and LILACS, through the following combination: "Adults" AND "Glucagon-Like Peptide-1 Receptor Agonists" AND "Mood Disorders", thus selecting clinical trials in English or Portuguese. Ultimately, 2 eligible articles were evaluated and considered low risk of bias using the PEDro criteria. **Results:** The research included an experimental group of 29 people and another placebo with 31. Regarding the percentage change in body weight, in the experimental group, using Liraglutide 3 mg/0.5 mL (18 mg/3 mL), there was an average of 3.3% reduction in baseline body weight, with a standard deviation of 5.2; in the placebo group, the average was 0.2%, with a standard deviation of 4.2. It was found that 11 of the patients in the placebo group had side effects, leading them to stop using the placebo: mood dysregulation (n = 5), gastrointestinal problems (n = 4) and suicidal ideation (n = 2). In the experimental group, only 3 cases of side effects can be cited: gastrointestinal problems (n = 1), mood dysregulation (n = 1) and suicidal ideation (n = 1). Finally, according to the safety instruments used by the authors – such as the CGI-BP, YMRS, MADRS and CSSRS scales, in addition to the measurement of vital signs – no participant needed to be removed from the research, with their withdrawals being the result of their own will. **Conclusion:** Therefore, GLP-1 analogs demonstrated efficacy in weight reduction and safety in overweight, obese and BD patients. Furthermore, they had fewer serious side effects compared to placebo. However, further studies with larger samples and longer follow-up periods are needed to confirm these findings and evaluate long-term effects. **Keywords:** obesity; bipolar disorder; glucagon-like peptide-1 receptor agonists.

METABOLISMO ÓSSEO E MINERAL

2017

SEVERE PRIMARY HYPERPARATHYROIDISM IN ADOLESCENCE WITH SHORT STATURE MIMICKING SKELETAL DYSPLASIA

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Case report: A 19-year-old girl was referred to the rare diseases service for investigation of skeletal dysplasia due to generalized bone pain and statural loss since age of 15, attributed to severe and progressive scoliosis. She reported spontaneous puberty, menarche at age 12, regular cycles and height 161 cm at age 14. Her spine radiography showed lumbosacral hyperlordosis, thoracic kyphoscoliosis and a marked height reduction of the thoracic vertebrae with biconcave appearance. DXA: L1-L4: 0.454 g/cm² (Z -5,4), femoral neck: 0.587 g/cm² (Z -3,4) and total hip: 0.596 (Z -3,4). Echocardiogram: slight mitral reflux. Karyotype: 46,XX [20]. After a year, at age 20, she was evaluated at the Endocrinology outpatient clinic: height 147 cm (Z-3.4), bilateral genuvarus and severe kyphoscoliosis. The biochemical and imaging evaluation revealed the diagnosis of primary hyperparathyroidism (PHPT): calcium 13.3 mg/dL, phosphorus 2.4 mg/dL, 25OHD 14.2 ng/mL, CTX 3,020 ng/mL, alkaline phosphatase 7.722 U/L, PTH 852 pg/mL, creatinine 0.6 mg/dL. Parathyroid ultrasound: no abnormalities. Scintilography of parathyroid: high uptake located in the projection of the lower 2/3 of the left thyroid lobe. She underwent left parathyroidectomy. Histopathology: parathyroid main cell adenoma. She progressed with pain relief and a significant reduction in PTH 91.5 pg/mL and calcium 9.6 mg/dL without bone hungry syndrome. **Discussion:** We report a case of PHPT in adolescence with severe bone disease and stature loss. PHPT is a rare disease in children and adolescents with an estimated incidence of 1:300,000 newborns. The disease presentation of PHPT is more severe in pediatric population, in contrast to the adult disease which is most commonly diagnosed via routine blood work. It is more commonly associated with more aggressive tumor histopathology and with multigland disease, as in multiple endocrine neoplasia (MEN) and hyperparathyroidism-jaw tumor. **Final comments:** Pediatric HPTP is a rare disease that should be recognized early. The usual presence of skeletal deformities can mimic the diagnosis of rickets or skeletal dysplasia. Although the majority arise from single parathyroid adenomas, it requires vigilance for recurrence of the disease or the development of syndromic manifestations such as MEN. Sequencing of genes (*CASR*, *MEN1* and *CDC73*) related to HPTH in the pediatric population is necessary, and in the presence of pathogenic variants, family members should be screened. **Keywords:** hyperparathyroidism; skeletal dysplasia; pediatric HPTP.

MISCELÂNEA

2018

EVALUATION OF BODY COMPOSITION AND GLYCEMIC CHANGES IN PATIENTS AFTER LIVER TRANSPLANTATION

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Introduction: The pre- and post-operative periods of liver transplantation are marked by distinct nutritional changes, with the post-operative period characterized by excessive weight gain, increased fat mass, and metabolic alterations, particularly in carbohydrate, lipid, and blood pressure metabolism. These changes are associated with the development of cardiovascular diseases and increased long-term morbidity and mortality in transplanted patients. **Objective:** To evaluate the nutritional status and glycemic profile of patients after liver transplant. **Patients and methods:** This is a descriptive, cross-sectional study conducted from May to November 2019 at a liver transplant unit in a reference center. The study population consisted of individuals of both sexes in the late postoperative period of liver transplantation (>1 year). Clinical variables (transplant time and comorbidities), biochemical (fasting blood glucose), and nutritional (weight, height, BMI, lean mass, and fat mass) variables were assessed. In data collection, a standardized questionnaire with questions to determine the profile of the studied population was used, and for the evaluation of body composition, the Tetrapolar Electrical Bioimpedance (BIA) method was adopted. **Results:** The study included 46 individuals, with an average age of 51.7 ± 16.9 years, of which 52.2% (n = 24) were female. The average transplant time was 7.2 ± 5.4 years. Regarding nutritional status, 47.9% of patients were overweight, and of these, 21.9% were obese. Excess body fat was observed in 84.7% (n = 39). No patient showed alterations in the lean mass compartment. Regarding glycemic changes, diabetes mellitus was present in 36.6%, and 43.4% had elevated fasting blood glucose, with an average of 103.6 ± 27.2 mg/dL. Comparing fasting blood glucose with sex and age, an association with male sex ($p = 0.04$) and age ≥ 60 years ($p = 0.04$) was found. **Conclusion:** The findings demonstrated a high percentage of alterations related to fat mass, as well as glycemic changes, which may characterize a high cardiovascular risk. This underscores the need for monitoring nutritional status and biochemical parameters to prevent excessive weight and fat mass gain, thereby preventing the development of cardiovascular complications that contribute to increased morbidity and mortality in patients after liver transplantation. **Keywords:** liver transplantation; glycemic changes; body composition.

METABOLISMO ÓSSEO E MINERAL

2019

LABORATORY EVALUATION AND BONE DENSITOMETRY IN PATIENTS WITH NORMOCALCEMIC HYPERPARATHYROIDISM

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Introduction: Normocalcemic primary hyperparathyroidism (NPHPT) is a diagnosis of exclusion. The isolated elevation of PTH levels requires careful investigation to identify the reason for this increase, excluding the possibility of secondary hyperparathyroidism. Although normocalcemic, elevated PTH levels lead to calcium removal from bones into the blood, which can cause complications such as osteopenia, osteoporosis, and increased fracture risk. **Objectives:** To evaluate the laboratory and densitometric profile in patients with NPHPT. **Methods:** Observational and cross-sectional study with retrospective evaluation of medical records of patients with NPHPT treated at the Endocrinology outpatient clinic between November 2023 and June 2024. Hypercalcemic, hypocalcemic, lithium users, thiazide diuretic users, patients with renal insufficiency, and vitamin D deficiency data were excluded. The following variables were analyzed: age, PTH (15-68 pg/mL), total calcium (8.4-10.2 mg/dL), ionized calcium (1.11-1.40 mmol/L), phosphorus (2.3-4.7 mg/dL), 25 OH vitamin D (21-100 ng/mL), and bone densitometry. Diagnosis of osteoporosis and osteopenia was based on T scores at key bone sites (L1 and L4, femoral neck, and total femur), with osteoporosis defined as T score ≤ -2.5 SD, osteopenia as T-score between -1 and -2.4 SD, and normal bone mass as T score > -1 SD. **Results:** The final sample consisted of 28 patients, with a mean age of 65.8 ± 7.8 years, including 2 men and 26 women. Laboratory profile of these patients (mean ± SD): PTH: 146.2 ± 110.23 pg/mL, calcium: 9.4 ± 0.50 mg/dL, phosphorus: 3.35 ± 0.70 mg/dL, ionized calcium: 1.21 ± 0.09 mmol/L, and 25-OHD: 32 ± 10.17 ng/mL. Densitometric profile: The prevalence of osteoporosis was 18% (n = 5, all women), osteopenia 25% (n = 7, all women), and normal bone mass 57% (n=16, including 2 men and the rest women). **Conclusion:** The laboratory profile of NPHPT shows elevated PTH levels with normal calcium, ionized calcium, phosphorus, and vitamin D levels. Despite normal calcium levels, we observed 18% osteoporosis and 25% osteopenia. **Keywords:** hyperparathyroidism; normocalcemic; osteoporosis.

METABOLISMO ÓSSEO E MINERAL

2020

LABORATORY EVALUATION AND BONE DENSITOMETRY IN PATIENTS WITH NORMOCALCEMIC HYPERPARATHYROIDISM

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Introduction: Normocalcemic primary hyperparathyroidism (NPHPT) is a diagnosis of exclusion. The isolated elevation of PTH levels requires careful investigation to identify the reason for this increase, excluding the possibility of secondary hyperparathyroidism. Although normocalcemic, elevated PTH levels lead to calcium removal from bones into the blood, which can cause complications such as osteopenia, osteoporosis, and increased fracture risk. **Objectives:** To evaluate the laboratory and densitometric profile in patients with NPHPT. **Methods:** Observational and cross-sectional study with retrospective evaluation of medical records of patients with NPHPT treated at the Endocrinology outpatient clinic between November 2023 and June 2024. Hypercalcemic, hypocalcemic, lithium users, thiazide diuretic users, patients with renal insufficiency, and vitamin D deficiency data were excluded. The following variables were analyzed: age, PTH (15-68 pg/mL), total calcium (8.4-10.2 mg/dL), ionized calcium (1.11-1.40 mmol/L), phosphorus (2.3-4.7 mg/dL), 25 OH vitamin D (21-100 ng/mL), and bone densitometry. Diagnosis of osteoporosis and osteopenia was based on T scores at key bone sites (L1 and L4, femoral neck, and total femur), with osteoporosis defined as T score ≤ -2.5 SD, osteopenia as T-score between -1 and -2.4 SD, and normal bone mass as T score > -1 SD. **Results:** The final sample consisted of 28 patients, with a mean age of 65.8 ± 7.8 years, including 2 men and 26 women. Laboratory profile of these patients (mean ± SD): PTH: 146.2 ± 110.23 pg/mL, calcium: 9.4 ± 0.50 mg/dL, phosphorus: 3.35 ± 0.70 mg/dL, ionized calcium: 1.21 ± 0.09 mmol/L, and 25-OHD: 32 ± 10.17 ng/mL. Densitometric profile: The prevalence of osteoporosis was 18% (n = 5, all women), osteopenia 25% (n=7, all women), and normal bone mass 57% (n = 16, including 2 men and the rest women). **Conclusion:** The laboratory profile of NPHPT shows elevated PTH levels with normal calcium, ionized calcium, phosphorus, and vitamin D levels. Despite normal calcium levels, we observed 18% osteoporosis and 25% osteopenia. **Keywords:** hyperparathyroidism; normocalcemic; osteoporosis.

TIREOIDE

2021

THE SAFETY PROFILE OF TEPROTUMUMAB IN TREATMENT OF GRAVES' OPHTHALMOPATHY: A SYSTEMATIC REVIEW

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Introduction: Graves' Ophthalmopathy is a debilitating, disfiguring and potentially blinding periocular condition resulting from Graves' disease. Recently, in 2020, Teprotumumab, an insulin-like growth factor 1 receptor inhibitor, was approved by the Food and Drug Administration to treat this ophthalmopathy. **Objective:** To evaluate the safety of using Teprotumumab in the treatment of Graves' ophthalmopathy. **Material and method:** This is a systematic review, based on the PRISMA protocol. The search was carried out in the Scopus database and the following search strategy was used: ("Graves ophthalmopathy" OR "thyroid eye disease") AND "teprotumumab" AND "randomized controlled trial" AND "clinical trial". The inclusion criteria were: English language, full text available and publications from the last five years. Review studies were excluded. **Results:** Eight articles were found and, after applying the inclusion and exclusion criteria, three were used to write this review. Study samples ranged from 51 to 83 participants and were composed of men and women diagnosed with Graves' ophthalmopathy. In the three studies analyzed, there was the presence of adverse effects (AE). In one of the studies, 80% of participants in both the group that received Teprotumumab and the group that received placebo experienced AE. The majority of AEs in the three studies were mild or moderate. In total, four patients discontinued treatment with the experimental drug, due to adverse effects, such as reaction to the infusion, conductive hearing loss, tinnitus and muscle spasms. Among the patients who discontinued the medication, one smoker experienced a serious, potentially life-threatening AE, although this event was not proven to be associated with the medication, as the patient had an underlying medical condition. There were no AEs that led to death. **Conclusion:** The use of Teprotumumab in patients with Graves' ophthalmopathy must involve the assessment of risks and benefits. The short follow-up period (21 to 30 days) in the evaluated studies limits a more comprehensive understanding of the medication's safety profile. **Keywords:** safety profile; teprotumumab; Graves' ophthalmopathy.

METABOLISMO ÓSSEO E MINERAL

2022

CASE REPORT: UNEXPECTED EFFECT OF SGLT2 INHIBITOR ON PHOSPHATEMIA IN A PATIENT WITH HYPERPHOSPHATEMIC FAMILIAL TUMORAL CALCINOSIS

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Case presentation: A 53-year-old female patient, under investigation of hyperphosphatemia (hyperP) associated with vascular and ectopic calcifications in hips and shoulders. Initial exams revealed phosphorus (P) levels of 7.1 mg/dL (reference 2.5-4.5 mg/dL), C-terminal FGF23 of 2,050 RU/mL (reference < 180 RU/mL), intact FGF23 of 18.93 pg/mL (reference 12-69 pg/mL), and a phosphate reabsorption rate (TRP) of 97.2%. Hyperphosphatemic Familial tumoral calcinosis (HFTC) was confirmed due to a mutation in the GALNT3 gene. Treatment included dietary phosphorus and calcium restriction, acetazolamide 1 g/day, and sevelamer up to 16 tablets/day, but serum phosphorus remained between 6.4 and 7.7 mg/dL. Teriparatide was administered for 2 months, reducing serum phosphorus to 5.2 mg/dL and TRP to 85.3%, but was discontinued due to significant hypercalciuria. Acetazolamide and sevelamer 9 tablets/day were maintained, with serum phosphorus at 6.7 mg/dL and TRP at 93.8%. Due to high cardiovascular risk (CVR) and prediabetes, empagliflozin (EFZ) was initiated while continuing other medications. After 2 months there was a reduction in serum phosphorus from 6.8 to 5.9 mg/dL (TRP 93%), prompting us to continue EFZ and investigate potential mechanisms for phosphorus reduction. **Discussion:** HFTC is a disease associated with mutations in FGF23, GALNT3, and α-Klotho genes, leading to reduced FGF23 secretion or resistance, increased renal phosphate reabsorption, and hyperP. It manifests with tissue calcifications, and treatment aims to decrease phosphatemia and calcified lesions. Besides dietary phosphorus restriction, treatments include acetazolamide and phosphate binders like sevelamer and aluminum. The patient had refractory hyperP despite these measures. SGLT2 inhibitors (SGLT2i) may mildly increase serum phosphorus, renal phosphate reabsorption, PTH, and total FGF23. In this case, after 2 months of SGLT2i therapy alongside other medications, serum phosphorus levels decreased while TRP remained stable. We questioned whether the phosphorus reduction could be due to increased FGF23 secretion or other unknown mechanisms. **Conclusion:** HFTC is a rare disease caused by reduced FGF23 secretion or resistance. Treatment remains challenging, and due to vascular and valvular calcification, patients have high CVR. Considering reported increases in FGF23 and PTH with SGLT2i use, we question whether SGLT2i could assist in treating hyperP in HFTC patients with high CVR and refractory hyperP. **Keywords:** hyperphosphatemia; familial tumoral calcinosis; SGLT2i.

MISCELÂNEA

2023

DIAGNOSIS AND TREATMENT OF HYPOINSULINEMIC HYPOGLYCEMIA INDUCED BY IGF-2 PRODUCING CHOLANGIOCARCINOMA: A CASE REPORT AND LITERATURE REVIEW

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A 63-year-old female patient experienced for three months episodes of malaise, sweating, and tremors, which improved after eating. She reported syncope with a blood glucose of 30 mg/dL, which required intravenous glucose infusion. She denied using insulin or oral hypoglycemics and had no symptoms of Addison's DISEASE. With a serum glucose level of 42.5 mg/dL, tests showed C-peptide at 0.10 ng/mL and insulin at < 1 mu/L. Basal cortisol was 16.29 ug/dL, basal GH was 0.07 ng/mL, IGF-2 was 554 ng/mL (normal range 20-230 ng/mL), and IGF-1 was 81 ng/mL (normal range 40-222 ng/mL) with an IGF-2/IGF-1 ratio of 6.8. A mammogram showed BIRADS 0, a breast ultrasound showed BIRADS 2, and an oncotic colpocytology test showed no malignancy. Imaging of the chest and head revealed no malignancy. Cholangiography showed moderate intra and extrahepatic bile duct dilation, with a dilated common bile duct and an expansive lesion in the gallbladder with irregular margins measuring 3.4 x 3.1 cm. Prednisone 5mg/day was started for three weeks, improving blood glucose levels. The patient underwent segmental hepatectomy and cholecystectomy with lymphadenectomy, diagnosing extrahepatic cholangiocarcinoma of predominantly tubular pattern, moderately differentiated with perineural infiltration, harmful blood vessel invasion, and harmful lymphovascular invasion. Immunohistochemistry showed no perineural, vascular, or lymphatic invasion. Glucocorticoids were discontinued 30 days post-surgery, and the patient had no recurrence of hypoglycemia, with capillary glucose levels between 73 and 224 mg/dL. Hypoglycemia associated with non-insulinoma tumors occurs due to IGF-2 production, with hypoglycemia in the absence of hyperinsulinism. Diagnosis is confirmed with serum glucose less than 55 mg/dL and low serum insulin and C-peptide levels. IGF-2 levels may be elevated or expected, but an IGF-2/IGF-1 ratio > 10 strongly suggests the diagnosis. Notable tumors include hepatocellular carcinoma, adrenocortical tumor, fibrosarcoma, mesothelioma, solitary fibrous tumor, gastrointestinal tract carcinomas, and leiomyosarcoma. Surgical removal of the cancer is the primary treatment for resolving hypoglycemia. Recognizing hypoglycemia due to IGF-2-producing tumors can be challenging and is often overlooked in clinical practice, with many cases undiagnosed. **Keywords:** hypoglycemia; cholangiocarcinoma; IGF-2-mediated hypoglycemia.

DIABETES MELLITUS

2024

EPIDEMIOLOGICAL PROFILE OF DEATHS FROM DIABETES MELLITUS BEFORE AND DURING THE COVID-19 PANDEMIC IN AMAZONAS

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During the COVID-19 pandemic, patients with comorbidities, such as systemic arterial hypertension and diabetes mellitus, were associated with worse prognoses. Currently, Brazil is the sixth country in the world in cases of diabetes, totaling 15.7 million, considered one of the main public health challenges. The objective of the work was to analyze the epidemiological profile of deaths from diabetes mellitus before and during the COVID-19 pandemic in Amazonas. This is a descriptive, cross-sectional study, with a quantitative approach, using secondary data collected in the Information Technology Department of the Unified Health System (SIH/DATASUS). The variables analyzed were: annual distribution of deaths, character of care, average length of stay, age group, sex and color/race for the period from January 2017 to May 2023, which comprises the period before (2017-2019) and during (2020-2023) the pandemic of COVID-19, defined by the World Health Organization (WHO). In the period described, 49,505 deaths from diabetes were recorded in Amazonas, 17,589 (35.5%) until 2019 and 31,916 (64.5%) between January 2020 and May 2023, with 2021 being the year with the highest number of deaths 11,772 (23.8%). Regarding the nature of care, 42,788 (86.4%) patients were treated urgently and 6,717 (13.6%) were treated electively. The average hospital stay was 5.2 days. Deaths were predominant in individuals aged 70-79 years, with 10,014 cases (20.2%), followed by the age group of 60-69 years with 9,785 cases (19.8%) and patients over 80 years old, 9,611 (19.4%). Males had 27,677 hospitalizations (55.9%). The brown color/race was the one with the highest prevalence, with 34,767 (70.2%) patients. The variables character of care, hospitalization stay rate, age group, sex and race did not present changes in terms of distribution in the period before the pandemic, when verified during the pandemic period. It was found during the study period that diabetes cases in Amazonas recorded a higher prevalence in men, elderly people, of mixed race, with a wide difference between elective and emergency care. Furthermore, an increase in the number of deaths from diabetes was observed during the period from January 2020 to May 2023, characterized by the COVID-19 pandemic, which may be related to the greater lethality due to SARS-CoV-2 infection in individuals with cardiac and endocrine comorbidities. **Keywords:** diabetes mellitus; COVID-19; pandemic.

ENDOCRINOLOGIA PEDIÁTRICA

2025

PREVALENCE AND PATTERNS OF Y CHROMOSOME MICRODELETIONS IN PATIENTS WITH 45,X/46,XY KARYOTYPE AND VARIANTS

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Introduction: Extensive research has been conducted on the Azoospermia Factor region (AZF), located on the long arm of the human Y chromosome (Yq), and its association with male infertility. Microdeletions in the AZF region have been identified, particularly in infertile males, but also in patients with 45,X/46,XY chromosome sex differences of sex development (DSD). Studies have shown a link between the presence of 45,X cells and the occurrence of AZFc microdeletions. **Objective:** To investigate Yq microdeletions in sex chromosome DSD patients. Patients: Twenty-eight sex chromosome DSD patients were evaluated. Fifteen patients were assigned as female at birth, all with 45,X/46,XY karyotype; two displayed clitoromegaly, and two had atypical genitalia. One of them (atypical genitalia) had their assigned sex changed to male at age 3. Thirteen patients were assigned as male at birth, all presented atypical genitalia. In 24 patients (85.7%) the karyotype was 45,X/46,XY. The remaining patients had the karyotypes 45,X/46,X,i(Yq), 45,X/46,XY/46,X,idic(Y), 45,X/46,XY/47,XXY, and 45,X/46,XY/47,XYY. **Methods:** Yq microdeletions were screened using both single and multiplex PCR techniques. Out of the 34 STSs (Sequence Tagged Sites) regions selected, six were analyzed individually, while the remaining 28 STSs were analyzed in pairs using multiplex PCR. **Results:** Yq microdeletions were detected in 13 out of 28 patients (46%). Among the 34 STSs analyzed, 20 were deleted, with 50% of these deletions located in the AZFc subregion. Microdeletions in the AZFb region were found in 8 patients and no deletion was identified in AZFa region. Loss of sY3168 STS was the most common, being present in 12 patients. **Discussion:** Our results confirm previous research showing that Yq microdeletions are present in 27 to 57% of patients with sex chromosome DSD. Small-scale studies have indicated that these microdeletions are often located in the AZFc region of the Y chromosome, which is consistent with our findings. In a study by Álvarez-Nava *et al.* (2008), it was noted that Yq microdeletions were more commonly detected in gonadal tissue samples compared to blood samples from the same patient. **Conclusion:** These findings further support for a potential association between the loss of specific Yq segments, chromosomal instability, and the formation of 45,X cell lineages. The detection of Yq deletions may assist in providing appropriate counseling and managing potential fertility in sex chromosome DSD patients. **Keywords:** Y chromosome microdeletions; azoospermia factor region; sex chromosome DSD patients.

METABOLISMO ÓSSEO E MINERAL

2027

MORBIDITY AND MORTALITY DUE TO BONE DENSITY AND STRUCTURAL DISORDERS IN BRAZIL: AN ECOLOGICAL STUDY FROM 2008 TO 2024

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Introduction: Bone density and structural disorders (BDSD) are an emerging medical and socioeconomic threat characterized by a systemic impairment of bone mass, strength, and microarchitecture which increases the propensity of fragility fractures. **Objective:** To analyze the sociodemographic profile of hospital morbidity and mortality due to BDSD in Brazil from 2008 to 2024. **Methods:** An ecological time-series study with a quantitative, descriptive, and exploratory approach was conducted using open data on hospital morbidity due to BDSD from January 2008 to May 2024. The data were obtained from the *Sistema de Informações Hospitalares do SUS* (SIH), organized into a *Microsoft Office Excel*® spreadsheet, and subsequently analyzed using *BioEstat*® version 5.3. Mortality rates (MR) and incidence rate (IR) were calculated using intercensal projections from the do *Instituto Brasileiro de Geografia e Estatística* (IBGE). **Results:** The study revealed that Brazil recorded a total of 279.206 hospitalizations and 1.546 deaths due to BDSD, with an IR of 8,07/100.000 (±1,77) and a MR of 0,04/100.000 (±0,01). IR and MR were analyzed using Pearson's correlation test and showed a very strong significant correlation ($r = 0,90$; $p < 0,0001$). The Southeast Region had the highest prevalence of hospitalizations (41,17%), with an IR of 7,90/100.000 (±1,98). Regarding mortality, the highest number of deaths also occurred in the Southeast Region (51,87%), with an MR of 0,05/100.000 (±0,01). The paired non-parametric analysis of variance (Kruskal-Wallis test) indicated that the difference between the average number of deaths and hospitalizations for each Brazilian administrative region was significant ($p < 0,0001$). Regarding hospitalizations by sex, a higher frequency was found in the male population (69,44%), with an IR of 11,45/100.000 (±2,64). The difference in IR compared to the female population was statistically significant ($p < 0,0001$). Concerning deaths by sex, females were more frequent (55,23%), with an MR of 0,04/100.000 (± 0,01). However, no statistically significant difference was observed in MR between females and males ($p = 0,1171$). These analyses were conducted using the Mann-Whitney test. **Conclusion:** The results indicate that BDSD are a significant cause of hospitalizations and deaths in Brazil. It is necessary to conduct further studies on this topic, focusing on the quality of care and the recording of these cases in health services. **Keywords:** bone density; bone tissue; epidemiology.

OBESIDADE

2029

IMPACT OF LOW-CARBOHYDRATE DIET ON METABOLIC SYNDROME MARKERS: A SYSTEMATIC REVIEW

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Introduction: The association of obesity and its complications has directly contributed to the rise in metabolic syndrome (MetS) cases, characterized by alterations in various markers such as abdominal obesity, elevated blood pressure, elevated fasting blood glucose, atherogenic dyslipidemia with high levels of triglycerides (TG), and low levels of high-density lipoprotein cholesterol (HDL-C). Recently, a low-carbohydrate diet (LCD) has been proposed as a treatment for MetS, reducing cardiovascular risk and type 2 diabetes mellitus. **Objective:** The objective of the present study is to examine the effects of LCD on MetS markers through a systematic review. **Materials and methods:** This study consists of a systematic review of articles published between 2013 and 2023. Following the PRISMA protocol for systematic reviews, five electronic databases were consulted: PubMed, Lilacs/BVS, Cochrane Library, SciELO, and Science Direct. The Boolean operator "and" was used to combine the MeSH terms "metabolic syndrome" and "low carbohydrate diet," as well as their equivalents in Portuguese and Spanish. Variations of the descriptors were employed to identify articles using different terms that still met the study's objectives. The screening and selection of articles were carried out using the Rayyan software, adhering to PRISMA criteria. Two researchers independently conducted the study selection process. **Results:** A total of 15,242 articles were identified, which, after applying the eligibility criteria, resulted in 16 studies. A total of 25,283 participants were included, ranging from 18 to 60 years of age, including men and women. The results indicated that a LCD significantly affects markers such as weight loss (9/11 studies – 81.1%), body mass index (BMI) (8/10 studies – 80%), abdominal circumference (9/12 studies – 75%), HDL-C (11/15 studies – 73.3%), TG (10/14 studies – 71.4%), blood pressure (7/10 studies – 70%), blood glucose, glycated hemoglobin (HbA1c), Homeostasis Model Assessment of Insulin Resistance (HOMA-IR) (6/9 studies – 66,6%), LDL-cholesterol (LDL-C) (5/11 studies – 45.4%) and total cholesterol (4/10 studies – 40%). **Conclusion:** The data showed that a LCD has a positive impact on MetS; however, some markers such as weight loss, abdominal circumference, HDL-C, TG and blood pressure are more affected by carbohydrate restriction. Therefore, these robust data support the idea that a LCD may be effective for some markers of MetS, but not for all of them. **Keywords:** low-carbohydrate diet; metabolic syndrome; obesity.

NEUROENDOCRINOLOGIA

2030

PITUICYTOMA: CASE REPORT OF A RARE BENIGN TUMOR OF NEUROHYPOPHYSIS

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A 44-years-old male presented with erectile disfunction and decreased libido for the last 8 years. He was diagnosed with panhypopituitarism [IGF-1 96 (52-219 ng/dL); FSH 0,8 ng/dL; LH 0.49 ng/dL; total testosterone < 10 ng/dL; free T4 0.57 (0.7-1.8 ng/dL); TSH 3,0 (0.4-4.3 ng/dL); basal cortisol 9.8 ng/dL] and hyperprolactinemia due to "hook effect" (prolactin after 1:100 serum sample dilution of 77 ng/dL). Magnetic resonance imaging revealed a suprasellar lesion with slight stellar extension measuring 3.0 x 2.6 x 2.5 cm, hypointense on T1, hyperintense on FLAIR, with homogeneous contrast enhancement. Prednisone 5 mg/day, levotiroxine 50 mcg/day and daily transdermal testosterone gel 1% was prescribed. Goldmann perimetry showed a relative increase in right eye's blind spot. He underwent transsphenoidal surgery with complete resection of the tumor, which was described as a vascular tumor with firm consistency. On the post-operative period, the patient presented with pneumocephalus, pneumoventricle and transient arginine vasopressin deficiency. All complications were reversed. No evidence of recurrence was detected over the last 9 months. Histopathological findings showed spindle cells with round to oval nuclei, dispersed chromatin and mildly eosinophilic cytoplasm, arranged in a storiform pattern. Neither mitosis figures nor necrosis areas were observed. Immunohistochemical stains were positive for thyroid transcription factor 1 (TTF-1) and glial fibrilar acid protein (GFAP) and negative for epithelial membrane antigen (EMA), confirming the diagnosis of pituicytoma. Ki-67 proliferation index was 3% (in hotspots). Pituicytoma is a rare benign tumor of neurohypophysis, along with spindle cell oncocytoma and granular cell tumor. In our center, over 1.605 surgical specimens from sellar/suprasellar tumors, we identified only this case of pituicytoma (0.06%). These tumors originate from pituicytes (spindle-shaped nucleated cells responsible for supporting and nourishing hypothalamic axons). In light of recent studies, posterior pituitary tumors seem to represent a spectrum of a single entity. Due to its rarity, their precise incidence is unknown. The characteristic immunohistochemical markers of pituicytomas are S100 protein, TTF-1 and GFAP, while negative markers commonly are EMA and synaptophysin. The treatment of choice is surgery with gross total resection being the main prognostic factor. Surgical complications may occur owing to the increased vascularity of these lesions. Keywords: pituicytoma; posterior pituitary; neurohypophysis.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2031

OVOTESTICULAR DISORDER OF SEX DEVELOPMENT IN A 46,XY PATIENT: A RARE CASE REPORT

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Case report: A female-phenotype patient was diagnosed with ovotesticular disorder of sex development (OT-DSD) at 8 months of age, following surgical correction of bilateral inguinal hernia. Confirmation occurred through histopathological examination, which revealed the presence of ovotestis, and karyotype determination of 46,XY. Pelvic ultrasound did not identify Müllerian derivatives, and the external genitalia were described as typically female. At age 12, the patient began estrogen replacement therapy. Referred to our service in adulthood, she had questions about her clinical condition but did not express gender dysphoria. After reviewing her medical history and confirming the diagnosis, she received counseling and her current hormone therapy was maintained. She initiated her sexual life satisfactorily. A dual-energy X-ray absorptiometry scan performed at age 28 revealed low bone mineral density for her age group, with a Z-score of -2.5 in the lumbar spine. **Discussion:** DSDs are conditions in which chromosomal, sexual, gonadal, or anatomical constitution is atypical. Individuals can be diagnosed at different stages of life. OT-DSD is the rarest variant, accounting for less than 10% of DSD cases worldwide. It is defined by the simultaneous presence of ovarian and testicular tissues in the same individual. The most common karyotype in OT-DSD patients is 46,XX, while 46,XY is infrequent. The clinical presentation encompasses a wide phenotypic variability, which influences decisions on gender assignment and counseling about genital and gonadal surgery. Ideally, the diagnosis should be made at birth, as late recognition can lead to greater difficulties in accepting the diagnosis. Most women require continuous steroid sex hormone replacement, and it is important that the treatment is individually tailored. Additionally, they should be counseled about fertility options. **Conclusion:** Neonatal sex assignment in OT-DSD patients is essential but challenging. Appropriate counseling by an endocrinologist is crucial to ensure the patient's right to autonomy and self-determination at any stage of life. It is also necessary to highlight the importance of early initiation of hormone therapy for sexual and bone maturity, as well as to indicate the available options in case of a desire for fertility. The scarcity of studies on the long-term management and follow-up of OT-DSD complications is a fact, but it should not compromise the care for this population. **Keywords:** ovotesticular disorder of sex development; bone health; fertility.

ADRENAL E HIPERTENSÃO

2034

ATYPICAL AGE ADRENOCORTICAL CARCINOMA AND ITS THERAPEUTIC CHALLENGES: A CASE REPORT

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Adrenocortical carcinoma (AC) is a rare endocrine tumor with an unfavorable prognosis, even rarer in childhood (<0.2% in the pediatric age group), often presenting as functioning tumors in this age group. Such was the case of E.B., 10 years old, female, who developed acne on the face and trunk, violaceous stretch marks on the breasts and abdomen, weight gain, hirsutism, and elevated blood pressure. After 6 months of progression, she was referred with already conducted laboratory tests to continue investigation. She maintained hypertension despite antihypertensive use, hypokalemia, clinical and laboratory hyperandrogenism, and hypercortisolemia with suppressed ACTH. Imaging revealed an expansive lesion in the right adrenal gland measuring 13.9 x 10.7 x 8.7 cm with invasion of the inferior vena cava and nodular lung images suggestive of metastases. Due to the clinical severity, tumor extension and invasion, as well as the need for extracorporeal circulation, due to the involvement of vascular metastases, the possibility of curative surgery was discarded and palliative surgery with partial removal of the tumor mass was not performed due to high surgical risk. So, mitotane was initiated as pharmacological treatment, and for this reason, a biopsy of the lesion was performed. It is worth noting that there was no need to perform a biopsy in this case, as it was done for institutional protocol requirements to start chemotherapy. In addition, the failure to perform palliative surgery may have shortened the patient's survival. The patient developed seizures and status epilepticus, secondary to posterior reversible encephalopathy syndrome (PRES) and refractory septic shock, dying 16 days after admission. In AC, excessive production of cortisol is frequent, resulting in Cushing's syndrome, which can lead to hypertension, as well as hypokalemia due to mineralocorticoid receptor stimulation. Excessive production of androgens can lead to virilization of patients and hyperaldosteronism is rare. The overlap of excess cortisol and androgens is particularly suggestive of malignancy. Treatment involves a multidisciplinary approach, including chemotherapy and/or radiotherapy, with complete surgical resection being the treatment of choice as it is the only possibility for cure. Prognosis is generally poor and correlates with tumor staging. Therefore, it is necessary to optimize knowledge and its management, as well as its early suspicion, due to the severity and rarity of AC. **Keywords:** adrenocortical carcinoma; hormonal production; childhood.

DIABETES MELLITUS

2035

OVERNIGHT MELATONIN IN GESTATIONAL DIABETES: A CASE-CONTROL STUDY

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Introduction: Melatonin is a neurohormone responsible for circadian regulation. It has an important influence on carbohydrate metabolism. Disruption of melatonin rhythm is associated with insulin resistance, the major event on gestational diabetes. It freely crosses the placenta and plays important roles in fetal development and placental health. Disturbances in melatonin secretion are associated with miscarriage, prematurity and pre-eclampsia. To our knowledge, there is no robust data to evaluate melatonin profile in gestational diabetes. **Objective:** To evaluate the overnight melatonin secretion in GDM and Non-GDM pregnancy. **Methods:** A case-control study examined pregnancy with and without DMG from 2nd to 3rd trimester of pregnancy. Clinical data and behavior questionnaires were collected by interview and chart review. Self-Rated Sleep Quality was evaluated by Pittsburgh Sleep Quality Index (PSQI). A four-variable screening tool including self-reported frequent snoring, chronic hypertension (HBP), BMI, and age was used to predict Obstructive sleep apnea (OSA) risk (FL Facco *et al.* 2012) and Horne Ostberg Morning-Evening questionnaire (MEQ) to define chronotype. Eveningness was defined as MEQ ≤ 41. Analysis of UaMT6s was performed by ELISA Kit; IBL (International, Hamburg, Germany). **Results:** The overnight UaMT6s excretion was evaluated in 53 GDM and 18 non-GDM women. GDM patients were older (34.2 ± 5.5 *versus* 29.4 ± 5.5; p = 0.05) and had higher BMI (31.1 ± 4.0 *versus* 28.2 ± 6.0; p = 0.04). The average UaMT6s excretion was 24.13 µg/h (±11.4 SD) and the mean levels were similar between GDM and Non-GDM (23.7 µg ± 11.2 *versus* 25.32 µg ± 12.2; p = 0.72). Among GDM, no associations with fasting (p = 0.19) nor 2-hour (p = 0.07) blood glucose levels on OGTT were found. There was no difference in UaMT6s excretion with or without HBP, nor did the presence of eveningness influence UaMT6s level (MEQ > 41: UaMT6s = 24.7 µg; MEQ ≤ 41: UaMT6s = 19.9 µg p = 0.79) and no correlation between UaMT6s and sleep quality (p = 0.66). In a linear regression analysis, the risk of OSA had an inverse relationship with UaMT6s levels (F = 4.815; p = 0.03), which remained after controlling for age, fasting blood glucose and gestational age. **Conclusion:** no difference was found in the excretion of UaMT6s among patients with or without DMG, despite the difference in age and BMI among them. Also, no correlation was found with sleep quality, while the four-variable score for OSA demonstrated an inverse relationship with UaMT6s levels. **Keywords:** melatonin; diabetes, gestation; sleep disorders.

NEUROENDOCRINOLOGIA

2036

LONG-TERM SAFETY AND EFFICACY OF ONCE-DAILY ORAL PALTUSOTINE IN THE TREATMENT OF PATIENTS WITH ACROMEGALY: UPDATE FROM ACROBAT ADVANCE

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Introduction: Paltusotine is a non-peptide, highly selective SST2 receptor agonist in development as a once-daily, oral treatment for patients with acromegaly or carcinoid syndrome. **Objective:** To report interim results of an ongoing, 6-year, single-arm, open-label extension study of paltusotine in the treatment of patients with acromegaly (ACROBAT Advance). **Methods:** Enrolled patients had completed either the ACROBAT Edge or Evolve phase 2 parent study. In Edge, patients were either sub-optimally controlled on an injected SRL (octreotide or lanreotide) alone or in combination with cabergoline, or required combination therapy or pasireotide to achieve normal IGF-I levels. In Evolve, enrolled patients had normal IGF-I levels on injected SRL monotherapy. Paltusotine was formulated as a capsule (10-40 mg) at Advance study initiation; all patients were switched to the tablet formulation (20-60 mg) during the third year of the study and had ≥ 2 assessments after switching to tablet formulation as of this analysis. Adjunctive treatment with cabergoline or pegvisomant was allowed in patients not attaining normal IGF-I levels on paltusotine maximum dose. **Results:** Forty-three patients were enrolled in Advance (Edge, n = 32; Evolve, n=11; 88% of eligible patients): at baseline, mean (±SD) age 53.0 ± 11.6 years, 56% female, 86% previous pituitary surgery, and none had prior radiotherapy. IGF-I control in Edge and Evolve subsets remained stable at parent study baseline values. For all patients pooled, median (IQR) IGF-I levels were 1.15 × ULN (0.84, 1.46; n = 43) at parent study baseline; in Advance, 1.14 × ULN (0.89, 1.29; n = 40), 1.06×ULN (0.87, 1.24; n = 35), and 1.08 × ULN (0.87, 1.57; n = 10) at months 12, 24, and 42, respectively. Acromegaly symptoms, as measured using the patient-reported Acromegaly Symptom Diary, were stably controlled: median (IQR) score of 8.6 (3.6, 20.1; n = 21) at parent study baseline; in Advance, 10.5 (5.0, 18.5; n = 40), 10.0 (5.0, 25.0; n = 34), and 13.5 (6.0, 22.0; n = 10) at months 12, 24, and 42, respectively. The most common AEs reported through month 42 were arthralgia (37.2%), headache (30.2%), and fatigue (23.3%). One serious drug-related AE (cholelithiasis) was reported. Of the 8 patients who discontinued the study, 2 were due to AEs (mild or moderate). **Conclusions:** long-term results show that once-daily oral paltusotine was well tolerated, with stable biochemical and symptom control relative to that observed with injected SRLs. **Keywords:** paltusotine; acromegaly; SST2 receptor agonist.

OBESIDADE

2037

CLINICAL, LABORATORY, AND ECHOCARDIOGRAPHIC EVALUATION IN A GROUP OF INDIVIDUALS WITH OBESITY INDICATED FOR BARIATRIC SURGERY

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Obesity is a metabolic disease characterized by the accumulation of adipose tissue in the body, leading to potential health damage. This condition is associated with an increased risk of developing comorbidities that negatively impact quality of life and life expectancy. Currently, bariatric surgery demonstrates superior outcomes in individuals with obesity grades II and III compared to lifestyle modifications or the use of anti-obesity medications. Individuals with obesity may exhibit hemodynamic and cardiac structural alterations, yet little is known about these changes in those indicated for bariatric surgery. The aim of this study was to evaluate the clinical, laboratory, and echocardiographic characteristics of individuals with obesity who are candidates for bariatric surgery. A convenience sample of 76 individuals with grade II and III obesity, indicated for bariatric surgery, was selected from a cardiology referral service between November 2019 and April 2021. Participants completed a questionnaire and underwent clinical, anthropometric, and biochemical assessments, in addition to Doppler echocardiography. The study's results revealed that 65.8% of the participants were female, non-smokers (94.7%), engaged in physical activity (77.6%), and had a family history of obesity (76.4%), diabetes mellitus (81.4%), and systemic arterial hypertension (93.0%). Grade II obesity was identified in 40.7% of the individuals, and grade III in 59.2%. Systemic arterial hypertension was the most prevalent comorbidity (90.8%), followed by metabolic syndrome (88.2%), pre-diabetes (44%), and diabetes mellitus (17.9%). Laboratory tests showed no differences relative to the degree of obesity, except for fasting glucose levels. The morphofunctional cardiac study revealed that 22% of the female group and 22.9% of the male group had altered left ventricular geometry, including ventricular hypertrophy and concentric remodeling. Additionally, 23.7% of the individuals exhibited left ventricular diastolic dysfunction, with a higher frequency observed in females with grade III obesity (9.3%). Left atrial dilation was infrequent, noted in 8% of the female group and 3.8% of the male group. In conclusion, our study identified a profile of individuals with obesity who are at high cardiometabolic risk and would benefit from multi-professional interventions aimed at reducing their overall cardiovascular risk. **Keywords:** obesity; echocardiografy; bariatric.

METABOLISMO ÓSSEO E MINERAL

2038

USE OF PROTEIN SUPPLEMENTATION TO DELAY AGING SARCOPENIA: A SYSTEMATIC REVIEW

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Introduction: Proteins are essential for muscle building and maintenance, crucial for bodily movement and metabolism. With advancing age, there is typically reduced muscle anabolism and increased muscle catabolism, leading to sarcopenia – a progressive and generalized loss of skeletal muscle mass, increasing the risk of falls and health issues. Therefore, considering protein supplementation to delay sarcopenia is important. **Objective:** To analyze the effectiveness of protein supplementation in delaying aging sarcopenia. **Methods:** A systematic review was conducted based on the PRISMA system. Thirty-five studies indexed in the PubMed database were collected using the keywords "whey protein" AND "anabolic resistance" AND "aging". Inclusion criteria encompassed articles from the last 5 years in English and Portuguese, excluding those not aligned with the study objective and systematic reviews, resulting in 20 articles. **Results:** Studies included physically pre-conditioned and unconditioned elderly patients aged 50 to 70 years. It was noted that protein supplementation combined with resistance training increased lean mass percentage in the elderly population. Elderly males particularly benefited from protein supplementation, showing reduced inflammatory markers, increased muscular strength, and improved cognitive function. It was also observed that a high-fat diet does not impact skeletal muscle protein synthesis following protein intake, with questions raised regarding the relevance of this supplementation as no significant differences were demonstrated between the control group and those treated with whey protein. Nevertheless, literature affirms protein intake to be effective in enhancing muscular development potential, even in sedentary patients. **Conclusion:** In summary, protein supplementation combined with resistance training proves effective in mitigating sarcopenia effects in elderly populations, especially in males. This underscores the importance of protein supplementation as part of an integrated approach to muscular health during aging. **Keywords:** whey protein; aging; sarcopenia.

DIABETES MELLITUS

2039

DIABETES MELLITUS IN THE ELDERLY: TRENDS IN MORBIDITY AND MORTALITY IN BRAZIL FROM 2008 TO 2024

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Introduction: Diabetes mellitus (DM) is a group of chronic metabolic conditions characterized by elevated blood glucose levels, resulting from the body's inability to produce insulin, resistance to insulin action, or both. The overall prevalence of diagnosed diabetes increases with age, and the rate of increase over time has been higher in people over 65 years of age. **Objective:** Describe the sociodemographic profile of hospitalizations and deaths due to DM in the Brazilian population over 60 years old from January 2008 to May 2024. **Methods:** An ecological time-series study with a quantitative, descriptive, and exploratory approach was conducted using open data on hospital morbidity and mortality due to DM from 2008 to 2024. The data were obtained from the *Sistema de Informações Hospitalares do SUS* (SIH), organized into a *Microsoft Office Excel*® spreadsheet, and subsequently analyzed using *BioEstat*®. Mortality rates (MR) and incidence rate (IR) were calculated using intercensal projections from the do *Instituto Brasileiro de Geografia e Estatística* (IBGE). **Results:** The study revealed that Brazil recorded a total of 1.185.753 hospitalizations and 73.740 deaths due to DM, with an IR of 277,63/100.000 (±82,66) and a MR of 17,32/100.000 (±5,48). IR and MR were analyzed using Pearson's correlation test and showed a very strong significant correlation ($r = 0,99$; $p < 0,0001$). The Northeast Region had the highest prevalence of hospitalizations (34,50%), with an IR of 378,92/100.000 (±101,51). Regarding mortality, the highest number of deaths also occurred in the Southeast Region (37,79%), with an MR of 14,03/100.000 (±4,83). The paired non-parametric analysis of variance (Kruskal-Wallis test) indicated that the difference between the average number of deaths and hospitalizations for each Brazilian administrative region was significant ($p < 0,0001$). Regarding gender, a higher prevalence was observed in females for both hospitalizations and deaths, with 54,96% and 56,85% respectively. The IR was 276,88/100.000 (±106,21), while the MR was 17,81/100.000 (±6,34). The difference in hospitalizations and deaths by gender was not statistically significant, with alpha errors of 0,7435 and 0,7176 respectively. **Conclusion:** The results indicate that DM is a significant cause of hospitalizations and deaths in the elderly in Brazil. It is necessary to conduct further studies on this topic, focusing on the quality of care and the recording of these cases in health services. **Keywords:** diabetes mellitus; epidemiology; Brazil.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2040

DIAGNOSIS, PREVALENCE AND CLINICAL-METABOLIC RELATIONSHIP OF HYPOGONADISM IN CISGENDER MEN LIVING WITH HIV

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Introduction: Hypogonadism is common in men living with HIV (MLWHIV). However, its relationship with metabolic conditions, as well as its prevalence, is still poorly understood. **Objectives:** To investigate the prevalence of hypogonadism in a population of MLWHIV and its potential relationship with metabolic factors. **Methods:** In this prospective cross-sectional study, 99 MLWHIV (19-73 yrs, median 38 yrs) clinically stable, under ART, with normal pubertal development, were recruited from the Infectious Diseases outpatient clinic of a tertiary center. All patients responded to the ADAM questionnaire (AQ) to evaluate hypogonadism symptoms. Free T (cFT) was calculated according to the Vermeulen formula. Hypogonadism was defined as TT < 300 mg/dL and/or cFT < 6 ng/dL associated with suggestive symptoms and classified as hypo or hypergonadotropic according to LH levels. Anthropometric, clinical, metabolic and HIV-associated variables were evaluated. FIB-4 index were used to estimate liver fibrosis likelihood. HOMA-IR, TYG, VAI and LAP indexes were used as insulin resistance-related markers. **Results:** Average time of infection was 7 years (1-36 yrs). The prevalence of hypogonadism was 33.3%. As SHBG is frequently elevated in MLWHIV, the inclusion of cFT in the diagnosis criteria increased the prevalence of hypogonadism in 57.6%. The majority of the cases (78.3%) were hypogonadotropic hypogonadism. The ADAM questionnaire showed a sensitivity of 81.8% and specificity of 50%. Compared to eugonadal subjects, patients with hypogonadism were older ($p < 0.001$) and had a longer duration of infection (< 0.001), higher prevalence of hypertension ($p < 0.001$), dysglycemia ($p = 0.001$), higher triglyceride levels (154 [50-430] *vs.* 101 [42-605] mg/dL, $p < 0.001$). Hypogonadism was positively associated with elevated BMI (>25) ($p = 0.02$), increased abdominal circumference ($p = 0.013$), insulin resistance markers [HOMA-IR ($p = 0,021$), TYG ($p < 0,001$), VAI ($p < 0,001$) and LAP ($p < 0,001$)] and positive FIB-4 ($p = 0.001$). **Conclusions:** In this study, one third of MLWHIV had hypogonadism, mostly of central origin (hypogonadotropic). T deficiency was positively associated with a worse metabolic profile, including insulin resistance and liver fibrosis indirect markers. The AQ was a sensitive screening tool, with low specificity. In the investigation of hypogonadism in MLWHIV it is mandatory to evaluate SHBG and cFT, to avoid underdiagnosis of this important condition. **Keywords:** HIV; hypogonadism; metabolic syndrome.

OBESIDADE

2041

THE USE OF SEMAGLUTIDE AS COMPLEMENTARY THERAPY FOR HEART FAILURE IN PATIENTS WITH OBESITY: AN ANALYSIS OF CURRENT LITERATURE

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Introduction: Obesity is related to an increased risk of heart failure with preserved ejection fraction (HFpEF), triggering worse quality of life, greater symptom burden and more hospitalizations for this disorder. Given this, interventions targeting obesity have been attracted as a new treatment strategy for HFpEF, highlighting the use of semaglutide as a complementary therapy in this scenario. **Objective:** To investigate the scientific literature related to the use of complementary therapy with semaglutide for heart failure in obese patients. **Materials and methods:** This is a systematic review, carried out through the analysis of scientific productions with the help of the PRISMA method. The research used the MEDLINE database, using the descriptors "OBESITY", "SEMAGLUTIDE" and "HEART FAILURE", associated with the Boolean operator AND. Studies available in full and in the English language over the last 10 years were included. **Results and discussions:** After the established exclusion criteria: duplicate studies, unavailable in full or with thematic leakage and their category with the analysis of the level of evidence, the final corpus resulted in 17 publications out of the 54 initially found. Scientific evidence indicates that semaglutide, a glucagon-like peptide-1 (GLP-1) receptor agonist, is a promising therapy for patients with an obesity phenotype with cardiovascular disorders, especially heart failure with preserved ejection fraction (HFpEF). Research has shown that the loss of body weight and fat mass can favor the improvement of symptoms and physical limitations triggered by HFpEF. According to studies, the non-glycemic effects of semaglutide allow favorable hemodynamic actions such as decreasing ventricular filling pressures and improving cardiac function and, respectively, a positive impact on the physical function and quality of life of patients with HFpEF. **Conclusion:** Based on the studies, it is concluded that the treatment of obesity in patients with HFpEF is essential for a better prognosis and improvement in the functional status of these individuals. Therefore, GLP-1 analogues are potentially promising drugs for weight loss in obese or overweight adults and, consequently, favorable for clinical improvement, health status and exercise capacity in patients with HFpEF. **Keywords:** obesity; semaglutide; cardiac insufficiency.

ADRENAL E HIPERTENSÃO

2042

FUNCTIONAL ASSESSMENT OF ADRENAL INCIDENTALOMAS

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Introduction: Adrenal incidentaloma (AI) is an asymptomatic mass in the adrenal gland discovered by chance in imaging exams. Patients diagnosed with AI should undergo clinical, radiological and laboratory evaluations to determine functionality and nodule malignancy. The prevalence of AI is 5% in the general population and increases with advancing age. Regarding functionality, 80% to 90% are non-functional and among functioning tumors, the most common is autonomous cortisol production, corresponding to 5%. **Objective:** Functionality assessment of adrenal incidentalomas. **Methods:** Observational, cross-sectional and retrospective study with data analysis from medical records of patients with AI consulted between December 2022 and June 2024 in a single center. Functionality assessment was carried out: Hypercortisolism (serum cortisol after suppression test with dexamethasone 1 mg at 11PM and measuring in the following morning at 8AM: above 1.8 µg/dL); Hyperaldosteronism (evaluated in hypertensive patients, with serum aldosterone concentration ≥ 12.5 ng/dL and the plasma aldosterone to renin activity ratio (A/PRA) ≥ 30), after correction of hypokalemia, when it is present, and spironolactone and thiazide diuretics withdrawal for 3 to 4 weeks. The pheochromocytoma (presence of total plasma metanephrine levels exceeding 200 pg/mL, at least 2 to 4 times the upper limit of normal). In addition, total testosterone (male reference range (RR): 240 to 816 ng/dL and female RR: up to 63 ng/dL) and free testosterone (male RR: 131.0 to 640.0 pmol/L and female RR: 2.0 to 37.0 pmol/L) were evaluated. **Results:** 37 patients with AI were identified, with the mean age and SD: 60.5 ± 14.4 years. This sample is composed by 7 men (19%) and 30 (81%) women. Regarding functionality: 70.5% (n = 26) were non-functional. Among those functioning tumors (only found in women patients), 21.5% (n = 8) presented hypercortisolism and 11% (n = 4) hyperaldosteronism. There were no pheochromocytoma or hyperandrogenemia cases. **Conclusion:** Most AI showed non-functioning activity. Hypercortisolism was the commonest functional abnormality, followed by hyperaldosteronism. In this study, there were not pheochromocytoma or hyperandrogenic syndrome reports. **Keywords:** adrenal; incidentaloma; hypercortisolism.

ADRENAL E HIPERTENSÃO

2043

PRECOCIOUS PUBERTY RELATED TO CONGENITAL ADRENAL HYPERPLASIA DUE TO 21-HYDROXYLASE DEFICIENCY, CLASSIC SALT-WASTING FORM

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Case presentation: A.C., a 9-year-old female, with congenital adrenal hyperplasia due to 21-hydroxylase deficiency, salt-wasting form (CAH 21), is the second child of consanguineous parents and both her siblings, aged 2 and 11, also have CAH 21. Born at term with a weight (W) of 3315 g and height (H) of 49 cm, she presented with ambiguous genitalia (Prader 2). First and second newborn screening tests (Heel Prick Test) : 89.7 and 460 ng/mL (<20). At 20 days old: karyotype: 46 XX, Na+: 132 mEq/L, K+: 5 mEq/L, cortisol: 6.8 mcg/dL, LH: 13.2 UI/L, FSH: 32.9 UI/L, androstenedione (Δ4): >10 ng/mL (<1.5), total testosterone (TT): 0.1 ng/dL, renin activity: 19.4 ng/mL/h (0.2-6). Started on hydrocortisone acetate (10 mg/m²) and fludrocortisone 200 mcg/day. At 12 months: W: 9.8 kg and H: 77 cm. Tests (2016): LH: 0.5 UI/L, FSH: 3.4 UI/L, Δ4: 0.4 ng/mL, TT: 2.5 ng/dL, 17 OH progesterone: 100 ng/mL. The patient remained stable, with semi-annual follow-ups, adjusting hydrocortisone and fludrocortisone doses until 2018, after which she was lost to follow-up for 3 years. At 6 years old (2021): W: 29 kg, H: 130 cm, growth velocity (GV): 10 cm/year, and Tanner Stage M1 P3. Bone age X-ray: 11 years. Tests: LH: 0.7 UI/L, FSH: 4.6 UI/L, TT: 207 ng/dL. Cyproterone Acetate 50 mg/day was started on that medical consultation. In 2022: W: 37 kg, H: 142 cm, Tanner Stage M1 P3, GV: 14 cm/year, and bone age: 13 years with a chronological age of 7 years. Tests: LH: 7.7 UI/L, FSH: 11 UI/L, Δ4: 4.3 ng/mL, E2: 14, TT: 207 ng/dL. triptorelin 11.25 mg intramuscular every three months was started on. In 05/2024: W: 45.4 kg, H: 146 cm, and growth velocity: 4 cm/year, maintaining all medications and starting, on the appointment, somatropin 0.1 UI/kg. **Discussion:** The increased production of androgens in decompensated CAH 21 leads to gonadotropin-independent precocious puberty. Chronic hyperandrogenemia can secondarily activate the hypothalamic-pituitary-ovarian axis and cause gonadotropin-dependent precocious puberty. Both conditions are characterized by early onset, before 8 years, of pubertal features such as acne, axillary hair, pubic hair, increased growth velocity, and advanced bone age. Indeed, these factors can compromise the final height of these children and result in psychological changes secondary to the early onset of puberty. **Comments:** Early diagnosis and treatment of CAH 21 and precocious puberty prevent accelerated skeletal maturation and the impairment of expected final height. **Keywords:** adrenal hyperplasia; puberty; precocious.

ENDOCRINOLOGIA DO EXERCÍCIO

2044

HYPOGONADISM IN MALE ENDURANCE ATHLETES: A SYSTEMATIC REVIEW OF THE LITERATURE

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Introduction: The cultivation of body aesthetics and healthy habits are the basis for scientific research that investigates the physiology behind the physical capacity of athletes who practice high-endurance activities. In addition to the benefits to cardiovascular conditions and the hope of prolonging life expectancy, side effects to the body have come to light, such as sexual dysfunction, especially in males. Recognizing and diagnosing this hormonal disorder quickly is necessary to intervene and minimize the impact on athletes' sporting performance and quality of life. **Objective:** Analyze scientific articles and describe significant data on hypogonadism in male Endurance athletes. **Materials and methods:** Based on the PRISMA protocol for this systematic literature review and using the scientific databases PubMed and VHL, studies were selected and their lines of research that integrate the topic over the last 2 decades were described. According to eligibility criteria, forty-five scientific articles were found and twelve listed to fulfill the purpose of this work. **Results:** Men who practice resistance exercises have reduced serum testosterone concentrations, related to basal and/or pulsatile concentrations of prolactin, LH and GnRH; thus, establishing the lack of control of the reproductive system, through the hypothalamic-pituitary-gonadal axis. Evidence establishes dysfunction in the endocrine balance, directly or indirectly involving the production of gonadotropins and subsequent spermatogenesis. Furthermore, they point out that exercise-related male hypogonadism is limited to athletes who practice Endurance sports for long periods and under low energy availability. **Conclusion:** Research has been carried out based on endocrine disorders already known in females and the consequences of low energy availability in high-endurance athletes. The need for well-structured prospective studies to concisely define the pathophysiological mechanisms involved in hormonal dysfunction in male Endurance athletes is confirmed. **Keywords:** male hypogonadism; endurance exercise; endocrinology.

TIREOIDE

2045

THYROTOXIC CRISIS – REPORT OF 2 CASES WITH DIFFERENT OUTCOMES

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Case 1: W, 54y old, hypertensive and diabetic, using Levothyroxine 12.5 mcg/d after dental procedure, started feeling suddenly unwell. On admission, she was torporous, dyspneic, with hyperthermia and emesis. Amiodarone was administered for supraventricular tachycardia. He had been experiencing inappetence for 1m, losing 20 kg, dyspnea, chest pain and edema in his lower limbs. The patient evolves lethargic, with high ventricular response atrial fibrillation(AFARV), scoring > 45 points in Bursh-Wartfosky scale (EBW). Thermal control, esmolol, propylthiouracil (PTU), Lugol's solution, hydrocortisone and cholestyramine were started. Presented resolution of the thyrotoxic crisis (TC) and a drop in freeT4 (6.92 > 2.21) allowing the exchange of PTU for methimazole(MTZ) 20 mg/d. Definitive treatment with I-131 was carried. **Case 2:** W, 38 y old, hypertensive, unintentional loss of 20 kg in 3 m, brittle nails and hair loss. Evolved with palpitation, dyspnea, malaise, lower limb edema, paroxysmal nocturnal dyspnea, tremors and heat intolerance. EBW = 10 points, no previous thyroid disease, with a voluminous goiter, increased blood pressure levels, ocular proptosis, bilateral pretibial myxedema, onychodystrophy and fine tremor of the extremities. TSH 0.001, freeT4 12, totalT3 10 and TRAb26.85. Thyroid volume 52 cm^3, pseudonodules and signs of thyroiditis. Chest X-ray: enlargement of the right ventricle. Started MTZ 40 mg/d, metoprolol 200 mg/d. After an episode of pneumonia, developed CT scoring > 45 points in EBW, starting beta-blocker, MTZ, hydrocortisone. There wasn't time for Lugol's arrival and TRAb dosage. PTU wasn't initiated due to liver dysfunction, nor plasmapheresis due to clinical instability. There was an initial drop and, after infection, a rise in freeT4 (12 > 5.14 > 12), septic shock, kidney dysfunction and death. **Discussion:** CT is a rare condition and the most serious complication of hyperthyroidism, affecting approximately 1% of cases of thyrotoxicosis and mortality > 30%, even adequate therapy instituted in a timely manner. In the cases mentioned, they received different therapies for CT. In first, CT entered with complete therapy management. The second, an important infectious condition with rapid evolution that may have influenced the different outcomes. **Final comments:** Adequate management in an intensive care environment is crucial, both for the triggering factor and for CT and its complications, as this can be decisive in resolving the case. **Keywords:** thyrotoxic crisis; severe hyperthyroidism; cases with different outcomes.

METABOLISMO ÓSSEO E MINERAL

2047

EXPERIENCE WITH ROMOSOZUMAB THERAPY IN THE TREATMENT OF GLUCOCORTICOID-INDUCED SECONDARY OSTEOPOROSIS

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Case presentation: A 26-year-old man reached our bone metabolic disease clinic due to low bone mass and recurrent fractures. He had been diagnosed with adrenal insufficiency due to adrenal hypoplasia a few days after birth, presenting with seizures and recurrent hypoglycemia, with no bilateral adrenal at CT imaging. He was born at term but small for gestational age (1900 grams at birth). Since then, he has been on glucocorticoid (GC) therapy, using recommended doses. He is below his target height, reaching 158 cm height in adulthood and has a history of 3 low-trauma upper limb fractures. Additional causes of low bone mass were excluded. A lab evaluation showed a CTX of 0.716 ng/mL and a P1NP of 60 mcg/L. His baseline DXA showed a Z-Score of -4.0, -2.4, and -2.5 SD at Lumbar spine (LS), Femoral neck (FN), and Total hip (TH), respectively. In agreement with the patient, he was prescribed romosozumab (Romab) even though it was not approved for Glucocorticoid-Induced Osteoporosis (GIO). After 8 months, P1NP was 306 mcg/L, and CTX was 1.310 ng/mL. There was a 24% increase DXA at LS, 3.8% at FN, and 8.3% at TH, with no new fractures. **Discussion:** Adrenal Insufficiency is characterized by the inability of the glands to produce glucocorticoids, making it a potentially life-threatening condition. Thus, treating this condition involves the replacement of GC, and its chronic use can induce osteoporosis (GIO). This condition is usually treated with bisphosphonates. There is limited data on alternative drugs for these patients, especially regarding anabolic therapy. Romab, an anti-sclerostin antibody that stimulates bone formation and inhibits bone resorption, has shown to be more effective than placebo and alendronate for fracture prevention and superior to teriparatide for bone gain in postmenopausal osteoporosis. The 2022 Guideline for GIO included Romab as a second-line therapy for patients with a high risk of fractures. This clinical case reports a patient with GIO who showed exceptional bone gain with Romab, especially at the LS. As expected, there was a significant increase in P1NP, showing the anabolic effect of the drug. Interestingly, CTX also increased, an unexpected effect since the medication is also an antiresorptive. In any case, this does not seem to have affected the bone gain. **Final comments:** Romosozumabe may be effective for the treatment of GIO. New data is needed although the medication was already included in the new GIO Guidelines. **Keywords:** glucocorticoid-induced osteoporosis; romosozumab; glucocorticoid.

MISCELÂNEA

2048

DIAGNOSIS OF SARCOPENIA IN ELDERLY PATIENTS LIVING WITH HIV/AIDS

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Introduction: Sarcopenia is a syndrome characterized by progressive and generalized loss of mass with impairment of skeletal muscle strength, associated with physical disability, poor quality of life and morbidity, with greater prevalence in older populations. With the increase in life expectancy of patients living with HIV, the frequency of sarcopenia in this population is gaining relevance as a change in health status, which may impact their clinical and survival outcomes. **Objective:** To evaluate its frequency in patients followed up at the Immunology outpatient clinic for chronic treatment and living with HIV and to compare the characteristics of patients with and without sarcopenia regarding the presence of changes in clinical, epidemiological and laboratory parameters: sex, age, weight, BMI, % body fat, % muscle mass, SMI, BMR, waist circumference, diagnosis time, CD4 and CD8, in addition to specific tests: Hand-Grip and Time Up&Go and a nutritional assessment using a 24-hour recall based in macronutrients. **Material and methods:** This is an observational and cross-sectional study, on a sample of 80 patients living with HIV aged > 60 years, of both sexes. The diagnosis of sarcopenia followed the guidelines and criteria of the European Working Group on Sarcopenia in Older People. The data after analysis were compared and considered $p < 0.05$ as significant. **Results:** The diagnosis of sarcopenia was made in 14 individuals (17.5%). Among these, 4 (28.6%) in the severe form and 10 (71.4%) in the mild form. Patients with sarcopenia were older; a significant correlation was observed between a lower BMI, a larger waist and waist/hip ratio ($p < 0.05$) and a lower % of fat. Another relevant data was a lower CD4 cell count in these patients ($p < 0.05$), a correlation was observed between the use of protease inhibitors and the risk of sarcopenia (OR for this group = 6.37, with a CI 95% from 1.3 to 30.7) indicating a considerable increase in risk. **Conclusion:** The diagnosis of sarcopenia showed a low frequency in the studied population (17.50%), but not different from the literature; as the tools used for this purpose are easy-to-evaluate, non-invasive and accessible tests, it is recommended that this population should be assessed for this risk; our data suggest the relationship between body composition, retroviral regimen and CD4 count as risk factors for the occurrence of sarcopenia; a more detailed analysis, with a larger population sample, is necessary to confirm these findings. **Keywords:** sarcopenia; HIV; AIDS.

NEUROENDOCRINOLOGIA

2049

SPORADIC PANCREATIC INSULINOMA PRESENTING WITH SEIZURES: CASE REPORT

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Introduction: Insulinomas are rare neuroendocrine tumors, with an annual incidence of 0.4/100.000. They commonly cause hypoglycemia and, in some patients, weight gain and, less frequently, seizures. An unusual presentation of these tumors can delay diagnosis and increase morbidity and mortality, therefore it's important to describe different presentation forms. **Case presentation:** We report a case of insulinoma in a 50-year-old man presenting with generalized seizures. He was initially treated with carbamazepine, on an outpatient basis, but without improvement. He was admitted to the emergency service with status epilepticus, refractory to the use of benzodiazepines and intravenous anticonvulsants, with control only after glucose administration. Throughout hospitalization, persistent hypoglycemia, especially postprandial, associated with grade II of obesity, raised suspicion of insulinoma. After a prolonged 72 hour fast, he presented with an elevated serum C-peptide level. Abdominal MRI showed a solid pancreatic nodule compatible with insulinoma. He underwent distal pancreatectomy with complete resolution of seizures and hypoglycemia, progressing to weight loss of 20 kg in the subsequent year. **Discussion:** The suspected diagnosis of insulinoma was established by the presence of Whipple's triad associated with weight gain. The elevated serum level of C-peptide after prolonged fasting corroborated the diagnosis. MRI is one of the methods of choice for locating neuroendocrine tumors, and resulted in a diagnosis in this patient. The treatment of choice is surgical, after which most patients are cured of the disease. Age and pathology are compatible with sporadic insulinoma, since insulinomas associated with multiple endocrine neoplasia type 1 (MEN-1) are often multicentric. **Final comments:** Pancreatic insulinomas are benign tumors that are curable in 90% of cases. However, they can be fatal if not correctly and quickly diagnosed. Premature and erroneous diagnosis of epilepsy or psychiatric disorder can delay treatment. Therefore, to increase the degree of suspicion, insulinomas should be included in the differential diagnosis of patients presenting neuroglycopenic and sympathetic symptoms. **Keywords:** insulinoma; Whipple's triad; seizures.

NEUROENDOCRINOLOGIA

2050

PHEOCHROMOCYTOMA: THE CHALLENGER OF CLINICAL DIAGNOSIS

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Introduction: Pheochromocytoma is a rare neuroendocrine tumor, with a wide clinical presentation, frequently underdiagnosed due to it's inespecific symptoms, that needs a critical view among the general clinicians. As it brings potentially fatal complications, early diagnosis is imperative for definitive treatment, the surgical excision. Pre- and post-operative preparation requires a tertiary level of complexity. **Methods:** The study aims to present a series of four cases of pheochromocytoma diagnosed and treated in a general hospital in Brazil's countryside, with an emphasis on it's clinical presentation and diagnostic evaluation. **Results:** The majority of the sample was male, mean age of 43 years. The symptoms were variable and inespecific among the cases, including: headache, palpitations, tremors, anxiety, irritability, sustained resistant or paroxysmal arterial hypertension, postural hypotension, and seizures secondary to hypertensive encephalopathy. The initial screening test was performed by measuring plasma metanephrine levels followed by imaging methods. All of them initially received alpha-blockers. Laparoscopic adrenalectomy was the surgical method used. One of the patients had intraoperative complications with an adrenergic crisis and the need for mechanical ventilation. In the late postoperative follow-up, the four patients achieved remission of their initial symptoms. **Conclusion:** The early diagnosis of pheochromocytoma has major influence in prognosis and frequently needs to be done by general clinicians, so it's necessary to emphasize the possibility of it's inespecific presentation, as to improve morbidity and mortality rates. **Keywords:** pheochromocytoma; clinical presentation; neuroendocrine tumor.

TIREOIDE

2051

COMPARISON OF MORTALITY AND CARDIOVASCULAR MORBIDITY FOLLOWING TREATMENT FOR HYPERTHYROIDISM: A BAYESIAN NETWORK META-ANALYSIS

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Introduction: Therapeutic approaches for the treatment of hyperthyroidism, namely antithyroid drugs, radioiodine therapy and thyroidectomy, aim to restore normal thyroid function while minimizing harmful effects. However, the difference in outcomes related to mortality and cardiovascular diseases between them remains controversial. **Objectives:** This network meta-analysis aimed to compare mortality and cardiovascular morbidity across three treatment options for patients with hyperthyroidism. **Methods:** This research was performed according to the PRISMA guidelines. PubMed, Embase, Cochrane Central, and Web of Science databases were comprehensively searched for randomized controlled trials and cohort studies that compared any of the three supracited therapeutic approaches between themselves or non-hyperthyroid controls. A Bayesian model was used to estimate each comparison's odds ratio (OR) and 95% credible intervals (CrI). For each endpoint, the model with the smaller deviance information criterion between fixed and random effects was chosen. Therapies were ranked according to the surface under the cumulative ranking curve area (SUCRA). **Results:** 9 cohort studies comprising 226,267 hyperthyroid patients and 488,732 non-hyperthyroid controls were included. Thyroidectomy achieved lower all-cause mortality ratios compared to antithyroids (OR 0.308; 95% CrI 0.070 to 1.013) and radioiodine (OR 0.323; 95% CrI 0.088 to 1.003), although not statistically significant. No difference was found between treatments for atrial fibrillation (AF), although thyroidectomy achieved numerically lower ratios compared to antithyroids (OR 0.420; 95% CrI 0.106 to 1.360) and radioiodine (OR 0.533; 95% CrI 0.159 to 1.504). For major acute cardiovascular events (MACE), there was little difference between thyroidectomy in comparison to antithyroids (OR 1.011; 95% CrI 0.415 to 2.598) and radioiodine (OR 0.979; 95% CrI 0.437 to 2.395). Lastly, regarding heart failure (HF), statistically significant differences were observed between thyroidectomy (OR 0.383; 95% CrI 0.241 to 0.594) and radioiodine (OR 0.568; 95% CrI 0.333 to 0.962) compared to antithyroids. Thyroidectomy was deemed as the most likely best treatment with respect to all-cause mortality (SUCRA 97.41%), AF (SUCRA 65.34%), and HF (SUCRA 65.74%), while antithyroids were the most likely best for MACE (SUCRA 52.49%). **Conclusion:** Further studies with proper designs are needed to verify the nature and truthfulness of these associations. **Keywords:** hyperthyroidism; mortality; cardiovascular diseases.

ENDOCRINOLOGIA PEDIÁTRICA

2052

CONGENITAL LIPODYSTROPHY ASSOCIATED WITH BONE CHANGES: CASE REPORT

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Berardinelli-Seip congenital lipodystrophy (BSCL), is a rare autosomal recessive disease, with a low prevalence of approximately 1:10,000,000 live births. In the state of Mato Grosso do Sul, only 2 were found, 1 of which was described in this report. This study seeks to report the patient, male, 17 years old, with no family history, with the patient and his brother, male, 11 years old, being the only cases. At the age of 12, he began to experience pain in the joints of his hands, feet and lower back, and has been under follow-up with an orthopedist since then. To mitigate the arthralgia, stretching exercises were requested, especially Pilates, and the use of Leptin continued, a medication which he had been using since 2017. There was an improvement in the pain and considerable stabilization of height growth. In 2023, bone densitometry was performed with normal results. However, after 3 months, the patient suffered a fall from his own height, resulting in a fracture of the left proximal femur, requiring surgery with a titanium rod implant. Laboratory tests were carried out which showed calcium deficiency. Since then, parenteral replacement has been carried out. Previous x-ray and pathology showed lamellar trabeculae showing areas of devitalization and absence of osteoid matrix. He is currently taking leptin, metformin, fibrate and orlitrat. The objective of this report is to evaluate the relationship between lipodystrophy and bone changes. Patients with Berardinelli-Seip syndrome present high height growth in the first years of life and muscular hypertrophy. A polycystic appearance is observed in 8-20% of cases on plain x-rays in the epiphyseal or metaphyseal location of long bones after 10 years of life. However, assessment using bone densitometry demonstrates normal or high bone mineral density. Therefore, it is not necessary to screen with bone densitometry, tomography and radiography of long bones in all patients who have this syndrome due to the fact that the patient described presents differently from other literature. **Keywords:** congenital lipodystrophy; Berardinelli syndrome; bone changes.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2055

RISK OF CARDIOVASCULAR DISEASES ASSOCIATED WITH INFERTILITY OR USE OF ASSISTED REPRODUCTIVE TECHNOLOGIES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: The use of assisted reproductive technologies (ARTs) is steadily increasing worldwide. The cardiovascular diseases outcomes and the extent to which infertility treatment in it, remains unclear. While ARTs offer hope to many couples struggling with infertility, it is crucial to consider the potential long-term health implications, particularly concerning cardiovascular diseases. Ongoing research and careful monitoring of patients undergoing these treatments are essential to ensure their safety and well-being. **Objective:** The objective of this meta-analysis is to analyze the risk of cardiovascular diseases in women who underwent treatment with assisted reproductive technologies. **Methods:** PubMed, Embase, and Cochrane databases were searched for randomized controlled trials (RCTs) and observational studies comparing risk of cardiovascular diseases in women who underwent treatment with assisted reproductive technologies to women that didn't undergo assisted reproductive technologies. A random-effects model was employed to compute the Odds Ratio (OR) with 95% confidence interval (CI). Statistical analysis was performed using R software 4.3.1. **Results:** A total 8 studies were included, which comprissed over 1,600.000 patients. Our meta-analysis showed that there was no significant risk of develop any cardiovascular diseases in patients that underwent assisted reproductive technologies when compared to patients that did not undergo the treatment (OR 10.73; 95%CI 0.62- 186.58; P = 0.1; I^2 = 100%). Regarding the risk of pre-eclampsia, there was a statistically significant difference between the ART group and the control, favoring the ART group (OR 0.42, 95% CI 0.33-0.53; P < 0.000001; I^2 = 87%). **Conclusion:** This meta-analysis of 8 studies demonstrated that there was no difference between the group receiving assisted reproductive technologies and those who did not regarding the risk of developing any cardiovascular diseases. **Keywords:** assisted reproductive technologies; meta-analysis; cardiovascular diseases.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2057

ASSOCIATION OF EMBRYO TRANSFER TYPE WITH INFERTILITY IN ENDOMETRIOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Endometriosis is a chronic, inflammatory condition characterized by the presence of endometrial-like tissue outside the uterus, and it is associated with infertility. Endometriosis can impair ovarian function, oocyte quality, embryo development, and implantation, contributing to infertility. Treatment options for endometriosis-associated infertility include surgical and assisted reproductive technologies. In the context of endometriosis, the choice between fresh embryo transfer (ET) and frozen embryo transfer (FET) can significantly impact reproductive outcomes, such as clinical pregnancy rate, live birth rate and miscarriage rate. **Objective:** This aims to evaluate and compare the reproductive outcomes associated with FET *versus* ET in women with endometriosis undergoing assisted reproductive technology. **Methods:** We conducted a comprehensive search of medical databases including PubMed, Cochrane, and Scopus to identify pertinent studies focusing on the association of embryo transfer type with infertility in endometriosis patients. We collected data on Clinical Pregnancy Rate, Live Birth Rate and Miscarriage Rate. The DerSimonian-Laird random-effect model was used to compute odds ratio (OR) with 95% of confidence interval (CI). The study heterogeneity was accessed by I^2 statistics. All statistical analyses were performed using the R statistical software (version 4.3.2). **Results:** A total of 6 studies were selected, of which a number of 2.828 patients were included, of whom 1.585 (56%) were from FET. Miscarriage (OR 0.76; 95% CI 0.54 - 1.07; p = 0.14; I^2 = 19%) analysis was performed using a fixed-effect model and no statistical evidence was observed. However, live birth rate (OR 1.58; 95%CI 1.12 - 2.23; p < 0.01; I^2 = 52%) and clinical pregnancy rate (OR 1.37; 95% CI 1.01 - 1.85; p = 0.04; I^2= 66%) were analyzed with random effect due to high heterogeneity, both had significant statistical evidence. **Conclusion:** This study observed that between fresh embryo transfer (ET) and frozen embryo transfer (FET) in patients with endometriosis, Clinical Pregnancy Rate and Live Birth Rate showed more statistical evidence towards FET. **Keywords:** embryo transfer; infertility; endometriosis.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

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IMPACT OF ENDOMETRIAL RECEPTIVITY ANALYSIS ON PREGNANCY OUTCOMES IN PATIENTS UNDERGOING EMBRYO TRANSFER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: The importance of endometrial receptivity in embryo transfer, in the context of in vitro fertilization (IVF), cannot be overstated. Successful implantation requires precise synchronization between the developing embryo and the receptive endometrium. Failure to achieve this synchrony is a major cause of implantation failure and infertility. Traditional methods to assess endometrial receptivity include histological evaluation via endometrial biopsy, but newer techniques such as the Endometrial Receptivity Array (ERA) evaluates the expression of 238 genes to diagnose a receptive endometrium, allowing for personalized timing of embryo transfer, which has shown promise in improving implantation rates in patients with recurrent implantation failure. **Objective:** To evaluate the impact of endometrial receptivity analysis, particularly using the ERA, on pregnancy outcomes in patients undergoing embryo transfer. **Methods:** We conducted a comprehensive search of medical databases including PubMed, Cochrane, and Scopus to identify pertinent studies focusing on the impact of endometrial receptivity analysis in patients undergoing embryo transfer. We collected data on Clinical Pregnancy Rate and Implantation Rate. Statistical analysis was performed in R software 4.3.2. A DerSimonian Laid random-effects model was employed to compute risk ratios (RR) with 95% confidence intervals (CI). A p-value of < 0.05 was considered statistically significant. Heterogeneity was examined with the Cochran Q test, prediction interval and I2 statistics. **Results:** We included 6 studies involving 2361 patients, of whom 389 (16,47%) was submitted through the Endometrial analysis. Compared with the Control, there was a statistically significant difference between groups tending for the intervention of the analysis of endometrium in a rise of clinical pregnancy (RR 1,57; 95% CI (0,71;3,48); $p < 0.01$; $I^2 = 95\%$), which was also demonstrated with the analysis of a higher implantation rate in the intervention group (RR 1,06; 95% CI (0,71;1,58); $p = 0,05$; $I^2 = 61\%$). Some considerations also need to be taken, as a high heterogeneity was found in our results. In that context, we performed a "leave-one-out" analysis that showed that the major part of this heterogeneity was a result of the inclusion of the Bergin (2021) trial. **Keywords:** endometrial receptivity; embryo transfer; pregnancy.

MISCELÂNEA

2059

METABOLIC EFFECTS OF FIBROBLAST GROWTH FACTOR-21 ANALOGUES IN PATIENTS WITH METABOLIC SYNDROME: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Fibroblast growth factor 21 (FGF-21) has been shown to improve lipid and glucose metabolism and energy expenditure. The FGF-21 analogues emerged as a promising treatment avenue for critical components of metabolic syndrome, such as metabolic dysfunction associated steatohepatitis, hypertriglyceridemia, diabetes, and obesity. However, their potential effects remain unclear. **Methods:** We systematically searched PubMed, Web of Science, and Cochrane databases, from inception to January 2024, only for randomized controlled trials (RCT). Statistical analysis was performed in R software 4.3.1. A random-effects model was employed to compute mean differences (MD) and risk ratios (RR) with 95% confidence intervals (CI). A p-value of < 0.05 was considered statistically significant. Heterogeneity was examined with the Cochran Q test, prediction interval and I^2 statistics. The results were reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement guideline. The protocol was prospectively registered in PROSPERO under CRD42023493083 identification number. Objectives: We aimed to perform a meta-analysis exploring the effects on glycemic control and lipid profile of FGF-21 analogues when compared to placebo. Results: A total of 15 RCTs with 1,427 patients were included, of whom 1038 (72.7%) were randomized to FGF-21 analogues therapy. The mean age was 55 years and the mean body mass index (kg/m^2) was 35.2. Over a mean follow-up time of 20.8 weeks, the FGF-21 group presented a significant decrease in body weight (MD -0.75%; 95% CI -1.25 to -0.24; $p = 0.004$; $I^2 = 0\%$), serum trigliceryde (MD -24.85%; 95% CI -32.41 to -17.28; $p < 0.001$; $I^2 = 64\%$), LDL-C (MD -5.92%; 95% CI -9.77 to -2.06; $p = 0.003$; $I^2 = 29\%$), nonHDL-C (MD -10.65%; 95% CI -14.13 to -7.17; $p < 0.001$; $I^2 = 0\%$) and a significant increase in HDL-C (MD 11.72%; 95% CI 7.68 to 15.76; $p < 0.001$; $I^2 = 73\%$). Despite of this, the FGF-21 analogues caused nonsignificant decreases in HOMA-IR (MD -1.38; 95% CI -4.69 to 1.92; $p = 0.412$; $I^2 = 85\%$), HbA1c (MD -0.17%; 95% CI -0.35 to 0.01; $p = 0.065$; $I^2 = 67\%$), plasma glucose (MD -0.45 mg/dL; 95% CI -3.99 to 3.08; $p = 0.802$; $I^2 = 15\%$), plasma insulin (MD -7.24%; 95% CI -19.16 to 4.68; $p = 0.234$; $I^2 = 0\%$) and C peptide (MD -0.37 nmol/L; 95% CI -0.86 to 0.10; $P = 0.126$; $I^2 = 78\%$). **Conclusions:** In conclusion, the use of FGF-21 analogues led to a significant improvement in the lipid profile. However, there was no significant enhancement in glycemic control. Keywords: fibroblast growth factor 21; FGF-21 analogues; metabolic syndrome.

MISCELÂNEA

2060

THE EFFECTS OF FIBROBLASTS GROWTH FACTOR-21 ANALOGUES IN PATIENTS WITH METABOLIC DYSFUNCTION ASSOCIATED STEATOHEPATITIS (MASH): A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Fibroblast growth factor 21 (FGF-21), has been proposed to improve liver histologic features, hepatic steatosis and markers of inflammation and fibrosis, thus emerging as a treatment avenue to metabolic dysfunction associated steatohepatitis (MASH). However, the potential effects of FGF-21 analogues remain unclear. Objectives: We aimed to perform a meta-analysis exploring the effects on liver of FGF-21 analogues compared to placebo. Methods: We systematically searched different databases for randomized controlled trials (RCT): PubMed, Web of Science, Cochrane – from inception to January 2024. Statistical analysis was performed in R software 4.3.1. A random-effects model was employed to compute mean differences (MD) and risk ratios (RR) with 95% confidence intervals (CI) for continuous and binary endpoints, respectively. A p-value of < 0.05 was considered statistically significant. Heterogeneity was examined with the Cochran Q test, prediction interval and I^2 statistics. The results were reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement guideline. The protocol was registered in PROSPERO (CRD42023493083). **Results:** A total of 12 RCTs with 1235 patients were included, of whom 852 were randomized to FGF-21 therapy. The mean age was 54 years and the mean BMI was 39.1. Over a mean follow-up time of 31.667 weeks, the analysis showed that while the ≥ 30% reduction in hepatic fat fraction (HFF) (RR 3.12; 95% CI 2.03 to 4.83; $p < 0.000001$; $I^2 = 39\%$) and the fibrosis improvement in ≥ 1 stage without worsening of MASH (RR 1.77; 95% CI 1.12 to 2.79; $P = 0.0145$; $I^2 = 29\%$) were significantly higher in patients treated with FGF-21 analogues compared with placebo, the higher MASH resolution without worsening of fibrosis (RR 2.48; 95% CI 0.87 to 7.08; $P = 0.090$; $I^2 = 60\%$) in FGF-21 group wasn't statistically significant. The FGF-21 group also presented significantly mean decreases in liver stiffness (MD -2.10 KPa; 95% CI -3.53 to -0.68; $p = 0.004$; $I^2 = 94\%$), HFF (MD -40.26%; 95% CI -63.01 to -17.51; $p < 0.001$; $I^2 = 97\%$), ALT (MD -19.31%; 95% CI -28.84 to -9.77; $p < 0.001$; $I^2 = 63\%$), AST (MD -19.32%; 95% CI -28.53 to -10.11; $p < 0.001$; $I^2 = 59\%$), Pro-C3 (MD -13.65%; 95% CI -21.93 to -5.38; $p = 0.001$; $I^2 = 81\%$). **Conclusions:** In conclusion, FGF-21 analogues significantly improves liver features of inflammation and fibrosis, however there were nonsignificant improvement regarding MASH resolution without worsening of fibrosis outcome. Keywords: metabolic dysfunction associated steatohepatitis; fibroblast growth factor 21; FGF-21 analogues.

NEUROENDOCRINOLOGIA

2061

LATE DIAGNOSIS OF CONGENITAL PANHYPOPITUITARISM AND ITS IMPLICATIONS

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Case presentation: A 26-year-old female patient, single, born and resident in Maceió/Alagoas, Christian, sought the endocrinology office for follow-up of hypothyroidism. She complained of irregular menstrual cycle, alopecia, brittle nails, and asthenia. She reported using GH in childhood due to short stature and primary amenorrhea. She was being followed up for hereditary hemochromatosis (H63D mutation) with the hematologist with a recent diagnosis. She denied allergies, surgeries, or other comorbidities. She was using Levothyroxine 62.5 mcg/day. On physical examination, the absence of female secondary sexual characteristics was striking, such as no hair in the pubic or armpit regions, in addition to underdeveloped breasts. According to the exams on February 13, 2023, she had a cortisol of 1.6; vit. D 19; FSH 2.97; LH 1; Prolactin 13.3; Estradiol 5; TSH 3.3; T3 109.1. Very small uterus and ovaries were found, as well as signs suggestive of hypogonadotropic hypogonadism on pelvic and transvaginal ultrasound on June 23, 2023. Magnetic resonance imaging (MRI) of the sella turcica revealed hypoplasia of the adenohypophysis and ectopic neurohypophysis, positioned in the hypothalamic region, with agenesis of the infundibular stalk. Thus, the diagnosis of panhypopituitarism was confirmed. In time, during the endocrinological follow-up, the patient suddenly presented an episode of a psychotic outbreak of a religious nature for the first time, with the possibility of iron impregnation in the basal ganglia being raised and a cranial MRI being requested for diagnostic conclusion. **Discussion:** Hypopituitarism is defined as a total or partial defect of the pituitary gland. Among the etiologies, they can be grouped as idiopathic, genetic or acquired. In the case presented, the cause is due to the deviation of the midline and ectopia of the gland. The diagnosis of this pathological entity is based on laboratory and clinical criteria, and its hallmark is the deficit in the synthesis of adenohypophyseal hormones. Treatment is individualized according to the type of deficiency of each patient, the most common being FSH, LH, ACTH, TSH and GH. **Final comments:** in view of the above, hypopituitarism should be considered among the possibilities in the investigation of developmental delays. In the case presented, the diagnosis was made late, resulting in irreparable damage to the patient, whether from a social, physical or psychological point of view. **Keywords:** hypopituitarism; neurohypophysis ectopia; hemochromatosis.

METABOLISMO ÓSSEO E MINERAL

2062

BEYOND BONE EFFECTS OF USING ZOLEDRONATE IN WOMEN WITH OSTEOPOROSIS OR OSTEOPENIA POSTMENOPAUSA OLDER THAN 65 YEARS: A SYSTEMATIC REVIEW

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Introduction: Bisphosphonates are a class of drugs used to inhibit bone resorption. Within this class, zoledronic acid, or zoledronate, exhibits the highest potency and is typically used by women over the age of 65 with bone disorders, including osteoporosis and osteopenia, especially post-menopause. Therefore, it is crucial to understand how this drug impacts the lives of older women. **Objective:** To evaluate the effects of zoledronate in postmenopausal women over the age of 65, beyond bone resorption. **Methods:** This is a systematic review based on the PRISMA protocol, conducted using the Embase and MedLine databases with the keywords "zoledronate" AND "older women" AND "osteoporosis" OR "osteopenia". The inclusion criteria were original articles in English published between 2018 and 2024. Review studies were excluded. **Results:** A total of 17 articles were found, and after applying the inclusion and exclusion criteria, 4 articles were selected for full reading. The 4 articles covered the same sample of 2000 women over 65 years old with osteopenia or osteoporosis. In one study, immunological effects were observed with a 26% reduction in lower respiratory tract infections in those who used zoledronate. Additionally, another study evaluated height changes in women with and without a history of bone fractures, showing less height loss in those who did not suffer fractures and used this drug. Moreover, a third included article noted differences in body composition for those who used zoledronate, with greater lean mass loss and stabilization of fat mass in users of this bisphosphonate, a change considered favorable for better bone health. Furthermore, reductions in cardiovascular events, neoplasms, and mortality were also noted in those who used zoledronate. **Conclusion:** It is evident that there are extra-skeletal impacts from the use of zoledronate in this population, which are relevant to the quality of life of this demographic. It is also highlighted that further studies should observe and investigate these effects more deeply to improve understanding and application in clinical practice. It is worth mentioning that the articles came from the same group of researchers, limiting the diversity of findings, thus being a focus for new studies to investigate. **Keywords:** zoledronate; osteoporosis; osteopenia.

OBESIDADE

2063

PARTIAL LIPODYSTROPHY ASSOCIATED WITH MACROGLOSSIA: A NEW VARIANT?

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Case presentation: A 55-year-old female patient with liver cirrhosis due to metabolic steatohepatitis and dyslipidemia (hypertriglyceridemia and low HDL) was referred for lipodystrophy characterized by atypical marked abdominal adiposity starting at age 50. Other causes of liver disease were excluded, and liver biopsy showed stage 4 fibrosis and > 66% hepatic steatosis. Her liver disease was well controlled (MELD-NA 8, Child-Pugh 5A) with no ascites or significant masses on abdominal MRI. She complained of macroglossia, confirmed on physical examination, which significantly affected her quality of life. There was no family history of similar cases. Anthropometric evaluation revealed a thigh skinfold thickness of 26 mm and a Körperbau index of 1.06. Dual-energy X-ray absorptiometry (DEXA) showed a fat mass ratio of 0.98% and 31% lower limb fat. However, she had marked atypical abdominal adiposity with a waist circumference of 116 cm. A facial MRI ruled out lingual lipomatosis, showing normal oral cavity structures and no significant fat deposition in the tongue. GH and IGF-1 levels were normal. **Discussion:** Partial lipodystrophy is a rare condition characterized by reduced adiposity in the lower limbs with variable fat accumulation in other body regions, often associated with early metabolic complications such as diabetes, hypertriglyceridemia, severe insulin resistance, and metabolic steatohepatitis. It can be inherited or acquired. Phenotypically, acromegaloid features are often observed due to insulin action on the IGF-1 receptor, given severe insulin resistance and compensatory hyperinsulinemia. This study aimed to describe a case of atypical lipodystrophy with marked abdominal adiposity, peripheral fat reduction in lower limbs, macroglossia, and advanced metabolic liver disease (F4), with negative genetic testing for pathogenic variants associated with lipodystrophies. **Conclusion:** This is an unprecedented case of partial lipodystrophy associated with macroglossia and severe hepatic metabolic outcomes. Such an association suggests the occurrence of atypical forms of the disease and underscores the importance of detailed clinical examination and consideration of insulin resistance stigmata in the evaluation of suspected cases. **Keywords:** partial lipodystrophy; macroglossia; abdominal adiposity.

DIABETES MELLITUS

2064

PREVENTING PREGNANCY IN ADOLESCENTS WITH DIABETES MELLITUS: ARE WE DOING IT RIGHT?

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Introduction: Diabetes mellitus (DM) is the direct cause of 2.3 million deaths/year in the female population globally and two out of five women with DM are of reproductive age. Prevention of unplanned pregnancies is essential in women with DM to avoid maternal-fetal complications. Long-acting reversible contraceptive methods (LARCs), such as intrauterine devices and the etonogestrel implant, are effective and safe, being the most suitable for preventing pregnancy in adolescents and in women with inadequate glycemic control and chronic complications or comorbidities. **Objective:** To describe the contraceptive method used by adolescents (10-18 years old) with DM treated at a reference center for the treatment of children and adolescents with DM in southern Brazil. **Material and method:** Cross-sectional study developed through review of medical records to collect clinical data and interview using a structured questionnaire. It was approved by the ethics committee number: 58015622.8.3001.5530. **Partial results:** Of the 373 adolescents with DM to be included in the research, 190 were interviewed so far. The mean age was 13.82 ± 2.68 years old; 140 (74%) had menarche, whose mean age was 11.72 ± 1.43 years old. Thirty-nine (20,5%) had started sexual intercourse, with a mean age at onset of 15.41 ± 1,35 years old. Of the 51 using contraceptive methods, 33 (65%) received a prescription from a medical professional and 18 (35%) had started using contraceptive methods without professional evaluation. The contraceptive methods used are: combined oral contraceptives 29 (57%); male condom 7 (13,8%), quarterly injectable progesterone 7 (13,8%); injectable combined contraceptive 5 (9,7%); etonogestrel implant 3 (5,7%). There were the one reports of a pregnancy among the interviewees. **Conclusion:** Although almost all adolescents with DM who had sexarche were using contraceptive methods only three were using a LARC, which would be the most appropriate due to its high efficacy and safety. Many were using contraceptive methods without a prescription from a health professional. The data reinforce the importance of including the topic of contraception and pregnancy planning in routine consultations for adolescents with DM from the onset of puberty, as well as public policies that expand access to LARCs for this population. **Keywords:** contraception; diabetes mellitus; adolescents.

METABOLISMO ÓSSEO E MINERAL

2065

PROFILE OF PATIENTS WITH HYPOPARATHYROIDISM FOLLOWED UP AT A UNIVERSITY GENERAL ENDOCRINOLOGY CLINIC IN CARIRI CEARENSE

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Introduction: Hypoparathyroidism is a disorder characterized by parathyroid hormone (PTH) deficiency and/or resistance, accompanied by hypocalcemia and hyperphosphatemia. Studies indicate that the prevalence varies between 20 and 30 cases per 100,000 inhabitants. The main etiology is post-operative thyroidectomy (iatrogenic) and the most common clinical manifestations are related to increased neuromuscular excitability. **Objectives:** To assess the epidemiological profile of patients with hypoparathyroidism seen at the general endocrinology outpatient clinic of a medical school in the Cariri-CE region. **Methods:** This is a descriptive, cross-sectional study based on data collection from the medical records of patients with hypoparathyroidism at the clinic. **Results:** Three patients took part in the study, all female, aged between 40 and 50 years (44.66 ± 4.11 years) at diagnosis. 66.6% had an iatrogenic etiology, after surgery for papillary thyroid carcinoma, and 33.3% had an idiopathic etiology. With regard to the clinical picture of the pathology, 66.6% had paresthesia in the upper and lower limbs, 66.6% fatigue, 66.6% alopecia, 66.6% drowsiness, 66.6% arthralgia, 33.3% muscle spasms in the upper limbs, 33.3% cramps, 33.3% tremors in the upper limbs, 33.3% chest pain and 33.3% mood swings. The patients had PTH levels below 10.4 pg/mL (8.66 ± 1.3 pg/mL). Of the patients evaluated, all are under clinical treatment with calcitriol, cholecalciferol and calcium carbonate, of which the daily doses vary between 0.50 and 0.75 mcg, 1,000 and 1,200 IU, 800 and 1,800 mg, respectively. **Conclusion:** Hypoparathyroidism is a relatively rare condition that can affect the quality of life of individuals who have it. According to the literature, female patients were the most affected, accounting for 100% of the cases, with iatrogenic causes due to treatment for papillary thyroid carcinoma being the most common, with a prevalence of 2:1. However, the prevalent age group for clinical manifestation and diagnosis of the disease was under 50, which is earlier than described in the literature. Furthermore, all the patients had similar symptoms to those described in the literature. **Keywords:** hypoparathyroidism; epidemiology; parathyroid.

DIABETES MELLITUS

2066

ARTIFICIAL INTELLIGENCE MODELS FOR HYPOGLYCEMIA PREDICTION IN TYPE 1 DIABETES: A SYSTEMATIC REVIEW

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Introduction: Brazil has the third highest number of children and adolescents with type 1 diabetes mellitus (DM1), an autoimmune disease characterized by pancreatic beta cells destruction. Hypoglycemia, blood glucose levels below 70 mg/dL, shows an annual incidence up to 90% in insulin-dependent individuals, which may cause neuroglycopenic and cardiovascular effects, and moreover, cognitive dysfunctions. Artificial intelligence (AI) has emerged as an alternative to help predict patterns of hypoglycemia occurrence, an often silent complication, through a set of validated data. **Objective:** The aim of this study was to delineate and evaluate advanced methodologies for predicting hypoglycemia through the application of AI models in DM1 patients. **Methods:** A systematic review was conducted by searching the PubMed/Medline, Scopus, Embase and SciELO databases using DesCS/MeSH validated descriptors: Diabetes Mellitus, Type 1; Artificial Intelligence; Hypoglycemia. The PRISMA review protocol was used and 20 articles were selected between 2019 and 2024. The exclusion criteria considered were: duplicates, papers with an objective other than predicting hypoglycemia, conference abstracts, letters and guidelines. **Results:** Several AI learning methods about forecasting hypoglycemia were found in the data analyzed. Subjective insulin sensitivity emerged as a significant challenge for machine learning applications. Another issue was inconsistent data and a small number (n) of participants. Glycemic levels were measured in 19 out of 20 articles with continuous glucose monitoring sensors (CGM), which provide and record data in real time. The most generally used and compared methodology for forecasting hypoglycemia was the support vector machine (SVM), with specificity and sensitivity above 80%. Furthermore, across the evaluated AI models in the selected articles, the Random Forest model yielded superior results, with sensitivity and specificity above 90%. This outcome was consistent with findings from other studies included in the review. **Conclusion:** Artificial intelligence associated with adjusted and tested predictive models can help forecasting and minimizing hypoglycemia. Then, consider AI devices into decision support systems for diabetics can improve the management and quality of life of DM1 patients. **Keywords:** diabetes mellitus, type 1; artificial intelligence; hypoglycemia.

MISCELÂNEA

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THE EFFECTS OF INCRETIN MIMETICS ON METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE (MAFLD): A SYSTEMATIC REVIEW AND BAYESIAN NETWORK META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

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Introduction: Incretin mimetics have been proposed to improve liver histologic features and hepatic steatosis, thus emerging as a treatment avenue to MAFLD. However, the potential effects of these drugs remain unclear. **Objective:** This meta-analysis aims to evaluate the efficacy of incretin mimetics for MAFLD. **Methods:** This review was performed according to the PRISMA guidelines. PubMed, Embase and Cochrane databases were searched for randomized controlled trials (RCTs) that compared any Incretin Mimetics between themselves, other drugs or placebo. A Bayesian model was used to estimate each comparison's risk ratio (RR) or mean differences (MD) with 95% credible intervals (CrI), and the model with the smaller deviance information criterion between fixed and random effects was chosen. Therapies were ranked according to the surface under the cumulative ranking curve area (SUCRA). **Results:** 20 RCTs comprising 1520 MAFLD patients were included. No difference was found between Liraglutide, Semaglutide or Tirzepatide for both fibrosis improvement without worsening of MASH and MASH resolution without worsening fibrosis, for that outcome no drug achieved statistical significance against placebo and for this outcome all of them achieved with Tirzepatide achieving the higher ratio compared to placebo (RR 5.5; 95%CrI 2.7 to 15). Regarding mean change from baseline in liver fat content (LFC) of Liraglutide, Semaglutide, Dulaglutide, Sitagliptin, Tirzepatide, Esfinopegdutide (MD -14%; 95%CrI -26 to -2.6), Pemvidutide (MD -12%; 95%CrI -22 to -2) and Retradutide (MD -12%; 95%CrI -22 to -2), only the last three achieved statistical meaningful reductions against placebo with none of this three achieving statistical significance against each other. For mean reduction in liver stiffness while Liraglutide and Dulaglutide did not promote a significant reduction compared to placebo, semaglutide (MD -0.14 kPa; 95%CrI -0.21 to -0.06) and Tirzepatide (MD -3.3 kPa; 95%CI -4.8 to -1.7) did, with Tirzepatide promoting a significant reduction when compared to Semaglutide (MD -3.13 kPa; 95%CrI -4.7 to -1.5). Lastly, regarding MASH, LFC and liver stiffness reduction, the Tirzepatide (SUCRA 98.7%), Esfinopegdutide (SUCRA 90.4%) and Tirzepatide (SUCRA 84.4%) were, respectively, deemed as the most likely treatment. **Conclusion:** This systematic review and meta-analysis showed that incretin based therapies had significant effect on reduction of liver stiffness, LFC and MASH resolution when compared to placebo. **Keywords:** MAFLD; incretin mimetics; fatty liver disease.

MISCELÂNEA

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AUTOIMMUNE HYPERINSULINEMIA SYNDROME (HIRATA SYNDROME): A CASE REPORT

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Case presentation: Female, 33 years old, white, with no previous exposure to insulin therapy, had been experiencing hypoglycemic episodes for 4 years and was previously diagnosed with insulinoma. Previous laboratory tests indicated fasting blood glucose of 34 mg/dL and insulin of 1,000 µU/mL. New tests found insulin higher than 1,000 µU/mL, blood glucose lower than 45 mg/dL, elevated insulin autoantibodies (IAA) (92.9%), elevated C-peptide, normal somatotropin (GH), and cortisol. A PET-CT was also requested, which did not identify a pancreatic tumor. Thus, the patient was diagnosed with autoimmune hyperinsulinemia syndrome (AHS). Treatment with diazoxide 25 mg was started, which was replaced by prednisone 60 mg, but both did not show effective results. Subsequently, with TSH of 0.06 mIU/L, free T4 of 1.5 ng/dL, and positive TRAb, the patient was diagnosed with Graves' disease and was unsuccessfully treated with methimazole and then with ablative therapy. With radioiodine, the patient developed hypothyroidism, which was controlled with levothyroxine. Currently, she has insulin levels above 1,000 µU/mL, and dysglycemia is controlled only with diet. **Discussion:** Autoimmune hyperinsulinemia syndrome, also known as Hirata syndrome, is a rare condition in which IAA develops in individuals not previously exposed to exogenous insulin and without pancreatic pathologies. On a global scale, only 380 cases of AHS were described between 1970 and 2009, with, in the last year, a predominance of individuals of Japanese origin in 90% of the cases described. To rule out other endocrinological disorders in the present case, cortisol and GH were measured, and a full-body 68Ga-DOTATOC PET-CT was performed, which was normal. The subsequent diagnosis of Graves' disease confirms that the existence of an autoimmune disease makes the appearance of another susceptible. SHA does not have standardized therapeutic management, as disease control and patient adaptation to medications present variable results. Final comments: The report deals with a rare case of autoimmune hyperinsulinemia, which should be considered a differential diagnosis in patients with hyperinsulinemic hypoglycemia, when imaging tests rule out a neuroendocrine tumor and insulin levels are extremely high. **Keywords:** autoimmune hyperinsulinemia syndrome; hypoglycemia; insulin autoantibodies.

ENDOCRINOLOGIA BÁSICA

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PROFILE OF HOSPITALIZATIONS DUE TO MALNUTRITION IN THE LAST 10 YEARS IN THE HEALTH REGIONS OF PERNAMBUCO: AN ECOLOGICAL TIME SERIES STUDY

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Introduction: Malnutrition, characterized by a deficiency of essential nutrients, is still a health challenge, especially in Brazil. Nutritional deprivation, in addition to affecting child growth and development, has a profound impact on the endocrine system, altering hormone production and regulation, such as changes in thyroid function, insulin resistance, adrenal dysfunction and impairment of the hypothalamic-pituitary-gonadal axis, leading to long-term consequences for metabolic and reproductive health. **Objectives:** To analyze the evolution of hospitalizations due to malnutrition (IPD) in the state of Pernambuco from 2013 to 2023. **Materials and methods:** This is a descriptive and exploratory ecological time-series study of the last 10 years, using data from the SUS Hospital Morbidity Database (SIH/SUS) available on the DATASUS platform to quantify the number of IPD by place of hospitalization in the state of Pernambuco, located in the Northeast Region of Brazil, dividing the analysis between the time scale of the year of processing and the Pernambuco health macro-regions, without differentiating between age groups or gender. **Results:** A steady rate of decline in the total number of IPD at the macro-regional and state level was seen in the period evaluated. The three-year period from 2013 to 2015 represented the highest total number of hospitalizations, accounting for 41.56% of the total for the decade studied, with 2013 being the numerical leader, while 2023 was the year with the lowest absolute number. Regarding the prevalence of hospitalizations, the Afogados da Ingazeira macro-region was found to have the highest rate (25.76/10,000 inhabitants), while the Petrolina macro-region ranked last (6.92/10,000 inhabitants). In absolute numbers, the highest levels of IPD occurred in the CIRs of Recife, Caruaru and Limoeiro respectively, and the lowest in the CIRs of Salgueiro, Serra Talhada and Ouricuri. **Conclusion:** The study showed a downward trend in hospitalizations for malnutrition in Pernambuco over the last decade, despite sporadic annual increases. However, there are major regional disparities, with some areas having higher hospitalization rates. This highlights the need for targeted interventions and effective public policies to promote equity in access to adequate nutrition and health services in the state. **Keywords:** malnutrition; Pernambuco; hospitalization.

DIVERSIDADE, EQUIDADE E INCLUSÃO

2073

ASSOCIATION BETWEEN CURRENT QUALITY OF LIFE AND ADVERSE CHILDHOOD EXPERIENCES IN A TRANSGENDER POPULATION ATTENDED AT REFERENCE CENTERS IN THE STATE OF BAHIA, BRAZIL: A CROSS-SECTIONAL STUDY

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Introduction: Traumatic experiences in childhood can trigger dendritic remodeling and inhibition of hippocampal neurogenesis, thus interfering with mental health, well-being, and physical and social functioning in adulthood. Similarly, transgender individuals have worse quality of life indicators compared to cisgender individuals, according to previous studies. **Objective:** Evaluate the association between adverse childhood experiences (ACE) and the current quality of life of the transgender population attended at reference centers in the state of Bahia, Brazil. **Materials and methods:** This cross-sectional study collected data through the application of two questionnaires: the ACE (Adverse Childhood Experience) to assess adverse events in childhood, and the WHOQOL-Bref (World Health Organization Quality of Life Brief Version) to assess quality of life. The population included transgender individuals aged 18 and older who sought two Specialized Centers in the Transsexualization Process in the state of Bahia, Brazil, between October 2020 and November 2023. **Results:** The study included 275 participants, comprising 156 trans men, 94 trans women, 10 travestis, and 11 non-binary individuals (4 did not report their gender identity). The median age of the analyzed population was 27 years (interquartile range 24 to 32). Using Spearman's correlation between quality of life results with the overall ACE score, it was found that the fewer ACE, the higher the quality of life in all four domains ($p < 0.01$). The domain that showed the strongest correlation with the overall ACE score was social relationships (rho = -0.393). In the multivariate analysis, only overall ACE score, age, medically prescribed hormone therapy, alcoholism, level of physical activity, and previous diagnosis of depression showed a statistically significant relationship with quality of life ($p < 0.05$). The social relationships domain was most affected by the ACE score (beta = -1.94; 95%CI [-2.59;-1.29]). **Conclusions:** It was demonstrated that the more ACE transgender patients had, the worse their quality of life. Other predictors of quality of life found were age, medically prescribed hormone therapy, alcoholism, level of physical activity, and previous diagnosis of depression. **Keywords:** quality of life; adverse childhood experiences; transgender persons.

MISCELÂNEA

2074

THE IMPORTANCE OF THE SELECTIVE ARTERIAL CALCIUM STIMULATION TEST (SACST) WITH HEPATIC SAMPLING IN THE ETIOLOGICAL INVESTIGATION OF A CASE OF HYPERINSULINEMIC HYPOGLYCEMIA

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Endogenous hyperinsulinemic hypoglycemia is a rare condition in medical practice, characterized by Whipple's triad associated with elevated serum insulin levels during hypoglycemic episodes. A 33-year-old healthy female, presented with Whipple's triad, predominantly postprandial symptoms. The suspicion of hypoglycemia was confirmed by a supervised 72-hour fasting test, which showed a biochemical pattern of endogenous hyperinsulinemic hypoglycemia, suggesting an insulinoma. However, non-invasive imaging and a gallium-68 PET-CT did not detect any peri-pancreatic abnormalities. The investigation continued with the selective arterial calcium stimulation test (SACST), which showed an increase of more than twice the basal insulin value in multiple vascular territories (superior mesenteric, proximal splenic, and distal splenic arteries), leading to the diagnosis of nesidioblastosis and excluding surgical treatment. SACST is a minimally invasive test performed by interventional radiologists, involving the catheterization of the arterial and venous supply of the pancreas, followed by selective arterial stimulation with calcium gluconate. This agent stimulates only abnormal and hyperfunctioning beta cells, and venous effluent samples are analyzed at specific times after injection (10 to 180 seconds). The interpretation of the results allows differentiation between localized insulin hypersecretion (insulinoma) or in multiple areas of the pancreas (nesidioblastosis). SACST has a sensitivity of 93% in locating insulinomas, which can reach 100% when combined with endoscopic ultrasound. Additionally, it has a diagnostic specificity of 99% to 100% in distinguishing the etiologies of endogenous hyperinsulinemic hypoglycemia. Its use can be crucial in etiological differentiation, providing better preoperative conditions and more accurately guiding therapeutic indications, minimizing the need for blind pancreatic exploration and removal of normal pancreatic tissue. SACST is an essential test in the investigation of endogenous hyperinsulinemic hypoglycemia, especially in cases with negative imaging tests. Despite its technical complexities, it offers significant diagnostic precision, facilitating surgical planning and the choice of the most appropriate treatment. **Keywords:** endogenous hyperinsulinemic hypoglycemia; nesidioblastosis; Selective Arterial Calcium Stimulation Test (SACST).

OBESIDADE

2075

THE USE OF GLP-1 AGONISTS AND THEIR IMPACT ON OBSTRUCTIVE SLEEP APNEA: A SYSTEMATIC REVIEW

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Introduction: Obstructive sleep apnea (OSA) is characterized by the repeated closure of the upper airways during sleep and is associated with an increased cardiovascular risk. It is estimated to occur in approximately 14% of men and 5% of women aged between 30 and 70 years. Weight loss and continuous positive airway pressure (CPAP) are well-established therapeutic options, but they are associated with challenges in long-term adherence. Glucagon-like peptide-1 (GLP-1) receptor agonists are increasingly used in glycemic control and weight reduction, showing promising potential for greater adherence and clinical improvement in OSA. **Objective:** To analyze the evidence regarding the use of GLP-1 agonists in improving OSA. **Methods:** This is a systematic review based on the PRISMA protocol. Searches were conducted in PubMed and Cochrane Library using the descriptors "Glucagon-Like Peptide-1 Receptor Agonists OR liraglutide OR semaglutide OR dulaglutide" AND "Sleep Apnea, Obstructive". Just randomized controlled trials were included. Studies that were incomplete or unrelated to the topic were excluded. **Results:** The initial search yielded 10 articles, and after applying the inclusion and exclusion criteria, 3 studies were selected for final analysis. The studies are multicentric and assessed the effect of liraglutide in samples ranging from 90 to 276 adult patients with an age of around 50 years, who had OSA associated with obesity or type 2 diabetes mellitus. Positive effects were identified on weight loss, glycemic indices, and the clinical presentation of OSA. Two studies compared liraglutide to placebo, showing a significant effect of the drug compared to placebo on the apnea-hypopnea index (AIH), as well as consistent trends in improvement in oxygen saturation, sleep architecture, and sleep/health-related quality of life. This beneficial effect is largely attributed to weight reduction observed with the medication across all studies. Another study compared CPAP *versus* liraglutide in patients with OSA. Although liraglutide had a greater impact on weight loss and benefits in reducing the AHI and improving sleep quality, these effects were less pronounced compared to the benefits provided by CPAP. **Conclusion:** Liraglutide showed a promising effect on improving the severity of OSA, representing a potential adjunctive treatment. Further studies are needed to confirm this positive effect of liraglutide and to evaluate the efficacy of other GLP-1 agonists for the benefit of OSA. **Keywords:** glucagon-like peptide-1receptor agonists; obstructive sleep apnea; weight loss.

DIABETES MELLITUS

2076

CHOICE OF CONTRACEPTIVE METHODS FOR WOMEN WITH DIABETES: EFFECT OF KNOWLEDGE AND GUARANTEED ACCESS

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Introduction: Women with diabetes mellitus (DM) should have planned pregnancies as uncontrolled glycemic levels are associated with the progression of chronic complications of DM and unfavorable maternal-fetal stages. Only 13% of women with DM worldwide use effective and safe contraceptive methods (CM). **Objective:** To verify which contraceptive methods are chosen by women with DM when they have access and guidance to contraceptive methods, their degree of satisfaction and permanence over 24 months. **Material and method:** Prospective cohort study, including women with DM treated at the Endocrinology outpatient clinic hospital in southern Brazil. The calculated sample number is 100 patients. Approved ethics committee: 58015622.8.0000.5327. Women who agree to participate in the study receive guidance on the available CM and the most appropriate ones for each patient, respecting the contraindications of the World Health Organization (WHO) eligibility criteria. A structured interview is conducted with detailed demographic, reproductive history, and medical health questions. The patient chooses the contraceptive method they want, after being monitored by telephone for 24 months to assess continuity, satisfaction with the method and occurrence of pregnancy. **Partial results:** To date, 58 women have been included, between 14 and 45 years old, with an average age of 29.7 years old. The majority 45 (78%) have DM1, 42 (72%) have a steady partner and 29 (50%) use contraindicated contraceptive methods according to WHO eligibility criteria. Ten (17%) used barrier methods, 3 (5.2%) did not initiate sexual intercourse and 1 (1.7%) did not use any contraceptive method. After guidance, 40 women (69%) chose etonogestrel implant, 8 (13.6%) oral progestin, 5 (9%) LNG-IUS (levonorgestrel intrauterine system), 3 (5%) Copper IUD (intrauterine device), 1 (1.7%) combined oral contraceptive and 1 (1.7%) quarterly progestin. 4 patients removed the etonogestrel:1 to weight gain, 2 to the desire to become pregnant and 1 due to menstrual irregularity. The average length of stay was 7,5 ± 3,5 months. **Conclusion:** The most chosen method was the etonogestrel implant. The majority chose the most recommended CM for their effectiveness and safety: LARCs (long-acting reversible contraceptives). When these women have access and choice, they opt for a LARC. Based on these results, improvements in access and availability to family planning methods for women with DM should be implemented. **Keywords:** contraception; diabetes mellitus; family planning.

NEUROENDOCRINOLOGIA

2077

QUALITY OF LIFE AND ITS DETERMINANTS IN TREATED ACROMEGALY PATIENTS: A SYSTEMATIC REVIEW

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Introduction: Patients with acromegaly often experience impaired health-related quality of life (HRQoL). While biochemical remission can improve HRQoL for some, traditionally, only biochemical parameters are evaluated. However, symptom improvement and HRQoL are the ultimate goals and should be assessed. Patient-reported outcomes are essential as patients' perception of HRQoL may differ from that of physicians. **Objective:** To evaluate the change in quality of life of acromegalic patients after treatment using specific questionnaires. **Materials and methods:** This systematic review adhered to the PRISMA guidelines. The search was conducted in PubMed, EMBASE, BVS, and Web of Science databases using the descriptors "Acromegaly" and "Quality of Life," filtered for the last 5 years, yielding 754 articles. We excluded duplicates, cross-sectional studies, animal studies, protocols, book chapters, letters, case reports, and reviews. We included full articles written in English, Portuguese, or Spanish, resulting in 15 selected articles. **Results:** A total of 11 studies with 1,121 patients were included in the quantitative analysis. The studies employed various treatments for acromegaly, including surgical procedures and biochemical therapies. Eight studies used the Acromegaly Quality of Life Questionnaire (AcroQoL), showing an average overall score increase of 3.01 points. The psychological dimension and the subdimension related to appearance increased by 2.24 and 3.28 points, respectively. The physical dimension showed a smaller increase of 1.4 points. Two studies used the 36-Item Short Form Health Survey (SF-36), revealing a statistically significant 7.8% improvement in the quality of life score post-treatment compared to pre-treatment. However, two studies using the Patient-assessed-Acromegaly Symptom Questionnaire (PASQ) did not show significant improvement (1.5%) in quality of life. **Conclusion:** Patients who underwent clinical or surgical treatments reported positive responses in symptoms and quality of life. Both AcroQoL and SF-36 indicated improvements in scores post-treatment compared to pre-treatment, but scores did not normalize compared to a healthy control population. It remains unclear which treatment option is best for improving QoL and reducing symptom burden. While controlling GH and IGF-1 reduces symptoms, it does not necessarily lead to improved quality of life. **Keywords:** acromegaly; quality of life; questionnaires.

NEUROENDOCRINOLOGIA

2078

EFFICACY OF CABERGOLINE THERAPY IN PATIENTS WITH NONFUNCTIONING PITUITARY ADENOMAS: A SYSTEMATIC REVIEW

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Introduction: Non-functioning pituitary adenomas (NFPA) correspond to pituitary tumors that do not cause syndromes due to hormonal hypersecretion of the gland. Currently, they account for approximately 14%-54% of pituitary adenomas, with a prevalence ranging between 7-43.3/100,000. Cabergoline (CBG), a dopaminergic agonist used to treat hyperprolactinemia, has been investigated as a potential adjuvant treatment for surgeries used to treat NFPA. Its effectiveness as monotherapy in the conservative treatment of the disease is also being investigated. Based on this, the evaluation of the real safety and efficacy of CBG in the management of NFPA is necessary. **Objective:** The study aims to carry out an analysis of the effectiveness of CBG therapy in patients with non-functioning pituitary tumors. **Methods and materials:** This is a systematic review based on the protocol (PRISMA) using the descriptors: "Non-functioning pituitary adenoma" AND "cabergoline" OR "dopamine agonists" in the PubMed, BVS, Embase and Web of Science databases. Inclusion criteria were randomized trials, cohort and longitudinal articles published in the last 5 years; Exclusion criteria were duplicate articles, animal studies, protocols, book chapters, letters, case reports and reviews. 98 articles were found, of which 6 were included after reading the title and abstract. **Results:** 6 articles and 317 patients were included, of which 80 (25.24%) achieved tumor reduction, 184 (58.04%) tumor stabilization and 53 (16.72%) tumor increase. Patients were divided into 3 groups: treated first with CBG (n = 50, reduction 20.00%, stabilization 48.00%, increase 32.00%), treated with CBG after tumor resection surgery (n = 134, reduction 39.55%, stabilization 52.24%, increase 8.21%) or surgery only (n = 100, reduction 8.00%, stabilization 74.00%, increase 18.00%). CBG doses were 0.5 or 1.5 mg/week, adjustable to 3.0 or 3.5 mg/week. Most adverse events were mild (e.g., gastrointestinal discomfort), with one study reporting pituitary hemorrhagic necrosis in 3 of 44 patients. **Conclusion:** The effect of CBG to promote tumor minimization in NFPA is low. However, tumor stabilization was observed in more than half of the cases. Achieving the aim using CBG is more effective when it is preceded by tumor resection. CBG treatment has the advantage of being non-invasive and having few adverse events. **Keywords:** non-secreting pituitary adenoma; cabergoline; treatment outcome.

TIREOIDE
2079

EPIDEMIOLOGICAL PROFILE OF MORBIDITY FROM MALIGNANT NEOPLASMS OF THE THYROID AND OTHER ENDOCRINE GLANDS IN THE STATE OF ALAGOAS FROM 2013 TO 2022

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Introduction: Thyroid cancer is the most common malignant neoplasm of the endocrine system and is responsible for a significant number of deaths worldwide. In 2020, there were 0.4 deaths per 100,000 people in Brazil. Endocrine neoplasms generally present challenges in diagnosis, treatment, and management due to their systemic effects, complicating the chances of cure. **Objective:** To analyze the epidemiological profile of deaths due to thyroid and other gland neoplasms in the state of Alagoas from 2013 to 2022. **Methods and materials:** This is a retrospective, detailed, and descriptive study based on data obtained from the Oncology Panel of the Department of Information and Informatics of the Unified Health System (DATASUS) and the Cancer Mortality Atlas of the National Cancer Institute (INCA). Data on incidence and mortality were collected by sex, age group, and location within the Health Regions of Alagoas for malignant neoplasms of the thyroid and other endocrine glands from 2013 to 2022. **Results:** During the analyzed period, there were 1,523 deaths due to endocrine gland neoplasms. The most lethal neoplasm was pancreas (886 deaths), followed by ovary (437) and thyroid (103). The most affected health region was the 1st, with a rate of 6.14 deaths per 100,000 inhabitants, particularly in Maceió, and most affected the 70-79 age group, followed by the 10th and 8th health regions with rates of 4.88 and 4.78, respectively. The age group with the highest number of deaths was 60-69 (385), with female deaths prevailing (987). Thyroid neoplasms accounted for 103 deaths, mostly in females (71), the 70-79 age group (31), and predominantly in the 3rd health region (0.45). **Conclusion:** Endocrine neoplasms affect all age groups, particularly those aged 60-79, posing challenges for diagnosis and treatment. Therefore, more preventive and screening actions should target these ages. Additionally, the 1st health region, especially Maceió, should focus on the population over 60 and females. Furthermore, thyroid neoplasms require greater public investment in prevention and diagnosis, as they significantly impact a substantial portion of the population and predominantly affect one gender. Due to the study's limitations, a cause-and-effect relationship cannot be established. **Keywords:** epidemiology; thyroid neoplasms; endocrine glands.

TIREOIDE
2080

EUTHYROID GRAVES' OPHTHALMOPATHY WITH NEGATIVE TSH RECEPTOR ANTIBODIES: A CASE REPORT

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Case report: A 57-year-old man was admitted for investigation of progressive bilateral ocular proptosis over 5 years. He reported low visual acuity, pain, and restricted ocular movement. Ophthalmological examination showed restrictive ocular myopathy, optic neuropathy, and severe ocular proptosis in both eyes, in addition to increased bilateral intraocular pressure. During the investigation, CT and MRI scans of the orbit showed bilateral grade III proptosis associated with thickening of the inferior rectus and medial rectus muscles, with preservation of the tendons. Thyroid tests including TSH, free T4, anti-thyroglobulin antibody and TSH receptor antibodies (TRAb) were within normal limits. The patient underwent transnasal surgical orbital decompression without complications. Histopathological study of the material obtained ruled out infiltrative or neoplastic granulomatous diseases. **Discussion:** Graves' ophthalmopathy (GO) is an autoimmune disease characterized by inflammatory changes of the orbit and retro-ocular tissues. GO classically occurs in patients with hyperthyroidism, but 5%-10% of cases may present with hypothyroidism or normal thyroid function, known as euthyroid Graves' ophthalmopathy (EGO). In EGO, the diagnosis is typically supported by the presence of autoantibodies, with TRAb being the pathological hallmark of the disease. However, the absence of anti-thyroid antibodies in EGO is a rare entity increasingly reported in the literature, creating diagnostic challenges. TRAb levels in patients with EGO are known to be low and decrease over time, therefore the sensitivity of diagnostic tests may vary depending on the stage of the disease. Additionally, TRAb levels correlate with the severity of GO, with reports of negative TRAb in milder phenotypes or earlier stages. Other autoantigens have been implicated in the pathogenesis of Graves' disease, suggesting that TRAb may not solely account for the clinical manifestations. **Final comments:** EGO may initially present with negative thyroid-specific autoantibodies. Therefore, patients with clinical and radiological characteristics suggestive of ophthalmopathy should be thoroughly evaluated with imaging studies even when thyroid function and autoantibodies are normal. These patients should also have a regular follow-up after diagnosis, given the variable time between the onset of thyroid dysfunction symptoms and the emergence of orbital disease in Graves' disease. **Keywords:** ocular proptosis; euthyroid Graves' ophthalmopathy; TSH receptor antibodies (TRAb).

MISCELÂNEA

2081

HUMANIZATION IN THE DOCTOR-PATIENT RELATIONSHIP IN STUDENTS IN THE FIRST MONTH OF THE MEDICINE COURSE. RESULTS OF 7 YEARS OF RESEARCH

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Making medical students aware of the need to care, before treating, constitutes the principle of practice at Humaniza SUS. Knowledge of each patient's social context will contribute to a better doctor-patient relationship. The objective was to evaluate the impact of inserting students in the first month of the medical course (SFMMC) in the hospital environment on the humanization of the doctor-patient relationship, during the monitoring of hospitalized patients. Experimental, observational and cross-sectional study on humanization in the doctor-patient relationship, through the application of a questionnaire to patients and SFMMC, after signing the Free and Informed Consent Form. All enrolled SFMMC were included, in addition to all patients hospitalized in pre-established beds, between 2017 and 2023. Students from other periods are excluded. Research project approved by the Research Ethics Committee number 1,963,944 in December 2016. 779 SFMMC participated in the research: 80.2% classified the experience as excellent; 94.9% perceived that there was an approach to the patient and that it met the patients' needs in 75.6%, being significantly higher in 2013, with 90.6% ($p < 0.001$); 98.6% ($p < 0.001$) and 82.2% ($p = 0.013$), respectively. 3,770 patients participated in the survey: 71.0% classifying the experience of having an SFMMC accompanying them as excellent and 25.4% as good; 97.4% of patients declared having received humanized care through the project. Firstly, they wanted their illnesses to be cured in 88.0% of cases and the information provided about their illnesses was satisfactory in 56.3%. Secondly, they sought respect, in 59.0%, and attention, in 56.2%, from the hospital team. Patients rated the experience of having an SFMMC accompanying them during hospitalization as excellent, with 71.0%, being significantly higher in the year 2023, with 73.8%, when compared to the year 2017, with 58.7 %. SFMMC's early approach to hospitalized patients demonstrated involvement in the progressively greater humanization of the doctor-patient relationship over the years, especially after the COVID-19 pandemic. It is necessary to insert SFMMC in the hospital environment, which represents its future workplace, so that it knows the social context involved and can contribute to the improvement of the biopsychosocial being, in addition to practicing the humanization necessary for good medical practice during the first six months of medical school. **Keywords:** humanization; doctor patient relationship; medicine student.

ENDOCRINOLOGIA BÁSICA

2082

KLINEFELTER SYNDROME DIAGNOSED IN ADOLESCENCE AND CONSEQUENCES OF DIAGNOSIS IN THIS AGE GROUP: CASE REPORT

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Case presentation: A 16-year-old male was referred to the endocrinology service in 2020 for evaluation of excessive growth and gynecomastia since the age of 5. He had a history of childhood depression, aggressiveness, and poor school performance, currently managed with fluoxetine 20 mg/day and escitalopram 10 mg/day, and frequently complained of knee pain. He was born full-term via cesarean section (birth weight: 3,600 g, length: 50 cm). On clinical examination, the patient exhibited a eunuchoid body habitus (long-limbed with predominance of the lower segment), height of 196 cm, weight of 73 kg, and body mass index (BMI) of 23.15 kg/m^2. Genitourinary examination revealed Tanner stage P3G1, with hardened, firm testes of reduced volume (less than 5 mL), and bilateral gynecomastia with peri-areolar glandular tissue, without galactorrhea. Laboratory tests showed elevated plasma levels of follicle stimulating hormone (40.25 IU/L, reference range: 0.9-15) and insulin-like growth factor 1 (IGF-1) (617 ng/dL, reference range: 177-509). Glucose, total testosterone, prolactin, and luteinizing hormone levels were within normal limits. G-banded karyotype analysis confirmed Klinefelter syndrome with 47,XXY. Pituitary magnetic resonance imaging revealed slight bulging of the gland at its superior aspect, with normal dimensions within normal limits. Hand and wrist X-ray indicated a bone age approximately between 14 and 15 years. **Discussion:** This represents a classic case of a condition with low prevalence (0.1 to 0.25%), often not diagnosed early, with up to 25%-50% of cases going undetected. The consequences of delayed diagnosis include exacerbation of common complications associated with the condition such as anxiety, depression, hypogonadism, and other related phenotypic expressions. **Final comment:** This case report underscores the importance of access to genetic and other diagnostic tests in clinical practice, which are often unavailable but crucial for timely diagnosis and effective therapeutic planning to mitigate the biopsychosocial complications of hypogonadism and gynecomastia in this rarely diagnosed syndrome. **Keywords:** Klinefelter syndrome; hypogonadism; gynecomastia.

NEUROENDOCRINOLOGIA

2083

MIXED GANGLIOCYTOMA-PITUITARY ADENOMA: A VERY RARE SELLAR TUMOR THAT STILL DEFIES PATHOGENETIC UNDERSTANDING

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Case report: A 56-year-old male presented with progressively decreased temporal visual fields. Physical examination showed a BP = 140/110 mmHg (on Losartan 50 mg/d) and BMI = 29.4 kg/m^2. Initial MRI showed a 2.5 x 2.0 x 1.4 cm sellar tumor with predominant T1- and T2-weighted hyposignal, with optic chiasm compression, suggestive of a pituitary adenoma with hematic/hyperproteic content. The pituitary function was normal but for low-borderline IGF-1 and testosterone levels. Screening for hypercortisolism was not performed since the patient showed no specific clinical evidence. A second MRI performed 30 months later showed an increase to 2,7 x 2,4 x 2,2 cm, knosp 0 bilaterally. During transsphenoidal surgery, an encapsulated softened material was found. After the opening of this capsule, a 4 mL purulent secretion was drained. Subsequent culture was negative. Histopathology revealed neuronal cells immersed in fibrilar stroma next to a few epithelial cells with vesicular nuclei and scarce cytoplasm. Immunohistochemistry was positive for anti-cytokeratin (in epithelioid cells), sinaptofisin (in neuronal cells), ACTH, GFAP (focal), neurofilament, and PGP9.5, and negative for CD34, GH, IDH1, FSH, LH, TSH, and Prolactin. The final diagnosis was a mixed gangliocytoma with corticotropic adenoma. **Discussion:** Mixed gangliocytoma-pituitary adenoma is an extremely rare tumor exhibiting both gangliocytic and pituitary adenomatous tissues. Most patients reported were female and harbored GH-secreting adenomas. ACTH- or PRL-secreting tumors have been less frequently described. It was previously considered a coincidental finding but is currently categorized as a distinct clinicopathological entity in the WHO classification. The origin of these tumors is intriguing. Hypotheses include (a) stimulation of hypothalamic hormones produced by the ganglion cells promoting adenoma formation, (b) neuronal transdifferentiation of pre-existing adenomatous cells, and (c) an origin from a common progenitor cell, since PIT-1 expression has been found in both ganglionic and adenomatous cells. The clinical and imaging features are non-specific, so diagnosis is usually established postoperatively. Transsphenoidal resection is the preferred treatment, and the surgical outcomes are favorable. **Final comments:** Understanding the pathogenesis of these tumors is challenging with our current biological knowledge. Further studies should evaluate the hypotheses regarding their development. **Keywords:** gangliocytoma; pituitary adenoma; hypothalamic hormones.

NEUROENDOCRINOLOGIA

2084

EMPLOYABILITY AND JOINT DISEASE IN ACROMEGALY

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Introduction: Acromegaly is a chronic disease associated with physical stigmas and comorbidities, such as arthropathy, which is radiographically detected in up to 90% of cases. Morbidity, functional disability, and the high incidence of affective disorders compromise quality of life. These factors, in a vicious cycle, can hinder employment, leading to reduced income and social interaction. **Objectives:** To evaluate the employability status of patients with acromegaly and to relate the findings to the presence of joint complaints in their follow-up history. **Methods:** Review of medical records focusing on joint symptoms; application of the "Occupation status" questionnaire from "*Pesquisa Nacional por Amostra de Domicílios (PNAD) (Instituto Brasileiro de Geografia e Estatística – IBGE)*". Differences between the employed and unemployed groups were evaluated using the Mann-Whitney test. **Results:** The sample included 43 patients with acromegaly, 22 females (51.1%), with a median age of 56 years at the time of questionnaire administration. In 28 cases (65.1%), patients were either cured or controlled with medication. 22 patients (51.2%) reported joint complaints during presentation or follow-up, predominantly in the lower limbs. 26 (60.5%) patients were classified as employed, with 23 having permanent paid jobs and 3 having temporary jobs. The remaining 17 (39.5%) were classified as unemployed. Among the employed, 4 (15.3%) were elderly, with a median age of 55 years, while among the unemployed, 8 (47%) were elderly, with a median age of 63 years, p = 0.003. Among those employed, 11 (42.3%) had joint complaints, and 11 (42.3%) had uncontrolled disease. Among the unemployed, these numbers were 11 (64.7%) and 4 (23.5%), respectively, with no significant difference between the groups. **Conclusion:** The percentage of unemployed patients was five times higher than the unemployment rate in the 1st quarter of 2024 in Brazil (7.9%). Symptomatic joint complaints were reported by half of the sample. While older age may interfere with employability, joint complaints and lack of biochemical control of the disease do not appear to interfere with employment status. **Keywords:** acromegaly; joint disease; employability.

NEUROENDOCRINOLOGIA

2085

THE COEXISTENCE OF PITUITARY ADENOMA AND MENINGIOMA: A CASE SERIES

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Introduction: Amongst benign central nervous system tumors, meningiomas and pituitary adenomas are ranked first and second in prevalence, accounting for 54.3% and 24%, respectively. The coexistence of both tumors is a rare event, especially when the meningioma is not linked to a history of irradiation. It remains unclear whether the cases represent an unfortunate association or there is a common genetic mechanism that favors their tumorigenesis. **Objective:** To report characteristics of patients in whom both a pituitary adenoma and a meningioma were found. **Methods:** A review of medical records from a cohort of pituitary adenomas patients at a Neuroendocrinology center from 2001 to 2023. Data were collected regarding size and immunohistochemistry of adenomas; size and location of coexisting meningiomas; previous history of irradiation and therapeutic approach. **Results:** 15 cases of coexistence of both tumors were found, with 13 occurring in female patients (86.7%), with a mean age at diagnosis of 49.6 years. The adenomas were mainly non-functioning (11), associated with acromegaly (2), prolactinoma (1), or Cushing's disease (1). Three patients underwent radiotherapy, with two of them being diagnosed with meningioma after 9 and 13 years of radiation exposure. The meningiomas size varied between 0.6 and 4.3 cm, and were predominantly located in the frontal region (6). In two cases, imaging tests revealed two meningiomas. Surgery was performed to remove the adenomas in 7 cases, and in 3 cases, the treatment consisted in surgery and radiotherapy. Only one patient had the meningioma surgically removed. Six patients were followed-up for more than 4 years (4 to 16); None of the cases showed a significant increase in meningioma size. **Conclusion:** The coexistence of pituitary adenomas and meningiomas is a rare condition that, despite its seeming increase in detection, generally result in case reports. This robust case series endorses the predominance among the female sex, from the sixth decade of life, typically associated with a non-functioning adenoma. The treatment options are individualized both for the adenoma and meningioma, allowing for continuous observation in most cases.
Keywords: pituitary; meningioma; adenoma.

DISLIPIDEMIA E ATEROSCLEROSE

2086

ASSOCIATION BETWEEN ENDOTHELIAL DYSFUNCTION AND SUBCLINICAL HYPOTHYROIDISM: AN UPDATED META-ANALYSIS

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Introduction: Endothelial damage can be triggered by different endocrine disorders. Subclinical hypothyroidism is related to this due to the cardiovascular system being a major target of thyroid hormone action. Although the number of studies demonstrating the relationship between subclinical hypothyroidism and increased cardiovascular risk is rising, there are still gaps in knowledge that will be clarified by this updated systematic review and meta-analysis. **Objective:** The aim of this study is to establish the association between endothelial damage and uncontrolled subclinical hypothyroidism. **Methods:** PubMed, Embase and Web of Science databases were searched for randomized controlled trials (RCTs) and cohort studies comparing the development of endothelial dysfunction in subclinical hypothyroidism and euthyroidism in the general adult population. A random-effects model was employed to compute the mean difference (MD) with a 95% confidence interval (CI). Statistical analysis was performed using Review Manager 5.4. A p-value < 0.05 was considered to determine if an outcome was statistically significant when comparing both groups and i^2 statistics was employed to compute the heterogeneity. The PRISMA scale was used to systematize the report of this revision. **Results:** A total of 35 studies were included comprising 6.241 patients, mostly female (n = 4.100; 65.7%), of whom 1.826 (29,25%) had a subclinical hypothyroidism condition. The group with this medical disease was associated with a non-significant reduction in HDL-C (MD -0.34; 95%CI -1.90 to 1.22; P = 0.67; $i^2 = 53\%$). Despite this, the subclinical hypothyroidism group was also related to significant increases in rates of LDL-C (MD 16.36; 95%CI 14.38 to 18.35; $P < 0.00001$; $i^2 = 87\%$), total cholesterol (MD 16.53; 95%CI 10.64 to 22.42; $P < 0.00001$; $i^2 = 83\%$), triglycerides (MD 13.30; 95%CI 7.06 to 19.54; $P < 0.0001$; $i^2 = 71\%$), TSH (MD 2.40; 95%CI 2.28 to 2.52; $P < 0.00001$; $i^2 = 98\%$) and carotid intima-media thickness (MD 0.08; 95%CI 0.04 to 0.11; $P < 0.0001$; $i^2 = 89\%$). **Conclusion:** In this systematic review and meta-analysis of patients with subclinical hypothyroidism, this disease was associated with endothelial dysfunction in uncontrolled patients compared with healthy controls. At last, the importance of medication control of this endocrine disorder is clear to prevent the emergence of future cardiovascular complications. However, more studies must be done to clarify this association.
Keywords: subclinical hypothyroidism; euthyroidism; endothelium.

DISLIPIDEMIA E ATEROSCLEROSE

2087

EFFECTS OF PITAVASTATIN COMPARED TO OTHER STATINS IN THE PREVENTION OF CARDIOVASCULAR DISEASES IN PATIENTS WITH HIV: A SYSTEMATIC REVIEW

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Introduction: The risk of cardiovascular disease increases among HIV-infected individuals, including those on antiretroviral therapy (ART). Statins are associated with reduced biomarkers of inflammation and endothelial dysfunction. Recent studies show a reduction in drug interactions and a greater effect in reducing inflammatory biomarkers with the use of pitavastatin in relation to other statins in patients with HIV and using ART. **Objective:** The primary objective of the study is to analyze the cardiovascular benefits of pitavastatin in relation to other statins in patients with HIV and using ART. **Methods:** This is a systematic review based on the PRISMA protocol, using the PubMed and Embase databases and the following descriptors: "Pitavastatin" AND "HIV". Free full-text clinical trials that met the selection parameters were included. Observational and analytical studies were excluded. **Results:** Based on the search strategy and selection of inclusion and exclusion criteria, 4 articles remained for analysis and writing of the review. Samples ranged from 24 to 7769 participants between 18 and 70 years of age. The common inclusion criteria for participants across the studies was prior diagnosis of HIV and use of antiretroviral therapy. It was observed that the use of pitavastatin in patients with HIV using antiretroviral therapy significantly reduced the level of markers of immune activation and arterial inflammation compared to patients receiving placebo or pravastatin. Pitavastatin also significantly lowered total and LDL cholesterol levels. Because it is minimally metabolized by CYP450, pitavastatin has a lower incidence of drug interactions compared to other lipid-lowering medications. **Conclusion:** From this perspective, pitavastatin appears as a promising statin to reduce cholesterol levels in patients with HIV and to prevent important adverse cardiovascular events in this population. The medication appears to be a beneficial alternative to other lipid-lowering drugs by reducing the risk of interaction with other drugs. As the present review is limited to the scarce number of studies found, more research is needed to evaluate the other effects of pitavastatin. **Keywords:** pitavastatin; HIV; cardiovascular diseases.

DIABETES MELLITUS

2089

EFFECT OF RETATRUTIDE ON KIDNEY PARAMETERS IN PEOPLE WITH TYPE 2 DIABETES AND/OR OBESITY: A POST-HOC ANALYSIS OF TWO PHASE 2 TRIALS

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Introduction and objective: The prevalence of chronic kidney disease due to T2D and obesity is rapidly increasing. Retatrutide (RETA), an agonist of GIP, GLP-1 and glucagon receptors, showed marked effects in reducing body weight and HbA1c in people with T2D and/or obesity/overweight (OB). This post-hoc analysis assessed the impact of RETA on kidney parameters. **Materials and methods:** Data from randomized participants in 2 phase 2 studies were included: T2D (N = 281): RETA (0.5, 4, 8, 12 mg) *vs.* dulaglutide 1.5 mg *vs.* PBO (N = 45-50/arm); OB (non-T2D; N = 338): RETA (1, 4, 8, 12 mg) *vs.* PBO (N = 62-70/arm). Assessments included CKD-EPI creatinine eGFR (Cr-eGFR), cystatin C-based eGFR and urine albumin-to-creatinine ratio (UACR). Change from baseline was analysed using mixed models for repeated measures; pairwise contrasts were used to compare RETA to PBO. **Results:** At 36 wks in T2D, no difference was observed in Cr-eGFR between all RETA groups and PBO; UACR was significantly reduced *vs.* PBO with RETA 12 mg. In OB, RETA 8 and 12 mg increased Cr-eGFR and decreased UACR compared to PBO at 48 wks. Results were similar when GFR was estimated from cystatin C. Blood pressure (BP) was significantly reduced in both studies. **Conclusion:** RETA 8 and 12 mg increased eGFR in people with OB but not in those with T2D. UACR and BP were reduced *vs.* PBO with higher doses of RETA in both trials. These data suggest possible benefits on kidney function that warrant further investigation in larger populations. **Disclosure:** This study was previously presented at ADA 2024. **Keywords:** tirzepatide; diabetes; obesity.

METABOLISMO ÓSSEO E MINERAL

2090

SEVERE OSTEOMALACIA AFTER BYPASS Y-ROUX PRESENTING WITH TETANY

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Case presentation: A 59-year-old female patient presented sudden onset of upper limb spasms, lower limb paresthesia and fatigue. She had undergone Roux-en-Y gastric bypass surgery (RYGB) five years earlier and did not have medical follow-up or vitamin supplementation. Physical examination revealed tetany and loss of muscle strength in all four limbs, with positive Chvostek and Trousseau signs. Initial lab tests showed calcium at 4.8 mg/dL (RR 8.5-10.1), phosphorus at 2 mg/dL (RR 2.5-4.9), vitamin D (25(OH)D3) at 4.8 ng/mL (RR ≥ 30), PTH at 1,013 pg/mL (RR 15-68.3), and alkaline phosphatase at 198 U/L (RR 50-136). Bone mineral density (BMD) measurements showed low levels: L1-L2 T-score of -5.0, right femoral neck T-score of -3.1, and right femur T-score of -3.1. These findings were consistent with hypocalcemia and osteomalacia (OM). **Discussion:** OM is a bone metabolic disease caused by decreasing levels of calcium and deficiency of the mineralization facilitator (vitamin D), impairing hydroxyapatite crystal deposition in the osteoid matrix**.** OM and hypocalcemia are common findings in patients submitted to RYGB surgery. However, a severe hypocalcemia leading to tetany is a rare condition triggered by extremely low levels of calcium (below 7.0-7.5 mg/d). In our patient, the RYGB surgery predisposed to OM and hypocalcemia with several symptoms including fatigue, paresthesia and tetany, requiring rapid intravenous calcium. Also, our patient exhibited extremely high levels of PTH (secondary hyperparathyroidism) due to calcium malabsorption and vitamin D deficiency. After hospital discharged, she was treated with high doses of oral calcium citrate and vitamin D supplementation daily. Six months later, she had no symptoms and lab results improved: serum calcium at 8.5 mg/dL, 25(OH)D3 at 42.3 ng/mL, phosphorus at 5.5 mg/dL, and PTH at 150 pg/mL. BMD increased by 22.7% in the lumbar spine, 11.7% in the femoral neck, and 15% in the total femur. Patients submitted to RYGB surgery have chronic calcium malabsorption and vitamin D deficiency. They should be regularly followed with serum calcium, phosphorus, alkaline phosphatase, vitamin D, and PTH levels. Daily consumption of 1,200 a 1,500 mg of calcium and at least 3,000 UI of vitamin D also should be stimulated. **Final comments:** This case reports the necessity of calcium and vitamin D supplementation and continuous monitoring patients submitted to RYGB surgery to prevent severe complications such as hypocalcemia and osteomalacia. **Keywords:** osteomalacia; bypass Y-roux; tetany.

DIABETES MELLITUS

2091

ORFORGLIPRON IMPROVES MARKERS OF BETA-CELL FUNCTION AND INSULIN SENSITIVITY IN TYPE 2 DIABETES

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Objective: Orforglipron (OFG), an oral, non-peptide GLP-1 receptor agonist, demonstrated significantly greater glycemic control and weight loss at doses ≥ 12 mg *vs.* placebo (PBO) or dulaglutide (DU) 1.5 mg in a 26-week phase 2 study of adults with type 2 diabetes (T2D). These exploratory analyses investigated mechanisms by which OFG improved glycemic control in T2D by analyzing exploratory biomarkers. **Methods:** Participants with T2D (mean age, 58.9 years; baseline HbA1c, 8.1%; weight, 100.3 kg) treated with diet and exercise, with/without metformin, were randomized to PBO, DU 1.5 mg, or once-daily OFG 3, 12, 24, 36, or 45 mg. Biomarkers of β-cell function and insulin sensitivity were analyzed by mixed model repeated measures, excluding data after study drug discontinuation or rescue drug initiation. **Results:** Biomarkers of β-cell function were improved by OFG at 26-weeks from baseline. HOMA-B significantly increased with OFG at doses ≥ 12 mg *vs.* PBO [HOMA-B (computed with insulin) for OFG 12, 24, 36, 45 mg % change from baseline (CFB) was 111%, 90%, 104%, 90% *vs.* PBO 6% and DU 1.5 mg 42%; HOMA-B (computed with C-peptide) CFB for OFG 12, 24, 36, 45 mg was 118%, 92%, 114%, 113% *vs.* PBO 14% and DU 46%]. HOMA-IR (computed with insulin) significantly decreased from baseline with OFG at doses ≥ 24 mg (OFG 24, 36, 45 mg CFB was 19%, 14%, 23%) but was not significantly different *vs.* PBO (12%) and DU (13%). Fasting glucose-adjusted glucagon significantly decreased with OFG at doses ≥ 12 mg *vs.* PBO (30%) and with OFG 12 mg (58%), 24 mg (59%), and 45 mg (60%) *vs.* DU (44%). **Conclusion:** These analyses suggest improved glycemic control with OFG *vs.* DU may be partly explained by improved β-cell function and insulin sensitivity. Additional studies are ongoing to understand these mechanisms. **Disclosure:** Previously presented at ADA 2024. **Keywords:** tirzepatide; diabetes; insulin sensitivity.

NEUROENDOCRINOLOGIA

2092

FAHR SYNDROME SECONDARY TO HYPOPARATHYROIDISM DUE TO TOTAL THYROIDECTOMY: CASE REPORT

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Case presentation: Woman, 67 years, went to the emergency room complaining of sudden dyspnea, requiring orotracheal intubation, and malaise in December/2022. D-dimer was elevated (1.129 ng/mL), but chest computed tomography (CT) in a pulmonary thromboembolism protocol showed no filling failure of the pulmonary arteries, and this diagnosis was ruled out. Hypocalcemia (Ca 5 mg/dL), with both Trousseau and Chvostek signs positive, and hyperphosphatemia (P 7.2 mg/dL) were evidenced in laboratory tests, at which time a head CT was requested, showing foci of gross calcifications affecting the basal ganglia, thalamus, corona radiata and dentate nucleus, bilateral and symmetrical, without mass effect. She presented intense tremors diffusely an episode of syncope and seizure during her hospitalization. When asked, she revealed a history of total thyroidectomy in 2002 due to papillary thyroid carcinoma. The possibility of iatrogenic hypoparathyroidism was raised, her lab showed PTH 4.3 pg/mL in the presence of hypomagnesemia (Mg 1.6 mg/dL), this electrolyte was replaced intravenously and PTH remained low (4.6 pg/mL). Given this clinical context, dyspnea was presumed to be diaphragmatic paralysis due to hypocalcemia. She is currently asymptomatic and using 3 g/day of calcium citrate, 722.2 mg/day of magnesium, with normal laboratory tests for her condition (Ca 9 mg/dL and P 5.6 mg/dL in June/2024). **Discussion:** The combination of clinical, laboratory and image data allows the patient to be diagnosed with Fahr syndrome due to hypoparathyroidism. Since PTH is a hormone that regulates calcium and phosphate homeostasis, its absence leads to hypocalcemia, causing neuromuscular symptoms, and hyperphosphatemia, and low serum calcium/phosphate ratio, resulting in ectopic soft tissue calcifications by deposition of phosphate. Although central nervous system involvement is rare in hypoparathyroidism, it occurs mainly in the basal ganglia region, causing Fahr syndrome. This condition is on the spectrum of Parkinson disease, justifying the patient's neurological symptoms. **Final comments:** Early diagnosis and treatment of hypoparathyroidism helps prevent serious secondary complications, such as calcifications and neurophysiological disorders. This can be achieved by monitoring calcium metabolism in the postoperative period of cervical surgery, since its main cause is iatrogenic. **Keywords:** Fahr syndrome; hypoparathyroidism; brain calcifications.

ENDOCRINOLOGIA BÁSICA

2094

EFFECTS OF 5-ALPHA-REDUCTASE INHIBITORS IN TREATMENT OF DISORDERS RELATED TO MUSCULAR ATROPHY: A SYSTEMATIC REVIEW

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Introduction: Muscle atrophy is a neuromuscular clinical condition that affects the contractile capacity of muscles, which can trigger the progressive and generalized loss of muscle mass, known as sarcopenia. It is known that there is an influence of testosterone in preventing sarcopenia, but little is known about the influence of 5-alpha-reductase inhibitors (5-ARIs), the enzyme responsible for converting testosterone into DHT, in maintaining lean mass. **Objective:** The present study aims to analyze the pharmacological effect of 5-ARIs in the treatment of conditions related to muscular atrophy. **Material and method:** This systematic review follows the PRISMA methodology and uses the following databases: PubMed, Embase and Cochrane. The search uses the descriptors ("muscular atrophy" OR "sarcopenia") AND ("5-alpha-reductase inhibitors" OR "finasteride" OR "dutasteride"). The inclusion criterion was the availability of free full text. Review studies and studies not consistent with the theme were excluded. **Results:** Of the 21 articles found, 16 were excluded after title analysis, leaving 5 for this work, 2 with rodents and 3 RCTs with samples ranging between 50 and 170 humans, two studies evaluating men with muscular atrophy and one that analyzes women over 65 years of age with sarcopenia. Two main thematic axes were identified among the selected articles: (I) The management of patients with Spinal and Bulbar Muscular Atrophy (SBMA) who were treated with dutasteride and (II) The therapeutic effect of 5-ARIs drugs for the reversal and prevention of cases of muscular atrophy, including sarcopenia. In (I), the selected studies showed that there were no significant differences in patients who were treated with dutasteride compared to the group that received placebo. In (II), the studies showed that the use of 5-ARIs, finasteride and MK-434, alone, were not responsible for the maintenance of muscle mass in rats with muscular atrophy or sarcopenic humans, only when associated with testosterone. **Conclusion:** Studies indicate that the use of 5-ARIs are not, in themselves, effective in treating or preventing muscle atrophy. However, the short follow-up and restricted number of patients were limitations in studies on SBMA. **Keywords:** 5-alpha-reductase inhibitors; muscular atrophy; sarcopenia.

ENDOCRINOLOGIA PEDIÁTRICA

2095

PREVALENCE OF CASES OF HYPOTHYROIDISM IN PEDIATRIC PATIENTS WITH DOWN SYNDROME IN JOANA DE GUSMÃO CHILDREN'S HOSPITAL DURING THE PERIOD OF 2016 TO 2021

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Introduction: Down syndrome (DS) is the most common chromosomal disorder in live newborns. Patients with DS have an increased risk of developing several diseases, particularly endocrine disorders such as hypothyroidism. Both conditions involve transient or permanent delay in neuropsychomotor development, and as a result, some effects of hypothyroidism may be mistaken for the symptoms caused by DS, posing a risk to the patient's health. Therefore, proper monitoring of thyroid dysfunctions is essential. **Objective:** Evaluate the prevalence of hypothyroidism in pediatric patients with Down syndrome at Joana de Gusmão Children's Hospital from 2016 to 2021. **Method:** This cross-sectional study assessed 123 medical records of children and adolescents up to 18 years old diagnosed with Down syndrome and treated at Joana de Gusmão Children's Hospital from January 2016 to December 2021. The prevalence of diagnosis of hypothyroidism in the presence of Down syndrome was calculated. This project was approved by the Ethics and Research Committee. **Results:** Out of 123 medical records assessed, hypothyroidism was found in 61 patients (49,6%), with 35 being boys (57,4%) and 26 being girls (42,6%). Among the 61 patients with hypothyroidism, 14 had congenital hypothyroidism (23%), 6 had subclinical hypothyroidism (9,8%), and 41 had acquired hypothyroidism (67,2%). **Conclusion:** There is a high prevalence of hypothyroidism in patients with DS, indicating the need for increased monitoring of thyroid function in these patients, especially during the early years of life. **Keywords:** Down syndrome; hypothyroidism; children; adolescents.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2097

ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY IN TURNER SYNDROME: A CASE REPORT

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Introduction: Turner syndrome (TS) results from partial or complete loss of the second sex chromosome and affects approximately 1 in 2,000 live female newborns. Diagnosis is suggested by short stature (SS) and delayed puberty in girls, confirmed by karyotype. Congenital cardiovascular malformations may be present, with a prevalence of 22% to 70% depending on the method used, which can reduce life expectancy by a decade. Bicuspid aortic valve is the most common. **Case report:** 33-year-old woman followed since the age of 10 for SS (118.5 cm, Z -3.7) and hypergonadotropic hypogonadism, with TS confirmed by karyotype 45,X [30]. At the age of 21, hypertension was diagnosed without other cardiovascular symptoms and treated with losartan and propranolol. Echocardiograms were normal. Cardiovascular magnetic resonance imaging (MRI) revealed right ventricular wall dyskinesia associated with reduced ejection fraction and signs suggestive of myocardial fibrosis, consistent with arrhythmogenic right ventricular cardiomyopathy (ARVC). Electrocardiogram showed sinus rhythm, negative T wave in the anterior wall from V1 to V5, and incomplete right bundle branch block. 24-hour Holter monitoring showed an average heart rate of 72 bpm with rare supraventricular extrasystoles and no ventricular arrhythmias. Exercise stress testing was normal. **Discussion:** ARVC is an emerging concept of cardiomyopathy not explained by ischemic, hypertensive or valvular heart disease. It encompasses a spectrum of systemic, inflammatory, or genetic heart diseases with a common phenotype of supraventricular and ventricular arrhythmias, conduction system disease, or sudden cardiac death. Diagnosis is challenging, as many patients are asymptomatic, and requires a combination of clinical data and imaging studies. Cardiac MRI stands out as the gold standard for assessing ventricular structure/function, edema, and fibrosis, although it is still an exam with low availability in public health. The cause of electrophysiological abnormalities is unknown, but genetic defects such as mutations in desmosomal genes are suspected. Altered expression of X-linked genes may act as transcriptional regulators of autosomal genes involved in ion channel activity. **Conclusion:** ARVC is a rare and recognized cause of sudden death in young people. To our knowledge, this association with TS has not been previously described in the literature and highlights the role of MRI in screening for cardiovascular abnormalities in TS. **Keywords:** Turner syndrome; arrhythmogenic right ventricular cardiomyopathy; cardiovascular magnetic resonance imaging.

DIABETES MELLITUS

2101

MAURIAC SYNDROME AND MULTIPLE TARGET ORGAN DAMAGE IN A YOUNG PATIENT WITH TYPE 1 DIABETES MELLITUS – A CASE REPORT TO DISCUSS ACCESS TO HEALTHCARE

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Case report: A 24-year-old female from a remote rural area was transferred to a hospital in the capital due to infectious pericarditis complicated by pericardial effusion with hemodynamic repercussions. During hospitalization, she required prolonged antibiotic therapy and pericardiocentesis. However, her prior medical history was particularly notable. The patient had type 1 diabetes mellitus (T1DM) since the age of four, which was poorly controlled, associated with short stature, a history of pubertal delay, hepatomegaly, and cushingoid appearance, characterizing Mauriac syndrome (MS). She also had severe proliferative diabetic retinopathy, diabetic nephropathy on renal replacement therapy one year before admission, resistant hypertension, and a history of ischemic stroke one and a half years before admission. Despite multiple target organ damage, the patient did not have regular medical care and had inadequate management of her insulin therapy. After stabilization, the patient was discharged for outpatient follow-up at our tertiary hospital. **Discussion:** Mauriac syndrome is a rare complication of long-standing poorly controlled T1DM, first described by Pierre Mauriac in 1930. It is mainly characterized by pubertal delay or growth failure, glycogenic hepatopathy, and cushingoid features. Long-term hyperglycemia causes both micro and macrovascular complications, increasing morbidity and mortality in these patients. Despite advances in T1DM therapy, such as modern insulins and new glycemic monitoring methods, young patients with rare and severe complications due to poor glycemic control still exist. This is often due to a lack of access to regular follow-up or new treatment modalities. In this case, the patient's residence in an underserved rural area in the hinterland, far from large medical centers, was a significant factor in the development of these complications, impacting her quality of life and mortality risk. **Final comments:** Adequate glycemic control and regular monitoring are essential in preventing T1DM-related complications, such as MS, which should be rare but is still occasionally reported. This case highlights the need for new prevalence and incidence studies of MS in underserved regions and highlights the importance of improving access to healthcare for patients in remote rural areas. **Keywords:** Mauriac syndrome; diabetes mellitus; type 1 diabetes mellitus.

DIABETES MELLITUS

2102

USE OF A PORTABLE RETINOGRAPH WITH ARTIFICIAL INTELLIGENCE FOR DIABETIC RETINOPATHY SCREENING IN TYPE 2 DIABETES PATIENTS: AN OBSERVATIONAL STUDY IN A TERTIARY HOSPITAL IN RECIFE-PE

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Introduction: Diabetic retinopathy (DR) is a common ocular complication in patients with type 2 diabetes (T2DM), which can cause blindness if not diagnosed and treated early. Early detection of DR is crucial to prevent the disease's progression. With technological advancements, portable retinographs with integrated artificial intelligence (AI) systems have shown potential to identify retinal changes indicative of DR. **Objective:** This research aims to evaluate the effectiveness of the portable retinograph with an AI system in detecting DR. Patients: Patients with T2DM treated at the endocrinology outpatient clinic of a tertiary hospital in Recife-PE. **Methods:** This is an observational, cross-sectional, and prospective study currently underway, comparing the heatmap algorithm of the AI coupled to the retinograph with the results obtained by a retina and vitreous specialist ophthalmologist. **Results:** Initially, 179 patients were recruited, of whom 26 (14,5%) were excluded due to ocular pathologies that prevented adequate image capture, including 2 cases of advanced diabetic ocular disease. Thus, 153 (85,5%) patients (306 eyes/images) were included in the analysis. Of the 286 valid images for evaluation, 20 (7%) were excluded due to low quality. The ophthalmologist positively identified 25 (8,7%) cases, all confirmed by the AI. Conversely, the specialist classified 261 images (91,3%) as absence of DR, while the AI positively identified 84 images (29,4%) and negatively 177 (62%). Therefore, the sensitivity and specificity, considering the standard of human reading for detecting positive cases, were 100% (95% CI 100-100) and 67.8% (95% CI 62.8-72.9), respectively. The positive predictive value was 22.9% (95% CI 17.4-28.5), while the negative predictive value was 100% (95% CI 100-100). **Conclusion:** This study highlights the promising application of AI in portable retinographs as an effective complementary tool in DR screening. The AI demonstrated high sensitivity in detecting positive cases, reinforcing the potential utility of the device as a screening tool. It is worth noting that the study is still ongoing, and future analyses may consolidate and expand these preliminary results. **Keywords:** diabetic retinopathy; portable fundus camera; artificial intelligence.

ENDOCRINOLOGIA PEDIÁTRICA

2104

49,XXXXY SYNDROME: A CASE REPORT

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Case presentation: A 4-year-old boy, born at 39 weeks, small for gestational age. **The** initial hearing screening was altered, with normal retesting after one month. He experienced difficulty latching onto the breast during the neonatal period. He exhibited delays in neuropsychomotor development and micropenis. At 9 months he was referred to pediatric endocrinology and with 11 months, karyotyping was performed, resulting in G-banding: 49,XXXXY. He received testosterone treatment, 50 mg in 3 doses between 1 and 2 years, which significantly improved development, growth rate, and penile length. He started walking at 1 year and 8 months with the help of physical therapy and spoke his first words after 2 years. He achieved daytime toilet training by 3 years. Currently, he presents a wide-based gait, clinodactyly of the 5th metacarpal, good comprehension of questions and commands responding with gestures, but with limited verbal interaction. He still lacks anal sphincter control. Current physical examination: Height: 96.8 cm (Z -1.94), Weight: 14.900 kg (Z -0.98), BMI: 15.9 (Z +0.47). Testes in scrotum, G1P1. Cranial MRI showed areas of altered white matter signal, unusual for the age, which may be related to the reported chromosomal abnormality. An auditory evaluation revealed alterations in retrocochlear and central auditory pathways bilaterally (neural conduction delay). **Discussion:** The karyotype 49,XXXXY, a rare variant of Klinefelter syndrome (KS), affects 1:85,000-100,000 live male births. With diagnosis usually after birth, ranging from newborn to 24 months of age, the presence of multiple genetic anomalies contributes to early diagnosis. Dysmorphic features, developmental delay, and/or micropenis, as well as hypogonadism and musculoskeletal abnormalities, are characteristic. Treatment involves multidisciplinary follow-up to improve quality of life and is primarily based on testosterone replacement. Research shows that treatment with this hormone benefits in neurocognitive development, the reproductive system, and metabolic profile regulation, even in later stages. **Conclusion:** The identification of this rare KS variant is extremely important, and its various manifestations can contribute to early diagnosis, allowing treatment that improves the patient and their family's quality of life. Research involving such individuals is limited and still needed, especially regarding the impact of testosterone treatment and the best timing for intervention. **Keywords:** 49,XXXXY; neuropsychomotor development; testosterone.

METABOLISMO ÓSSEO E MINERAL

2105

RECURRENT ACUTE PANCREATITIS AS A CLINICAL MANIFESTATION OF HYPERCALCEMIA DUE TO PERSISTENT HYPERPARATHYROIDISM – CASE REPORT

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Case report: A 37-year-old male presented to the hospital with upper abdominal pain associated with vomiting and was diagnosed with acute pancreatitis (AP). Prior medical history was significant for a kidney transplant eleven years before admission due to chronic kidney disease (CKD) of unclear etiology. He also had hyperparathyroidism, which was being treated with cinacalcet on an irregular basis. During this hospitalization, the patient required a prolonged ICU stay due to pancreatic necrosis and septic shock. The etiological investigation ruled out the most common causes of pancreatitis such as lithiasis, alcohol, hypertriglyceridemia, and drugs. Despite the severity of the injury, the patient maintained mild hypercalcemia. After stabilization, he was discharged for outpatient follow-up. Two weeks later, the patient was readmitted with a new episode of AP. This time, serum calcium levels were moderately elevated. Consequently, the previous diagnosis and treatment of hyperparathyroidism were revisited. Further investigation showed elevated PTH with persistent hypercalcemia despite cinacalcet therapy. Scintigraphy with sestamibi revealed a parathyroid adenoma in the right lower lobe, suggesting persistent hyperparathyroidism (PHP). After clinical recovery and control of calcium levels, the patient was referred for surgery for definitive treatment. **Discussion:** Patients with CKD often develop secondary hyperparathyroidism in response to mineral abnormalities, which is expected to resolve after kidney transplantation. However, 8% to 50% of transplant patients may persist with the disease due to structural changes in the glands, such as hyperplasia or adenomas, characterizing PHP. Sustained hypercalcemia can lead to various complications, with AP being one of the rarest. In severe cases of AP, calcium levels tend to decrease through multifactorial mechanisms; however, when disproportionately normal or elevated calcium levels are found, hypercalcemia can be suspected as the etiology. Adequate and definitive treatment of PHP is crucial to control calcium levels and prevent related complications. **Final comments:** Hypercalcemia is a very rare etiology of AP but must be considered in the investigation. Among the causes of hypercalcemia, PHP is more likely in patients with a history of CKD, particularly in transplant recipients. Therefore, adequate monitoring and treatment of PHP are essential to avoid the detrimental effects of elevated PTH levels. **Keywords:** acute pancreatitis; hypercalcemia; persistent hyperparathyroidism.

TIREOIDE

2107

PAPILLARY THYROID CARCINOMA: A COMPLEX CASE OF ATYPICAL EVOLUTION

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Case presentation: J.A.B., a 60-year-old male, sought medical attention in September 2023 for a nodule in the right axilla. He had a history of hypertension and no family history of cancer. In 1992, he underwent a partial thyroidectomy due to thyroid cancer but had no medical records. In 2001, he reported undergoing cervical surgery, also without records, remaining asymptomatic and without using levothyroxine until 2010, when cervical lymph nodes appeared in a diagnostic PCI with iodine 131 (I131) and a CT scan showed lymph nodes at level III on the right. In 2011, he underwent cervical dissection, therapeutic dose of I131 (154 mCi), and started on levothyroxine, which he used irregularly. Post-dose PCI showed three areas of hyperconcentration, described in the pathology report as lymph node metastases of papillary carcinoma with infiltration into fibroadipose and muscular tissues. In 2013, MRI, neck CT, and diagnostic PCI were normal, but elevated thyroglobulin (Tg) levels indicated active disease. In 2015, a new diagnostic PCI was negative, but Tg levels remained elevated, and in 2016, a cervical ultrasound was normal, with irregular outpatient follow-up. In 2023, after total thyroidectomy, histopathology showed classic invasive papillary carcinoma, and CT showed cervical adenomegaly and a right axillary mass, with fine-needle aspiration suggesting metastasis. In November of that year, lymphadenectomy was performed, with histopathology showing 23 metastatic lymph nodes up to 9.3 cm (23/26), with capsule transposition, followed by a dose of I131 (150 mCi). In April 2024, CT showed bilateral cervical adenomegaly and a mediastinal mass, inoperable. In May 2024, he was diagnosed with deep vein thrombosis in the right arm and hemithorax, treated with anticoagulants. In June 2024, he passed away, with tests showing elevated TSH and thyroglobulin levels. **Discussion:** Papillary carcinoma, especially the classic subtype, has a good prognosis and survival rate similar to the general population when properly treated and monitored. The appearance of metastases in cervical lymph nodes occurs in up to 50% of cases, but they are usually not voluminous or located outside the neck. **Final comments:** This case is notable for its atypical presentation and severe evolution, likely justified by inadequate surgical planning and follow-up, lack of TSH suppression, and probable iodine refractoriness. **Keywords:** papillary thyroid carcinoma; atypical evolution; metastasis.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2108

PREVALENCE AND CORRELATION OF ANXIETY AND DEPRESSION WITH FAMILY HISTORY OF THESE DISORDERS AND THEIR INTERDEPENDENCIES IN THE TRANS POPULATION TREATED AT REFERRAL CENTERS IN THE STATE OF BAHIA: A CROSS-SECTIONAL STUDY

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Introduction: Transgender individuals are those whose gender identity is not compatible with the sex assigned at birth. This population is more vulnerable to developing mental disorders, particularly anxiety and depression, due to the impacts of minority stress. In addition to genetic factors, family functioning and peer relationships are important factors that influence the mental health of young people, especially transgender individuals. Objective: To assess the prevalence of anxiety and depression and its correlation with family history of these conditions in trans people treated at referral centers in Bahia. **Methods:** Interview and data collection from electronic medical records of patients attended between October 2018 and 2022 for analysis of data regarding the report of past personal or first-degree family diagnosis of anxiety and/or depression by psychiatrist. The sample included patients treated at centers who had a desire for cross-hormone therapy and signed an informed consent form approved by the institutions' Research Ethics Committee. STATA 14.1 was used to evaluate the data. Results: Of the 186 patients included, 59.5% were trans men (TM), 37.8% trans women or transvestites (TW) and 2.7% non-binary (NB). Among the total, 31.7% reported having a diagnosis of anxiety and depression, while 24.2% reported only anxiety and 16.1% only depression. A family history of the two diseases was present in 21.7% of cases, only anxiety in 8.2% and only depression in 19.0% of family members; whereas a family history of anxiety was associated with the development of anxiety and depression in trans individuals ($p = 0.020$). Family anxiety was more prevalent in patients with both disorders than in those without (15.5% vs. 4.7%) and was also more prevalent in patients with anxiety only than in those without (18.1% vs. 5%). The existence of anxiety as the only diagnosis was associated with a history of it in family members ($p = 0.010$) and its prevalence was higher in TM when compared to TW (28.8% vs. 16.4%) ($p = 0.049$). The presence of depression was associated with suicide attempts ($p = 0.013$) and anxiety ($p < 0.001$). There was no statistically significant correlation between the other variables. **Conclusion:** In our sample, the diagnosis of anxiety in first-degree family was associated with prior personal diagnosis of anxiety, a diagnosis with a higher prevalence in TM compared to TW. The presence of depression was associated with suicide attempts and comorbid anxiety. Keywords: transgender; anxiety; depression.

ADRENAL E HIPERTENSÃO

2109

REPORT OF THREE PATIENTS – APPARENTLY UNRELATED – WITH PARAGANGLIOMA RESULTING FROM A FOUNDING MUTATION OF THE SDHB GENE DESCRIBED IN THE IBERIAN PENINSULA

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We report three patients with paragangliomas (PG) carrying a germline deletion of 15,678 bp occurring in the SDHB gene. This large deletion was described in association with a founder effect that occurred in the Iberian Peninsula, in particular, in the north of Portugal and in the west of Spain. The deletion covers the promoter region, exon 1 and part of intron 1 of this gene (c.-10413_73-3866del). **Case 1:** Male, diagnosed with PG of the right carotid glomus and pituitary adenoma at the age of 40. He had a previous clinical history of pheochromocytoma (PHEO) operated on at 16 years of age. Due to the association between PHEO/PG and pituitary adenoma, a diagnosis of 3PA syndrome was made. Cerebral aneurysm was incidentally diagnosed along with pituitary adenoma and PG. **Cases 2:** 16-year-old young woman with PG in the Zuckerkandl organ, with an anterior and left lateral paravertebral mass measuring 4 cm in the topography of D11 and D12. **Case 3:** 18-year-old young woman, with PG in the Zuckerkandl organ, with a mass in the left para-aortic region measuring 6.5 cm in length. The three cases had excess circulating catecholamines (3.5 to 7 times increase) surgery and were then clinically followed for 6 months (Case 1), 4 years (Case 2) and 40 years (Case 3), without evidence of recurrence or metastases. At-risk family members of the three cases received genetic counseling and were genetically screened for this founding mutation: the 3 children of case 1 (3PA) were not carriers of the deletion. This was found in the mothers of cases 2 and 3. The founding mutation of SDHB (c.-10413_73-3866del) has been found in Brazil and Mexico in individuals with ancestors originating from the Iberian Peninsula. Since the description of this founder effect, other founder deletions have been reported in patients with PG and PHEO, namely in the French/Canadian population and in the Dutch/South African population. These founder deletions are different and result from independent genetic events. We emphasize the importance of providing, in addition to the usual genetic investigation, research aimed at detecting large deletions in patients with PG or PHEO in Latin America; we indicate that 3PA syndrome may be a clinical form of presentation of this founder mutation and, finally; We draw attention to the possibility that this founding mutation may be underdiagnosed in Brazil and Latin America, a region historically colonized by people originating from the Iberian peninsula. **Keywords:** paraganglioma; founder mutation; molecular study.

METABOLISMO ÓSSEO E MINERAL

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CLINICAL MANAGEMENT AND FOLLOW-UP OF BONE DISEASE IN A PATIENT WITH ROTHMUND-THOMSON SYNDROME

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Case presentation: A 42-year-old female with Rothmund-Thomson syndrome (RTS) presented with short stature, bilateral amaurosis, poikilodermatous lesions, alopecia, primary amenorrhea, and growth hormone (GH) deficiency. At age 21, bone densitometry (DXA) indicated low bone mass. Despite 3 years of estradiol and progesterone replacement for hypogonadism and 10 months of GH replacement (suspended due to hypertriglyceridemia), she experienced multiple fragility fractures. She was then prescribed oral bisphosphonate therapy for 10 years, resulting in a 34% increase in bone mass in L2-L4, 14% in the right femoral neck, and 19% in the right femur. However, severe osteoporosis persisted, leading to teriparatide treatment. After a 2 years therapy, the patient showed a good response with a bone mineral density (BMD) increase of 16% in the lumbar spine, 18% in the right femoral neck, and 4.9% in the right total femur. **Discussion:** RTS is a rare autosomal recessive disorder related to mutations in the RECQL4 gene. About 75% of RTS patients exhibit skeletal abnormalities such as osteopenia and pathological fractures, indicating generalized bone impairment. Bone mass loss is multifactorial, involving disruptions in calcium homeostasis from gastrointestinal disorders, reduced vitamin D synthesis due to limited sun exposure, and hypogonadism. RECQL4 directly affects osteoclast metabolism through p53 modulation, contributing to bone disease severity. Despite long-term bisphosphonate treatment, our patient experienced disease progression, with continued high fracture risk and DXA-confirmed osteoporosis. Teriparatide therapy was initiated, with stringent monitoring for bone malignancy. The patient showed a significant increase in bone mass in the lumbar spine and right femoral neck. The patient continued alendronate with calcium and vitamin D to maintain bone mass. Treatment to increase BMD and reduce fracture risk usually starts with antiresorptive agents, with anabolic therapies reserved for severe cases. Due to the rarity of the disease, data on anabolic agents in RTS is lacking. Teriparatide may associate with benign bone tumors and osteosarcoma in this population, requiring cautious use. **Conclusion:** This case reports the successful use of teriparatide in a patient with RTS, with no signs of malignancy during or after treatment. The complexity of managing osteoporosis in these patients highlights the need for further studies to ensure the safe use of anabolic therapies. **Keywords:** Rothmund-Thomson syndrome; osteoporosis; teriparatide.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2111

PREVALENCE AND CORRELATION OF ANXIETY AND DEPRESSION WITH SEXUAL ABUSE AND USE OF LEGAL AND ILLEGAL SUBSTANCES IN A TRANSGENDER POPULATION ATTENDED AT REFERENCE CENTERS IN THE STATE OF BAHIA: A CROSS-SECTIONAL STUDY

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Introduction: Transgender refers to individuals who identify with a gender different from the one assigned at birth. Compared to cisgender people, transgender individuals are more likely to develop mental disorders due to the adverse contexts in which they live. They also have a higher prevalence of sexual abuse. The use of legal and illegal substances is more common in this population. These risky behaviors are interconnected with mental health, increasing the chance of developing mental disorders, particularly anxiety and depression. **Objective:** To evaluate the prevalence of anxiety and depression and their correlation with sexual abuse and/or the use of legal and illegal substances in transgender people attended at reference centers in Bahia. **Methods:** Data on self-reported previous diagnoses of anxiety and depression by a psychiatrist, history of sexual abuse, alcoholism, smoking, and use of illegal drugs were obtained through interviews and data collection from electronic medical records between October 2018 and 2022. The sample included patients attended at the centers for cross-sex hormone therapy who signed an informed consent form approved by the institutions' ethics committees. STATA 14.1 was used to analyze the data. **Results:** Of the 186 patients included, 59.5% were trans men, 37.8% trans women and travestis, and 2.7% non-binary. Among them, 31.7% reported a previous diagnosis of anxiety and depression, while 24.2% reported only anxiety, and 16.1% only depression. Regarding substance abuse, 80.3% of respondents reported recurrent alcohol use, 34.1% smoking, and 30.9% of the transgender population studied used illegal drugs. The prevalence of sexual abuse was 31.6%. A history of sexual abuse was more prevalent in patients with anxiety and depression than in those without mental disorders (39.6% *vs.* 27.7%) (p = 0.046). This variable was also more prevalent in patients with anxiety (42.2% *vs.* 28%) (p = 0.028). The presence of depression in transgender patients was associated with the use of illegal drugs (p = 0.047). Although 48.2% of patients with depression used illegal drugs, the number of users was lower among those without the disease (27.6%). **Conclusion:** The history of illegal drug use was related to depression. Sexual abuse was correlated with anxiety and depression, as well as with the exclusive diagnosis of anxiety. **Keywords:** transgender; substances use; sexual abuse.

METABOLISMO ÓSSEO E MINERAL

2114

ASSESSMENT OF SKELETAL HEALTH IN BRAZILIAN MEN WITH CELIAC DISEASE AT THE TIME OF DIAGNOSIS: HOW IMPORTANT IS IT?

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Introduction: Low bone mass density (BMD) is an extraintestinal finding in the celiac disease (CD). This can result in bone fractures, leading to a loss of quality of life. **Objective:** To evaluate BMD in male patients with CD at the time of diagnosis according to the patient's age. **Methods:** Descriptive retrospective carried out in the period between 2013 and 2023 in a single office that studied results from radiological absorptiometry double energy (DEXA) in 28 male patients with a recent diagnosis of CD, divided into three groups: group 1 (age up to 18 years old); group 2 (from 19 to 49 years old) and group 3 (over 50 years old). Demographic and anthropometric parameters were trained, time elapsed between the beginning of symptoms and diagnosis of CD and occurrence of fractures. **Results:** Celiac patients had a median age of 36.0 years (IQR = 16.5-50.7). Among them, 39.3% presented osteopenia and 14.3% had osteoporosis. Only 36% of the sample presented values normal DEXA results (group 1 with 37.5%; group 2 with 46% and group 3 with 14.2%). No fracture pathology was observed in this sample. The delay in diagnosing CD observed had a median of 1.0 year (IIQ = 1.0-4.7). When comparing the number of individuals with DEXA results normal and altered, there was no difference in body mass index, delay time in diagnosis or Marsh classification (P = 0.18). **Conclusion:** Male patients in the moment of CD diagnosis showed a high prevalence of low BMD, which was particularly evident in individuals over 50 years. **Keywords:** disease celiac; bone; masculine.

METABOLISMO ÓSSEO E MINERAL

2115

TREATMENT OF LYMPH FISTULA WITH LIPIODOL AFTER PARATHYROIDECTOMY DUE TO PARATHYROID CARCINOMA: A CASE REPORT

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Introduction: Postoperative lymph fistula following head and neck surgery is a complication that prolongs hospital stay and has considerable potential morbidity. Management strategies may include conservative approach as well as surgical treatment. We aim to describe a case of lymph fistula following neck surgery due to parathyroid carcinoma. **Case:** A 68-year-old woman was submitted to resection of left inferior parathyroid (2.5 cm in size) along with total thyroidectomy and central lymph node dissection due to parathyroid carcinoma. After surgery, the patient has developed a progressive bulging above the surgical incision and has complained of dysphagia and dyspnea. CT scan has showed a fluid buildup (volume 212 mL) with extension to the mediastinum. Aspiration of the content has showed milky fluid, with triglyceride dosage of 927 mg/dL. Drainage of the lymphocele was performed, however there was recurrence of it in less than 24 hours, confirming an active lymph fistula. Conservative treatment with a low fat diet, compressive dressing and octreotide was not effective. A lymphangiography with lipiodol was performed aiming the thoracic duct embolization. Unfortunately, catheterization of the thoracic duct was unsuccessful, but the use of lipiodol as a contrast method had a therapeutic effect since, after emptying the lymphocele during the procedure, it did not reoccur and the residual collection was reabsorbed in the following months. **Discussion and final comments:** Lipiodol is an iodized oil used as a contrast method in imaging studies that also has therapeutic effects, such as use in radioembolization. Despite the unsuccessful catheterization of the thoracic duct in the case reported, the use of lipiodol during lymphangiography allowed for the correction of the lymph fistula and the literature has shown a success rate of 50%-70% with this approach. When lymphangiography fails, surgical management is indicated. It is not always possible to identify the thoracic duct on imaging and its preoperative location is not usually valued in parathyroidectomies; however, after a thorough retrospective analysis of the patient's preoperative neck CT scan, it was possible to locate the thoracic duct close to the parathyroid tumor. This case illustrates the importance of preoperative evaluation of the thoracic duct in order to minimize the risk of postoperative lymph fistula. **Keywords:** parathyroid carcinoma; lymph fistula; lipiodol.

TIREOIDE

2117

STATINS AS A PROMISING ADJUNCTIVE THERAPY FOR THYROID EYE DISEASE IN GRAVES' DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Thyroid eye disease (TED) is a significant complication of Graves' disease (GD), characterized by inflammation and tissue remodeling around the eyes, leading to symptoms such as proptosis, diplopia, and vision impairment. Statins, known for their lipid-lowering effects, have demonstrated anti-inflammatory and immunomodulatory properties, suggesting potential benefits in TED management. **Objective:** This systematic review and meta-analysis aimed to evaluate the efficacy and safety of statins in preventing the incidence and/or progression of TED in patients with GD. **Methods:** A comprehensive literature search was conducted across multiple databases, including PubMed, Embase, and Cochrane Library, up to June 2024, including 6 studies. Randomized controlled trials (RCTs) and observational studies assessing the impact of statins on TED incidence, progression, symptom improvement, quality of life (QoL), and safety in GD patients were included. The review model was based on PRISMA for systematic review and meta-analysis. Data extraction and quality assessment were performed independently by two reviewers. Meta-analysis was conducted using a random-effects model to calculate pooled estimates of treatment effects. **Results:** 6 studies, encompassing a total of 42.562 patients, were included in the analysis. Statin therapy was associated with a significant reduction in the incidence and progression of TED (Hazard Ratio [HR] = 0.6, 95% Confidence Interval [CI]: [0.44-0.81], $p < 0.05$. Patients treated with statins experienced notable improvements in TED symptoms, including reduced proptosis and diplopia, and reported better QoL scores (Odds Ratio [OR] = 1.31, 95% CI: [0.91-1.88], $p = 0.14$). Importantly, the use of statins did not increase the risk of hepatotoxicity compared to controls (Odds Ratio [OR] = 0.45, 95% CI: [0.05-3.89], $p = 0.46$). **Conclusion:** Statins appear to be an effective and safe adjunctive treatment for preventing the incidence and progression of TED in patients with GD. Their beneficial effects on symptom improvement and QoL enhancement, coupled with the absence of increased hepatotoxicity risk, support the potential role of statins in the management of TED. Further large-scale RCTs are warranted to confirm these findings and to elucidate the underlying mechanisms of statin benefits in TED. **Keywords:** Thyroid eye disease; Graves' disease; statins.

TIREOIDE

2120

A STUDY ON THE RELATIONSHIP BETWEEN AUTOIMMUNE THYROID DISEASE AND OVARIAN RESERVE: A SYSTEMATIC REVIEW

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Introduction: Autoimmune thyroid disease (AITD) is most common among women of reproductive age and it is believed to have an influence on the reproductive system. Studies have shown that thyroid disorders affect thyroid hormone receptors on the surface of oocytes and are linked with a low ovarian reserve. **Objective:** To evaluate the relationship between ovarian reserve and autoimmune thyroiditis in women. **Methods and materials:** This systematic review followed the recommendations of PRISMA. 106 articles were found using the descriptors "Ovarian reserve" AND "thyroid autoimmunity" OR "Hashimoto" in the PubMed, EMBASE, BVS and Web of Science databases, within the last 5 years. Duplicate articles, animal studies, case reports and reviews were excluded. Full articles written in English, Portuguese, or Spanish were selected. **Results:** 10 observational studies were included in this review, with a total population of 1,836 women, of which 1,093 had AITD and 743 were part of the control group. The mean age was 37.5 years. 70% of the studies collected the anti-Müllerian hormone (AMH) levels in the anti-TPO positive and negative patients. The mean anti-TPO level was 191.82 IU/mL in the positive patients. The mean antral follicle count (AFC) was 10.3 follicles for individuals anti-TPO positive and 13.73 for those anti-TPO negative. The AMH in patients with AITD was 1.47 ng/mL while in patients in the control group it was 2.34 ng/mL. Therefore, it can be observed a decrease in serum AMH levels concerning the increase in anti-TPO levels. This pattern remains when evaluating AFC. Regarding the other hormones, one study evaluated FSH levels relative to anti-TPO, but no significant correlation was established. 30% of the studies showed a decrease in AMH levels in women over 35 years old. 20% showed no significant differences between patients with AITD and the control group but couldn't explain the results, therefore, going against the ones that established a relationship between decreased ovarian reserve and AITD. **Conclusion:** Women diagnosed with autoimmune thyroiditis are at higher risk for impaired ovarian reserve. The AMH showed a decrease in both anti-TPO positive and negative patients, while it was not possible to establish a relationship between FSH and anti-TPO levels. Monitoring ovarian reserve may be recommended for women with autoimmune thyroiditis. **Keywords:** autoimmune thyroiditis; ovarian reserve; anti-Mullerian hormone.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2121

EFFECTS OF ANDROGEN REPLACEMENT THERAPY ON THE MENTAL HEALTH OF PATIENTS WITH HIV AND HYPOGONADISM: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Hypogonadism (HG) is one of the prevalent factors among men with the human immunodeficiency virus (HIV), and androgen replacement therapy (ART) is one of the best lines of treatment for the problem. However, the consequences of this therapy on the mental health (MH) of these patients are still unclear. **Objectives:** To carry out a systematic review (SR) and meta-analysis (MA) of randomized controlled trials (RCTs) that addressed MH outcomes of men with HIV and HG undergoing ART. **Patients and methods:** A systematic search was carried out in PubMed, Embase and Cochrane Central databases, from inception to June 25, 2024. Only RCTs that compared the effects of ART *versus* placebo on the MH of patients with HIV and HG were included. The outcomes: Hamilton Rating Scale for Depression (HAM-D), emotional well-being and beck depression inventory (BDI); were compiled into the pooled analyses for Overall Mental Health (OMH) by standardized mean difference (SMD); as well as the depression scales compiled for the pooled analyses for Depression Score (DS). The SR and MA were conducted according to the PRISMA protocols. Heterogeneity between studies was assessed using Cochran's Q test and the I^2 statistic. P-values of less than 0.10 and $I^2 > 25\%$ were considered indicative of significant heterogeneity. Random-effects models were used for statistical analysis in the 5.4 version of the Review Manager software. **Results:** From the search in the databases, 698 articles were found. After removing duplicate and ineligible studies, 4 articles were included in the present study according to the inclusion criteria. In total, the research covered 295 patients, of which 156 underwent ART, while 139 received placebo. The analysis showed high heterogeneity between studies ($I^2 \geq 50\%$). In relation to OMH (SMD -1.30; 95% CI: -2.75, 0.15; $p = 0.08$; $I^2 = 96\%$); and for DS (SMD -1.69; 95% CI: -3.79, 0.40; $p = 0.11$; $I^2 = 91\%$); statistically relevant difference wasn't found between the two groups. Variations in the measurement of depression scales and the lack of standardization in the assessment of MH were factors that have directly contributed to the high heterogeneity among studies. **Conclusion:** It can be inferred that, although both analyses of the depression score (DS) and overall mental health (OMH) parameters favor ART, there is no statistically significant difference between the two groups (placebo and TRT). **Keywords:** hypogonadism; HIV; mental health.

ENDOCRINOLOGIA PEDIÁTRICA

2122

EPIDEMIOLOGICAL PROFILE OF INFANT MORTALITY DUE TO MALNUTRITION IN ALAGOAS FROM 2013 TO 2022

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Introduction: Child malnutrition is a multifactorial condition primarily resulting from the early cessation of exclusive breastfeeding and inadequate complementary feeding. It manifests either as an acute disease (low weight) or a chronic disease (low weight and height). In early childhood, it leads to higher mortality rates and functional impairments later in adulthood. The most common form is marasmus, characterized by an overall insufficiency of nutrients. In this context, child malnutrition is linked to socioeconomic vulnerability in Brazil. Despite political efforts, regions in the Northeast, such as Alagoas, remain vulnerable. Highlighting this issue is crucial to improving prevention and management to avoid deaths. **Objective:** To describe the epidemiological profile of infant mortality due to malnutrition in Alagoas between 2013 and 2022. **Methods:** This is a descriptive and retrospective study conducted with data extracted from TabNet, provided by the DATASUS. Information was obtained on the number of infant deaths (0-364 days) from all types of malnutrition (CID E40-E46 and E50-E64) in Alagoas between 2013 and 2022. The age range remained fixed, varying only the IBGE microregion/municipalities, year of death, sex, and color/race. **Results:** A total of 63 deaths were recorded, with 4.76% occurring in the late neonatal period (7-27 days) and 95.23% in the post-neonatal period (28-364 days). Analysis by IBGE microregion/municipalities showed that Mata Alagoana, Maceió, São Miguel Dos Campos, Arapiraca, and Alagoana do Sertão do São Francisco all together accounted for 63.49% of infant deaths in the state. Mata Alagoana and Maceió had the same percentage (17.46%). Regarding sex, 47.61% of deaths were male and 50.79% female. The mixed-race category represented 73.01% of deaths. White and black represented 11.11% and 6.34% respectively. The analysis by year of death showed a progressive decline in mortality from 2013 (26.98%) to 2016 (3.17%), with the following values in subsequent years: 9.52% (2017); 7.9% (2018); 7.9% (2019); 3.17% (2020); 6.34% (2021); and 7.9% (2022). **Conclusion:** Higher numbers are observed in the post-neonatal period, in Mata Alagoana and Maceió, among females and in the mixed-race category. Overall, despite the decline in infant mortality due to malnutrition over the years, it is essential to intensify efforts in prevention and treatment to avoid premature deaths. **Keywords:** malnutrition; infant mortality; epidemiology.

TIREOIDE

2125

INVESTIGATION OF THYROID PAPILLARY CARCINOMA METASTASIS REVEALS NEUROENDOCRINE TUMOR

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Case report: A 63-year-old woman, former smoker, underwent total thyroidectomy (TT) in December 2022 for thyroid papillary carcinoma (TPC) with pathological staging: T2N0bMx. Preoperatively, a solitary pulmonary nodule (SPN) measuring 1.6 x 1.4 cm was identified in the basal medial segment of the right lower lobe on chest CT, performed to investigate a 2-year history of chronic cough. Biopsy of the SPN was recommended following TT. During the procedure, multiple pleural and lung parenchymal implants were observed, leading to segmentectomy, pleurectomy, and pleurodesis. First immunohistochemistry (IHC) indicated metastasis from thyroid papillary carcinoma (positive for TTF1 and Cytokeratin 7; negative for Thyroglobulin, Cytokeratin 20, PAX 8, and NAPSIN A). FDG-18 PET showed pleural thickening in the right hemithorax, particularly in calcified plaques, possibly reflecting chronic inflammatory post-pleurodesis changes and/or active neoplastic areas. Iodine-131 therapy was recommended by the surgeon. However, the nuclear medicine physician requested the first evaluation of the patient with endocrinology before administering I131, who disagreed with the diagnosis of pulmonary metastasis from PTC due to the excellent response after TT (Tg < 0.2 ng/mL, ATTG negative, TSH: 0.06 mUI/mL). A review of IHC revealed the SPN to be a well-differentiated grade I neuroendocrine tumor (Synaptophysin +, TTF1 +, Chromogranin -, Napsin -, p63 -, Thyroglobulin -, Ki67 approximately 1%). DOTATOC-Ga68 PET confirmed increased tracer uptake in right pleural and cissural areas, SUVmax: 6.4. The patient continues with oncology and endocrinology care without chemotherapy or iodine therapy. **Discussion:** TPC metastasizes distantly in about 5% of cases, primarily to the lungs, usually in a miliary pattern. Metastasis presenting as an SPN is exceedingly rare. In 2014, a series of 17 cases of SPN caused by thyroid neoplasm metastasis included 16 cases from the papillary subtype, all showing positive thyroglobulin in IHC. Therefore, its absence should prompt attention to expand the IHC and investigate another primary lesion. Our case revealed a synchronous pulmonary neuroendocrine tumor, exceptionally rare (1/4 of NETs). No reports were found of synchronous TPC with pulmonary NET in the initial literature review. **Conclusion:** Pulmonary metastasis presenting as an SPN from TPC is extremely rare; even rarer is the synchronous association of TPC with pulmonary NET. **Keywords:** thyroid papillary carcinoma; neuroendocrine tumor; synchronic tumors.

NEUROENDOCRINOLOGIA

2128

PITUICYTOMA AS DIFFERENTIAL DIAGNOSIS OF A SELLAR MASS

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Case 1: A 51y man presented with an incidental finding in a magnetic resonance imaging (MRI) of a sellar mass (3.6 x 2.6 x 2.3 cm, isointense on T1 and slightly hyperintense on T2 with homogeneous contrast enhancement, compression of the optic chiasm (OC) and contact with of both internal carotid arteries). He had symptoms of hypogonadism with low testosterone levels (0.4 ng/mL) and normal FSH (6U/L) and LH (5.1), but no visual complaints or neurological symptoms. A transsphenoidal surgery (TSS) was performed. Anatomopathological analysis reported a meningioma. Due to incompatibility of clinical and imaging presentation, the histopathology was reviewed showing TTF-1 and S100 by IHC. **Case 2:** A 62y woman with a history of progressive headache and acute signs of nausea and postural hypotension. MRI showed a sellar mass with isointense signal on T1 and T2, lobulated contours measuring 1.7 x 1.4 x 1.3 cm, hypervascularized, displacing the OC superiorly. Laboratory tests: mild elevation of prolactin, low basal IGF-1, LH, FSH and a cortisol of 4.18 µg/dL. Prednisone 2.5 mg/day was started with improvement of symptoms. A biopsy of the pituitary lesion was performed, with IHC positivity for TTF1. **Case 3:** A 47y woman with a history of tinnitus, headaches since 2016 and superior right arm paresis after 2017 was investigated with a mastoid CT study compatible with a jugulotympanic glomus. The lesion was incompletely resected in 2018 and pathological exam revealed a paraganglioma. Radiotherapy was then indicated. During the follow up (June 2020), MRI showed a sellar mass with suprasellar extension isointense in T1 and T2 of 1.9 cm in size, compressing OC. She had right superior temporal visual loss, but no hypopituitarism. A TSS was performed with IHC positivity for TTF-1, GFAP and EMA. **Discussion:** Pituicytomas are rare benign neoplasms, which originate in glial cells of the neurohypophysis or infundibular region. They do not have distinctive characteristics on MRI and according to the literature, the most common manifestations are isointensity on T1 and hyperintensity on T2. IHC profile (TTF-1 positivity) and the fuso-cellular aspect allow the differentiation of this rare type of tumor from other sellar masses. Case 3 was an unprecedented association of pituicytoma and paraganglioma. **Final comments:** Attention to image analysis on MRI and IHC are necessary tools for a correct diagnosis of pituicytomas. Their management and follow-up are still challenging. **Keywords:** pituicytomas; glial cells; neuroendocrine neoplasm.

METABOLISMO ÓSSEO E MINERAL

2129

CORRELATIONS OF POLYMORPHISMS OF GENES RELATED TO VITAMIN D PATHWAY AND CLINICAL PRESENTATION IN PATIENTS WITH SPORADIC PRIMARY HYPERPARATHYROIDISM

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Introduction: Lower levels of 25-hydroxyvitamin D (25OHD) increase parathormone (PTH) secretion and have been associated with a more severe presentation of primary hyperparathyroidism (PHPT). Mendelian randomization has demonstrated that certain polymorphisms (SNPs) in genes involved in the vitamin D pathway are related to 25OHD and calcitriol levels. **Objective:** To compare the distribution of polymorphisms in the genes 7-dehydrocholesterol reductase (DHCR7), 25-hydroxylase (CYP2R1), 1alpha-hydroxylase (CYP27B1), 24-hydroxylase (CYP24A1), and DBP (Gc) between patients with PHPT and matched controls, and to evaluate correlations with the clinical presentation of PHPT. **Methods:** This analysis was conducted on 229 PHPT patients (GPHPT) and 244 controls (GC). SNPs were evaluated using allele discrimination assays by qPCR. Statistical significance was considered if $p < 0.05$. **Results:** Most participants were women (87.9%), Caucasian (60.3%) with a median age of 70 years [range: 41-95]. The groups were similar in terms of sex, ethnicity, and age. Variations in the distribution of certain polymorphisms were observed depending on ethnic background, particularly in variants of DHCR7, DBP, and CYP2R1, but no differences in the distribution of polymorphisms were observed when comparing GPHPT *versus* GC. Within the GPHPT group, however, correlations were found between certain polymorphisms and the clinical aspects. Those with the T allele of CYP27B1 had a higher proportion of nephrolithiasis (68.8% *vs.* non-T allele 50.8%; OR 2.14 [95% CI 1.15-4.05]; $p = 0.027$). Furthermore, individuals with the Gc2 variant had higher prevalence of osteoporosis (63.4% *vs.* non-Gc2 45.8%; OR 2.05 [95% CI 1.18-3.49] $p = 0.012$) and individuals with the GG genotype of CYP2R1 were diagnosed at a younger age compared to those with other genotypes [61 years (range 24-83) *vs.* 64 years (range 38-88); $p = 0.007$]. No associations were found between the polymorphisms and levels of calcium, ionized calcium, PTH, and phosphorus. **Conclusion:** Gene polymorphisms can alter the activity or binding affinity of proteins involved in the vitamin D pathway and presented variability across different ethnicities. Our preliminary analysis suggests potential implication of variants of the genes CYP2R1, DHCR7, DBP, and CYP27B1 on the clinical presentation of PHPT, such as nephrolithiasis, osteoporosis and age at diagnosis, encouraging further expansion of the sample size to better understand the relevance of these associations. **Keywords:** genetic variants; nephrolithiasis; osteoporosis.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2130

EPIDEMIOLOGICAL PROFILE OF PATIENTS IN A TRANS OUTPATIENT CLINIC IN THE STATE OF ALAGOAS FROM 2022 TO 2024

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Introduction: Health care to the transgender population in Brazil is crucial to promote equity and respect for human rights, combating discrimination and ensuring access to adequate medical care. In this context, the transgender outpatient clinic at Dr. João Fireman Family Clinic operates integrally and multidisciplinary, with activities and services aimed at improving the quality of life and well-being of this population. **Objective:** To outline the epidemiological profile of patients treated at the multidisciplinary transgender outpatient clinic located at Dr. João Fireman Family Clinic, in the Jacintinho neighborhood, in Maceió/AL. **Materials and methods:** This is a descriptive, cross-sectional study based on the results of a questionnaire filled out by 145 patients in the period from 2023 to 2024. **Results:** Of the 145 patients, 58.6% were men, 33.8% women, and 7.6% non-binary, with an average age of 26.5 years and the majority having an education level up to high school (77.2%) and 21.4% with higher education. Regarding marital status, 84.8% reported being single, 8.3% married, and 2.1% divorced. About children, 93.1% reported not having any. In terms of residence, most live in Maceió (105 patients), with others from nearby cities like Satuba (5), and in the interior, like Penedo (4), among others. Of those living in Maceió, 20 patients reside in the Jacintinho neighborhood, and the rest in different areas. Overall, 40% reported being in formal employment, 25.5% in informal employment, and 33.8% unemployed. Regarding lifestyle habits, 25.5% reported smoking, and 48.3% using alcoholic beverages, with 11.7% declaring the use of some type of illicit drug. Concerning hormone therapy, 71.7% are currently using it and 10,6% of the men have a referral for masculinizing mastectomy surgery; 90.6% do not have any surgical referral. In terms of vaccination status, 63.4% have an up-to-date vaccination card. As for the demand for health professionals at the Dr. João Fireman Family Clinic, 88.3% were seen by endocrinology, 72.4% by nursing, 64.1% by psychology, 47.6% by social services, 30.3% by gynecology, and 29% by psychiatry. **Conclusion:** Primary and specialized care plays an essential role in attending to transgender people and understanding the aspects and contexts in which these patients are inserted is essential for comprehensive and humanized care. **Keywords:** epidemiological profile; transgender; trans outpatient clinic.

METABOLISMO ÓSSEO E MINERAL

2131

EPIDEMIOLOGY, CLINICAL PRESENTATION AND BIOCHEMICAL CHARACTERISTICS OF PATIENTS WITH SPORADIC PRIMARY HYPERPARATHYROIDISM FOLLOWED AT A BRAZILIAN UNIVERSITY HOSPITAL

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Introduction: Primary hyperparathyroidism (PHPT) clinical presentation has been changing over the years, becoming mostly asymptomatic in developed countries, but data from developing countries remain limited. **Objective:** to evaluate clinical and biochemical features of sporadic PHPT in a Brazilian population of a tertiary hospital. **Casuistic and methods:** 268 individuals with PHPT followed in a school-hospital in São Paulo in the last two years were evaluated in this preliminary analysis. Data are presented as mean ± SD or median [ranges], according to distribution. Descriptive and comparative analyses were conducted, statistical significance set if $p \leq 0.05$. **Results:** Mean age at diagnosis was 61.4 ± 11.3 years, with the majority between 60-69 years (33.2%); 234 were women (87.3%; 6.9:1 female/male ratio), 151 (56.3%) Caucasian and 151 (55.6%) were clinically asymptomatic. At diagnosis, median total calcium (tCa) was 11.2 mg/dL [10.0-19.1], ionized calcium (iCa) 1.49 mmol/L [1.28-2.48], and PTH 144.2 pg/mL [51.4-2374.0]. Target organ involvement was evaluated: 58.9% had nephrolithiasis and 50% osteoporosis. Compared to asymptomatic presentation, symptomatic were younger (59.3 ± 12.0 *vs.* 63.2 ± 10.4), had higher levels of tCa (11.5 [10.1-19.1] *vs.* 11.1 [10.0-16.0]), iCa (1.53 [1.28-2.48] *vs.* 1.47 [1.28-1.88]), PTH (154.0 [61.5-2374.0] *vs.* 134.0 [51.4-1375.0]) and 24-hour urine calcium (uCa) (255 [23-1140] *vs.* 209 [14-756]) and lowers levels of phosphorus (2.5 [1.1-4.3] *vs.* 2.8 [1.8-3.8]). Individuals with lithiasis were also younger (59.0 ± 11.6 *vs.* 62.9 ± 10.7), with higher levels of PTH (147.8 [51.4-2374.0] *vs.* 129.8 [66.0-1100.0]), uCa (279 [23-776] *vs.* 202 [14-1140]), and with a higher proportion of Caucasian (66.7%; OR 2.89 [CI 95% 1.64-5.08; p = 0.0003]). Data from 156 of 173 submitted to surgery showed: 84% had uniglandular disease, 14.7% multiglandular, and 1.3% carcinoma. **Conclusion:** Most of the patients with sporadic HPTP were Caucasian women, with age between 60-69 years. There was still a higher proportion of symptomatic patients compared to developed countries. It suggests that asymptomatic cases may still not being effectively diagnosed, while symptomatic are identified earlier and tend to have more severe disease, possibly indicating a different pathophysiology rather than a delay in diagnosis. Caucasians are at higher risk for nephrolithiasis than non-Caucasians. These characteristics in disease presentation may be influenced by ethnic-environmental factors. **Keywords:** asymptomatic disease; nephrolithiasis; ethnicity.

NEUROENDOCRINOLOGIA

2133

PITUITARY ADENOMA AND SELLAR MENINGIOMA COLLISION TUMORS: CASE SERIES AND SYSTEMATIC REVIEW

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Introduction: Meningiomas and pituitary adenomas (PA) are common intracranial tumors accounting for 37% and 16% of cases respectively. In rare cases, these lesions occur in the same location known as collision tumors. **Objective:** To report a single-center experience of PA and sellar meningioma and systematically review the literature. **Methods:** Retrospective review of radiological reports with simultaneous PA and meningioma from 2013 to 2024. Following PRISMA guidelines, we used PubMed, Embase, and ScienceDirect databases to conduct a systematic review of reported cases of collision tumors composed of PA and meningioma. Duplicate studies and studies lacking radiology or pathology confirmation were excluded. **Results:** In our case series, 23 patients were selected, of which 13 were submitted to surgery, representing 0.8% of 1605 sellar lesions. Two cases were confirmed as collision tumors by histological review (0.12%): 67 yo male and 58 yo female that had, respectively, a non-functioning plurihormonal (LH, FSH, and TSH) PA adjacent to a meningothelial meningioma and a non-functioning plurihormonal (FSH and ACTH) PA in contact with a transitional meningioma. None of them presented another endocrine tumor or hypercalcemia, with multiple endocrine neoplasia (MEN-1) being discarded. For the systematic review, a total of 719 studies were collected, of which 128 were discarded as duplicates, 456 articles after title and abstract analysis, and 114 due to lack of radiology or pathology confirmation. Finally, 21 articles were selected, with three additional ones collected through external research. From a total of 26 patients, most were female (77%) with a median age of 55 (34-75). Visual deficits (65%), headaches (39%), and hyperprolactinemia (35%) were common findings. Only one study assessed MEN-1 which described a patient with five endocrine tumors, including another collision in the adrenal gland (carcinoma and myelolipoma). Most PA were non-functioning (65%), followed by somatotropic (19%), lactotrophic (12%), and corticotropic PA (4%). To our knowledge, this is the first systematic review on the subject. **Conclusion:** PA and meningioma collision tumors are exceedingly rare, with only 26 cases published, and represent 0.12% of sellar surgeries in our center. They manifest as mass effect, with most PAs being non-functioning. MEN-1 was not present in our cases and assessed in only one study with a patient presenting two collision lesions: sellar and adrenal. **Keywords:** pituitary adenoma; collision tumor; meningioma.

OBESIDADE

2134

TIRZEPATIDE IN TYPE 2 DIABETES AND OBESITY: A SYSTEMATIC REVIEW OF EFFICACY, SAFETY, AND TOLERABILITY

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Introduction: Tirzepatide, a dual agonist of the glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) receptors, represents a novel treatment option for type 2 diabetes mellitus (T2DM) and obesity or overweight. **Objective:** To evaluate the efficacy, safety, and tolerability of Tirzepatide compared to other existing therapies or placebo. **Materials and methods:** This study is a systematic literature review following the PRISMA protocol, which analyzed the new drug Tirzepatide in therapy for patients with T2DM or obesity/overweight. The PICO strategy was utilized, applying the following search terms: ("GLP-1/Glucagon receptor dual agonist" OR "Tirzepatide") AND ("diabetes type 2" OR "obesity") AND ("clinical trial" OR "randomized controlled trial"), in the National Library of Medicine (PubMed) database. Twenty-three articles were found, nine of which were excluded for not addressing the central theme. **Results:** The 14 evaluated studies analyzed the clinical relevance of using Tirzepatide compared to other medications (such as Semaglutide and Glargine) and placebo. Among the dosage variations, daily doses of 5 mg, 10 mg, and 15 mg were most commonly used in different patients, with therapeutic benefits identified in all doses. Tirzepatide therapy showed substantial results in weight loss and reduction of adipose mass compared to placebo and other medications, such as Semaglutide and Glargine. However, it was observed that discontinuation of Tirzepatide therapy led to the recovery of lost weight, which was not seen with continuous treatment. Regarding adverse effects, gastrointestinal issues, mainly diarrhea, vomiting, and nausea, were prominent but transient and primarily in high doses. Conversely, a lower risk of developing hypoglycemia was noted during the use of Tirzepatide compared to other therapies, such as Insulin Degludec. Additionally, this medication significantly reduced the predicted 10-year risk of developing T2DM. **Conclusion:** Tirzepatide emerges as a promising therapy for T2DM and obesity, offering significant weight loss and reduction in adipose mass compared to other therapeutic options. Although it presents adverse effects as the main challenges, its lower incidence of hypoglycemia and potential to reduce the future risk of developing T2DM underscore its clinical relevance. **Keywords:** tirzepatide; efficacy; obesity and type 2 diabetes.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2135

USE OF TESTOSTERONE IN WOMEN: A SYSTEMATIC REVIEW OF CLINICAL INDICATIONS, THERAPEUTIC BENEFITS, RISKS, AND CLINICAL OUTCOMES

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Introduction: The hormone testosterone plays a significant role in regulating sexual function and cellular metabolism. Due to its potential, studies explore hormone therapy with testosterone (THT) as a possible measure for clinical conditions such as hypoactive sexual desire disorder, androgen deficiency, and menopause. Additionally, masculinizing THT aims beyond clinical conditions, facilitating gender transition. **Objective:** To evaluate the appropriate clinical indications, therapeutic benefits, risks, and clinical outcomes of testosterone use in women. **Materials and methods:** This study is a systematic literature review following the PRISMA protocol, which analyzed women with specific clinical conditions using testosterone, compared to placebo or no treatment. The PICO strategy was utilized, applying the following descriptors: ((“testosterone” OR “androgen therapy”) AND “women”) AND (“clinical indications” OR “therapeutic benefits” OR “adverse effects” OR “clinical outcomes” OR “treatment outcomes” OR “risk assessment”), across the databases Virtual Health Library (VHL), Scientific Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS), and National Library of Medicine (PubMed). A total of 3,327 articles were found, with 2,948 excluded for not addressing the central theme, 140 duplicates across databases, and 6 duplicates within PubMed. After careful analysis, the final corpus consisted of 224 articles. **Results:** Studies indicate that testosterone administration can improve sexual function, desire, and satisfaction in premenopausal women with androgen deficiency, as well as increase libido, improve mood, and enhance quality of life. Furthermore, in postmenopausal women, it showed benefits for urogenital health, reducing vaginal dryness, and improving sexual function. Another possible indication for THT is gender transition in the process of masculinization, where studies highlight physical changes such as increased muscle mass, redistribution of body fat, and voice changes. **Conclusion:** Thus, THT in women presents significant benefits for various clinical conditions, confirming its importance both in treating these conditions and in gender transition. However, it must be administered with caution due to potential adverse effects, including cellular changes with mutagenic characteristics. **Keywords:** testosterone therapy; clinical benefits; women.

DISLIPIDEMIA E ATEROSCLEROSE

2137

THE STATIN DILEMMA: CARDIOVASCULAR BENEFITS *VS.* HYPERGLYCEMIA RISK IN DIABETIC PATIENTS

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Introduction: The risk of developing cardiovascular diseases (CVD) is significantly higher in individuals with diabetes, and low-density lipoprotein cholesterol (LDL-C) concentration is a major risk factor. In this context, in addition to lifestyle changes, statin therapy is the cornerstone of dyslipidemia treatment. However, its use has been associated with increased insulin resistance and hyperglycemia. **Objective:** To analyze the clinical implications of statin-induced hyperglycemia in diabetic patients, including effects on glycemic control, cardiovascular complications, and related clinical outcomes. **Materials and methods:** This is a systematic review based on the PRISMA protocol, using the following descriptors: (“statin therapy” OR “statin use”) AND (“hyperglycemia” OR “glucose intolerance” OR “diabetes mellitus”) AND (“diabetic patients” OR “patients with diabetes”) AND (“clinical implications” OR “glycemic control” OR “cardiovascular complications” OR “clinical outcomes”). The databases used were the National Library of Medicine (PubMed) and Latin American and Caribbean Health Sciences Literature (LILACS). Of the 80 articles found, 54 were excluded for not correlating statin use with hyperglycemia or for not being available in full text. **Results:** Among the 26 selected articles, it was observed that despite their important role in preventing CVD, evidence suggests that statins negatively affect the glycemic profile in people with diabetes. Additionally, statins increase the risk of developing type 2 diabetes mellitus (T2DM) in non-diabetic patients. This effect depends on the dose and type of statin, suggesting that their lipid-lowering potency contributes to abnormal glucose metabolism. In this perspective, statin users were more likely to initiate insulin therapy, develop significant hyperglycemia, experience acute glycemic complications, and use a higher number of hypoglycemic drug classes. However, this risk depends on age, pre-existing diabetic risks, type, and potency of statins. **Conclusion:** This review demonstrated that statin use was associated with a higher risk of hyperglycemic complications. Therefore, glycemic control is essential during statin treatment in T2DM patients. More research is needed to balance the cardiovascular benefits of statin therapy with its risk of diabetes progression. **Keywords:** statin therapy; hyperglycemia; cardiovascular benefits.

NEUROENDOCRINOLOGIA

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CASE REPORT: DUPLICATION OF ISOLATED PITUITARY STEM – IMPORTANCE OF QUESTIONING

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Case: A 64-year-old woman, with ER2+ breast cancer in 1999, underwent chemotherapy and surgery. Oncological evaluation on 08/2022 – Magnetic resonance imaging (MRI) – suggestion of "secondary implantation in pituitary stem" – regular expansive lesion with 1.5 x 0.9 x 0.8 cm, involving the entirety of the pituitary stem, with extension to the upper portion of the adenohypophysis and optic chiasm. No complaints or changes on physical examination. hypothalamic-pituitary axis without alterations, and compatible with the patient's age – hypergonadotrophic hypogonadism. MRI of the skull and sella turcica 09/2022 and 01/2023, both with enlargement of the infundibular region of the hypothalamus with apparent duplication of the pituitary stem (DPS), pituitary gland with normal configurations and volume. Confirmed by 2 neuroradiologists, pituitary stem duplication, without glandular alteration. **Discussion:** Isolated DPS is associated with duplication of the pituitary gland. Isolated DPS is quite rare, with only 8 cases published at present. The etiopathogenesis is unknown, reports of developmental genetic alterations such as ROBO 1, PAX 6 and TTF-1. DHH can lead to changes in the pituitary hypothalamic axis – growth hormone (GH) deficiency the most common, hyperprolactinemia and panhypopituitarism, and neurological and ophthalmologic manifestations. In our case, we present the suspicion in the evaluation of a woman with previous breast cancer, of secondary implantation without clinical and laboratory alterations, and with repeated examination in a short period of time without evidence of the reported. The stem and pituitary are uncommon sites for metastases, most of which originate from epithelial neoplasms such as breast and lung, often occupying the neurohypophysis, with manifestations of diabetes insipidus, hypopituitarism, visual alterations and headache. Radiological features of invasive sellar mass, loss of the shiny spot of the posterior lobe, erosion of the sellar bone and may require transsphenoidal and histopathological surgery for diagnosis. **Final comments:** We warn about the need for diagnostic care, valuing the clinic. Because DHH alone is a rare manifestation, careful differential diagnosis is essential. Genetic studies, if available, complement and enhance the diagnosis. **Keywords:** pituitary stem; cancer; diagnostic.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2140

PREVALENCE AND IMPACT OF MIGRAINE AND TENSION-TYPE HEADACHE IN TRANSGENDER MEN: A CASE-CONTROL STUDY

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Headaches are a global public health problem, being one of the main causes of years lived with disability across the world. Little is discussed about the prevalence of headaches in the transgender population on cross-hormone replacement. Therefore, this study aimed to evaluate the prevalence and impact of primary headaches among transgender men on gender-affirming hormone therapy and cisgender men and women and their associated factors. An observational, case-control study was carried out with transgender men and cisgender men and women from the Endocrinology outpatient clinic. In the study, 150 participants were recruited, 50 of whom were transgender men and the other 100 divided equally between cisgender men and women. The median age was 30.5 years for transgender men, 31 years for cisgender men and 30 years for cisgender women. 41 transgender men (82%), 46 cisgender women (92%), and 47 cisgender men (94%) had headaches in the last 12 months. A higher prevalence of migraines was found in transgender men compared to cisgender men ($p = 0.003$). When comparing transgender men and cisgender women, both groups had high rates of headaches, with no statistical difference. The population of cisgender men had a higher prevalence of tension-type headache (TTH) ($p < 0.001$). Transgender men had a high prevalence of depression and anxiety, with statistical significance when compared to cisgender men ($p = 0.003$ and $p = 0.002$, respectively). New studies are necessary to better understand headaches and their characteristics in transgender men, as well as the effect of cross-hormone replacement with testosterone on the prevalence and impact of migraine and TTH. **Keywords:** transgender; headache; hormone therapy.

TIREOIDE

2141

MORTALITY FROM MALIGNANT THYROID NEOPLASMS IN BRAZIL: AN ECOLOGICAL STUDY FROM 2000 TO 2022

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Introduction: Thyroid cancer is the most common malignant neoplasm of the endocrine system, and its incidence has significantly increased over the past few decades in all regions of the world. **Objective:** To analyze the epidemiological profile of mortality due to malignant thyroid neoplasms in Brazil from January 2000 to December 2022. **Methods:** An ecological time-series study with a quantitative, descriptive, and exploratory approach was conducted using open data on mortality due to malignant thyroid neoplasms from 2008 to 2024. The data were obtained from the *Sistema de Informações sobre Mortalidade* (SIM), organized into a *Microsoft Office Excel*® spreadsheet, and subsequently analyzed using *BioEstat*®. Mortality rates (MR) was calculated using intercensal projections from the do *Instituto Brasileiro de Geografia e Estatística* (IBGE). All statistical analyses were conducted with a significance level of $\alpha = 0.05$. **Results:** The study revealed that Brazil recorded a total of 14.991 deaths due to malignant thyroid neoplasms, with a MR of 0,32 per 100.000 (±0,05). The Southeast Region had the highest prevalence of deaths (41,19%), with a MR of 0,32 per 100.000 (±0,04) and an average number of deaths of 269,13 (±51,18). The paired non-parametric analysis of variance (Kruskal-Wallis test) indicated that the difference between the average number of deaths for each Brazilian administrative region was significant ($p < 0,0001$). Regarding the study of sex in deaths from malignant thyroid neoplasms, a higher frequency was observed in the female population (66,76%), with a MR of 0,43 per 100.000 (±0,06) and an average number of deaths of 435,13 (±95,58). The difference in deaths by gender was statistically significant ($p < 0,0001$), using the Mann-Whitney test. The age group of 70 to 79 years recorded the highest number of deaths, with a frequency of 27,92% and a MR of 2,65 per 100.000 (± 0,30). Regarding race, it was found that most deaths occurred in the white population (60,95%), with an average of 378,65 (±66,95) deaths per year. The Kruskal-Wallis test indicated a statistically significant difference for both age group and race in deaths from malignant thyroid neoplasms ($p < 0.0001$). **Conclusion:** The results indicate that malignant thyroid neoplasms is a significant cause of deaths in Brazil. It is necessary to conduct further studies on this topic, focusing on the quality of care and the recording of these cases in health services. **Keywords:** thyroid neoplasms; epidemiology; Brazil.

DISLIPIDEMIA E ATEROSCLEROSE

2142

CLINICAL, LABORATORY AND GENOTYPIC CHARACTERISTICS OF PATIENTS WITH CHYLOMICRONEMIA SYNDROME FOLLOWED UP IN A TERTIARY HOSPITAL

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Hypertriglyceridemia can be primary (genetic) or secondary (diet, obesity, DM2, medications, endocrine diseases). Familial chylomicronemia syndrome (FCS) is a rare genetic condition that presents with triglycerides above 1,000 mg/dL and occurs with mutations in the LPL, APOC2, LMF1, GPIHBP1 and APOA5 genes. Multifactorial chylomicronemia syndrome (MCS) involves environmental factors, having a greater association with coronary artery disease (CAD). The objective of this study was to describe the clinical, laboratory and genotypic characteristics of 6 cases of FCS and 12 cases of MCS from the Dyslipidemia outpatient clinic of the General Hospital of Fortaleza. This is a descriptive and retrospective study, with an analytical component that was carried out in July 2024 through a review of the electronic medical records of patients treated between January 2023 and May 2024. Clinical and historical data on pancreatitis and abdominal pain were collected by medical record review and self-report, respectively. 18 patients were evaluated, with a mean age of 40 years and a predominance of women (55.6%). Six patients had homozygous (4 LPL, 2 GPIHBP1) and 12 heterozygous (11 LPL and 1 APOA5) mutations. Diagnosis in homozygosity occurred earlier (average 20 years, $p = 0.001$). The average body mass index (BMI) was 26.16 kg/m², with overweight in the MCS group (29.6 kg/m²) and normal in the FCS group (20.8 kg/m², $p = 0.001$). Consanguinity was observed in one third of the SQF group. Acute pancreatitis was more common in the FCS group (50%, $p = 0.007$), as was recurrent abdominal pain (66.7%, $p = 0.034$). Only one patient in the FCS group had eruptive xanthomas. Diabetes was observed in both groups. Mean triglyceridemia was higher in the homozygous group (1893 mg/dL *vs.* 775 mg/dL) and HDL was lower in the FCS group. Glycated hemoglobin was lower in the heterozygous group (6.35% *vs.* 7.0%). The response to the use of fibrates was unsatisfactory in the FCS group, but 40% of the MCS group had a positive response. Patients with FCS showed a higher incidence of acute pancreatitis (50%) and recurrent abdominal pain (66.7%). High triglycerides (median 2,729 mg/dL) and low HDL (22.8 mg/dL) were observed in the FCS group, while the MCS group had lower triglycerides and a greater response to treatment with fibrates. In conclusion, further studies are needed to evaluate lipoprotein lipase activity in heterozygous patients due to differing lab and phenotypic manifestations. **Keywords:** hypertriglyceridemia; familial chylomicronemia syndrome; acute pancreatitis.

ENDOCRINOLOGIA BÁSICA

2144

ADOPTIVE BREASTFEEDING: REPORT OF A SUCCESSFUL CASE IN THE USE OF DOMPERIDONE AS A GALACTOGOGUE

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Case presentation: Breastfeeding has benefits for mother and infants, and should be encouraged in the entire mother-child binomial, as long as both have favorable physiological conditions. Woman, 36 years old, 0G0P0A, sought guidance for adoptive lactation. She denies previous endocrinopathies, has thrombophilia, endometriosis and infertility. She underwent in-vitro fertilization without success, which made her choose adoption. First care provided on the day she found out about the birth of the child, female, born at term, 3,440 g, height 49 cm, Apgar not reported. On maternal physical examination, symmetrical breasts, protruding nipples. Guidance on induction of medicated lactation with domperidone 10 mg every 8/8 h to increase prolactin and mechanics with warm compresses on the breasts every 3 hours for 10 minutes, breast massage and daily milking, with an electric, double automatic breast pump, milking 3 cycles of 22, 12 and 12 minutes, with 10 minute intervals between milkings. After 48 hours of induction, breast milk ejection began. That same day, the newborn arrived at the family home. On physical examination, the newborn was active, with strong sucking, coordinated movements of inspiration, expiration and swallowing, search reflex present, lingual frenulum normally inserted. Massage was performed on the mother's breasts, positioning the newborn to the breast that started sucking. Translactation technique was performed with urethral probe number 6 and 10 mL of infant milk compound was offered. Newborn accepted the entire volume and showed signs of satiety. After 5 days of starting binomial domperidone, exclusive breastfeeding and newborns with adequate weight gain, having recovered their birth weight at 15 days of life. Breastfeeding continued for 4 months and 3 days, weaning occurred spontaneously by the infant. **Discussion:** Adoptive breastfeeding is not widespread, it is easy to manage and has a low cost. Domperidone proved to be an efficient galactogogue, since, within 48 hours, the excretion of breast milk occurred satisfactorily for breastfeeding. Therefore, once the lactation induction process has begun, it cannot be suspended without medical supervision until serum prolactin levels are normalized. **Final comments:** Adoptive breastfeeding should be started as early as possible, in order to optimize results, this process being established in the presence of the newborn's primitive reflexes and maternal hyperprolactinemia stimulated by domperidone. **Keywords:** adoptive breastfeeding; galactogogue; domperidone.

NEUROENDOCRINOLOGIA

2145

SILENT CORTICOTROPHIC MACROADENOMA TRANSFORMING INTO CUSHING'S DISEASE IN THE POSTOPERATIVE PERIOD: A CASE REPORT

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Case presentation: Female patient, 59 years old, asymptomatic, reported having done, in 2014, magnetic resonance imaging (MRI) of the brain, on her own, to have "a picture of the brain". The MRI detected a suprasellar lesion 1.3 x 2.4 x 1.0 cm, which involves the left carotid artery and compresses the optic chiasm. Laboratory tests pointed to non-functioning pituitary adenoma (NFPA). She was followed by a neurosurgeon, which suggested surgical intervention, but the patient refused, claiming she was asymptomatic. In 2021, still without symptoms, there was significant growth in size in relation to previous images: 3.3 x 3.2 x 2.4 cm. Campimetry in 2021 without changes. She maintained normal levels of thyrotropin (TSH), prolactin, growth hormone (GH), corticotropin (ACTH), insulin-like growth factor 1 (IGF-1) and cortisol. Gonadotropins (FSH/LH) were elevated, compatible with the postmenopausal status. She underwent left open craniectomy in February 2022, whose immunohistochemistry (IHC) concluded to be ACTH-producing pituitary adenoma. Evaluation three months after surgery showed suppressed TSH, FSH and LH, while serum cortisol post 1mg of dexamethasone (16.5 µg/dL), late-night salivary cortisol (120.2 ng/dL) and ACTH (178 pg/mL) were elevated, suggesting evolution to Cushing's disease (CD) from a silent corticotrophic adenoma (SCA). In the last MRI of July 2023, there is a tumor remnant of 2.8 x 2.6 x 2.4 cm. Currently the patient complains of "affected vision" and weight gain. Physical examination without stigmata for Cushing's syndrome. She is scheduled for a new surgical approach. **Discussion:** SCAs are a distinct subtype of NFPA with IHC positive for ACTH without causing CD and, compared to other NFPA, may be more aggressive and have higher recurrence rates. There are reports that SCAs can transform into functioning adenomas after a long inert period. This may indicate malignant behavior of the tumor. In a series of 16 cases of SCAs with evolution to CD, all were macroadenomas and some underwent up to five surgeries, nine were women, and the mean age of diagnosis of NFPA was 42 years and of CD 45.7 years. ACTH ranged from 21.5 to 1,500 pg/mL and serum cortisol from 20.2 to 75 µg/dL, while urinary cortisol of 24h from 210 to 2454 µg/dL. **Final comment:** The aggressiveness of SCAs highlights the need for long-term follow-up, with active surveillance for possible malignant transformation, as well as re-evaluation for complementary treatments in the postoperative period. **Keywords:** pituitary neoplasms; Cushing syndrome; adenoma, non-functioning pituitary.

DIABETES MELLITUS

2146

OXIDATIVE STRESS MARKERS IN CHILDREN WITH TYPE 1 DIABETES MELLITUS: IS THERE A RELATIONSHIP WITH CARDIOVASCULAR RISK?

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Introduction: Type 1 diabetes mellitus (T1DM) is characterized by the absence of insulin production, a disease predominantly diagnosed during childhood and on the rise. The hyperglycemic state promotes high levels of free radicals, catalysts of oxidative stress (OS), which create a pro-inflammatory scenario responsible for increased cardiovascular risk. **Objective:** To evaluate the metabolic profile and biochemical markers of OS in patients aged 3 to 18 with T1DM compared to healthy patients, in order to correlate with the increased cardiovascular risk generated by the pro-inflammatory context. **Materials and methods:** A cross-sectional study, with a convenience sample, correlating data from 36 control patients and 27 T1DM patients. Patients with chronic diseases and/or using anti-inflammatory medications were excluded. The metabolic profile was determined by analyzing body mass index (BMI), total proteins, total cholesterol (TC), and triglycerides (TG). The oxidative stress markers were malondialdehyde (MDA) and reduced glutathione (GSH). The significance level was $p < 0.05$. **Results:** The average age between the control and T1DM groups was 10.2 years and 10.18 years, respectively ($p = 0.9043$). The average BMI of the controls was 16.53 kg/m², and the T1DM group was 18.81 kg/m² ($p < 0.0006$). The average TC value was 147.45 mg/dL in the control group and 168.95 mg/dL in the T1DM group ($p = 0.0076$), while the average TG value was 73.66 mg/dL in the control group and 83.96 mg/dL in the T1DM group ($p = 0.1920$). The MDA in the control group had an average of 0.82 µmol/dL, and the T1DM group had 0.69 µmol/dL ($p = 0.0325$). The GSH in the control group had an average of 91.32 µmol/dL, and in the T1DM group, it was 93.48 µmol/dL ($p = 0.7860$). Both the Multiple Regression Model and Pearson's Correlation analysis for glycated hemoglobin (HbA1C) in the T1DM group identified a positive association with increased TG and MDA ($p = 0.0466$ and $p = 0.0276$ for regression; $p = 0.0270$ and $p = 0.0188$ for Pearson's Correlation, respectively). The other factors analyzed did not show $p < 0.05$. **Conclusion:** As found in the literature, patients with T1DM showed an increase in TG and MDA, factors that may be associated with increased cardiovascular risk. However, they did not show a strong relationship with increased TC or reduced GSH as expected, likely related to the small sample size. **Keywords:** type 1 diabetes mellitus; oxidative stress; cardiovascular risk.

OBESIDADE

2147

EVALUATION OF LABORATORY ASPECTS OF OXIDATIVE STRESS IN OBESE CHILDREN

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Introduction: Obesity is characterized by an excess of adipose tissue, a major producer of free radicals that cause oxidative stress (OS), which is associated with cardiovascular events, a process that begins in childhood. **Objective:** To evaluate the metabolic profile and biochemical markers of OS in patients aged 5 to 18 classified as obese by body mass index (BMI) compared to eutrophic patients, in order to correlate with the increased cardiovascular risk generated by the pro-inflammatory context. **Materials and methods:** A cross-sectional study, with a convenience sample, correlating data from 36 control patients and 31 obese patients. Patients with chronic diseases or using anti-inflammatory medications were excluded. The metabolic profile was determined by analyzing total proteins, total cholesterol (TC), and triglycerides (TG). The oxidative stress markers were malondialdehyde (MDA) and reduced glutathione (GSH). The significance level was $p < 0.05$. **Results:** There was a higher prevalence of females (53%) in the control group and males (55%) in the obesity group ($p = 0.6267$). The average age between the control and obesity groups was 10.2 years and 9 years, respectively ($p = 0.2708$). The average BMI of the controls was 16.53 kg/m² and the obesity group was 28.61 kg/m² ($p < 0.0001$). The average TG value was 73.66 mg/dL in the control group and 107.46 mg/dL in the obesity group ($p < 0.0001$). The MDA in the control group had an average of 0.82 µmol/dL, and the obesity group had 0.89 µmol/dL ($p = 0.1464$). The GSH in the control group had an average of 91.32 µmol/dL, and in the obesity group, it was 100.11 µmol/dL ($p = 0.1844$). The Multiple Regression Model for BMI in the Obese Group identified a positive association with age advancement ($p = 0.014$) and a negative association of TC ($p = 0.0041$) with BMI. Pearson's Correlation analysis also revealed a positive correlation with age variation ($p = 0.0013$) and BMI, but a negative correlation of TC with BMI ($p = 0.0086$). The other factors analyzed did not show $p < 0.05$. **Conclusion:** Age and TC have a significant impact on the obesity group. This is an ongoing study, with possible interference in the results due to the small sample size, which may explain the discrepancy in the literature that has shown strong correlations between obesity and the reduction of GSH, an increase in MDA, and worsening of the lipid profile – factors related to increased cardiovascular risk in obese individuals, which, to date, have not been found in this study. **Keywords:** childhood obesity; oxidative stress; cardiovascular risk.

TIREOIDE

2148

THYROID FUNCTION ALTERATIONS IN PLHIV UNDERGOING OUTPATIENT FOLLOW-UP IN A PUBLIC UNIVERSITY HOSPITAL

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Introduction: People living with HIV (PLHIV) have a higher prevalence of hypothyroidism compared to the non-infected population. Some antiretroviral therapy (ART) regimens also appear to be correlated with thyroid disorders (TDs). In PLHIV, autoimmune TDs are more correlated with immune reconstitution syndrome (IRS) than with innate autoimmunity. The sick euthyroid syndrome mainly occurs in critically ill patients and in advanced stages of the disease. **Objective:** To evaluate thyroid function alterations, the ART used, and sociodemographic data in PLHIV attending an HIV/AIDS outpatient clinic at a public and university hospital. **Methods:** Cross-sectional study based on 3,440 medical records of PLHIV. A convenience sample of 140 patients who met the inclusion criteria (PLHIV, aged 18 years or older, with thyroid hormone measurements) was selected. Data on sex, age, race, place of birth, education, duration of HIV infection, nadir CD4+ count, ART used, duration of ART use, latest viral load measurement, latest CD4+ measurement, co-infection with HBV, HCV, and syphilis, the diagnosis of thyroid disease, symptoms, measurement of anti-thyroid antibodies, TSH, T4L, HDL, LDL, triglycerides, glucose, and glycated hemoglobin, presence of hypertension (HTN), diabetes, or other endocrinopathies, abdominal circumference, weight, height, and BMI were obtained from the medical record. Statistical analysis was performed using SPSS 25. **Results:** The sample consisted of 88 women and 52 men, with a mean age of 52.8 years. There was a higher prevalence of arterial hypertension than in other studies of PLHIV. 18 patients had at least one laboratory test corresponding to subclinical hypothyroidism, and in 14 of them, this TD was transient. 8 patients were being treated for hypothyroidism with levothyroxine, of whom 3 had Hashimoto's thyroiditis, 2 had hypothyroidism with negative TPOAb, 1 had a thyroid nodule, and 2 had no specific TD mentioned in the medical record. Hypothyroxinemia was observed in 12 patients. We also found 1 patient with Graves' disease. Autoimmune diseases in our patients were probably not caused by IRS. **Conclusion:** Our study found a higher prevalence of transient subclinical hypothyroidism compared to other publications. In the patients who had autoimmune TDs in our study, there was possibly no correlation with IRS. We found no statistically significant correlation between the ART used and the presence of TDs. **Keywords:** thyroid; HIV; hypothyroidism.

NEUROENDOCRINOLOGIA

2149

TREATMENT EFFECT OF THE SGLT2 INHIBITOR EMPAGLIFLOZIN IN AN OUTPATIENT WITH CHRONIC SYNDROME OF INAPPROPRIATE ANTIDIURESIS (SIAD)-INDUCED HYPONATREMIA

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Case presentation: A 41-year-old man was diagnosed with Still's disease in 2016 after investigation and hospitalization for joint pain, fever, and myalgia. Following prednisone pulse therapy, he developed cytomegalovirus encephalitis and seizures due to hyponatremia, identified as SIAD (syndrome of inappropriate antidiuretic hormone secretion). Despite clinical improvement, hyponatremia persisted. He was discharged with normonatremia after lithium 300 mg/day and water restriction. Prednisone and lithium were gradually reduced, achieving remission of rheumatological symptoms by January 2023. In February 2023, he was hospitalized for gastrointestinal bleeding and a seizure linked to severe hyponatremia (Na:103 mEq/L), restarting lithium 300 mg/day. In May 2023, due to adverse neurological symptoms and unpredictable effects of lithium therapy, his treatment was changed to empagliflozin 25 mg/day. Since then, he has maintained normal sodium levels without adverse events like hypoglycemia, infections, or hypotension. **Discussion:** The syndrome of inappropriate antidiuresis (SIAD) is characterized by a reduction of free water excretion with consecutive hypotonic hyponatremia. Despite its high prevalence, there are limited treatment options for chronic disease. The recommended first-line treatment is fluid restriction, which is often not successful for low compliance. The use of lithium is not recommended in European guidelines. Other additional second-line treatment options, such as vasopressin receptor antagonists (vaptans), are very costly and bear the risk of plasma sodium overcorrection, or they are poorly tolerated and not brand-market available, such as urea. The sodium-glucose cotransporter 2 (SGLT2) inhibitor empagliflozin promotes osmotic diuresis via urinary glucose excretion, potentially resulting in correction of hyponatremia. It is Approved for diabetes treatment, the medication also offers protection against cardiovascular and renal outcomes in patients with chronic kidney disease, with and without diabetes. Few randomized trials and observational studies show that SGLT-2 inhibitors are beneficial and safe in SIAD. **Conclusion:** Empagliflozin, an SGLT2 inhibitor, offers a promising treatment for SIAD when fluid restriction fails, due to its tolerance, accessibility, and safety. Larger studies are needed to confirm efficacy for SIAD-induced chronic hyponatremia. **Keywords:** syndrome of inappropriate antidiuresis; sodium-glucose cotransporter 2 inhibitor; hyponatremia.

ADRENAL E HIPERTENSÃO

2150

IN VITRO FERTILIZATION IN A PATIENT WITH CONGENITAL ADRENAL HYPERPLASIA DUE TO 21-OH-LASE DEFICIENCY: A CASE REPORT

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Case presentation: M.L.A., female, overweight, hirsutism, acne, hair loss, oily skin, clitoromegaly, but regular ovulatory cycles, with desire to get pregnant for 7 years. She was diagnosed with congenital adrenal hyperplasia due to 21-OH-LASE deficiency (CAH-21), a non-classical form, with basal 17-OH-progesterone (17-OH-P): 2,892 ng/dL; Total testosterone (TT): 110 ng/dL (VR: 10-75); Androstenedione (Andro): 6.6 ng/mL (VR: 0.3-3.3). The partner had spermogram dysfunction and ectasia of the rete testis in the right testicle. Prednisolone 5 mg, myoinositol and multivitamins were started. In 1 month, the ovas are collected without assessing the androgenic status, still with probable hyperandrogenemia. 38 ovas were collected, 22 viable, 20 fertilized and 15 frozen embryos. Prednisolone was adjusted to 7.5 mg, reaching 17-OH-P: 1033 ng/dL; TT: 54 ng/dL; Andro: 5.3 ng/dL; being released for embryo implantation. After 10 days with Beta-hCG of 95.6 mIU/mL, pregnancy is confirmed. **Discussion:** In CAH-21, infertility may be present in 10 to 30% of patients, due to the increase in androgens and their metabolites. In the partner, changes were found in viscosity, motility, shape, DNA fragmentation and number of round cells in the spermogram. The male factor is responsible for 50% of couples' infertility, and investigation of both is mandatory. Hyperandrogenism between 7 and 12 weeks of gestation can lead to virilization in female fetuses. The ovas collected by the patient were of good quantity and quality. For nidation, there is evidence that we must maintain TT and Andro at physiological levels, without normalizing 17-OH-P, due to the risk of iatrogenic hypercortisolism. In our case, we did not achieve normalization of Andro. High levels of progesterone prevent GnRH pulsatility and ovulation, increase the density of cervical mucus, interfering with sperm motility, and reduce endometrial thickening. We achieved a progesterone of 0.59 ng/dL in the follicular phase, following the recommendation < 0.6 ng/dL; endometrial thickness of 8.1 mm prior to implantation, following the guideline of ≥ 7 mm. Once the pregnancy was confirmed, corticosteroid therapy was continued, as the miscarriage rate in pregnant women who use glucocorticoids is lower, 6.5% x 26.3% in non-users. **Final considerations:** In the treatment of infertility, it is necessary to investigate the couple, even in women known to have CAH-21. **Keywords:** congenital adrenal hyperplasia; fertility; pregnancy.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2152

IMPACT OF HORMONAL TREATMENT ON BONE DENSITY AND DEVELOPMENT IN TRANSGENDER INDIVIDUALS: A SYSTEMATIC REVIEW

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Introduction: Hormone therapy (HT) is an essential intervention protocol for transgender people during the gender affirmation process. However, after the start of HT, changes in bone mineral density (BMD) and bone development could be observed. **Objective:** To analyze the impact of hormonal treatment on bone density and bone development in transgender people. **Materials and methods:** Systematic Literature Review based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses – PRISMA, in the databases PubMed, Scopus, Web of Science and Embase, using the descriptors "Transgender", "Bone Density", "Bone Development ", "Bone Turnover" and "Hormonal Treatment". The research question was developed using the PICO strategy. Ryan software was used to assist in screening studies. Observational studies and randomized clinical trials were included and evaluated for methodological quality using the ROBINS-I and RoB 2 criteria. Studies with a high risk of bias, which did not present outcomes for transgender patients or were unavailable in full text were excluded. **Results:** Of the 22 approved studies, 2 focused on bone health in trans men, 3 on trans women and 17 covered both genders. During pubertal suppression with gonadotropin-releasing hormone (GnRH), 31.8% of studies observed a reduction in BMD Z-scores in both genders. One of these studies reported the recovery of BMD to pre-treatment levels with the use of HT, except in the lumbar spine of trans women. However, 9% of studies showed values below normal even before GnRH. Testosterone, in turn, demonstrated an improvement in Z scores in 7 studies, whereas estradiol increased BMD in only 2 studies and was not effective in another 5. A cohort study demonstrated low BMD in trans women undergoing long-term LT when compared to trans men (1.4%) and cisgender controls (2.0%), being correlated with a higher occurrence of fractures (2.5%), which suggests a relationship with the type of HT used. However, another cohort showed increased lumbar spine Z-scores in trans women (95% CI, +0.12 to +0.32) and trans men (95% CI, +0.23 to +0.45) after 10 years of HT, suggesting that HT does not harm BMD in the long term. **Conclusion:** Hormone therapy in transgender people affects bone density variably: testosterone improves BMD in trans men, while estradiol has mixed effects in trans women and GnRH reduced Z-score in both genders. **Keywords:** transgender; hormone therapy; bone mineral density.

DISLIPIDEMIA E ATEROSCLEROSE

2154

CONGENITAL GENERALIZED LIPODYSTROPHY: CASE SERIES REPORT

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Case presentation: Case 1: A 23-year-old female with diabetes mellitus (DM) on 3 units/kg/day insulin and oral medication, exhibiting prominent musculature, phlebomegaly, and generalized lipoatrophy with triglycerides (TGL) of 1,816 mg/dL. She presented an ischemic cerebrovascular event and required hemodialysis due to DM complications. **Case 2:** A 35-year-old female with DM on 2.35 units/kg/day insulin, hypertension, biopsy-confirmed hepatic steatosis, phlebomegaly, acromegaloid facies, and acanthosis nigricans. **Case 3:** A 2-year-old male with chronic diarrhea, malnutrition, generalized lipoatrophy, acromegaloid facies and psychomotor development delay. **Case 4:** A 16-year-old male with abdominal distension, growth delay, generalized lipoatrophy, acromegaloid facies, and phlebomegaly. Patients were evaluated with a genetic panel for hypertriglyceridemia, revealing a homozygous pathogenic variant in the AGPAT2 gene (Cases 1, 2, and 3) and CAV1 gene (Case 4) after suspected hereditary lipodystrophy. **Discussion:** Congenital generalized lipodystrophy (CGL) or Berardinelli-Seip Congenital Lipodystrophy is an ultra-rare disease with an estimated prevalence of 1 in 10 million individuals and autosomal recessive inheritance, in which there is a reduction or absence of body adipose tissue. The classification is based on the involved gene. In the case of the AGPAT2 gene, type 1 LGC is described; while for the CAV1 gene it is LGC type 3. These genes encode proteins involved in lipid homeostasis, regulating triglyceride synthesis and adipocyte differentiation. Clinical manifestations typically manifest at birth or early childhood and vary with the type of CGL. Lack of fat leads to leptin and adiponectin deficiency, reduced triglyceride synthesis, abnormal ectopic fat accumulation (in liver and muscle), hypertriglyceridemia, and insulin resistance, predisposing to complications such as DM, renal disease, hepatic disease and pancreatitis. Additional features include hypertrophic cardiomyopathy, mental retardation and focal lytic bone lesions. Treatment of CGL remains challenging and may involve replacement of human recombinant leptin (Metreleptin). **Final remarks:** Early diagnosis of CGL ideally occurs in childhood; however, due to its rarity, diagnosis may be delayed, exacerbating metabolic complications that significantly impact the quality of life for these patients. **Keywords:** congenital generalized lipodystrophy; Berardinelli-Seip congenital lipodystrophy; hypertriglyceridemia.

DIABETES MELLITUS

2155

MAURIAC SYNDROME: A RARE BUT STILL CHALLENGING CONDITION

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Case presentation: Male, 23 years-old, with type 1 diabetes mellitus (DM1) diagnosed at the age of 9, with history of multiple hospitalizations for diabetic ketoacidosis (DKA). Short stature (136 cm, Z score -3), hypogonadotropic hypogonadism, and hepatomegaly were observed when he was 13 years, therefore Mauriac syndrome (MS) was diagnosed. Body assessment through DEXA identified sarcopenic obesity, percentage of total fat of 30,1, (Z score > +2), and relative skeletal muscle index (RSMI) of 5,96 kg/m². He also had low bone mass, with T score of -3,6 in the total proximal femur, T score in lumbar spine (L1-L4) of -4,5 corrected for height. During a new hospitalization for DKA, he presented cushingoid facies, infantile phenotype, height of 139 cm, weight of 45 kg and BMI of 23,3 kg/m², hepatomegaly, with glycated hemoglobin (A1c) of 10,6%, fasting blood glucose of 405 mg/dL, and hepatic abnormalities, with oxaloacetic transaminase (AST) of 83 U/L, pyruvic transaminase (ALT) of 22 U/L. After continuous infusion insulin therapy, the patient was transitioned to subcutaneous route at a total dose (DTI) of 58 IU (1.28 IU/kg). He was discharged from the hospital with DTI 36 IU (0.8 IU/kg), using continuous glucose monitoring (CGM). Reevaluation revealed important glycemic variability, which allowed ideal dose adjustments, and resulted in a significant glycemic control improvement. **Discussion:** Mauriac syndrome is a rare presentation of long-standing uncontrolled DM1, more common in children and adolescents, with no sex predilection. With a clinical diagnosis, the disease can present with hepatomegaly, growth retardation, obesity, dyslipidemia, delayed puberty, difficult glycemic control, cushingoid facies, elevated liver enzymes, and a greater predisposition for the development of acute and chronic complications. Growth deficit does not have well-defined mechanisms, there are hypotheses about resistance to the action of growth hormone (GH) and increased cortisol secretion. Treatment is based on insulin therapy, which can cause clinical regression of hepatomegaly, with a reduction in liver enzymes, and reestablishment of weight deficit depending on age. **Final comments:** Although rare since insulin therapies became available, MS is still present in many regions of the country. In addition to intensive insulin therapy regimens and qualified multidisciplinary assistance, access to CGM proves to be a determining tool for good evolution in this scenario. **Keywords:** Mauriac syndrome; type 1 diabetes mellitus; continuous glucose monitoring.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2158

PROPHYLACTIC GONADECTOMY AND TURNER SYNDROME: A QUESTIONABLE INDICATION

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Introduction: Turner syndrome (TS) is a chromosomal disorder characterized by numerical and/or structural alterations of the X chromosome, with 1:2,500 live births prevalence. Short stature and hypergonadotropic hypogonadism are the principal manifestations. Individuals with TS can present Y chromosome sequences, and, in these cases, prophylactic gonadectomy (PG) is indicated. However, there is controversy regarding this approach. **Objective:** To analyze the prophylactic gonadectomy indication for all ST cases. **Materials and methods:** Systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Using the descriptors "Turner syndrome", "Y chromosome", AND "Gonadectomy", we searched PubMed, BVS, CAPES Periodicals, and EMBASE databases, yielding 457 articles. Animal studies, protocols, book chapters, letters, case reports, and reviews were excluded. Full articles written in English, Portuguese or Spanish, published between 2018 and 2023, involving individuals with clinical and cytogenetics ST diagnoses were selected. **Results:** Applying inclusion and exclusion criteria, 22 articles were selected, with 9 remaining after a full-text review. This review included data from 804 TS patients. For Y chromosome investigation, FISH and PCR techniques were used in 103 individuals, only FISH in 430 individuals, and only PCR in 166 individuals, and the technique was not specified in the remaining cases. Despite the controversy surrounding prophylactic gonadectomy, surgery was performed in all here selected studies, restricted to Y+ cases in 5 studies and without restriction in other TS cases. The gonadectomy age ranged from 0 to 23 years, with a mean of 10.56 years. Gonadal neoplasia was detected in 13 participants (1.61%). **Conclusion:** TS heterogeneous manifestations lead to different therapeutic approaches. Establishing a unified protocol for prophylactic gonadectomy is still a challenge, once this procedure can affect the possibilities of spontaneous pubertal development. Nevertheless, a prophylactic gonadectomy is consistent across studies here analyzed. Investigation of the Y chromosome in ST patients is an important tool for diagnosis complement, treatment, and prognosis. **Keywords:** Turner syndrome; Y chromosome; gonadectomy.

ADRENAL E HIPERTENSÃO

2160

SEVERE HYPERTENSIVE CRISIS DUE TO PHEOCHROMOCYTOMA IN A 52-YEAR-OLD FEMALE: A CASE REPORT

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Patient S.A.P., female, 52 years old, was attended at the Emergency Department (ED) in Fernandópolis due to a hypertensive crisis (BP = 200/110 mmHg) associated with palpitations, dyspnea, and vomiting. Antihypertensive medications were administered, resulting in an improvement of the condition. She also presented glycemic fluctuations, reaching up to 300 mg/dL, which normalized with the improvement of BP, without the need for insulin therapy. She reported having hypertension for 2 years and a previous acute myocardial infarction (AMI). She had three previous admissions due to hypertensive emergencies. Due to intense precordialgia for the past 4 months, a coronary angiography was performed, which showed no alterations. She returned to the ED with complaints of severe headache, palpitations, and hypertensive crisis, progressing to desaturation, requiring life support measures, and was referred to intensive care. Laboratory tests showed significant hyperlactatemia, acute kidney injury, leukocytosis, and hyperkalemia. Antimicrobial therapy was initiated, and she was discharged after 7 days. Among the tests, elevated levels of urinary (MU) and plasma metanephrines (MP) were found, and nuclear magnetic resonance imaging showed a 3 cm nodular image in the right adrenal gland. Carvedilol and doxazosin were introduced, other medications were discontinued, and she was referred for surgical preparation. **Discussion:** Pheochromocytomas (PHEO) are rare tumors, primarily located in the adrenal medulla and benign, causing hypertensive crises due to the excessive production of catecholamines. The clinical manifestations of PHEO are similar to those found in previously studied cases, but due to other manifestations with other pathologies, the diagnosis can be delayed. Among the laboratory tests, catecholamine and MP measurements are the most indicated, with MP being the most sensitive. **Final comments:** This type of neoplasm can lead to severe, potentially lethal hypertensive crises, making it important to investigate, treat, and resect these tumors. Effective detection of these cases leads to early diagnosis. Surgical excision of the tumor implies a rapid recovery and lower prevalence of morbidity and mortality. **Keywords:** pheochromocytoma; hypertensive crisis; secondary hypertension.

DIABETES MELLITUS

2161

DIABETIC KETOACIDOSIS AND THYROID STORM COEXISTING AS AN ENDOCRINE EMERGENCY

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Case presentation: A 59 years old female, was admitted in the emergency room (ER) with palpitations, nausea, prostration, dyspnea, and 4 kg weight loss in the past month. She has had diabetes mellitus (DM) for the past 10 years and has been using insulin since 2 years after diagnosis. Currently meds were glargine insulin, linagliptin, empagliflozin and metoprolol for an arrhythmia. She also had a previous history of Hyperthyroidism, at age of 29, in remission after 18 months of propylthiouracil (PTU). Thyroid function tests were normal 6 months prior admission. In the ER, Diabetic ketoacidosis (DKA) was diagnosed, and she was transferred to the ICU unit. During hospitalization, DKA recurred 3 times, even though infectious and inflammatory markers were negatives. Due to sustained tachycardia, DKA recurrences, and a past history of hyperthyroidism, thyroid function was assessed. Lab showed TSH: 0.001 µIU/mL and FT4: 4.55 ng/dL. Considering the Burch-Wartofsky point scale (temperature: 37.2°C; tachycardia: 144 bpm; nausea, and DKA as a triggering factor), treatment for thyroid storm (TS) was initiated: PTU 600 mg/day besides beta-blockers that were already in use. Symptoms relapsed rapidly and there were no new episodes of DKA. During outpatient follow-up, she presented euthyroid lab tests, anti-glutamic acid decarboxylase antibodies (anti-GAD) > 2,000 IU/mL and TSH receptor antibodies (TRAB) of 9.77 IU/mL. She now uses methimazole 30 mg/day and basal-bolus insulin regimen, with good glycemic control. **Discussion:** Thyroid diseases and DM are the two most prevalent endocrine disorders and can coexist. Hyperthyroidism promotes hyperglycemia by reducing insulinemia, increasing glycolysis, gluconeogenesis and intestinal absorption. Patients with DM and hyperthyroidism have worse glycemic control, and thyrotoxicosis is prone to start DKA. The coexistence of DKA and TS is a rare event, with a mortality rate of 15%. Symptoms and triggering factors can overlap. It is hard to establish whether DKA precipitates TS or the opposite. Persistent tachycardia in the absence of infection or altered mental status, despite metabolic improvement, requires TS investigation. **Conclusion:** DKA and TS presenting simultaneously can be potentially fatal. Awareness that both can precede or precipitate the other, is important for early diagnosis and appropriate treatment. **Keywords:** diabetes mellitus; diabetic ketoacidosis; thyroid crisis.

METABOLISMO ÓSSEO E MINERAL

2162

ATYPICAL FRACTURES FROM PROLONGED USE OF BISPHOSPHONATES: A CASE REPORT

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Case presentation: A 71-year-old female patient diagnosed with osteoporosis had been using sodium risedronate for six years. The medication was suspended for a "drug holiday" following a good response to treatment. The patient also reported mechanical pain in the anterior part of her left leg, which began one month before stopping the medication. She developed a transverse fracture in the diaphysis region of the left femur, which was atraumatic and occurred three months after discontinuing the medication, requiring surgical correction. **Discussion:** Atypical femoral fractures are rare, with an incidence ranging from 3.0 to 9.8 cases per 100,000 patient-years. The first case of atypical fracture associated with prolonged use of bisphosphonates was reported in 2005. Prolonged use of these drugs can lead to a progressive loss of the bone's elastic properties, posing a risk factor for atypical femoral fractures. These fractures are defined as those occurring between the lesser trochanter and the supracondylar region of the femur, where the bone is predominantly cortical. The typical location is in the femoral diaphysis, especially in the subtrochanteric region. The risk of atypical fracture increases in people who use oral bisphosphonates for more than three years, particularly after five years of treatment. Besides bisphosphonates, there are reported cases of atypical fractures associated with other medications, such as denosumab and glucocorticoids. In 32% to 76% of patients, atypical femoral fractures are preceded by prodromal pain in the groin or hip. Therefore, the presence of prodromal pain in a patient undergoing antiresorptive therapy should be considered a warning sign. In such cases, radiographs of the femur may reveal focal changes, such as cortical thickening, at the site where the macroscopic fracture will occur. **Final comments:** The reported case involves a patient with prolonged bisphosphonate use and prodromal pain, as traditionally described in the literature. Therefore, it is essential to carefully monitor prodromal symptoms, as they can precede atypical fractures. Although rare, these fractures must always be considered. Hence, active surveillance of patients on long-term bisphosphonate therapy is necessary, continuously evaluating the risk *versus* benefit. **Keywords:** atypical fracture; bisphosphonates; osteoporosis.

DISLIPIDEMIA E ATEROSCLEROSE

2163

PHARMACOLOGICAL APPROACH IN PEDIATRIC PATIENTS WITH HYPERTRIGLYCERIDEMIA: A SYSTEMATIC REVIEW

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Introduction: Hypertriglyceridemias can arise from both endogenous (VLDL or IDL) and exogenous (chylomicron) sources. Hypertriglyceridemia, caused by excess VLDL, impairs the removal of chylomicrons and may be related to the appearance of small and dense LDL, contributing to atherosclerosis. It can occur due to genetic defects or association of environmental, genetic, and hormonal factors, such as diabetes and obesity. Management is a challenge due to the interaction of its causes and the scarcity of evidence-based guidelines, which contributes to the increase in cardiovascular diseases and prevention should start in childhood. **Objective:** To identify pharmacological treatments for hypertriglyceridemia in pediatric patients in the literature. **Material and methods:** A systematic review of randomized controlled trials was conducted in the Cochrane and PubMed databases, from May to July 2024, using the descriptors "hypertriglyceridemia", "children", and "child health" with the Boolean operator AND. Duplicate articles that were not available in full and that dissociated from the topic in question were excluded. It adopted the Jaddad scale for methodological quality. The PRISMA scale was used to improve the reporting of this systematic review. **Results:** The search resulted in 13 studies, 7 of which were included (n = 405). Of these, 5 were good clinical studies with a score ≥ 3 on the Jaddad scale. Four articles analyzed the use of omega-3 fatty acids, composed of docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) in different dosages, two evaluated only the use of DHA and one addressed the use of plant sterols in milk. In a study of obese children (n = 130), the use of 3 g/day of omega-3 for 12 weeks demonstrated significant efficacy at high doses, with triglyceride reductions of 39.1% in the omega-3 group, compared to 14.6% in the placebo group. Another article showed children with acute lymphoblastic leukemia (n = 34) who received 0.100 g/kg/day of omega-3 for three months, obtained significantly lower TG levels (p = 0.043). Other forms of intervention, such as the use of plant sterols and DHA doses, have shown limited or no significant efficacy. **Conclusion:** Studies have shown that omega-3, DHA, and plant sterols may be a possibility for the management of hypertriglyceridemia in pediatric patients. However, more research is needed to assess its effectiveness in different clinical settings and establish evidence-based guidelines. **Keywords:** children; fatty acids omega-3; hypertriglyceridemia.

METABOLISMO ÓSSEO E MINERAL

2166

CHRONIC PANCREATITIS AND BONE LOSS: A CASE REPORT

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Introduction: Osteoporosis is a metabolic bone disease characterized by demineralization and reduction of bone mineral density (BMD). Diseases that leads to nutritional malabsorption, such as chronic pancreatitis (CP), can substantially increase the risk of its development. **Case Presentation:** L.M.L.S.S., female, 66 years old, followed up at a bone metabolism outpatient clinic in an endocrinology reference center due to osteoporosis diagnosed in 2018. Bone density measured by dual-energy X-ray absorptiometry (DXA) demonstrated BMD of 0.650 with T-score = -3.1 in spine. Past medical history included hypertension, diabetes, hypothyroidism and gastric exophytic adenocarcinoma treated with surgery, adjuvant chemotherapy and radiotherapy in 2005. Along with other medications, this patient was on calcium and vitamin D replacement and Risendronate since diagnosis. Secondary causes were investigated, but no important findings were found. During follow-up she was admitted to a tertiary care hospital, due to consumptive syndrome. Patient presented with unintentional weight loss of 8 kg in 12 months, associated with constant dorsal pain at the thoracic spine region and diarrhea. During hospitalization, she underwent upper and lower gastrointestinal tract endoscopy, with no significant findings. Magnetic resonance of the thoracic spine demonstrated compression fracture of the T11 vertebra. Abdominal computed tomography displayed evidence of CP, and a new DXA (2022) demonstrated significant worsening of BMD (0.512 and T-score -4.2) in spine. This patient began treatment with pancreatin, showing an excellent response with rapid gain of 6 kg after 6 months. She was later transitioned to Zolendronic Acid, with improvements on BMD (0.603 and T-score = -3.0 in 2023). **Discussion:** The higher incidence of bone fragility in CP is multifactorial and associated with concomitant Vitamin D deficiency, female sex, lower body-mass index and chronic inflammatory states. In fact, osteopenia or osteoporosis has a combined prevalence of 66-79% in patients with CP, significantly increasing the risk of fractures. Furthermore, the loss of intestinal absorption capacity means that oral medications cannot achieve their desired effectiveness. **Final comments:** In patients with CP, the treatment of underlying pathologies and switching to medications with parenteral route of administration when possible are feasible strategies to overcome progression of these comorbidities and potentially recover BMD. **Keywords:** osteoporosis; bone resorption; chronic pancreatitis.

MISCELÂNEA

2167

MEN-2A AS A DIFFERENTIAL DIAGNOSIS FOR HYPERTENSIVE CRISES DUE TO COCAINE USE: A CASE REPORT

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Case presentation: A 50-year-old male patient, former cocaine user (1994-2013), with no family history of neoplasms, presented with a history of hypertensive crises since age 13, without targeted investigation. He frequently visited the emergency department due to pressure peaks and other adrenergic symptoms, at the time associated with the use of stimulant drugs. In June 2013, during a bout of cholecystitis, total abdominal ultrasound revealed adrenal masses. He was subsequently referred to cardiology and endocrinology services for follow-up, initiating investigations for Pheochromocytoma (PHEO). In 2014, a thyroid nodule was identified on ultrasound and underwent Fine-Needle Aspiration (FNA) with a cytological report of proliferative epithelial lesion with a follicular pattern (at that time, Bethesda 3). In 2015, bilateral adrenalectomy confirmed PHEO upon biopsy. Later, the hypothesis of medullary thyroid carcinoma (MTC) was raised due to elevated calcitonin levels (CT 247.04 pg/mL) and concurrent hyperparathyroidism (PTH 424.79 pg/mL). In 2022, parathyroid scintigraphy showed findings consistent with adenoma. In September 2023, total thyroidectomy, partial parathyroidectomy and cervical lymph node dissection, confirmed MTC upon biopsy, establishing the diagnosis of MEN-2A. In follow-up exams, there was a reduction in calcitonin levels (37.8 pg/mL) and a decline in PTH (375 pg/mL). However, it was noted in June 2024 that calcitonin remained elevated at 157 pg/mL and PTH at 139.1 pg/mL. A total abdominal ultrasound was performed, revealing signs of possible hepatic metastasis from MTC, which would explain the sustained levels of CT and PTH, leading to referral to oncology. **Discussion:** MEN-2A is a rare genetic syndrome associated with the proto-oncogene RET on chromosome 10, characterized by multiple endocrine neoplasias including PHEO, MTC, and primary hyperparathyroidism with parathyroid adenomas/hyperplasia. Symptoms of PHEO typically arise from excessive catecholamine release, presenting as severe hypertension episodes, palpitations, intense sweating, headache, tremors, and anxiety, consistent with the patient's lifelong symptoms. **Considerations:** This case highlights delayed diagnosis of MEN-2A in the patient, as hypertensive crises were initially attributed to cocaine use, delaying early treatment initiation. It underscores the importance of considering differential diagnoses and the need for further case reports and discussions on this disease. **Keywords:** MEN-2A; hypertensive crisis; cocaine.

TIREOIDE

2168

ANTI SYNTHETASE SYNDROME AS A PRECIPITANT OF DECOMPENSATED HYPOTHYROIDISM: A CASE REPORT

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Case presentation: This report aims to describe a 29-year-old female patient with rheumatological autoimmune disease (anti-synthetase syndrome) as a rare factor in decompensation of primary hypothyroidism. The patient had Hashimoto's hypothyroidism and received an intra-hospital diagnosis of anti-synthetase syndrome - a disease that generates disorders in the gastrointestinal system, primarily affecting striated muscles and resulting in dysphagia. She was initially using 3.77 µg/kg/day of levothyroxine, with free T4 below the reference value, and, due to inflammatory myopathy, it was only possible to compensate for hypothyroidism, laboratory and clinically, with control of the rheumatological disease. **Discussion:** It is known that hypothyroidism is characterized by a deficiency in the production of the hormones triiodothyronine (T3) and thyroxine (T4) by the thyroid gland. When primary, its main etiology is chronic autoimmune thyroid disease, also called Hashimoto's thyroiditis. And once managed, its follow-up through free T4 is indicated. In cases where thyroid function cannot be normalized, despite the use of LT4 doses > 1.9 µg/kg/day, refractory hypothyroidism must be suspected and its etiologies investigated. The most common etiology for decompensation is low adherence to treatment, but the patient was in a hospital environment with supervised administration of her medication. The existence of conditions that compromise the absorption of the medication, such as gastrointestinal diseases and medications, were then detailed. And after association with the patient's clinical context, considering an improvement in free T4 after improvement in the underlying disease, anti-synthetase syndrome with gastrointestinal tract involvement was identified as the etiology for the difficult compensation of the disease. **Final comments:** After ruling out poor adherence to treatment, other clinical conditions that impair medication absorption should be considered for better clinical management of the patient, among them, a rare condition is anti-synthetase syndrome - reported here. Documenting that, with control of the underlying disease, it was possible to globally compensate for the clinical picture. Finally, the patient was linked to the endocrinology service for follow-up and proved that, despite being rare, autoimmune diseases that affect the motility of the gastrointestinal tract should be in the clinical doctor's range of differential diagnoses. **Keywords:** decompensated hypothyroidism; anti-synthetase syndrome; refractory hypothyroidism.

METABOLISMO ÓSSEO E MINERAL

2169

EARLY-ONSET PAGET'S DISEASE: A CASE REPORT

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Paget's disease of bone (POB) is a skeletal disorder characterized by intense bone resorption with ineffective remodeling, generating fragile bone and a greater risk of fractures and deformities. POB typically affects the elderly and rarely presents before age 40. Genetic factors may play an important role in POB. A 43 years old female patient, referred to Endocrinology service for diffuse bone pain for 8 years. In addition, she had bone deformities such as an enlarged skull and bowing of long bones, as well as unilateral hearing loss since childhood. She has a previous history of radius fracture and clavicle dislocation with low-impact trauma. Also, she has family members with bone deformities. In laboratory tests, the calcium profile was within normal limits, but the alkaline phosphatase was 547 (U/L). Bone scintigraphy showed multiple foci of increased uptake, including the skullcap and sacroiliac joints. A genetic test revealed an alteration in the TNFRSF11A gene compatible with Paget's disease. Treatment with alendronate was initiated using alkaline phosphatase level and bone pain as parameters. She underwent treatment between 2013 and 2017 (FA 547 U/L to 65 U/L), between 2018 and 2021 (FA 124 U/L to 91 U/L) and 01/2022 to 11/2022 (FA 111 U/L at 115 U/L). The patient currently asymptomatic, with stable alkaline phosphatase and not using bisphosphonates. Many genes related to the disease have been studied in recent years. Mutations in the TNFRSF11A gene are related to the early onset of Paget's disease, as seen in the case reported. Treatment is made in cycles and its main objective is symptomatic relief and normalization of bone activity markers such as FA or CTX. This report showed a rare case of early-onset Paget's disease and the importance of an adequate investigation, including genetic study, to better understand the disease and appropriate therapy. **Keywords:** Paget's disease; fracture; bone deformities.

TIREOIDE

2170

ANALYSIS OF THE EPIDEMIOLOGICAL PROFILE OF PATIENTS HOSPITALIZED WITH THYROTOXICOSIS AND OTHER THYROID DISORDERS IN THE STATE OF AMAZONAS FROM 2014 TO 2023

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Introduction: Thyroid disorders can result in long periods of treatment and hospitalizations, which affect the quality of life of patients. One of the causes is thyrotoxicosis, which refers to an excess of thyroid hormones in the bloodstream and can result from various thyroid disorders such as Graves' disease or toxic thyroid nodules. Additionally, the high concentration of iodine in the diet in the northern region, due to an intake of approximately 8.78 grams of salt per day, is noteworthy. The state of Amazonas accounted for 22.43% of hospitalizations for thyrotoxicosis and thyroid disorders in the Northern region during the analyzed period. Such hospitalizations could be prevented or reduced with public policies aimed at prevention and effective management of these disorders. **Objective:** Identify the epidemiologic profile of the hospitalizations due to thyrotoxicosis and other thyroid disorders, in the state of Amazonas, between 2014 and 2023. **Materials and methods:** It is a retrospective descriptive epidemiological study. Secondary data available from the *Sistema de Informações Hospitalares* (SIH/SUS) between 2014 and 2023 were used. The variables included were: number of hospitalizations, sex, age, race/ethnicity, average length of stay, hospitalization costs and hospital admission type. Analysis was conducted using descriptive statistics. **Results:** There were 402 admissions due to thyrotoxicosis and other thyroid disorders in Amazonas between 2014 and 2023. The year with the highest number of admissions was 2018, with 11.19%. Manaus was the city with the most hospitalizations, with 70.65% of the cases. Regarding gender, 77.12% hospitalizations are female. The most affected age group was 40 to 49 years old, with 27.61%. Mixed race individuals constituted the majority at approximately 48.76%. The average hospital stay was 6.7 days, with 73.63% being elective admissions and 26.37% emergency admissions, totaling R$ 249,670.52 in costs. **Conclusion:** Thyroid disorder hospitalizations significantly impact on the public healthcare system in Manaus, resulting in higher public spending. Females, particularly during menopause, are notably affected. However, there is insufficient epidemiological data on these disorders in Amazonas, including socio-economic factors specific to the Amazonian population. Thus, there is a necessity to improve the characterization of thyroid disorder hospitalizations to inform effective public health policies. **Keywords:** epidemiological profile; thyroid diseases; hospitalization.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2171

EVALUATION OF MEDICAL RESIDENTS' KNOWLEDGE ABOUT HEALTHCARE FOR TRANSGENDER AND GENDER DIVERSE PATIENTS IN A TERTIARY HOSPITAL IN NORTHEAST BRAZIL

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Introduction: The term "transgender and gender diverse" (TGD) is used to refer to people whose gender identity does not correspond to the sex assigned to them at birth. It is observed that such individuals suffer from a lack of knowledge among healthcare providers, which contributes to the occurrence of disparities in care compared to cisgender individuals. In this scenario, gaps in the medical residency curriculum regarding care for TGD patients are evident. **Objective:** This study aimed to assess the knowledge of medical residents at a tertiary hospital in Northeast Brazil regarding healthcare for TGD population. **Materials and methods:** This was an observational cross-sectional study conducted in 2023 at a tertiary hospital in Northeast Brazil, involving medical residents enrolled in residency programs at the study site. A self-authored questionnaire was used, and data collection was voluntary and anonymous, conducted online. Data analysis included descriptive statistics and chi-square test. Participants were grouped into clinical, non-clinical, and specialty (Gynecology and Obstetrics [GO] and Endocrinology) categories. **Results:** 107 medical residents completed the questionnaire, representing 39.77% of the eligible population, with a higher proportion in clinical specialties (69.15%). All participants identified as cisgender. Nearly all respondents indicated they considered it important to understand healthcare for TGD patients. Residents in GO and Endocrinology reported receiving more prior education on the topic ($p = 0.0009$) and demonstrated greater knowledge regarding the minimum age for initiating gender-affirming hormone therapy ($p = 0.009$). They were also more likely to know where to refer TGD patients for specific care related to hormonal therapy and gender-affirming surgeries ($p = 0.007$). Approximately 70% of participants reported feeling confident in providing healthcare to TGD patients. Among those who reported insecurity, lack of experience was the main reason cited ($p = 0.002$). **Conclusion:** It was evident that residents recognize the importance of the topic in their practice but lack specific knowledge and prior education. These findings underscore the need for more formal training opportunities on healthcare for TGD patients during medical residency. **Keywords:** transgender persons; health services for transgender persons; medical education.

MISCELÂNEA

2172

IS IT CANCER OR IS IT AUTOIMMUNE POLYGLANDULAR SYNDROME TYPE 2? A CASE REPORT ON THE INVESTIGATION OF CONSUMPTIVE SYNDROME

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Case presentation: This report aims to focus on describing a 54-year-old female patient, initially referred to the oncology service to investigate consumptive syndrome associated with episodes of: hypoglycemia, asthenia, dizziness, nausea, visual darkening and symptomatic hypotension. This patient had a brownish color and oral mucosa with hyperpigmented areas and was initially investigated with suspicion of neoplasia. After endocrinology evaluation, the diagnosis of adult autoimmune polyglandular syndrome (APS) type II was confirmed and its symptoms were justified by primary adrenal insufficiency and primary hypothyroidism (Hashimoto's), with significant clinical improvement after therapeutic management with corticosteroid therapy and levothyroxine 75 mcg/morning. The patient returned 6 months after the service with clinical improvement with progressive weight gain, with a notable reduction in skin pigmentation. **Discussion:** Autoimmune polyglandular syndromes (APS) are a heterogeneous group of rare diseases characterized by autoimmune activity against more than one endocrine organ, although non-endocrine tissues can also be affected. Patients with SPA are associated with a higher risk of developing other types of non-glandular autoimmune diseases. It is estimated that 40% to 50% of all cases diagnosed with Addison's disease present an additional autoimmune disease capable of clinically defining SPA II, therefore screening and clinical surveillance are essential. Due to the wide variety of non-specific symptoms, the fact that they mimic many common diseases and the interval between the occurrence of different endocrine disorders, evaluation by a specialist in endocrinology and metabolism is a priority. **Final comments:** We aim to highlight the importance of broad clinical investigation and screening of other autoimmune diseases, as well as the role of endocrinological disorders in the investigation of consumptive syndrome and as a range of differentials for complaints, which at first glance, appear to be non-specific. **Keywords:** autoimmune polyglandular syndrome; autoimmune diseases; consumptive syndrome.

METABOLISMO ÓSSEO E MINERAL

2173

INTRACTABLE PRURITUS SECONDARY TO HYPERCALCEMIA: A CASE REPORT

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A 42-year-old man, without previous comorbidities, with a history of intramuscular mineral oil application for aesthetic purposes comes to the tertiary hospital, among other complaints, presenting itching that was difficult to control. Upon admission, he had notable hardened deformities where the injections had been made, and abrasions on the skin, due to the intense itching. In laboratory tests, serum calcium, phosphorus and serum creatinine and blood urea nitrogen were elevated. Subsequently, PTH and 25-hydroxyvitamin D were also measured and founded in low levels, while 1,25-dihydroxyvitamin D, was high. In this scenario, the diagnostic hypothesis of non-parathyroid hypercalcemia was established, due to the production of calcitriol from the autonomous activity of 25-hydroxyvitamin D3 1-alpha-hydroxylase in granulomas formed in the topography of mineral oil application, consequent increase of calcium and phosphorus, both associated with itching. Given the condition, therapies were initiated to combat the symptom with antihistamines, phosphorus chelators and carbamazepine, in addition to renal replacement therapy, given the diagnosis during hospitalization of chronic kidney disease, without success in controlling the complaint. At the same time, during these attempts to solve the problem, calcium levels still remained high. In this context, corticosteroid therapy was initiated using prednisone 40 mg/day, with the aim of reducing hypercalcemia induced by granulomatous diseases. From this moment on, calcium levels were controlled and consequent improvement in pruritus. Pruritus is a common complaint among patients with elevated calcium, phosphorus and chronic kidney disease. It has a major impact on the patient's quality of life, even damaging their sleep. In this context, patients suffering from concomitant non-parathyroid hypercalcemia with high levels of calcium, phosphorus and chronic kidney disease have several risk factors for developing pruritus. In the clinical case presented, even after implementing measures that resulted in the normalization of phosphorus levels and control of nitrogenous slags, in addition to optimizing anti-pruritus medications, success was only achieved after reducing calcium after starting treatment with corticosteroid therapy. We present a case of non-parathyroid hypercalcemia in which the decrease in calcium levels after corticosteroid therapy was decisive to the improvement of difficult-to-control pruritus. **Keywords:** intractable pruritus; non-parathyroid hypercalcemia; calcium.

METABOLISMO ÓSSEO E MINERAL

2175

PRIMARY HYPERPARATHYROIDISM DIAGNOSED DURING THE WORK UP FOR SUBCLINICAL HYPOTHYROIDISM

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Introduction: Primary hyperparathyroidism (PHPT) is an endocrine disorder secondary to parathyroid hormone (PTH) hypersecretion, mostly due to solitary parathyroid adenoma (85%-90%). The disease is characterized by hypercalcemia and an elevated or inadequately normal serum PTH. PHPT is often detected by routine serum calcium measurement in asymptomatic women. We describe an unusual case of an asymptomatic patient with PHPT due to solitary adenoma detected after an ultrasonography for subclinical hypothyroidism. **Case:** A 57-years-old female patient was referred to the endocrinology service due to altered thyroid function suggestive of subclinical hypothyroidism (TSH 7.32 mUI/mL and T4L 1.28 ng/dL). She did not have fatigue, anemia, dysmenorrhea or other symptoms. She did not have other pathologies and was not taking any drugs. To confirm thyroid alterations and evaluate treatment, new laboratory tests were requested after 3 months. New exams showed TSH 3.23 mUI/mL and T4L 1.13 ng/dL. Anti-TPO was negative, but thyroid US showed a hypoechoic nodular lesion in the topography of the left parathyroid, measuring 2.1 x 0.5 cm. Given these results, PTH, calcium, albumin, vitamin D, phosphorus and magnesium were requested to investigate PHPT, which was confirmed by an increase in PTH (119.1 pg/mL) and calcium (10.9 mg/dL). Therefore, in order to evaluate the impact of PHPT on the patient and the existence of conditions that indicated surgical treatment, new exams were requested. Patient was discharged and will return to the outpatient clinic for a surgical decision. **Discussion:** Imaging tests in PHPT are generally requested after confirmation of the laboratory diagnosis, which makes the clinical case in question an example of an incidental finding. Parathyroidectomy in asymptomatic cases is usually indicated for patients < 50 years-old, with nephrolithiasis, 24-hour calciuria > 400 mg/day, serum calcium > 1 mg/dL upper limit normal, glomerular filtration rate < 60 mL/min/1.73 m² or bone changes, such as osteoporosis. Although not indicated for diagnosis, imaging tests help to locate the adenoma before surgery and have varying sensitivity and specificity, respectively, from 88%-97% and 94%-100% in the US, 82% and 92%-100% in tomography and 90% and 100% in scintigraphy. **Conclusion:** The present case demonstrates an atypical and incidental diagnosis of PHPT. **Keywords:** hyperparathyroidism; hypothyroidism; ultrasonography.

NEUROENDOCRINOLOGIA

2176

THYROTROPINOMA: A RARE ETIOLOGY OF HYPERTHYROIDISM IN A YOUNG PATIENT - A CASE REPORT

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Case presentation: A 31-year-old man presented to the Endocrinology service with complaints of sweating and palpitations for approximately 1 year. He also reported a weight loss of about 5 kg with preserved appetite. He denied tremors, headache, visual changes, or decreased libido. He was not on any continuous medications and had no family history of thyroid problems. On examination, he had a normal heart rate and no evidence of ophthalmopathy. Laboratory tests revealed: TSH 3.69 IU/mL (reference range [RR] 0.4-4.5), free T4 2.6 ng/dL (RR 0.54-1.24), total T3 258.95 ng/dL (RR 70-204), with normal TRAB and thyroid ultrasound. Pituitary magnetic resonance imaging (MRI) was performed, revealing a solid nodule in the right paramedian aspect of the adenohypophysis, elevating the diaphragma sellae superiorly and displacing the pituitary stalk to the left, predominantly hypoenhancing, measuring 1.4 x 1.0 x 1.0 cm, without involvement of the optic chiasm. Due to suspicion of thyrotropinoma, additional tests were ordered, demonstrating preserved other pituitary axes and elevated serum levels of sex hormone-binding globulin (SHBG) (106.1 nmol/mL [RR 13.2-89.5]) and C-telopeptide (CTX) (0.82 ng/mL [RR less than 0.58]). In this context, the patient was referred for transsphenoidal tumor resection, which was performed without complications. **Discussion:** Thyrotropinomas (or TSHomas) are a rare cause of hyperthyroidism and represent TSH-secreting pituitary tumors with absent or low response to negative feedback exerted by thyroid hormones. They predominantly occur between the fifth and sixth decades of life, without a sex predilection. Clinical presentation involves signs and symptoms of hyperthyroidism, and the differential diagnosis should include resistance to thyroid hormones syndrome, where laboratory parameters of thyroid hormone action (such as SHBG and CTX) are normal, unlike in thyrotropinoma. First-line treatment is surgical removal of the adenoma, achieving complete resection in no more than 60% of cases of macroadenomas. **Final comments:** The diagnosis of thyrotropinoma should be considered in the context of central hyperthyroidism, especially in the presence of a pituitary macroadenoma on MRI and elevation of peripheral markers of thyroid hormone action. Additionally, given the patient's young age, the possibility of familial pituitary tumor syndrome cannot be ruled out, although weakened by the absence of family history and evidence of a normal calcium profile. **Keywords:** pituitary neoplasms; thyroid hormones; hyperthyroidism.

TIREOIDE

2177

DETECTION OF MACRO-TSH AFTER RENAL TRANSPLANTATION: A CASE REPORT

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Case presentation: A 43-year-old woman followed at the Endocrinology outpatient clinic for hypothyroidism after total thyroidectomy, performed in 2019 in conjunction with total parathyroidectomy due to difficult-to-control tertiary hyperparathyroidism. She had a history of chronic kidney disease of indeterminate etiology, on hemodialysis since age 20, and underwent renal transplantation in September 2023. At a consultation one month prior to transplantation, she was taking levothyroxine 125 mcg/day (2.6 mcg/kg/day), a dose stable since 2019, with normal thyroid function (August/2023: TSH 1.89 mIU/L and free T4 1.63 ng/dL [reference range 0.93-1.7]). She returned approximately 6 months after transplantation, on prednisone 5 mg/day, tacrolimus 1 mg/day, and sirolimus 1 mg/day. Laboratory tests showed TSH levels measured by chemiluminescence: 0.35 mIU/L (January/2024), 24 mIU/L (March 12, 2024), 30.10 mIU/L (March 23, 2024), with normal free T4 (1.68 ng/dL on March 23, 2024). She was prescribed 100 mcg of levothyroxine, recently adjusted by the nephrologist after evaluating the January 2024 TSH level. She denied complaints and reported regular and appropriate medication use. A macro-TSH assay was requested, performed using polyethylene glycol (PEG) precipitation method, which showed 19.24% recovery, indicating presence of macromolecule, leading to a reduction in TSH level to 3.04 mIU/L. **Discussion:** Current assays used for TSH measurement provide high precision, but can still be interfered by certain factors, with the rare possibility of macro-TSH presence, a biologically inactive complex formed by TSH molecule in association with anti-TSH immunoglobulin. In this case, there was a temporal association between thyroid function alteration and renal transplantation with initiation of immunosuppressive drugs. In the literature, a case of falsely elevated TSH following renal transplantation with anti-CD3 therapy was described, attributed to heterophilic antibodies against the medication's immunoglobulin rather than macro-TSH formation. **Final comments:** The presence of macro-TSH should be suspected in patients with unexplained TSH elevation and inconsistent clinical presentation, to avoid unnecessary adjustments in levothyroxine dose. There are no reported cases of macro-TSH detection following sirolimus or tacrolimus use, adding uniqueness to this report. Further studies are needed to better evaluate this potential association. **Keywords:** thyroid function tests; thyrotropin; kidney transplantation.

TIREOIDE

2178

UNILATERAL GRAVES' ORBITOPATHY: A DIFFERENTIAL DIAGNOSIS OF CAROTID-CAVERNOUS FISTULA

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Female, 76 years old, with a previous diagnosis of Graves' disease, regularly using tapazole 10 mg/day, evaluated by an ophthalmologist with bilateral proptosis, however significantly worse in the left eye, associated with conjunctival hyperemia, tearing and local pain. Advised to seek emergency care due to an atypical ophthalmological presentation, more unilateral, with suspected carotid-cavernous fistula. Upon hospital admission, he complained of holocranial headache, bilateral paripalpebral edema, pain upon ocular movement and reduced visual acuity in the left eye. Clinical Activity Score (CAS) of 08 points, compatible with signs of Graves' Orbitopathy activity. A cerebral tomography angiography was performed which showed bilateral proptosis, dilation and more intense venous enhancement of both superior ophthalmic veins, notably on the left, associated with mild engorgement of the cavernous sinuses, findings that suggested a carotid-cavernous fistula. The Interventional Radiology Team indicated conservative treatment, not recommending endovascular embolization, considering it was a low-output fistula, difficult to access and with high morbidity associated with the procedure. Magnetic resonance imaging of the orbit showed findings suggestive of thyroid ophthalmopathy. The Endocrinology team decided to start intravenous methylprednisolone 500 mg/week for 6 weeks, considering the possibility that the symptoms were associated with Graves' Orbitopathy. The patient presented a rapid response to corticosteroids, with improvement in inflammatory signs and left eye protrusion after the first dose of methylprednisone. The objective of this report is to present Graves' Orbitopathy with atypical presentation as a differential diagnosis of a rare and potentially fatal neurological complication that is carotid-carvernous fistula. Graves' ophthalmopathy is a potentially vision-threatening autoimmune inflammatory disease, and carotid-cavernous fistula is a medical emergency that can lead to visual loss and intracranial hemorrhage. Searching for differential diagnoses of conditions with atypical evolution is essential for adequate treatment. Considering evidence of systemic disease, in the case of hyperthyroidism, was essential for initiating treatment for moderate-severe Graves' Orbitopathy, with a rapid therapeutic response. **Keywords:** Graves' orbitopathy; carotid-cavernous fistula; Graves' disease.

DIABETES MELLITUS

2179

FRUCTOSAMINE AND TRIGLYCERIDES – DEVELOPING AN INDEX FOR ASSESSING INSULIN RESISTANCE (TRIGFRUC INDEX)

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Introduction: Insulin resistance (IR) is a metabolic condition in which cells become less responsive to insulin and can progress to type 2 diabetes. While established methods exist for assessing IR, there remains a significant need for more simplified and reliable tools in IR evaluation. **Objective:** To develop and evaluate a new IR index incorporating fructosamine and triglyceride levels (TrigFruc index), aiming to improve the accuracy of IR assessment compared to existing methods. **Methods:** Data from 200 individuals were analyzed. Pearson correlation was employed to assess the association between HOMA-IR, TyG index, and TrigFruct. ROC curve analysis was utilized to determine the optimal TrigFruct cutoff for IR detection, comparing its sensitivity and specificity to those of HOMA-IR and the TyG index. **Results:** Study with 200 participants (63% female, avg. age 46.6 years), The established HOMA-IR index identified IR in 32%, while the TyG index detected IR in 66% of participants. The novel TrigFruct index exhibited a weaker correlation with HOMA-IR (r = 0.28) compared to the TyG index (r = 0.44). For IR detection based on HOMA-IR, the optimal TrigFruct cutoff (Ln 4.57) demonstrated a sensitivity of 50%, and a specificity of 23%. In comparison to the TyG index, the optimal TrigFruct cutoff (Ln 4.74) displayed a sensitivity of 85% and a specificity of 95%. **Conclusion:** The TrigFruc index, incorporating fructosamine, shows promise for IR assessment. Compared to HOMA-IR, it exhibits better correlation with the TyG index and superior sensitivity and specificity for IR detection when using the TyG index as a reference. **Keywords:** insulin resistance; TrigFruc Index; fructosamine.

NEUROENDOCRINOLOGIA

2180

ALZHEIMER'S DISEASE A IN SITU CEREBRAL DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF THERAPEUTIC APPROACHES USING INTRANASAL INSULIN TREATMENT

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Introduction: Alzheimer's disease (AD) is a progressive neurodegenerative disorder and increasing evidence suggests that AD shares pathophysiological similarities with type 2 diabetes. Intranasal insulin (INI) for AD has emerged as a promising therapeutic approach due to its ability to directly target the brain and modulate insulin signaling pathways. **Objective:** To evaluate the efficacy and safety of INI therapy for AD through a systematic review and meta-analysis of randomized clinical trials. **Methods:** A comprehensive search across electronic databases, including PubMed, Web of Science, Scopus, and Embase, was conducted to identify relevant studies published up to June 2024. Studies were included if they met the following criteria: original research articles published in peer-reviewed journals; focused on humans; investigated the therapeutic effects of INI administration on cognitive impairment associated with AD; reported quantitative data on cognitive outcomes, biomarkers, or pathological markers relevant to AD. A meta-analysis was conducted to quantitatively synthesize the effects of INI on cognitive outcomes. **Results:** A total of 647 articles were identified, and eight studies met the inclusion criteria. The odds ratio was 3.75 with a 95% confidence interval of 1.49-9.4. The test for overall effect showed $p < 0.05$. The I^2 value indicated that 85.5% of the variability among studies arises from heterogeneity rather than random chance. **Conclusion:** While the data is not yet definitive enough to establish INI as a treatment for AD, the accumulating evidence supporting its safety, efficacy, and reduced systemic side effects strongly suggests that INI is associated with an overall enhancement of global cognition. **Keywords:** Alzheimer's disease; intranasal insulin; systematic review.

NEUROENDOCRINOLOGIA

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DIABETES INSIPIDUS DUE TO ERDHEIM-CHESTER DISEASE: A CASE REPORT

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A 33-year-old male patient with no previous relevant medical history, began having mechanical low back pain in 2018. During the investigation, he underwent bone scintigraphy, which revealed lytic lesions in the lumbar spine, ribs, skull, clavicle, and knees. In 2022, he started losing both body and facial hair, showing signs of a reduced libido, and developing erectile dysfunction. He developed polyuria and polydipsia in that same year, leading him to the ingestion of nearly 15 liters of water per day and diuresis of the same volume; xanthelasma and papulo-verrucoid lesions also started appearing on the limbs, face, and back. At one of his medical follow-ups, a biopsy of the skin lesion was performed, which revealed nodular dermal proliferation of xanthomatous histiocytoid cells with discrete mononuclear infiltrate, consistent with Erdheim-Chester Disease. One year later, the patient started medical appointments at an Endocrinology and Metabolism's clinic of quaternary care to investigate the diagnosis. During the patient's evaluation, hypogonadotropic hypogonadism was confirmed. In May 2024, a water deprivation test with ddAVP infusion was performed. The test confirmed the diagnosis of central diabetes insipidus. By the end of the test, the patient had plasma osmolarity of 309 mOsm/kgH2O, serum sodium of 148 mEq/L, and urinary osmolarity of 142 mOsm/kgH2O. There was a 233% increase in urinary osmolarity after ddAVP infusion, reaching a value of 459. The patient was discharged with testosterone replacement and ddAVP. Erdheim-Chester disease is a rare form of non-Langerhans histiocytosis. The most common clinical manifestations include: bone sclerosis, ocular proptosis, diabetes insipidus, cardiac involvement and pulmonary infiltrates. Some BRAF mutations have also been found in these patients. The diagnosis is confirmed by biopsy and anatomopathological analysis. Therapeutic options are diverse and include interferon alpha, imatinib, infliximab, vemurafenib (specific therapy for those with BRAF mutation), corticosteroids and bone marrow transplant. Although still a rare and often missed diagnosis, the number of cases of Erdheim-Chester disease has increased in the last 15 years, due to greater knowledge of the disease and the willigness to follow through with this hypothesis. Faced with a young patient with multiple sclerotic bone lesions, skin lesions and central diabetes insipidus, one should keep the hypothesis of non-Langerhans histiocytosis in mind. **Keywords:** Erdheim-Chester disease; diabetes insipidus; hypogonadotropic hypogonadism.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

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HEART RATE VARIABILITY IN WOMEN WITH PCOS AND TRANSGENDER MEN UNDER GENDER-AFFIRMING HORMONE THERAPY: DO ANDROGEN LEVELS MATTER?

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Introduction: Autonomic cardiac modulation can be evaluated by measuring heart rate variability (HRV). HRV is influenced by age and gender and has been regarded as a tool for assessing preclinical cardiovascular disease (CVD). **Objective:** To assess HRV at rest and during sympathetic stimulation test in women with PCOS and men assigned female at birth (AFAB) undergoing gender-affirming hormone therapy (GAHT), compared to healthy control ciswomen (CW). **Methods:** This cross-sectional study, using biorepository samples from two previous studies, included 46 women with PCOS (Rotterdam criteria), 12 AFAB men on testosterone treatment for at least 6 months, and 36 age-matched CW. Exclusion criteria were the use of hormonal contraceptives, smoking, hypertension, CVD and other medical conditions affecting HRV. For HRV assessment, participants underwent a 30-minute electrocardiographic test, with the first 20 minutes at rest followed by 10 minutes of a mental stress test (Stroop color test). The frequency domain was evaluated, consisting of low frequency (LF) reflecting sympathetic activity, high frequency (HF) expressing vagal activity, and LF/HF ratio reflecting sympathovagal balance. **Results:** The participants were mostly young adults aged 23 [18-28]. Women with PCOS had higher BMI and HOMA-IR ($p < 0.001$ for both) than AFAB men and CW. Total testosterone levels were at the male reference range in the AFAB group, women with PCOS had higher and CW normal levels, according to the female reference range ($p < 0.001$). Spectral analysis of HRV revealed that AFAB and PCOS participants had similar responses to sympathetic stimulation, both of which were worse than those of the control group: LF 0.71 [0.64-0.77] *vs.* 0.7 [0.61-0.8] *vs.* 0.83 [0.75-0.86], $p < 0.001$; HF 0.25 [0.2-0.3] *vs.* 0.24 [0.15-0.33] *vs.* 0.14 [0.12-0.2], $p < 0.001$; and LF/HF ratio 2.76 [2.15-3.75] *vs.* 2.85 [1.82-5.19] *vs.* 5.76[3.68-8.21], $p < 0.001$. Similar results were found after sensitivity analysis excluding participants with BMI ≥ 30 kg/m². **Conclusions:** The results of this study suggest that, despite differences in circulating androgen levels, women with PCOS and AFAB men on GAHT exhibited similar disturbed autonomic modulation in response to sympathetic stimulation, compared to CW. Further research is needed, especially longitudinal studies, to determine whether these changes in HRV can predict future clinical CVD in these individuals. Funding sources: CNPq/FAPERGS/INCT *Hormônios e Saúde da Mulher*, Brazil. **Keywords:** PCOS; transgender; cardiovascular disease risk.

TIREOIDE

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NONTHYROID METASTASIS TO THE THYROID GLAND: CASE SERIES REPORT FROM AN ONCOLOGY CENTER

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Introduction: Metastasis to the thyroid gland (MTG) from non-thyroid neoplasms are uncommon, comprising only 0.1% to 3% of thyroid malignancies. However, autopsies' series reveal a prevalence of up to 24%. This discrepancy suggests that MTG are often missed or misdiagnosed in clinical practice, possibly due to the advanced stage of the primary neoplasia. A comprehensive understanding of the clinical and sonographic characteristics remains scarce, and management is challenging. **Objective:** To describe the demographic, clinical, imaging characteristics, and overall survival of a population diagnosed with MTG. **Methods:** A retrospective study was conducted, including patients diagnosed with MTG by thyroid cytology and/or histology in an oncology center in Portugal from November 2009 to July 2024 (n = 53). Patients with direct thyroid infiltration, and those whose thyroid histology did not confirm the cytology reports were excluded (n = 12). **Results:** Forty-one patients were included, with a mean age of 61.5±14.4 years, and 21 (51.2%) females. Histology reports (core needle biopsy and/or thyroidectomy) were available in 15 (36.6%) cases. Median time to MTG detection after primary neoplasm diagnosis was 36.0 (95%CI: 0.0- 73.4) months. The most frequent diagnoses were lung (n = 10, 24.4%) and renal cell carcinoma (n = 8, 19.5%). At MTG diagnosis, seven (17.1%) patients had an occult primary tumor. Thirty-one (75.6%) patients present with multiorgan metastasis. In most cases (n = 22, 57.9%), MTG was identified incidentally on imaging exam. The most frequent symptom was a cervical mass (n = 10, 26.3%). Hypothyroidism was diagnosed in five (12.8%) patients. Three patients were diagnosed with synchronous papillary thyroid carcinoma. The largest nodule size was 33.8 ± 14.4 mm, and the nodule volume was 16.1[6.62; 18.8] cm³. Most nodules (n = 13, 54.2%) were classified as EU-TIRADs 5. Multifocality was identified in three (8.11%) patients. PET/CT 18F-FDG showed high uptake in the thyroid lesion in 26 (96.3%) patients. Median overall survival was 16.3 (95%CI: 0.0-34.0) months. **Conclusion**: n these patients, prognosis appears unfavourable, with limited overall survival, which is closely tied to the biology of the primary neoplasia and the burden of metastatic disease. A newly discovered thyroid nodule with aggressive sonographic features in a patient with a history of cancer should raise a high level of suspicion. Clinical management decisions should consider the patient's overall health status. **Keywords:** thyroid gland; metastasis; cancer.

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FACTITIOUS CUSHING'S SYNDROME SUBSEQUENT TO CUSHING'S DISEASE IN REMISSION

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Case presentation: A 46-year-old female patient with hypertension and type 2 diabetes mellitus with weight gain of 30 kg, as well as abdominal striae rubra, facial plethora, acanthosis nigricans, muscle weakness, hirsutism, oligomenorrhoea, prominent goiter, skin hyperpigmentation and ecchymoses. After investigation, ACTH-dependent Cushing's syndrome (CS) was confirmed. She also presented a baseline cortisol value of 29 mcg/dL. Magnetic resonance imaging revealed a 6 x 4 mm pituitary adenoma. Petrosal sinus catheterization was performed, but with inconclusive results. She underwent transsphenoidal hypophysectomy. Immediate post-operative period with baseline cortisol value of 1.53 mcg/mL and positive immunohistochemistry for ACTH. She received 5 mg of prednisone daily, still with symptoms of hypercortisolism. She had multiple hospitalizations after surgery due to decompensation of comorbidities and suspected recurrence of Cushing's disease (CD), which was ruled out due to low cortisol and ACTH levels. Her use of nasal glucocorticoids (GC) was later discovered, suggesting factitious CS associated with Munchausen's syndrome, which was confirmed by psychiatry and treatment was started. **Discussion:** Patient initially diagnosed with CD, with laboratory remission after transsphenoidal hypophysectomy, but maintaining initial symptoms with frequent hospitalizations, as well as laboratory tests showing low cortisol and ACTH levels, suggesting exogenous hypercortisolism. Identifying the hidden use of GC was crucial. Factitious CS is associated with psychiatric disorders such as Munchausen syndrome, where the patient induces the illness to get attention. The psychiatric disorders often associated with factitious CS can overlap symptoms with other medical conditions, making diagnosis difficult. It is also necessary to look out for symptoms of GC withdrawal syndrome that may have contributed to the case. Management requires discontinuation of GC use, treatment of complications and psychiatric intervention. **Conclusion:** Factitious CS should be considered in patients with unexplained hypercortisolism when laboratory findings are not compatible with endogenous CS. A multidisciplinary approach, including full clinical assessment, laboratory tests and psychiatric intervention, is essential. Identification and appropriate management are crucial to improving patients' quality of life and preventing complications. **Keywords:** Munchausen's syndrome; factitious Cushing's syndrome; Cushing's disease.

METABOLISMO ÓSSEO E MINERAL

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ASSESSMENT OF APPARENT BONE MINERAL DENSITY IN ADULT WOMEN WITH TURNER SYNDROME: A CROSS-SECTIONAL STUDY

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Introduction: Turner syndrome (TS) results from the complete or partial absence of the one X chromosome and causes a variety of health conditions, including ovarian failure, short stature and metabolic disorders. Bone fragility has been described and assessing bone mineral density (BMD) in this population is important. TS has significantly lower lumbar and femoral neck BMD, and the diagnosis of osteoporosis is more common. Bone density is routinely quantified by a two-dimensional measurement using areal BMD (g/m^2) but this may underestimate BMD in individuals with short stature and smaller bone size. Apparent bone mineral density (BMAD), derived from bone volume, is a method of correcting areal BMD in people with short stature. **Objective:** To evaluate BMD and BMAD in TS adults followed up at a reference centre. **Patients and methods:** Cross-sectional, descriptive and quantitative study of 46 TS, aged over 20 years, in a tertiary centre. BMD was obtained using Lunar Prodigy Advance densitometry, and BMAD was obtained using the calculator available at: https://courses.washington.edu/bonephys/opBMAD.html. Data were collected and continuous variables are presented as mean +/- standard deviation (median) and categorical variables as n(%). Kruskal-Wallis or Fisher's exact test were used for comparison between groups, considering $p < 0.05$ significant. **Results:** The median age was 28 years, 54% monosomy, 28.3% X structural alteration and 17.4% mosaicism, 41% of whom were treated with GH (mean time of use 5.7 years). Pubertal induction occurred after the age of 13 in 35 (83%) patients. Only 4 patients (8.6%) had spontaneous menarche. BMD varied directly with height. The frequencies of low bone mass (lumbar and femoral) differed significantly in the sample when calculated from BMD values (47.8% and 39.1%) or BMAD values (30.4% and 13%). Lumbar spine BMD (1.076 g/cm^2 *vs.* 0.904 g/cm^2, $p = 0.0002$) and femoral neck BMAD (0.21 g/cm^3 *vs.* 0.15 g/cm^3, $p = 0.01$) were significantly higher in those with spontaneous menarche. In women with induced puberty and aged between 20 and 41.5 years, there was no significant difference in BMD and BMAD in relation to previous GH use. **Conclusions:** BMAD analysis is the most appropriate technique for assessing bone mass in adult women with TS and a height of less than 150 cm. The use of BMD may lead to a false diagnosis of low bone mass in this population. This study reinforces that timely estrogen exposure is associated with better bone mass. **Keywords:** Turner syndrome; bone mineral density; osteoporosis.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

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BODY COMPOSITION IN ADULT WOMEN WITH TURNER SYNDROME: A CROSS-SECTIONAL STUDY

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Introduction: Turner syndrome (TS) results from the complete or partial absence of the second X chromosome. Ovarian failure, short stature and metabolic alterations are common characteristics. It is essential to know the characteristics of body composition in this population. Dual-energy X-ray absorptiometry (DXA) is a gold standard method for assessing body composition. Fat mass index (FMI), visceral adipose tissue (VAT), android to gynoid ratio (A/G) and relative skeletal muscle index (RSMI) are some parameters provided by DXA. FMI is better than the body mass index (BMI) for measuring body fat in people with increased lean mass. VAT is associated with cardiometabolic risk factors. The android/gynoid ratio (A/G) is correlated with dyslipidaemia, mortality and the risk of myocardial infarction. RSMI ≤ 5.45 kg/m² in women can be considered low muscle mass. **Objective:** To evaluate the body composition parameters of adults with TS followed up at a referral centre. **Methods:** Cross-sectional, descriptive and quantitative study of 46 adult TS, aged over 20, in a tertiary centre. Body compositions were obtained using Lunar Prodigy Advance densitometry. The parameters obtained have been compared with a control group of healthy women matched for age. **Results:** Median age of 28 years, 54% monosomy, 28.3% X structural alteration and 17.4% mosaicism. The frequency of overweight and obesity was 27% and 18%. The body composition of women with TS differed significantly from the control group, adjusted for age and BMI. In TS women with X structural alteration, greater trunk and A/G fat mass was observed. FMI, VAT and the A/G correlated significantly with BMI, waist (W) and the waist to height ratio (W-to-H). In the multivariate analysis, W showed a strong predictive effect on the A/G ratio. Eutrophic women with TS had a higher percent of total fat, VAT, A/G ratio, trunk fat and lower RSMI when compared to the control group. **Conclusion:** TS have an altered body composition when compared to the control group. Body composition parameters correlated significantly with BMI, W and W-to-H. These results highlight the importance of anthropometry in the physical examination, a simple and accessible measure that correlates well with the accurate measurement obtained by DXA. TS is often associated with congenital and acquired cardiovascular disease, which reinforces the importance of lifestyle modification and body composition improvement.
Keywords: Turner syndrome; body composition; anthropometry.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

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BONE MINERAL DENSITY IN TRANSGENDER PEOPLE: FINDINGS FROM A CROSS-SECTIONAL STUDY

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Introduction: Sex hormones play a crucial role in bone health. Transgender (TG) individuals may be at higher risk for bone mineral density (BMD) changes due to gender-affirming hormonal therapy (GAHT) and surgeries. **Objective:** To study the prevalence of low BMD in a Portuguese TG population and to compare TG on GAHT with TG not on GAHT. **Methods:** Cross-sectional study including TG with a dual-energy x-ray absorptiometry (DXA) scan (n = 106). Exclusion criteria: age > 50y, chronic diseases or drugs affecting bone metabolism (n = 10). BMD was measured at lumbar spine (LS), total hip (TH), and femur neck (FN). Z-scores were assessed using identified sex (IS). Values ≤ -2.0 SD were considered as low BMD for age. For TG on GAHT for < 2y, Z-scores using different reference sexes were compared. P-values were adjusted to group differences. **Results:** Thirty TG females were included, aged 25.3 ± 5.07y, 16 (53.3%) on GAHT. Fourteen (46,7%) had low BMD [6 (37.5%) on GAHT and 8 (57.1%) not on GAHT (p = 0.282)]. BMD and Z-scores were similar. TG females on GAHT had a higher prevalence of low BMD (37.5% *vs.* 3.7%, p = 0.007) and lower Z-scores (LS -1.45 ± 1.10 *vs.* -0.27 ± 0.86 p < 0.001; TH -0.41 ± 1.04 *vs.* 0.36 ± 0.92 p = 0.017; FN -0.71 ± 0.91 *vs.* 0.05 ± 1.1 p = 0.029) than TG males not on GAHT. In TG females on GAHT, TH and FN Z-scores were higher using reference values of IS when compared to using birth-assigned sex (p = 0.003 and < 0.001, respectively), but with no differences in low BMD rates (p = 0.999). Sixty-six TG males were included, aged 24.1 ± 6.19y, 39 (59.1%) on GAHT. Eight (12.1%) had low BMD [5 (12.8%) on GAHT and 3 (11.1%) not on GAHT (p = 0.999)]. BMD and Z-scores were similar. Compared to TG females not on GAHT, TG males on GAHT had a lower prevalence of low BMD (50% *vs.* 12.8%, p = 0.004), and higher Z-scores in all sites (LS -1.59 ± 1.07 *vs.* -0.24 ± 0.96 p < 0.001; TH -1.19 ± 1.06 *vs.* -0.25 ± 1.04 p = 0.005; FN -1.24 ± 1.08 *vs.* -0.51 ± 0.99 p = 0.015). In TG males on GAHT, Z-scores using birth-assigned sex reference were higher at TH (p < 0.001) and FN (p = 0.006) when compared to IS, but with no difference in classification as low BMD (p = 0.500). **Conclusion:** There is a high prevalence of low BMD in our population. TG females on GAHT have a higher low BMD prevalence than TG males not on GAHT, despite similar estradiol levels. This may reflect behavioral differences and undertreatment. TG males have lower rates of low BMD, even when compared to TG females not on GAHT, possibly due to testosterone aromatization, but also behavioral differences.
Keywords: transgender; bone health; bone mineral density.

METABOLISMO ÓSSEO E MINERAL

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CHARACTERIZATION OF THE PHENOTYPE AND PENETRANCE OF PRIMARY HYPERTROPHIC OSTEOARTHROPATHY IN HETEROZYGOTES FOR SLCO2A1 VARIANTS

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Introduction: Primary hypertrophic osteoarthropathy (PHO) is a rare autosomal recessive disease characterized by periostosis, pachydermia, digital clubbing, and cutis verticis gyrata (complete form, CF). Initially, it may be confounded with acromegaly. It is caused by pathogenic variants (PVs) in the *HPGD* and *SLCO2A1* whose correspondent phenotypes are PHOAR1 and PHOAR2, respectively. Recently, a dominantly inherited form associated (PHOAD) was identified in heterozygous *SLCO2A1* carriers, but data on the phenotype and penetrance in this subset are limited. **Objectives:** To describe the phenotype/genotype of four PHO probands and investigate phenotype/penetrance in heterozygous carriers. **Methods:** Both genes were sequenced using Sanger sequencing. **Results:** The four probands exhibited the CF of PHO. The mean ages at symptom onset, clinical diagnosis, and genetic diagnosis were 18.5 ± 2.7y (16-22), 22 ± 3.4y (18-26), and 47.5 ± 7.8y (38-57), respectively. The homozygous *SLCO2A1* PVs found in cases 1-4 were as follows: p.Q188R, p.C420F, p.A176T, and p.G104*. PVs were novel in cases 1 and 3. The parental generation of cases 3 and 4 exhibited consanguinity. Among 14 heterozygous relatives, five elderly individuals (78 ± 6.7y, 72-86) from the parental generation were affected: two with the incomplete form (IF) of PHO and three with isolated digital clubbing (IDC). Of the 47 *SLCO2A1* heterozygous cases reported, including 14 from our study, the estimated overall penetrance was 70%, in males 83% and in females 50%. The dominant phenotypes were CF (64%) and IF (36%) among probands; IDC (41%) followed by IF and fruste form (FF) in screened cases (28% each), with IDC and FF being the dominant phenotypes in screened men and women, respectively. The penetrance rate of periostosis in women was 28% (5/18), including our oldest patient (86-year-old, periostosis, pachydermia). Penetrance rates were significantly higher in men ($p = 0.024$) and in individuals carrying truncated SLCO2A1 PVs ($p = 0.053$). **Conclusion:** Penetrance in *SLCO2A1* heterozygotes is incomplete and higher in the elderly, males, and those with truncated PVs. As previously documented in PHOAR2, PHO phenotypes are more pronounced in males. However, periostosis appears to be more frequent in females than previously reported. Notably, IDC may be the sole manifestation in heterozygotes. Additionally, we confirmed both inheritance models (PHOAR2/PHOAD) occurring simultaneously in families harboring *SLCO2A1* variants. **Keywords:** primary hypertrophic osteoarthropathy; *SLCO2A1*; penetrance.

METABOLISMO ÓSSEO E MINERAL

2194

PARATHYROID ALLOTRANSPLANTATION ON REFRACTORY HYPOPARATHYROIDISM: AN INNOVATIVE BRAZILIAN EXPERIENCE

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Introduction: Hypoparathyroidism is a disorder characterized by deficient or inappropriately low parathyroid hormone (PTH) secretion, leading to hypocalcemia and hyperphosphatemia. The standard clinical treatment has been used for decades, which consists of calcium and calcitriol replacement. However, some patients are refractory to this therapy, and they experience maintenance or worsening of symptoms (fatigue, muscle cramps, paresthesia, intracerebral calcifications, cognitive dysfunction, and renal stones/nephrocalcinosis). Therapies based on recombinant human parathyroid hormone (rhPTH) have emerged in recent years but still have low availability mainly due to their high cost. Despite few reports in the literature, parathyroid allotransplantation has been described as an alternative strategy to treat more severe cases. **Objective:** This study aimed to evaluate parathyroid allotransplantation on patients suffering from refractory hypoparathyroidism. **Patients and methods:** The donors were patients waiting for subtotal parathyroidectomy due to hyperparathyroidism secondary to end-stage chronic kidney disease. Parathyroid tissue was removed, prepared and immediately implanted in the non-dominant forearm of the recipient. Donors and recipients were ABO-compatible, and immunological screening was performed in two cases (HLA typing, Panel Reactive Antibody, and crossmatch tests). A short-term immunosuppressive regimen was adopted: three days of methylprednisolone followed by seven days of prednisone. Follow-up period: 12 months. **Results:** The first allograft showed no evidence of functionality 12 months after transplant. In the following two patients, serum PTH levels did not increased as expected. However, serum calcium levels increased, and both patients experienced relief from hypocalcemic symptoms. In Case 2, oral supplementation decreased to half of the initial dose one month after transplantation and to one-fifth at the end of a 12-month follow-up period. In Case 3, intravenous calcium could be discontinued one week post-transplantation, and it was not yet required. PTH levels initially increased in Case 4 and hypocalcemic symptoms also reduced. Nevertheless, the allograft showed signs of failure one month after transplantation. **Conclusion:** Parathyroid allotransplantation showed to be safe and effective, and it can be considered for refractory hypoparathyroidism. This is an innovative and not yet described procedure in Brazil. **Keywords:** allograft; hypocalcemia; hypoparathyroidism.

METABOLISMO ÓSSEO E MINERAL

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EXPERIENCE WITH BONE-FORMING AGENTS AFTER ANTIRESORPTIVE THERAPY FOR OSTEOPOROSIS IN A TERTIARY SPECIALIZED SERVICE

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Introduction: Osteoporosis is a systemic skeletal disease characterized by bone fragility. Identifying patients stratified with a "very high risk" of fractures can reduce therapeutic inertia through the implementation of anabolic therapy, reducing the risk of preventable fractures and morbidity and mortality. **Objective:** To present clinical and densitometric aspects of patients who used bone-forming therapy and to analyze the effectiveness of these medications. **Methods:** Retrospective analysis of medical records of patients followed up in the outpatient clinic of osteometabolic diseases in a specialized care service. Results are expressed as median (P25-P75). **Results:** A total of 22 patients (20 women) were included, diagnosed with osteoporosis at age 60 years (46-63 years). Seven patients (31%) had this diagnosis before 50. Secondary causes were identified in 14 (63%) patients, with the most frequent being glucocorticoid use (35%). Twenty patients (90%) had fractures; 11 (55%) had multiple fractures. The most frequent bone site was the spine in 12 (60%), followed by the wrist in 4 (20%), the femur in 3 (15%), and the humerus in 2 (10%). Prior to the use of anabolic therapy, 21 patients (95%) had received antiresorptives for 7 years (4.25-10), and only one was treatment-naïve. Teriparatide was used by 15 patients (68%) and Romosozumab by 9 (40%), and 2 patients (9%) used both medications in different times. The median age at the start of this treatment was 71 years (65-78 years). Before anabolic therapy, DXA revealed T-scores in the lumbar spine (LS), femoral neck (FN), and total hip (TH), respectively, of -4.1 (-3.4 to -4.7); -2.6 (-2 to -3.1); -2.3 (-1.8 to -2.8). The bone mineral density (BMD) gain with this treatment was 13.1% (7 to 18.5%) in LS, 1.3% (-6 to 8%) in FN, and 2.2% (-2.5 to 9.5%) in TH. The increase in T-score was 0.8 (0.3-1.4) in the LS, 0.1 (-0.6 to 0.4) in FN, and 0.1 (-0.1 to 0.3) in TH. BMD gain in the LS, FN, and TH was observed in 93%, 62%, and 62% of patients, respectively. After the start of bone-forming therapy, no new fractures occurred. **Conclusion:** Although the concept that starting with anabolic therapy and then transitioning to antiresorptives results in greater efficacy than the reverse sequence, we observed, in this study, a large BMD increase even when romosozumab or teriparatide were used after a median of 7 years of antiresorptive therapy. **Keywords:** osteoporosis; bone-forming agents; very high risk.

METABOLISMO ÓSSEO E MINERAL

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EFFECT OF BONE-FORMING AGENTS FOR THE TREATMENT OF OSTEOPOROSIS IN BOTH GENDERS AND IN DIFFERENT TREATMENT SEQUENCES

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Introduction: The anabolic or bone-forming agents approved for the treatment of osteoporosis are teriparatide and romosozumab, indicated for patients with "very high risk" of fracture due to the larger increase in bone mineral density (BMD) and significantly lower incidence of fractures. **Objective:** To evaluate the effect of bone-forming treatment for osteoporosis. **Methods:** Retrospective analysis of medical records of a series of patients with osteoporosis undergoing bone-forming therapy. Categorical variables are presented as frequency and prevalence, and numerical variables as mean and standard deviation; numerical data were compared using the Student's t-test, with a significance level of 0.05. **Results:** Twelve patients were included, 8 of whom were women (67%). Only 5 were treatment-naïve, while 7 started anabolic therapy after antiresorptives. Teriparatide was used by 2 patients and Romosozumab by 10. The age at the start of anabolic therapy was 70.8 ± 9.3 years. The indication for anabolic therapy was a very high risk of fracture in 10 (83%) and atypical femoral fracture in 2 (17%). Nine patients (75%) had previous osteoporotic fractures, totaling 16 fractures (10 in major sites). Initial DXA revealed a T-score of -2.8 ± 1.4 in the lumbar spine (LS), -2.8 ± 1.1 in the femoral neck (FN), and -2.3 ± 1.2 in total hip (TH), with 9 patients (75%) having a T-score ≤ -3.0 in at least one site. Risk factors for osteoporosis included smoking (50%) and a family history of osteoporotic fracture (50%). Seven patients (7/12) completed anabolic treatment, and the BMD gain was 8.8 ± 3.5% in LS, 4.3 ± 4.2% in FN, and 2.4 ± 3.5% in TH. We observed an increase in P1NP from 39.7 ± 17.1 to 101.1 ± 34.7 ng/mL after 1-3 months of treatment initiation. There was no difference in BMD gain between men and women at any of the bone sites analyzed. Treatment-naïve patients had BMD gains of 8.3 ± 2.9% in the spine, 6.2 ± 5.4% in FN, and 5.6 ± 2.0% in TH, while patients who used bone-forming agents following antiresorptives gained 9.1 ± 4.3% in the spine, 2.9 ± 3.2% in FN, and 0.0 ± 1.8% in TH, with significantly greater gains in the TH in the treatment-naïve group (p = 0.006). **Conclusion:** Bone-forming therapy resulted in substantial densitometric gains at all bone sites. No differences were observed between men and women, suggesting efficacy in both genders. Treatment-naïve patients had a larger response in the TH compared to those previously treated with antiresorptives. **Keywords:** osteoporosis; treatment sequence; bone-forming agents.

DIABETES MELLITUS

2198

CAN THE CURRENTLY AVAILABLE RISK CALCULATORS ADEQUATELY PREDICT OUTCOMES OVER 10 YEARS IN PATIENTS WITH LONG-STANDING TYPE 1 DIABETES?

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Introduction: Patients with long-standing type 1 diabetes (T1D) have an increased risk of cardiovascular (CV) events or death. It is unclear if the currently available CV risk (CVR) calculators are suitable for these individuals. This study aimed to evaluate the performance of different CVR calculators in a sample with long-standing T1D. **Patients and methods:** A retrospective analysis of medical charts was conducted on patients with T1D for 20 years or more. CVR was calculated using data from 10 years ago based on: 1 – Brazilian Society of Cardiology (SBC); 2 – Brazilian Society of Diabetes (SBD); 3 – Type 1 Risk Engine (T1RE) of the Steno Diabetes Center. Non-fatal acute myocardial infarction (AMI), non-fatal stroke, and death up to the present day were assessed. The association between CVR and outcomes was evaluated. **Results:** The sample comprised 123 patients (55.3% females and 3.25% smokers). The mean age and duration of T1D were 38 ± 11.1 and 26 ± 6.6 years, respectively. In 2014, according to SBC, 9.8%, 88.6%, and 1.6% of patients had intermediate, high, and very high CVR over 10 years, respectively. According to SBD, 24.5%, 0.9%, 48.2%, and 26.4% had low, intermediate, high, and very high CVR, respectively. According to ST1RE, 83.2%, 14.7%, and 2.1% had low, intermediate, and high CVR, respectively. Non-fatal CV events occurred in 3 cases (2 AMI, 1 stroke); 4 deaths were reported (due to heart failure, breast cancer, sepsis, sudden death). There was an association between death and CVR calculated by SBC ($p = 0.001$) and T1RE ($p < 0.001$) and between CV events and CVR by SBC ($p < 0.001$) and T1RE ($p = 0.036$). SBD-estimated CVR was not associated with CV events ($p = 0.34$) or death ($p = 0.585$). According to SBC, 90.24% had high/very high CVR, but 93.7% of those did not have any outcome. By ST1RE, 2.1% (2/95) had high/very high CVR, and 1 of those died. Two patients classified as intermediate and 1 classified as low CVR had a CV event, and one low CVR patient died (sudden death). It was not possible to assess the ST1RE CVR in the other 2 death cases. Death was associated with diabetic complications ($p < 0.001$). There was no association between outcomes and age, T1D duration or smoking. **Conclusion:** The 10-year risk of CV events and death was associated with the SBC and T1RE, but not with SBD calculator. Although SBC calculator may overestimate CVR, ST1RE may underestimate risk. Further research is required to identify the ideal tool for appropriate risk stratification in individuals with T1D. **Keywords:** type 1 diabetes; cardiovascular risk; cardiovascular diseases.

DIABETES MELLITUS

2200

EXPLORING THE LINK BETWEEN COVID-19 INFECTION AND THE DEVELOPMENT OF TYPE 2 DIABETES MELLITUS

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Introduction: Type 2 diabetes mellitus (T2DM) is a chronic disease characterized by the loss of insulin sensitivity – a hormone that regulates blood glucose levels. This loss of sensitivity and/or difficulties in insulin production result in a state of hyperglycemia. SARS-CoV-2 virus infection has a tropism for insulin-producing pancreatic beta cells, subsequently impairing insulin production and secretion, leading to significant metabolic alterations in patients. **Objectives:** This systematic review, following the PRISMA guideline, aims to review the available literature on the topic, presenting and discussing recent findings. **Methods:** A systematic review was conducted using the Medical Subject Headings descriptors: "Diabetes Mellitus, Type 2" and "COVID-19" combined with the operator "AND." Inclusion criteria were relevant research articles. Exclusion criteria included studies with inadequate methods, lack of scientific rigor, and data duplication. Databases used were PubMed, Embase, and SciELO. Cohort studies conducted between 2020 and 2021 were utilized. **Results:** Five studies were retrieved for the construction of this review. The literature unanimously affirms that beyond the acute phase of COVID-19, patients can present post-acute sequelae, involving both pulmonary and extrapulmonary outcomes. In a cohort study with 181,280 patients who tested positive for COVID-19, there was a considerable increase in the risk of incident diabetes (HR 1.40, 95% CI 1.36-1.44) and an increased risk of using antihyperglycemic agents (HR 1.85, 95% CI 1.78-1.92) compared to the control group. The studies demonstrated a higher propensity for developing T2DM after COVID-19 in certain groups, especially individuals over 65 years old (HR 1.36, 95% CI 1.31-1.41) and patients with pre-diabetes (HR 1.31, 95% CI 1.27-1.36), hypertension, and dyslipidemia, which can be seen by the increased number of hospitalizations compared to the control group. **Conclusions:** The literature pointed to a positive correlation between COVID-19 and the development of T2DM. Groups at risk for diabetes showed a higher propensity for its development after exposure to COVID-19, amplifying baseline risks and accelerating the manifestation of the disease among susceptible individuals. Therefore, post-acute care strategies for COVID-19 patients should include the identification and management of diabetes. **Keywords:** type 2 diabetes mellitus; COVID-19; SARS-CoV-2.

DIABETES MELLITUS

2201

EFFECTS OF SEMAGLUTIDE ON KIDNEY OUTCOMES IN PATIENTS WITH CHRONIC KIDNEY DISEASE AND DIABETES TYPE 2: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Semaglutide (SMG) has been utilized for the treatment of type 2 diabetes, given the increasing number of individuals worldwide affected by these conditions, attributable to shifts in population health and habits. The increase in the prevalence of diabetes has also contributed to a rise in its complications, such as chronic kidney disease. As CKD progresses, treatment becomes more complex, so it is important to understand whether SMG can offer any benefit to these patients. Individualized use of SMG can aid in glycemic control while delaying the progression of vascular complications. Therefore, assessing renal events is crucial in the contemporary context. **Objective:** This study aims to evaluate the renal outcomes associated with semaglutide in patients with type 2 diabetes and kidney impairment. **Methods:** We systematically searched PubMed, Embase and the Cochrane Library for randomized controlled trials and controlled observational studies in patients with chronic kidney disease and diabetes, following the PRISMA protocol. The search strategy included the keywords "Semaglutide", "chronic kidney disease", and "diabetes". Review Manager 5.4 and Inverse Variance Random Effects was used for statistical analysis and heterogeneity was examined with the Cochran Q test and I^2 statistics. **Results:** From the search of the databases, 570 articles were found. After removing duplicates and ineligible studies, 3 articles were included in this study according to the inclusion criteria. In total, data from 8,979 patients were evaluated in this review, of whom 4,076 patients used SMG, while 4,903 received placebo. Only one renal outcome related to the population under study could be found in all 3 studies, which was used to carry out the meta-analysis. For the mean annual rate of change in estimated glomerular filtration rate (eGFR) from baseline to end of trial, the pooled analyses for between groups mean difference was 1.25 (95% CI: 0.90-1.60; $p < 0.00001$; $I^2 = 43\%$). **Conclusion:** This systematic review and meta-analysis revealed that the semaglutide group demonstrated significantly better eGFR compared to the placebo group. These findings indicate that patients with chronic kidney disease and diabetes can benefit from the same treatment for both conditions. Therefore, semaglutide emerges as a viable option for mitigating renal function loss and informing clinical medical practice. **Keywords:** semaglutide; diabetes; chronic kidney disease.

DIVERSIDADE, EQUIDADE E INCLUSÃO

2202

EPIDEMIOLOGICAL ANALYSIS OF MALNUTRITION-RELATED HOSPITALIZATIONS IN SOUTHEASTERN BRAZIL: A RETROSPECTIVE STUDY (2020-2024)

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Introduction: Undernutrition (UDN), a condition resulting from inadequate or insufficient intake of essential nutrients necessary for the normal functioning of the body, is a pressing public health concern in many regions of the world, including southeastern Brazil. This problem is particularly acute in the context of southeastern Brazil due to the disparities in socioeconomic factors, which contribute to the prevalence of undernutrition and its associated complications. UDN can lead to a series of complications, from immune weakening, loss of muscle mass and growth problems in children, in addition to metabolic and endocrinological changes. Its prevalence is worthy of a detailed analysis of its data to take effective public measures **Objectives:** To analyze the impacts and distribution of hospitalizations due to malnutrition in Southeastern Brazil. **Methods:** A retrospective epidemiological study was conducted using data from DATASUS, via the SUS hospital morbidity system (SIH/SUS). Hospitalization data were collected from the period between January 2020 and May 2024. The parameters used were: "*Região*", "*Unidade Federativa*", "*Lista de Morbidade CID-10*", "*Faixa etária*". These parameters are associated with the number of hospitalizations, mortality and hospital costs. **Results:** The southeast region reported n = 47,116 hospitalizations due to malnutrition, with a total number of deaths of 7,562 (16.04%), among the states that make up the region, São Paulo presented n = 12,136 (25.75%) hospitalizations with 2,358 deaths, Minas Gerais n = 25,180 (53.44%) and 3,308 deaths, Rio de Janeiro n = 5,592 (11.86%) and 1,515 deaths, Espírito Santo n = 4,208 (8.93%) and 381 deaths. The average length of stay for patients was 7.6 days. The total spent, in *reais*, that the Southeast region had was R$ 38,562,502.20. Analyzing social aspects, the highest mortality rate was among men, while the age groups with the highest mortality were the elderly (age > 60) with a rate above 90%, followed by the pediatric population (age < 20). **Conclusions:** The data presented shows Minas Gerais as the state with the highest mortality and hospitalizations due to malnutrition in the Southeast region. The high mortality rate, especially among the elderly population, and the significant financial cost highlight the severity of the problem and the urgency of effective measures to mitigate the impacts of malnutrition on the population of the Southeast region. **Keywords:** undernutrition; Southeastern; epidemiological.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2203

EFFECTS ON THE CARDIOVASCULAR RISK PROFILE OF GENDER-AFFIRMING HORMONE THERAPY IN TRANSGENDER MEN: A SYSTEMATIC REVIEW

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Introduction: Gender-affirming hormone therapy (GAHT) is commonly used by transgender men (TM) for the gender transition, and testosterone is usually administered. However, the use of androgens is associated with the potential exposure of individuals to cardiovascular risks. Therefore, it is necessary to understand how GAHT influences the cardiovascular risk profile in TM. **Objective:** To analyze the potential effects of gender-affirming hormonal therapies in transgender men in the cardiovascular context. **Methods:** This is a systematic review carried out under the PRISMA protocol, made from the PubMed and Cochrane databases with the descriptors "Cardiovascular" AND "Gender-affirming hormone therapy" AND "Transgender men". 3 articles were selected, based on the inclusion criteria for studies in English between 2019 and 2024, excluding review studies. **Results:** 47 articles were found, and 3 were selected for reading, after the application of the inclusion criteria. A first study, conducted with 33 TM submitted to GAHT, showed greater aortic stiffening related to aging in this group than in the control groups. Another study, including 11 TM in testosterone use, pointed to greater endothelial dysfunction than the control group. A third study, which analyzed 20 TM, indicated, after GAHT, changes in inflammatory metabolic parameters, which could increase cardiovascular risk, and evidence of vascular changes, such as thickening of the middle-intimal layer. **Conclusion:** The association between hormonal therapy with androgens and increased cardiovascular risk in the population analyzed is evident. However, further studies are needed to better understand this correlation. It is worth mentioning that studies that analyze transgender populations are still insufficient and incipient, revealing the need for more scientific support in this context, in favor of the health of these patients. **Keywords:** cardiovascular risk; gender-affirming hormone therapy; transgender men.

NEUROENDOCRINOLOGIA

2204

WATER DEPRIVATION TEST IN CHILDREN: CHALLENGING BUT STILL NECESSARY TO DIAGNOSE CENTRAL DIABETES INSIPIDUS

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Introduction: It is challenging to differentiate central diabetes insipidus (CDI) from nephrogenic diabetes insipidus (NDI) or primary polydipsia (PP) in patients with polyuria-polydipsia syndrome, especially in the pediatric population. Despite its limited accuracy and low tolerance in children, the water deprivation test (WDT) is still used as a reference. **Objectives:** To review indications and outcomes of pediatric patients undergoing WDT; to describe the safety of these tests; to investigate the existence of baseline variables that predict outcomes; and to reevaluate criteria for suspending and reinterpreting tests. **Patients, materials and methods:** A retrospective analysis of 83 WDTs carried out in the investigation of 57 patients with polyuria-polydipsia syndrome, with a mean age of 8.2 years (0-17.9), in a referral University hospital over 23 years under the same protocol. All WDTs were independently reinterpreted by three experienced experts. **Results:** Of the 83 tests performed, 47 (56,6%) were conclusive in establishing a definitive diagnosis. There were no serious adverse effects. The overall accuracy, including conclusive and inconclusive tests, was 53%. Simplified (2-hours) WDT (n = 21) were inconclusive in 47,6%. The mean duration of conclusive tests to confirm CDI or NDI was 2 hours, while PP and partial CDI needed 6 and 7 hours, respectively. Using ROC analysis, we found that a baseline urinary osmolality (uOsm) greater than 279 mOsm/kg excluded DI in all patients (Se = 100%; Sp = 74%; $p < 0.01$). Moreover, a uOsm greater than 533 mOsm/kg at the time of test interruption also excluded the diagnosis of DI in all individuals (Se = 100%; Sp = 100%; $p < 0.01$). Adopting the lower limit of 3% weight loss as a criterion for interrupting the WDT would preclude the diagnosis of nine (19%) conclusive tests. **Conclusion:** WDT is safe and necessary in children. However, it is conclusive in only 53% of the tests and simplified WDT is even less effective. A basal uOsm greater than 279 mOsm/kg excludes DI, while a uOsm greater than 533 mOsm/kg at the time of test interruption is enough to exclude DI. The lower limit of 3% weight loss as a criterion for suspending WDT reduces the number of diagnoses. Considering the high rate of inconclusive WDT and its safety, we suggest revising the discontinuation and diagnostic criteria to increase its diagnostic performance. Baseline clinical and biochemical variables can help guide the indication but cannot replace the WDT. **Keywords:** water deprivation test; diabetes insipidus; children.

METABOLISMO ÓSSEO E MINERAL

2205

THE IMPORTANCE OF MUSCLE STRENGTH AND PHYSICAL PERFORMANCE AS PART OF THE DIAGNOSIS AND MANAGEMENT OF SARCOPENIA IN YOUNG ADULTS LIVING WITH HUMAN IMMUNODEFICIENCY VIRUS

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Introduction: Sarcopenia is a disease characterized by reduction of muscle strength and functionality and has become increasingly common in our population. Specific groups such as people living with the human immunodeficiency virus (PLWH) are at greater risk for developing this condition. **Objective:** To evaluate muscle functionality and performance and body composition in young PLWH and define screening protocols for sarcopenia in this population. **Methods:** Eighty-one HIV-infected and 54 uninfected (20 to 50 years) male and female subjects were enrolled to participate. Patient evaluation included body composition by DXA (dual energy X-rays), SARC-F questionnaire, hand grip test and timed up & go. **Results:** Fifty PLWH and 50 age-gender matched controls completed the study. The median age was 40 (25-49) *vs.* 36.5 (22-50) for the HIV and control groups, respectively (p 0.120). Race, gender, body mass index, phosphorus and 25-hydroxyvitamin D were similar between groups. HDL-c was significantly lower in HIV-infected (p 0.006). Groups had similar body composition parameters, although more PLWH presented appendicular lean mass (ALM) and ALM adjusted to height (ALM/h^2) below reference values (18% *vs.* 4%). SARC-F questionnaire and TUG were significantly compromised in HIV-infected when compared to controls (p 0.001 and 0.005, respectively). Hand grip test was slightly lower in PLWH than in control group (29.0 kg (9.3-56.0) *vs.* 32.8 kg (13.3-57.3); p 0.052). **Conclusion:** Our results confirm that there is loss of functionality, physical performance and muscle strength in young HIV-infected. Therefore, we developed a screening protocol with new cut-off values considering a younger population of HIV-infected that are at high-risk for sarcopenia. With early diagnosis we may decrease muscle dysfunction, morbimortality, providing an increase in quality of life and working hours. **Keywords:** sarcopenia; HIV; muscle strength.

METABOLISMO ÓSSEO E MINERAL

2207

GENDER DISPARITIES IN THE INCIDENCE OF HIP FRACTURES AND BONE DENSITOMETRY EXAMS IN BRAZIL

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Introduction: About one-third of hip fractures occur in men, who experience higher morbidity and mortality rates compared to women. Guidelines recommend that all men aged 70 and older undergo at least one DXA (dual-energy X-ray absorptiometry) scan during their lifetime. However, adherence to these guidelines and specific data for Brazil remain unknown. **Objective:** This study aims to evaluate the incidence of hip fractures and the utilization of DXA exams among men and women covered by the Brazilian Unified Health System (SUS) from 2008 to 2022. **Methods:** We conducted a retrospective, observational study using population-based data obtained from the Department of Informatics of SUS (DATASUS) from 2015 to 2022. The analysis focused on hip fracture rates (proximal femur) and DXA exam numbers, stratified by age and sex. Annual incidence rates of hip fractures and DXA scans were calculated per 100,000 individuals aged 50 and above. Descriptive and inferential statistical analyses were employed to compare these rates between sexes. **Results:** As of 2022, the annual incidence rate of hip fractures per 100,000 individuals over 50 years was 133.5 for women and 80.7 for men. The incidence of hip fractures in men begins to rise after age 45 and remains higher than in women until age 64. The median age at which men experience fractures is 67 years, whereas for women, it is 79 years. In the 50-54 age group, the risk of hip fracture in men increased 3.33 times compared to younger age groups. The ratio of hip fracture rates between men and women over 50 was 6:10. However, the number of DXA tests performed on men was significantly lower than on women across all age groups, with a ratio of 1:10. In 2022, the rate of DXA exams per 100,000 individuals over 70 was 2,376 for women (totaling 158,726 exams) and 351 for men (totaling 17,801 exams). Despite a 32% increase in hip fractures between 2015 and 2022, the number of DXA scans performed during this period remained stable. **Conclusion:** Despite a notable increase in hip fractures over the past seven years, there has been no commensurate rise in DXA scans, suggesting inadequate attention to osteoporosis diagnosis and fracture prevention in both genders, particularly among men. Hip fractures in men occur at a younger age compared to women and with relevant frequency. However, male osteoporosis remains underestimated, underscored by the disproportionately low number of DXA exams conducted, especially after age 70, compared to women. **Keywords:** femoral fracture; osteoporosis; sex disparities.

OBESIDADE
2208

FACTORS ASSOCIATED WITH THE INFLUENCE OF THE ENDOCANNABINOID SYSTEM IN INDIVIDUALS WITH OBESITY: A SYSTEMATIC REVIEW

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Introduction: Obesity is the excessive accumulation of fat in the body, which may be responsible for the predisposition to other health conditions. Studies have demonstrated the relationship between the endocannabinoid system and obesity and metabolism, which can be explained by CB1 receptors, their stimulators anandamide (AEA) and 2-arachidonylglycerol (2-AG), among other molecular aspects. **Objective:** To evaluate factors associated with the effects of the endocannabinoid system in the context of obesity. **Material and method:** This is a systematic review based on the PRISMA Protocol, with a search in the PubMed database, using the strategy "endocannabinoids" AND "obesity". Clinical trials/randomized controlled trials from the last 5 years were included and reviews were excluded. **Results:** 17 articles were found, 3 of which were eligible for the topic of this review. The samples ranged between 60 and 100 individuals with some factor related to obesity or overweight. Studies show that dietary variations influence the endocannabinoid system in the context of obesity, since in overweight individuals on an energy-restricted diet with high nutritional quality there was an increase in CB1 receptors, prevention of the decline in dehydroepiandrosterone and increased gene expression DALG-α in adipose tissue, in relation to individuals with the same restriction, but a diet of low nutritional quality. Individuals on the Mediterranean diet had reduced AEA levels, with greater functionality of the intestinal microbiome, greater homeostasis and integrity of the intestinal barrier. On the other hand, the study with a group ingesting whey protein and reducing calories reveals that these factors can reduce AEA and 2-AG even without a significant drop in weight and BMI, showing an improvement in obesity markers through mechanisms other than weight loss. **Conclusion:** There is significant evidence of the relationship between the endocannabinoid system and metabolism in individuals with some degree of obesity or overweight, with the influence of dietary aspects. **Keywords:** obesity; endocannabinoid system; diet.

TIREOIDE
2210

METHIMAZOLE-INDUCED AGRANULOCYTOSIS PRESENTING WITH COMPLICATED PHARYNGOTONSILLITIS: CASE REPORT

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Case presentation: A 37-year-old woman diagnosed with hyperthyroidism due to Graves' disease (GD) started on Methimazole (MTZ). After 1 month, she was admitted to the Emergency Department with odynophagia and fever. Physical examination revealed tachycardia, tremor in the extremities, an enlarged thyroid without palpable nodules, and no ocular changes. Laboratory tests indicated hyperthyroidism with elevated TRAB, an ultrasound showed signs of diffuse thyroid disease, and a contrast-enhanced CT scan revealed a tonsillar abscess. Suspecting drug-induced agranulocytosis from the antithyroid drug (ATD), MTZ was discontinued, and broad-spectrum antibiotics (ATB) were initiated. During hospitalization, scintigraphy confirmed a diffusely hyperactive thyroid, despite the prior contrast scan. Granulocyte colony-stimulating factor (Filgrastim) was used in the interim. After resolving the infection, definitive treatment for hyperthyroidism with a dose of iodine was chosen, leading to an asymptomatic discharge. At an outpatient follow-up, clinical and laboratory hypothyroidism was detected, and Levothyroxine was started with good clinical follow-up. **Discussion:** Hyperthyroidism is characterized by increased synthesis and release of T3 and T4, affecting 0.2%-0.7% of the population. GD is the most common cause, manifesting as thyrotoxicosis and treated with ATD, radioiodine, or surgery, in that order of preference. MTZ is the first-choice ATD. However, it is hypothesized that this medication exerts an extra action on autoimmunity, either through a direct immunosuppressive effect or a primary effect on thyroid cells, with secondary effects on the immune system. Thus, ATD-induced agranulocytosis is a rare complication, with a prevalence of 0.2%-0.5% in GD patients, marked by a reduction in the granulocytic cell line. It can manifest regardless of age, dose, or duration of use. In these cases, discontinuing the drug, initiating ATB, stimulating granulocyte production, and definitively treating hyperthyroidism is necessary. **Final comments:** Agranulocytosis is a rare outcome after MTZ use. Rapid identification and appropriate management, as well as definitive alternatives for hyperthyroidism, are essential. The importance of this work lies in alerting physicians to the possibility of this complication. It is recommended that patients be warned when starting the drug, a practice that can prevent unnecessary suffering. **Keywords:** hyperthyroidism; agranulocytosis; methimazole.

ENDOCRINOLOGIA BÁSICA

2211

FRUCTOSE TOLERANCE TEST IN PATIENTS WITH STAEATOTIC LIVER DISEASE ASSOCIATED WITH METABOLIC DISORDER, COMPARED TO HEALTHY CONTROLS

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Introduction: Steatotic liver disease associated with metabolic disorders (DHEADM) is characterized by the presence of liver fat in individuals who do not consume excessive alcoholic beverages and is also considered one of the main causes of hepatocellular carcinoma. This pathology brings high healthcare costs due to the impact of its complications, an example of a complication is non-alcoholic steatohepatitis (NASH). Thus, current research has demonstrated fructose as one of the main triggers of the pathology, and this occurs due to the increase in uric acid, mediating the stimulation of hepatic lipogenesis and reduction of fatty acid oxidation. **Objective:** To evaluate the effects on markers of hepatic metabolism of an acute overload of 75 grams of fructose in patients with DHEADM, or with non-alcoholic steatohepatitis (NASH), comparing them to the overload in healthy controls. **Methods:** The study was carried out with 19 individuals, 9 of whom had steatosis or NASH and 10 healthy volunteers. Therefore, the volunteers were individually subjected to a fructose tolerance test (TTF), and uric acid and other markers were measured before, 1 hour and 2 hours after the overload. **Results:** Thus, it was demonstrated that anthropometric data showed that individuals with DHEADM had greater weight, BMI and waist circumference compared to the control group. Furthermore, these patients showed elevated levels of ferritin, insulin, blood glucose and uric acid, but there was no significant difference in triglycerides and TGP ($p < 0.08$). After fructose overload, a significant increase in insulin was observed in the group with steatosis ($p = 0.04$) within 1 hour, indicating greater insulin resistance. Although uric acid was expected to increase proportionally to the metabolic phenotype, the differences in means between groups were not significant, suggesting a similar response to fructose, regardless of the presence of NAFLD. **Conclusion:** Finally, it was observed that patients with DHEADM have high basal levels of ferritin and uric acid. However, the response to the fructose tolerance test was similar to that found in healthy individuals, indicating no correlation between TTF and the patients' metabolic phenotype. **Keywords:** steatotic liver disease; metabolic disorders; fructose tolerance test.

TIREOIDE

2212

FOLLICULAR THYROID CARCINOMA PRESENTING AS METASTASIS TO SKULL BASE WITH CRANIAL NERVE DYSFUNCTION – A CASE REPORT

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1. SANTA CASA DE SÃO PAULO, SÃO PAULO, SP, BRASIL.

45-year-old female with known multinodular goiter followed in primary care for 20 years presented to the emergency department with diplopia and progressively reduced visual acuity. Cranial CT and, posteriorly, MRI showed large tumoral lesion spreading through the skull base with high signal in T2, centered in the sella turcica, measuring 43 x 42 mm. Mass extended into sphenoid sinus, clivus, and cavernous spaces, with complete involvement of left internal carotid, and was suggestive of meningioma. Physical examination revealed third cranial nerve palsy and large goiter. The patient reported compressive symptoms, therefore total thyroidectomy was performed, initially demonstrating a thyroid adenoma. Patient underwent just a transsphenoidal biopsy of the tumor, because it was considered to be irresectable during the procedure. Anatomopathology was diagnostic of bone metastasis of follicular carcinoma. Review of the thyroidectomy material confirmed the thyroid as the neoplasm's primary site. Currently, the patient is being monitored at our service and will undergo additional therapies, such as radioiodine therapy. Thyroid cancer accounts for 1.5% of all cancer in adults and follicular carcinoma (FTC) comprises 17%-20% of those. Overall, mean survival rate after 10 years is 85%, and metastasis has been reported in 6%-20% of patients. The most common metastatic sites are the lungs and bones. Skull base metastasis is rare, with less than 30 cases reported in literature. Most reports occurred in women, with symptoms related to cranial nerves involvement being common, like our patient. Surgical treatment of metastasis is the choice if possible and radioiodine therapy is an alternative. It was a rare case of widely invasive FTC with metastasis to the skull base that had been followed in primary care for over 15 years. Information about this entity is important for physicians to avoid delayed diagnosis of this rare disease. **Keywords:** thyroid neoplasms; follicular adenocarcinoma; skull base neoplasms.

METABOLISMO ÓSSEO E MINERAL

2215

HYPOPARATHYROIDISM IN PREGNANCY: A CASE REPORT

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Case presentation: A.A.P.L., 31 years old, with post-surgical hypoparathyroidism (HypoPT), at 15 weeks of gestation using: calcitriol 0.25 mcg/day and CaCO3 600 mg/day, with P: 4.8 mg/dL (VR: 2.5-4.8); Mg: 2.3 mg/dL (VR: 1.9-2.5); CaT: 7.9 mg/dL (VR: 8.6-10); 25-OH-D: 43.8 ng/mL; CaU 24 h (Vol: 2.9L): 711 mg/24 h. CaCO3 was adjusted to 1,200 mg/day and oral hydration was recommended, reaching: Mg: 2.32 mg/dL; CaT: 8.2 mg/dL; P:4 mg/dL; CaU 24 h: 409 mg/24 h. CaCO3 was increased to 1,800 mg/day, reaching: P: 3.5 mg/dL; CaT: 8.1 mg/dL; CaU 24 h: 323 mg/24 h, maintaining this approach until the end of pregnancy with an asymptomatic patient. After a normal, full-term and uneventful birth, the patient returns with P: 2.4 mg/dL; CaT: 8.1 mg/dL; CaU 24 h: 152 mg/24 h. **Discussion:** HypoPT is characterized by hypocalcemia in the presence of a low or inadequately normal PTH level. In 75% of cases, HipoPT occurs after neck surgery, as in our patient. During pregnancy, there is an increased synthesis of calcitriol, in part caused by the increased production of PTH-related protein by the placenta and breast tissue, regardless of the functioning of the parathyroid glands. There is also more effective intestinal absorption of Ca, allowing for greater transfer of Ca from mother to fetus and ensuring that fetal Ca needs are met. In women with residual parathyroid function, this can cause PTH suppression, but in our patient such physiological adaptation was insufficient to maintain normocalcemia. Hypercalciuria (HyperCaU) can increase during pregnancy with an increase in the renal load of filtered Ca, a fact noted in our case. HipoPT therapy includes: calcium salts, calcitriol and possibly thiazides, with the aim of maintaining the serum Ca level close to the lower limit of normal, phosphorus close to the upper limit and calciuria < 250 mg/24 h. During pregnancy and lactation, due to changes in Ca homeostasis, careful monitoring is necessary to avoid fetal complications. Hydrochlorothiazide is category B during pregnancy, however, we chose not to use it, due to the patient presenting with asymptomatic HyperCaU and the possible risks for the fetus: hydroelectrolyte disorders, neonatal jaundice, dehydration, hypoxia and fetal malnutrition. One possibility is to increase hydration and monitor Ca and electrolyte levels, since the risks of complications are serious. **Keywords:** hypoparathyroidism; pregnancy; hypocalcemia.

DISLIPIDEMIA E ATEROSCLEROSE

2216

COMPOUND HETEROZYGOUS VARIANTS OF UNCERTAIN SIGNIFICANCE IN FAMILIAL PARTIAL LIPODYSTROPHY – A CASE REPORT

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Introduction: Lipodystrophy is a group of rare syndromes characterized by complete or partial fat loss with broad phenotypic variation, classified as congenital or acquired and according to fat distribution as partial or generalized. Markedly reduced adipokines, mainly leptin and adiponectin, lead to abnormally stimulated appetite, ectopic fat deposition, hepatic insulin resistance, hypertriglyceridemia, liver steatosis, diabetes and hypertension. Accurate diagnosis allows genetic counseling and early interventions, minimizing further cardiovascular outcomes. **Case report:** E.F.D., female, 34 years-old, referred to the Endocrinology Unit due to hypertriglyceridemia and increased muscle mass since adolescence. Her comorbidities were hepatic steatosis, polycystic ovary syndrome (PCOS), hypertension and pre-diabetes, and she was treated with ciprofibrate, metformin and atenolol. Her mother had similar phenotype with fewer comorbidities, and her father had hypertriglyceridemia. Physical exam demonstrated acromegalic facies, asymmetric fat distribution with truncal predominance and muscular pseudohypertrophy, while lab results showed triglycerides >1,000 mg/dL. Patient's genetic panel revealed compound heterozygosity in both PPARG gene (familial partial lipodystrophy type 3) and ABCA1 gene (primary hypoalphalipoproteinemia). Her mother presented simple heterozygous mutation in PPARG gene (p.D381N), whereas her father, simple heterozygous mutation in ABCA1 gene (p.G1050E). Patient is currently asymptomatic with appropriate lab tests in use of the aforementioned medications. **Discussion:** Lipodystrophy is a clinical underdiagnosed condition, and limited access to molecular testing hinders this diagnosis. This patient presented clinical and laboratory findings that led to the diagnosis of Familial partial lipodystrophy type 3. Genetic testing showed two heterozygous mutations in both PPARG and ABCA1 genes that separately would have uncertain significance, but as a compound heterozygosity may explain this clinical (asymmetric fat deposition) and metabolic (pre-diabetes, PCOS, liver steatosis and hypertension) findings. **Conclusion:** Compound heterozygosity of variants of uncertain significance in genes commonly associated to lypodistrophy and hypertriglyceridemia may cause lypodistrophy. Increased access to genetic testing will provide not only description of new mutations, but also reclassification of variants of uncertain significance. **Keywords:** lipodystrophy; hypertriglyceridemia; compound heterozygous.

NEUROENDOCRINOLOGIA

2217

DIAGNOSTIC INVESTIGATION AND CLINICAL MANAGEMENT OF AN INSULINOMA IN A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS: A CASE REPORT

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Introduction: Insulinomas are tumors most often benign and functional, capable of secreting insulin, thus considered the leading cause of hypoglycemia due to endogenous hyperinsulinemia. They occur at a rate of 1 to 4 cases per million in the general population. Symptomatically, one expects to find autonomic manifestations such as diaphoresis, tremors, and palpitations, as well as neuroglycopenic manifestations including confusion, behavioral changes, personality alterations, visual disturbances, seizures, and coma. **Case report:** A 23-year-old woman with systemic lupus erythematosus, on immunosuppressive therapy, prednisone 10 mg, azathioprine 200 mg, and hydroxychloroquine 400 mg, presented to the endocrinology clinic due to recurrent episodes of fasting hypoglycemia, improving after meals. She brought in laboratory tests from three different dates in recent weeks. The first (05/01): fasting glucose 48 mg/dL, C-peptide 2.7 ng/mL, fasting insulin 7.9 uU/mL, and negative anti-insulin antibodies. The second (29/01): fasting glucose 61 mg/dL, C-peptide 2.2 ng/mL, and fasting insulin 17.7 uU/mL. The third (12/03): fasting glucose 60 mg/dL, C-peptide 1.7 ng/mL, and fasting insulin 3.2 uU/mL. Additionally, an abdominal computed tomography (CT) scan showed no abnormalities. Family history revealed a sister diagnosed with a prolactinoma. Management included adjusting prednisone dose to 15 mg daily (10 mg in the morning, 5 mg at night) to prevent further episodes of morning hypoglycemia, investigation for other endocrinopathies, and an endoscopic ultrasound (EUS) request. Subsequent investigations did not reveal elevations in PTH, calcium, or any pituitary hormones. Endoscopic ultrasound identified a hypoechoic, round lesion measuring 6 mm just below the pancreatic capsule in the body of the pancreas. The patient was referred for surgery. **Discussion:** Despite abdominal CT being the non-invasive method of choice for localizing insulinomas, in this case, the tumor was only detectable via EUS, although literature describes this exam as more sensitive for tumors in the pancreatic head region. Furthermore, the need for parallel investigation of other endocrinopathies is emphasized, considering the patient's personal and family pathological history. **Final comments:** This case demonstrates the importance of using different clinical and complementary methods for thorough investigation, in order to achieve positive outcomes in the management of patients with insulinoma. **Keywords:** insulinoma; diagnosis; hypoglycemia.

METABOLISMO ÓSSEO E MINERAL

2218

SEVERE VITAMIN D DEFICIENCY WITH OSTEOMALACIA MASKING THE DIAGNOSIS OF PRIMARY HYPERPARATHYROIDISM

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Case presentation: Female, 39 years old, with chronic diarrhea and reflux disease, use of anticonvulsants, neurological symptoms (nystagmus and hyperkinesia), depression and nephrolithiasis presented with weight loss and hip pain. Laboratory tests revealed: PTH 2,935 pg/mL (12-88 pg/mL), alkalinep phosphatase (ALP) 1,472 U/L (30-120 U/L), calcium (Ca) 8.4 mg/dL (8.8-10.4 mg/dL). Further investigations were initiated and repeat tests showed: PTH > 3,000 pg/mL, ionized calcium 1.25 mmol/L (1.17-1.30 mmol/L), phosphorus (P) 2.8 mg/dL (2.5-4.5 mg/dL), urinary calcium 39.5 mg/24 h, 25(OH)D 19.4 ng/mL, and normal renal function. Bone densitometry revealed: femoral neck Z-score -2.6 SD, total hip Z-score -3.7 SD, and lumbar spine Z-score -4.3 SD, indicating low bone mass for age. A diagnosis of secondary hyperparathyroidism due to severe vitamin D (VD) deficiency associated with osteomalacia was made, likely exacerbated by risk factors such as chronic diarrhea, anticonvulsant use, low sunlight exposure, and low calcium intake. Treatment with 14,000 IU weekly of Colecalciferol and calcium supplementation was initiated. Follow-up: PTH 1184 pg/mL, ALP 555 U/L, Ca 10.3 mg/dL, P 2.3 mg/dL. VD replacement was optimized with Calcifediol 20 mcg/day. After 2 months of supplementation: ALP 241 U/L, P 1.70 mg/dL, Ca 11.9 mg/dL, PTH 686 pg/mL, 25(OH)D 32.45 ng/mL, suggesting PTH-dependent hypercalcemia, confirming the diagnosis of primary hyperparathyroidism (PHPT). Cervical ultrasound revealed a nodular lesion in the left inferior parathyroid gland region consistent with scintigraphy findings of hyperfunctioning tissue in the same location, leading to referral for surgery. **Discussion:** PHPT is a PTH-dependent hypercalcemic disorder that can present with varied manifestations, including normocalcemic PHPT. VD deficiency is common and in severe cases can mask this diagnosis, potentially leading to osteomalacia associated with hyperparathyroidism. **Conclusion:** Early detection of PHPT is challenging due to its variable presentation, which may include nonspecific symptoms or be completely asymptomatic in early stages. Coexistence of VD deficiency can further complicate the clinical picture, resulting in delayed or underdiagnosed cases. Understanding these interactions is crucial for improving the identification and management of this complex condition, aiming to prevent complications such as osteomalacia and other metabolic bone disorders, as well as avoiding iatrogenic interventions. **Keywords:** vitamin D deficiency; primary hyperparathyroidism; osteomalacia.

DIABETES MELLITUS

2220

NON-FUNCTIONING GIANT NEUROENDOCRINE TUMOR IN THE PANCREAS: A RARE CASE OF SURGICAL ABDOMEN

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A 25-year-old man with abdominal pain for 4 months, associated with weight loss, cholestasis and hyperglycemia with the needed of insulinoterapy. Abdominal computerized tomography showed expansive formation in the pancreatic body, interposed cystic areas, measuring 5.3 x 7.5 x 5 cm, without signs of invasion of the superior mesenteric vein and splenomesenteric junction. Presented the same characteristics in the head portion of the pancreas, measuring 3,1 x 4,2 x 2,1cm, causing extrinsic compression on the pancreatic duct. Endoscopic ultrasound with biopsy of the lesion revealed it to be a neuroendocrine carcinoma. Total duodenopancreatectomy, splenectomy, subtotal gastrectomy, cholecystectomy, and regional lymphadenectomy were indicated. Anatomopathological study consistent with well-differentiated grade 3 neuroendocrine tumor, measuring 14 cm in its largest dimension, with clear surgical margins, 0/52 lymph nodes affected by the neoplasm, mitotic index < 5 mit/CGA, and Ki67 40%. After the removal of the neoplasm, tumor markers were evaluated, including the glycoprotein chromogranin A and synaptophysin, both of which tested positive, commonly found in neuroendocrine cells. The patient had no family history of endocrine neoplasms, and the recent diagnosis of diabetes was attributed to extensive pancreatic involvement. Pancreatic neuroendocrine tumors are rare neoplasms that originate from cells integrating the endocrine and nervous systems, with the pancreas being the most commonly affected organ. Non-functioning tumors are more prevalent than functioning ones, often discovered incidentally on imaging studies and may present symptoms if compressing adjacent structures. The majority of neuroendocrine tumors are sporadic and not linked to genetic inheritance, although familial syndromes such as multiple endocrine neoplasias exist. Generally, non-metastatic tumors have a high cure rate, especially when managed by a multidisciplinary team, resulting in significant survival improvements. The case report describes a rare presentation of surgical abdomen due to the size and lineage of the tumor, associated with a diagnosis of type 3C diabetes secondary to pancreatic disease. **Keywords:** neuroendocrine; diabetes; pancreatic tumor.

ADRENAL E HIPERTENSÃO

2221

QUETIAPINE-INDUCED ADRENAL INSUFFICIENCY: A CASE REPORT

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Case presentation: C.P.P.M., female, 50 years old with hypothyroidism, dyslipidemia, depression, fibromyalgia and headache. She was taking quetiapine 200 mg/day, lithium 600 mg/day, duloxetine 60 mg/day, levothyroxine 137 mcg/day and topiramate 100 mg/day. She was initially diagnosed with fibromyalgia due to symptoms of polyarthralgia and myalgia, but accompanied by vomiting, vertigo and abdominal pain. Adrenal insufficiency (AI) was suspected, in which she presented basal cortisol (F): 5 mcg/dL, adrenocorticotropic hormone (ACTH): 8 pg/mL, F in the insulin tolerance test (ITT) with a maximum value of 11 .9 mcg/dL at 60'; F Cortrosin test: maximum value 24.2 mcg/dL at 60', concluding the diagnosis of AI, however with magnetic resonance imaging (MRI) of the Pituitary and MRI of the Adrenal glands without lesions, the possibility of AI was raised due to the use of quetiapine, when we removed the medication we obtained an F in the ITT with a maximum value of 22.9 mcg/dL at 45' and ACTH 22 pg/mL. **Discussion:** The patient was diagnosed with fibromyalgia, a condition often associated with non-specific symptoms such as polyarthralgia, fatigue and sleep disorders, however, attention was drawn to abdominal pain, nausea and vomiting, unusual complaints for fibromyalgia. The review of the medication history and the analysis of symptoms associated with laboratory suggested a possible AI caused by prolonged use of quetiapine, as we did not observe structural lesions that would justify hypocortisolism. In the diagnosis, there were discordant results between the cortrosin tests, which reached an F value > 18 mcg/dL and the ITT with an F level < 18 mcg/dL. However, the ITT is the gold standard for determining IA and this was the test we used for diagnosis. Quetiapine, an atypical antipsychotic, can suppress the hypothalamic-pituitary-adrenal (HHA) axis, leading to low cortisol production, being able to reduce the release of ACTH, altering the response of the HPA axis and resulting in secondary adrenal insufficiency, in addition to the potential to reduce the therapy of hormones released from corticotropin (CRH) by the hypothalamus. Hypocortisolism can cause symptoms that can be confused with fibromyalgia, especially polyarthralgia, myalgia and asthenia, however, the gastrointestinal symptoms, commonly seen in AI, are infrequent in fibromyalgia. **Final Considerations:** In quetiapine users with symptoms of polyarthralgia, myalgia, abdominal pain and nausea, AI should be studied. **Keywords:** adrenal insufficiency; quetiapine; fibromyalgia.

OBESIDADE

2222

THE RELATIONSHIP BETWEEN OBESITY AND INSUFFICIENT SLEEP QUALITY: A SYSTEMATIC REVIEW

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Introduction: Over the last 40 years, overweight and obesity have increased from 4% to 18% globally. This increase in body fat is linked to several comorbidities, including sleep disorders, which impact metabolic markers. On the other hand, studies indicate that lack or reduced sleep tend to coexist with obesity. With the increase in this association, it is important to investigate the factors that link them. **Objectives:** To analyze the association between obesity and insufficient sleep quality. **Methods:** This systematic review, without meta-analysis, searched the PubMed and LILACS databases with the descriptors "Obesity" AND "Sleep Wake Disorders". Filters were applied for "articles published between 2019 and 2024", "free full text", and "humans". The articles available in the cited databases with a concomitant focus on both themes were inserted. The search was conducted following the PRISMA protocol. Studies that diverted the central focus from the relationship between topics, as well as reviews, were excluded. Results/Discussions: Initially, 139 articles were identified; after screening titles and abstracts, 9 articles were reviewed. The results, based on observational studies, indicate a significant relationship between overweight/obesity and sleep disorders. Reducing the duration and/or quality of sleep can alter dietary regulation due to changes in the hormones responsible for controlling hunger and appetite, especially leptin and ghrelin. Sleep deprivation reduces leptin, increasing hypocretin, a neuropeptide that prolongs wakefulness and stimulates appetite (Bonanno et al., 2019). According to Lizończyk e Jośko-Ochojska (2020), more than half of adolescents with sleep problems sought additional portions of food, with this number being even higher among overweight and obese adolescents. In parallel, Wang et al. (2022) revealed an association between a diet rich in saturated fat and glycemic index with a higher risk of insomnia and daytime sleepiness. **Conclusion:** The connection between obesity and sleep disorders is evident due to the prevalence highlighted in studies. However, more studies are needed to clarify the causal direction of this correlation. Although the exact cause of the relationship between these themes is not fully defined, the results of this review suggest that an adequate sleep routine should be a target for obesity prevention. Keywords: obesity; overweight; sleep quality.

DISLIPIDEMIA E ATEROSCLEROSE

2223

EFFECTS OF INCLISIRAN *VERSUS* ALIROCUMAB ON LIPID PROFILE IN PATIENTS WITH HIGH CARDIOVASCULAR RISK OR HYPERCHOLESTEROLEMIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Inclisiran inhibits the translation of mRNAs that form the liver enzyme PCSK9, while Alirocumab is a human monoclonal antibody that inhibits this enzyme by binding to it. Both drugs are capable of improving the lipid profile, mainly by reducing LDL and Lp(a). **Objective:** To evaluate whether Inclisiran is more effective in reducing LDL and Lp(a) than alirocumab. **Materials and methods:** This systematic review with meta-analysis was registered on the PROSPERO platform (CRD42024563261), and was carried out in accordance with PRISMA. Randomized clinical trials were included, with a control group, in which patients had high cardiovascular risk or hypercholesterolemia (LDL > 100 mg/dL). Additionally, such studies needed to present data on LDL or Lp(a) reduction to be included. The search for articles was carried out in 3 databases (PubMed, Scopus and Web of Science). Article screening was carried out in Mendeley, followed by data extraction. Next, in addition to a meta-analysis in the R environment, the presence of heterogeneity was assessed using an I^2 test. **Results:** 1,157 articles were initially found, 168 of which were duplicates, 881 were excluded after reading titles and abstracts and 76 after complete reading, leaving 32 articles. 30,790 people participated in the included studies. Doses of 75 mg, 150 mg and 300 mg of alirocumab were used, as well as 100 mg, 200 mg, 284 mg, 300 mg and 500 mg of inclisiran. Meta-analyses were performed to evaluate the reduction of LDL in 12 weeks with 75 mg (p = 0.50) and 150 mg -52.17 (CI 95% -53.31 and -51.02) and -58.3 (CI 95% -69.38; -47.22) (p = 0.15) of alirocumab, as well as in 24 weeks with the same doses (p = 0.23) (p = 0.26). The dose of inclisiran in these meta-analyses was 300 mg. There was no statistically significant difference between the drugs in LDL reduction. Additionally, meta-analyses were performed on Lp(a) reduction with alirocumab 75 mg (p = 0.07), escalation from 75 mg to 150 mg -25.96 (CI 95% -34.25; -17.67) and -14.66 (CI 95% -22.39; -6.92) (p = 0.05), 150 mg (p = 0.13), 300 mg (p = 0.36), after 24 weeks, and with all doses and endpoints (p = 0.03). The comparison was made on the first 4 with inclisiran 300 mg. There was a statistically significant difference only when escalating from 75 mg to 150 mg and in the meta-analysis that included all doses and endpoints. **Conclusion:** Both drugs are effective for reducing LDL, while alirocumab was superior to inclisiran, in some doses, for reducing Lp(a). **Keywords:** inclisiran; alirocumab; dyslipidemia.

OBESIDADE

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EFFECTS OF SEMAGLUTIDE ON DEATH IN PEOPLE WITH OBESITY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Approximately 1.5 billion people will live with obesity in 2035. This pathology is associated with the development of a variety of other diseases, which can cause the individual's death. GLP-1 analogues are an alternative for the treatment of obesity, one of which is semaglutide. **Objective:** To evaluate whether the use of semaglutide reduces deaths in individuals with obesity compared to placebo. **Materials and methods:** This systematic review with meta-analysis was registered on the PROSPERO platform, under CRD42024515993, and was carried out in accordance with PRISMA. Randomized clinical trials with a control group were included, which included participants with a BMI > 30 kg/m^2, who had some previously established cardiovascular disease. Furthermore, clinical trials that presented data on death from any cause after using the medication were included. Searches for articles were carried out in 6 databases (PubMed, SciELO, Scopus, Lilacs, Cochrane and Web of Science). Article screening was carried out in Mendeley, followed by data extraction. Next, in addition to a meta-analysis in the R environment, the presence of heterogeneity was assessed using an I^2 test. Publication bias was assessed using a funnel plot. **Results:** Initially, 3333 articles were found, of which 1180 were excluded because they were duplicates, 2037 after reading titles and abstracts and 113 after reading the complete articles, leaving 3 articles. In total, 24,084 patients participated in the included studies. 4 doses were used: 0.5 mg, 1 mg and 2.4 mg subcutaneously, as well as 14 mg orally. The time of use of the drug varied between 104 and 112 weeks. With these data, a meta-analysis was carried out seeking to assess relative risk. The heterogeneity test was not statistically significant. A funnel plot confirmed the absence of sample bias. The meta-analysis resulted in a relative risk of 0.79 (95% CI 0.70-0.89). Furthermore, there was no statistically significant difference between the subcutaneous and oral administration routes (p = 0.08). **Conclusion:** The use of semaglutide in people with obesity reduced the risk of death from any cause by 21% compared to placebo. Furthermore, the subcutaneous route of administration was not superior to the oral route in reducing this outcome. **Keywords:** semaglutide; obesity; death.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2225

PREDICTIVE ANALYSIS AND GENOTYPE-PHENOTYPE CORRELATION IN A FAMILY WITH ANDROGEN INSENSITIVITY SYNDROME

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Introduction: Androgen insensitivity syndrome (AIS) is a rare condition with X-linked recessive inheritance classified as disorder of sex development (DSD) 46,XY DSD. The AIS presents three distinct phenotypes: the most severe phenotype, knowledge complete androgen insensitivity syndrome (CAIS), partial androgen insensitivity syndrome (PAIS), with ambiguous genitalia, and mild androgen insensitivity syndrome (MAIS), characterized by infertility and/or gynecomastia. Pathogenic alterations in androgen receptor (AR) protein are observed in the previously mentioned phenotypes. AR binds to testosterone and dihydrotestosterone, regulating genes involved in male sexual development. Damage in hormones binding to AR leads to AIS and *in silico* predictive analysis of novel AR protein alterations can be an important tool for understanding the effects upon molecular AR mechanisms. **Objective**: To analyze the impact of the novel p.Ala567Asp alteration on AR protein using bioinformatics programs. **Materials and methods:** PolyPhen-2, SIFT, Mutation Taster, Franklin, and Clustal Omega were used. **Results:** The analyses revealed that the p.Ala567Asp is likely pathogenic according to PolyPhen-2, deleterious by SIFT, modifies the protein according to Mutation Taster, and likely pathogenic in the Franklin. Conservation analysis by Clustal Omega showed that amino acid 567 is conserved across different vertebrate species. **Conclusion:** The p.Ala567Asp alteration, never before described in the literature, was identified in a family with five members affected by CAIS and seven asymptomatic carriers. Predictive analyses can function as an important tool for understanding the genotype-phenotype correlation of pathogenic alterations not previously described in the literature. Through this study, we can infer that the p.Ala567Asp on AR protein is pathogenic and associated with the CAIS phenotype, as observed in the family here analyzed. Functional analysis of the altered AR protein may complement this study and provide further insights into this alteration. **Keywords:** androgen insensitivity syndrome; androgen receptor; predictive analysis.

DISLIPIDEMIA E ATEROSCLEROSE

2226

SEMAGLUTIDE *VERSUS* ALIROCUMAB IN REDUCING CARDIOVASCULAR OUTCOMES: A META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

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Introduction: Cardiovascular diseases are the leading cause of death in the world. 2 classes of medications stood out in reducing cardiovascular outcomes: GLP-1 receptor agonists and PCSK9 inhibitors. The most studied drugs belonging to these classes are semaglutide and alirocumab, respectively. Objective: To evaluate whether semaglutide is superior in reducing cardiovascular outcomes compared to alirocumab. Materials and methods: This meta-analysis was performed in accordance with PRISMA. Only randomized clinical trials with a control group were included, which included patients with a previously established cardiovascular disease or who presented severe hypercholesterolemia (LDL > 190 mg/dL). Searches for articles were carried out in 3 databases (PubMed, Scopus and Web of Science). Article screening was carried out in Mendeley, followed by data extraction. Subsequently, in addition to meta-analyses in the R environment on 7 cardiovascular outcomes (non-fatal acute myocardial infarction (MI), non-fatal stroke, death from cardiovascular causes, death from any cause, hospitalization for unstable angina or heart failure and coronary revascularization). Tests for differences between subgroups were performed. **Results:** 8 articles were included, 3 of which used alirocumab and 5 semaglutide. In total, 48,681 people participated in these studies. Doses of 0.5 mg, 1 mg and 2.4 mg subcutaneous semaglutide and 14 mg orally were used, as well as 75 mg and 150 mg subcutaneous alirocumab. There was a statistically significant difference for unstable angina 0.97 (CI 95% 0.79-1.19) and 0.58 (CI 95% 0.39-0.86) (p = 0.02), in favor of alirocumab, and for coronary revascularization 0.76 (CI 95% 0.69-0.85) and 0.91 (CI 95% 0.83-1.00) (p = 0.04), in favor of semaglutide. Alirocumab was effective in reducing stroke, but there was no difference when compared with semaglutide (p = 0.38). Furthermore, both were effective in reducing MI (p = 0.24) and death from any cause (p = 0.65) with no differences between the drugs. Only semaglutide reduced deaths from cardiovascular causes, without differences between both medications (p = 0.74). None managed to reduce hospitalizations for heart failure. **Conclusion:** Alirocumab is superior in reducing hospitalizations for unstable angina, while patients who received semaglutide needed fewer coronary revascularizations. There was no statistically significant difference between the drugs for the other outcomes. **Keywords:** semaglutide; alirocumab; cardiovascular outcomes.

DIABETES MELLITUS

2227

BENEFITS OF I-PORT ADVANCE IN PATIENTS WITH SEVERE INSULIN RESISTANCE: CASE STUDY

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Case presentation: 28-year-old male patient, born in Fortaleza, Ceará, diagnosed with acquired generalized lipodystrophy (LGA) at the age of 18. The first phenotypic characteristics were noticed at two years of age with a lack of adipose tissue in the trunk and limbs, acromegalic facies, phlebomegaly and prominence of lower limb muscles. He developed hypertriglyceridemia, cognitive impairment and liver cirrhosis due to autoimmune hepatitis and at the age of 24 he was diagnosed with diabetes with Anti-GAD65 of 1050.3 IU/mL and C-peptide of 0.07 ng/mL, characterizing diabetes of dual etiology, i.e. type 1A DM in association with acquired generalized lipodystrophy. The genetic study (targeted sequencing panel) was negative for pathogenic variants associated with lipodystrophy. During multidisciplinary care, he was referred to nursing care due to difficult-to-control insulin-resistant diabetes, multiple daily doses, presence of lipohypertrophy in the right arm and left side of the abdomen and lack of metabolic control (HbA1c of 10.3% and fasting blood glucose of 463 mg/dL). Using the NPH/Regular regimen and a total dose of 382 IU (7 UI/kg/day) corresponding to 52% basal and 47% bolus and with a FS of 4. Considering the absence of adipose tissue and high concentrations of insulin, we opted to using the I-Port Advance device for subcutaneous application, measuring 6 mm, lasting 72 hours or 75 applications and easy to use. To ensure greater precision, the skinfold thickness was measured in the regions with the greatest visible adiposity: triceps and abdomen, opting for the tricipital region with a 4mm fold. With the use of I-Port Advance, the patient's A1c decreased to 9.2% after three months. **Discussion:** LGA is a rare condition that involves gradual loss of adipose tissue in childhood and/or adolescence associated with severe and early metabolic changes and autoimmune diseases. Ectopic fat deposition and severe insulin resistance result in diabetes that is difficult to control and requires high doses of insulin, as observed in the case presented. The use of I-Port Advance led to a significant improvement in metabolic parameters, probably related to the reduction in discomfort caused by the application of high doses of insulin in these cases, in addition to the guidance and support provided by the multidisciplinary team. **Final considerations:** The I-Port Advance device is a possible differentiator for improving metabolic control and quality of life for patients. **Keywords:** acquired generalized lipodystrophy; insulin resistance; health technology.

TIREOIDE

2228

THE IMPORTANCE OF CAPITAL CITIES IN THE TREATMENT OF THYROTOXICOSIS: A QUANTITATIVE ANALYSIS OF HOSPITAL ADMISSIONS IN BRAZIL

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Introduction: Thyrotoxicosis, a clinical condition characterized by an excess of thyroid hormones in the body, has a variable prevalence according to diagnostic and socio-demographic criteria. Effective management of this condition requires access to advanced medical resources and specialized treatments, which are generally only available in urban centers and capital cities. It is therefore necessary to understand the role of metropolises in the treatment of thyrotoxicosis in Brazil. **Objective:** The study looked at the prevalence of hospitalizations for thyrotoxicosis, with an emphasis on the Brazilian capitals. **Methods:** A survey of secondary data from DATASUS on thyrotoxicosis (ICD E05) was carried out from 2019 to 2023, considering the number of hospitalizations in the capitals and states. The data was stratified by place of residence and hospitalization. **Results:** In the period analyzed, there were 3,514 hospitalizations related to thyrotoxicosis, with an average of 702 hospitalizations per year. Of these cases, 56.91% were hospitalizations in state capitals and 44.09% in other cities. In 2020, the lowest number of cases was recorded, with a reduction of 32.27% compared to the previous year. Of the hospitalizations carried out in the capitals, 33.33% were of patients from other locations and, among the large centers, 36% worked exclusively with cases not from the capital itself. **Conclusions:** The data observed allows us to conclude the importance of the Brazilian capitals in the treatment of thyrotoxicosis, concentrating the largest number of hospitalizations of patients, resident or not, in the capital. The year 2020 recorded a lower rate of hospitalizations, possibly associated with reduced demand for health services due to social isolation and the redistribution of resources for the COVID-19 pandemic. The results highlight the centrality of capital cities in the health system, highlighting the need for new public policies for the equitable distribution of specialized resources for the treatment and diagnosis of thyrotoxicosis in non-metropolitan areas. **Keywords:** Unified Health System; thyroid; thyrotoxicosis.

DISLIPIDEMIA E ATEROSCLEROSE

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THE IMPACT OF PCSK9 INHIBITORS ON CARDIOVASCULAR OUTCOMES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: PCSK9 inhibitors are drugs that inhibit the liver enzyme PCSK9. This action culminates in the reduction of LDL levels. Such action is relevant, as high LDL levels are associated with greater cardiovascular risk. **Objective:** To evaluate whether alirocumab is more effective in reducing cardiovascular outcomes than evolocumab. **Materials and methods:** This systematic review followed PRISMA's guideline. Only randomized clinical trials with a control group were included, which included patients with a previously established cardiovascular disease or who presented hypercholesterolemia (LDL > 100 mg/dL). Article screening was carried out in Mendeley, followed by data extraction. Subsequently, meta-analyses in the R environment, seeking to assess relative risk, were realized on 7 cardiovascular outcomes (non-fatal acute myocardial infarction (MI), non-fatal stroke, death from cardiovascular causes, death from any cause, hospitalization for unstable angina or heart failure (HF) and coronary revascularization). **Results:** The searches obtained 2,213 articles, of which 6 were included, 3 of which used Alirocumab and 3 used Evolocumab. In total, 55,481 patients participated in these studies. Doses of 75 mg and 150 mg of Alirocumab were used, whereas studies with evolocumab used 140 mg every 2 weeks or 420 mg per month. There was a statistically significant difference for hospitalizations for unstable angina 0.58 (95% CI 0.39-0.86) and 0.98 (95% CI 0.82-1.17) (p = 0.02), in favor of alirocumab. Furthermore, alirocumab was effective in reducing stroke 0.75 (95% CI 0.60-0.94) (p = 0.28) and death from any cause 0.82 (95% CI 0.72-0.94) (p = 0.08), but there was no difference for evolocumab. Evolocumab was effective in reducing coronary revascularization 0.81 (95% CI 0.75-0.88), but there was no difference for alirocumab (p = 0.15). Both were effective in reducing MI 0.85 (95% CI 0.77-0.93) and 0.75 (95% CI 0.68-0.83), with no statistically significant difference between them (p = 0.09). None managed to reduce death from cardiovascular causes 0.95 (95% CI 0.82-1.10) and 0.87 (95% CI 0.74-1.02) (p = 0.40) and hospitalizations due to HF 1.00 (CI 95% 0.81-1.22) and 0.90 (CI 95% 0.72-1.11) (p = 0.49) and there was no difference between the drugs. **Conclusion:** Alirocumab was more effective in reducing hospitalizations for unstable angina than evolocumab. There was no statistically significant difference between the drugs for the other outcomes. **Keywords:** alirocumab; evolocumab; cardiovascular outcomes.

ADRENAL E HIPERTENSÃO

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THE ORIGIN OF MYXOMA IN THE BRAIN PARENCHYMA: EMBOLI *VS.* METASTASIS

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Introduction: The term "metastasis" is uncommon for benign neoplasms, such as cardiac myxoma, which is one of the neoplasms that can be found in Carney complex (CNC). CNC is a hereditary syndrome with autosomal dominant inheritance, characterized by multiple neoplasms, such as benign and malignant, endocrine and nonendocrine tumors (cardiac, cutaneous and neural). Cardiac myxomas occur in 20%-40% of these patients and are the main cause of morbidity and mortality in this disease. **Clinical case:** A 46-year-old female patient with previous diagnosis of CNC with a *PRKAR1A* (491_492delTG, p.Val164Aspfs*5) pathogenic variant and recurrent atrial myxoma. Within 5 months of myxoma surgical excision, she experienced two intraparenchymal hemorrhage stroke. FDG-PET showed hypermetabolism in two areas of bleeding and arteriography revealed multiple fusiform aneurysms. She underwent an excisional biopsy of the parietal lesion, and histological data confirmed well-differentiated myxoid neoplasy. She was treated with adjuvant radiotherapy. **Clinical lessons:** There are few reported cases of brain metastasis secondary to an atrial myxoma. This case is the first known instance associated with Carney complex. Although cardiac myxoma is biologically a benign tumor, it may exhibit malignant functional behavior due to its potential for embolization, invasion and proliferation within the walls of blood vessels and intraparenchymal regions, however the pathogenic mechanisms remains unknown. **Keywords:** Carney complex; brain metastases; cardiac myxoma.

ADRENAL E HIPERTENSÃO

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LONG-TERM FOLLOW-UP OF FAMILIAL BMAD WITH GERMLINE ARMC5 PATHOGENIC VARIANTS

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Introduction: Bilateral macronodular adrenocortical disease (BMAD) generally presents bilateral adrenal macronodules with variable cortisol. Since 2013, the tumor suppressor *ARMC5* gene is a major genetic cause of familial BMAD, occurring in around 80% of familial cases. **Results:** Fourteen BMAD families from a single tertiary center were included. Germline *ARMC5* pathogenic variants (PV) were found in 72 of 172 (42%) relatives evaluated. In total, 12 different PV were found. Most patients were women (86% of index cases and 58% of relatives). The median age of index cases was 52.1 (39-73) years and of relatives was 43 years (3 months-84 years). Index cases showed a greater proportion of associated comorbidities such as arterial hypertension (93% *vs.* 24%), diabetes (43% *vs.* 6%), dyslipidemia (79% *vs.* 43%), osteoporosis (14% *vs.* 1%) and meningioma (14% *vs.* 4%) than their relatives. Index cases presented a more severe hypercortisolism than relatives according to morning plasma cortisol after 1-mg DST (16.9 [2-27.4] *vs.* 5.4 [1.1-25.6] mcg/dL), 24-hour urinary cortisol (2.3 *vs.* 0.7-fold ULN), midnight salivary cortisol (4.18 *vs.* 1.1-fold ULN) and lower ACTH (5.1 [<2-8] *vs.* 11.8 [<2-48.7] pg/nL). Index cases are more often surgically treated (79% *vs.* 21%) than relatives. **Discussion:** We report the largest series of familial BMAD with *ARMC5* PV. To help to better diagnostic family cases, we suggest a management flowchart. Genetic screening for the specific *ARMC5* PV found in their index cases should be performed in all first-degree relatives. All relatives with an *ARMC5* PV should be submitted to a 1-mg DST at baseline, and those with mild autonomous cortisol secretion (MACS), defined by a morning plasma cortisol after 1-mg DST above 1.8 mcg/dL, should subsequently repeat every 1 year. Imaging evaluation should include an adrenal CT scan and brain imaging repeated each 2 years, mainly in adults after 30 years of age. Patients with overt CS should undergone adrenal-sparing surgery, and unilateral adrenalectomy of the largest adrenal gland should be performed in patients with MACS and asynchronously adrenal nodules. **Keywords:** bilateral macronodular adrenocortical disease; *ARMC5*; familial BMAD.

METABOLISMO ÓSSEO E MINERAL

2233

BONE FRAGILITY AND MUSCLE LOSS IN ADDISON DISEASE PATIENTS ON CHRONIC GLUCOCORTICOID, AS ASSESSED BY HRPQCT AND DXA

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Introduction: Addison's disease (AD) is characterized by deficient adrenal glucocorticoid production. Treatment involves the replacement of glucocorticoids (GCs). The condition requires just physiologic GC replacement, but patients often receive high doses, leading to long-term side effects, including osteoporosis. Guidelines on GC-induced osteoporosis do not include patients with adrenal diseases. BMD data in AD are conflicting. High-resolution peripheral quantitative computed tomography (HRpQCT) assesses volumetric BMD, microarchitecture, and mechanical properties of the tibia and radius. There are no studies assessing bone quality using HRpQCT in subjects with AD. **Objective:** Evaluate the bone health of patients with AD on chronic use of GC. **Materials and methods:** This cross-sectional study evaluated patients with AD treated with GC for ≥ 1 year. DXA and HRpQCT were performed, and the group was compared to healthy age-, sex- and race-matched controls. Correlations were performed on the AD group. **Results:** 19 patients were compared to 38 controls (mean age 51 ± 18 *vs.* 48 ± 15, p = 0.6; female 37% in each group). There was no between-group difference in weight and height (p > 0.4 for both), but lean mass was lower in AD patients (Baumgartner 6.39 *vs.* 7.39 kg/m^2, p < 0.01). In the AD group, the median time since diagnosis was 6 (2-33) years, and the mean glucocorticoid dose was 17 ± 6 mg/m^2/day in hydrocortisone equivalence. Compared to controls, patients with AD had lower BMD (T-score at spine -1.1 ± 1.2 *vs.* -0.2 ± 1.5, at total hip -1.0 ± 0.9 *vs.* -0.4 ± 1.0, at femoral neck -1.1 ± 1.0 *vs.* -0.4 ± 1.2 SD; p < 0.03 for all). At the radius, the AD group had 11% lower trabecular (Tb) number (p = 0.03). At the tibia, patients had lower Tb number, Tb vBMD, greater Tb separation and lower cortical area and thickness compared to controls (17%-26% difference in these parameters, p < 0.03 for all). Tibial, but not radial, stiffness was 27% lower in the AD group (p < 0.03) compared to controls. In the AD group there was a positive correlation between lean mass and stiffness (radius r = 0.53, tibia r = 0.51; both p < 0.04) and a negative correlation between cumulative GC dose and spine BMD (r = -0.67, p < 0.01). **Conclusion:** This is the first study to assess bone health using HRpQCT, in patients with AD on chronic GC. Our findings suggest that AD patients have loss of lean mass and skeletal fragility mainly of the trabecular compartment. Bone loss may be related to loss of lean mass and GC. **Keywords:** bone microarchitecture; HRpQCT; Addison disease.

ENDOCRINOLOGIA PEDIÁTRICA

2234

USE OF ALLOPURINOL IN HYPOGLYCEMIA SECONDARY TO 6-MERCAPTOPURINE

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Introduction: 6-mercaptopurine (6-MP) is a purine analogue frequently used in the treatment of patients with acute lymphoblastic leukaemia (ALL), the most common neoplasm in paediatric patients. This drug acts by inhibiting the synthesis of nucleic acids, with the occurrence of hypoglycemia being a rare complication. This is classically addressed with dosage adjustments (such as changing the time of intake and dividing the daily dose) or by concomitant administration of complex carbohydrates (HCC). Allopurinol was recently introduced as a therapeutic option for refractory cases. **Clinical case 1:** Female child, 2 years old, diagnosed with B-ALL undergoing chemotherapy in the consolidation phase with 6-MP. The patient was referred to the Pediatric Endocrinology consultation due to several capillary and plasma blood glucose values below 45 mg/dL, without apparent associated symptoms. Given the suspicion of hypoglycemia secondary to 6-MP, continuous glucose monitoring (CGM) was initiated, anticipating nighttime intake of 6-MP and feeding with HCC at night, without resolution of the condition. The etiological study documented blood glucose of 63 mg/dL, C-peptide of 2.86 ng/mL (1.1-5.0 ng/mL), insulin of 6.53 uUI/mL (2.6-24.9 uUI/mL) and morning cortisol of 10.2 µg/dL (3.9-24 µg/dL). Allopurinol 50 mg was introduced four hours before taking 6-MP, resulting in a clear improvement in the glycemic profile without new episodes of hypoglycemia. **Clinical case 2:** Male patient, 6 years old, diagnosed with B lymphoblastic lymphoma undergoing intensive chemotherapy that included 6-MP. Due to episodes of hypersweating and prostration, capillary blood glucose was measured, and values were found to be below 40 mg/dL. He was referred to the Pediatric Endocrinology consultation and, as in the previous case, CGM was implemented and allopurinol was started, with complete resolution of the condition. The etiological study documented blood glucose of 88 mg/dL, C-peptide 3.49 ng/mL, insulin 10.8 uUI/mL, ACTH 55.9 pg/mL and morning cortisol of 13.1 µg/dL. **Discussion:** Hypoglycemia is an uncommon but potentially serious adverse effect of treatment with 6-MP, which may limit tolerance to ALL treatment and periods of drug discontinuation. Allopurinol modifies purine metabolism, leading to the reduction of the metabolite 6-methylmercaptopurine, responsible for most adverse effects, including hypoglycemia. **Keywords:** Hypoglycemia; 6-mercaptopurine; allopurinol.

ADRENAL E HIPERTENSÃO

2235

ADULT AND PEDIATRIC PATIENTS WITH ADRENOCORTICAL CARCINOMA ASSOCIATED WITH THE SAME GERMLINE ONCOGENIC VARIANT TP53 (P.R337H) AND DIFFERENT OUTCOME: THE INFLUENCE OF SOMATIC VARIANTS IN ACC

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Introduction: Adrenocortical carcinoma (ACC) is a rare and aggressive endocrine malignancy with a poor prognosis. Adult and pediatric patients exhibit distinct clinical behaviors and outcomes, with adults having a worse prognosis, suggesting a molecular difference. The *TP53* variant p.R337H is present in 85% of pediatric patients and 10% of adults. However, the second mutational impact responsible for tumorigenesis has been poorly elucidated. **Objective:** To investigate somatic alterations in *TP53* and *CTNNB1* in adult and pediatric ACC. **Methods:** This is a retrospective study of 28 patients divided into adult and pediatric groups with a diagnosis of ACC. The age of the pediatric group ranged from 3 to 15 years and the adult group ranged from 40 to 60 years. There were 17 adults (n = 12 p.R337H and n = 5 WT) and 11 pediatric patients (n = 6 p.R337H and n = 5 WT). The *TP53* and *CTNNB1* genes were analyzed from adrenal tissue DNA. **Results:** In adult ACC, pathogenic or likely pathogenic variants were predominantly found in the DNA binding domain of *TP53*: c.818G>A (p.R273H), c.456G>A (p.P152P), c.844C>T (p.Arg282Tr), c.415A>C (p.Lys139Gln), c.672G>T (p.Glu224Asp), c.456G>A (p.P152P), c.869G>A (p.R290H), all in heterozygosis and homozygous variants: c.439G>C (p.Val147Leu), c.404G>C (p.Cys135Se). In pediatric ACC, the single germline variant was p.R337H. No pathogenic or likely pathogenic somatic variants were found in pediatric ACC, however, LOH of exon 10 was observed, resulting in homozygous mutations in 50% of patients. Pathogenic or likely pathogenic variants in exon 3 of *CTNNB1* were found in adults with p.R337H-negative ACC (c.133T>G (p.S45A) heterozygous and c.38C>A heterozygous). Overall survival in the pediatric group was 90% at 5 years, while only 15% of adults survived. **Conclusion:** Investigating the molecular differences between adult and pediatric individuals with ACC is crucial for the advancement of personalized and precision medicine in this field. **Keywords:** adrenocortical carcinoma; TP53; CTNNB1.

OBESIDADE

2236

OBESITY, BINGE EATING AND ADJUSTMENT DISORDER: A SYSTEMATIC REVIEW

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Introduction: Obesity is a complex multifactorial chronic disease, related to psychosocial factors, obesogenic environments and genetic variations. According to the Obesity Atlas 2024, published by the World Obesity Federation (WOF), by 2035 there will be a prevalence of 37%, 45% and 61% of overweight and obese adults in low-, lower-middle- and upper-middle-income countries, respectively. In line with this, adjustment disorders, commonly known as emotional stress, and binge eating appear to be associated with the condition. Stress is an important factor in triggering compulsive behavior and concomitant overweight or obesity. **Objective:** To analyze the correlation between binge eating, adjustment disorders and obesity based on a systematic review. **Methods:** This is a systematic review that gathered evidence by collecting articles from the National Library of Medicine (NLH), Virtual Health Library (VHL) and Scientific Electronic Library Online (SciELO) databases according to the PRISMA protocol, using the descriptors: “obesity” AND “binge-eating disorder” AND “adjustment disorders” associated with the filters: full text; languages: English and Portuguese; from 2015 to 2024. A total of 99 articles were found, 92 were excluded due to duplication or avoidance of the topic and, finally, 7 articles constituted the body for analysis. **Results:** Through the analysis of the articles collected, a relationship was observed between stressful events with recurrent episodes of large meals, without self-induced compensatory behavior, associated with a subsequent feeling of suffering. Stress seems to contribute to compulsive behavior by activating the hypothalamic-pituitary-adrenal axis, leading to an increase in cortisol and, consequently, a search for comfort through food, used in an attempt to meet the energy needs mediated by stress. In addition, negative emotions acted as a stimulus for compulsive eating behavior. In this sense, the analysis of the studies showed that the prevalence of binge eating disorder was present in 17% to 60% of overweight or obese individuals. Furthermore, the disorder was observed predominantly in women. There was a reduction in prevalence with increasing age and a proportional increase in body mass index. **Conclusion:** This review indicates that there is a significant association between obese patients and binge eating disorder or coexisting emotional disorders. This analysis confirms the need for a multidisciplinary assessment of each patient. **Keywords:** obesity; binge-eating disorder; adjustment disorders.

DIABETES MELLITUS

2239

RELEVANCE OF HOSPITALIZATIONS OF YOUNG PATIENTS DUE TO DIABETES MELLITUS: RETROSPECTIVE ANALYSIS

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Introduction: Diabetes mellitus is a chronic metabolic disorder in which most cases are divided into type 1 diabetes mellitus (DM1) and type 2 diabetes mellitus (DM2). In adolescents, DM1 is considered one of the most common chronic diseases. Linked to this, a tendency for an increase in cases of diabetes mellitus in all age groups, especially among young people, has been observed in Brazil. The condition is associated with higher rates of hospitalization and the need for medical care as a result of target organ damage. **Objective:** To determine the prevalence of hospitalizations of young people with diabetes mellitus and their epidemiological profile between 2019 and 2023 in Brazil. **Methods:** A retrospective cross-sectional study was carried out by analyzing data obtained from the Hospital Information System of the Department of Informatics of the Unified Health System (SIH/DATASUS) during February 2024. The filters "period: January 2019 to December 2023", "ICD-10 morbidity list: diabetes mellitus", "ICD-10 chapter: IV, nutritional and metabolic endocrine diseases" and "age group: under 1 year to 19 years" were used. The variables gender, race and number of hospitalizations in Brazil were observed. **Results:** During the period 2019 to 2023, a total of 49,599 young people hospitalized for diabetes mellitus were reported. The southeast and northeast regions had the highest rates, with 21,536 (43.42%) and 12,769 (25.74%) cases, respectively. In addition, the highest number of hospitalizations occurred in the years 2021, 2022 and 2023, with 10,078, 10,401 and 10,057 episodes, in that order. The mortality rate was 0.58 during the period analyzed. It was possible to observe that the most affected young people were between the ages of 10 and 14 (36.41%). Despite this, the number of young people aged between 15 and 19 was significant (31.21%). In this study, there was a prevalence of females, totaling 56.80% of cases. In addition, individuals of brown race/color were identified in 44.13% of the records, white 33.03%, black 3.02%. Approximately 18.25% of patients did not declare themselves. **Conclusion:** This study found that the prevalence of hospitalizations for diabetes mellitus in young patients was higher in the southeast and northeast regions. In addition, individuals of brown race, female gender and aged between 10 and 14 years were the most affected epidemiologically. Discussion of this issue is essential for adequate management of the condition in young people. **Keywords:** diabetes mellitus; hospitalization; Brazil.

DISLIPIDEMIA E ATEROSCLEROSE

2240

LIPODYSTROPHY – THE IMPORTANCE OF BEING ATTENTIVE FOR DIAGNOSE: CASE REPORT

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Case presentation: A 47-year-old female patient with hypertension (HTN) and overweight, diagnosed with type 2 diabetes mellitus (T2DM) for 15 years, visited the endocrinology clinic for severe hypertriglyceridemia (TGC = 3,657 mg/dL, total cholesterol = 552 mg/dL, HDL = 11 mg/dL) and poor glycemic control (HbA1c: 11.5%), despite using 10 units of insulin and ciprofibrate. The patient denied any history of pancreatitis and coronary artery disease but reported that her mother had severe hypertriglyceridemia and died due to complications from HTN and T2DM. She also mentioned that her brother had a stroke at age 50 and her sister had T2DM. On physical examination: BP: 167/85 mmHg, BMI: 27.56. Phenotypic changes included no fat deposition and prominent muscles in the lower limbs, abdominal fat accumulation, and phlebomegaly. **Discussion:** The patient presents a case consistent with lipodystrophy, evidenced by the loss of subcutaneous fat in the lower limbs and central deposition, severe dyslipidemia with elevated triglycerides and low HDL levels. Lipodystrophy is characterized by selective and variable loss of adipose tissue, hormone deficiencies (leptin and adiponectin), ectopic fat accumulation (in the liver and other tissues), significant insulin resistance, severe hypertriglyceridemia, and increased cardiovascular risk. This disease can be congenital or acquired, partial or generalized. The main familial subtypes are familial partial lipodystrophy type Dunnigan (FPLD2) and Berardinelli-Seip syndrome. The prevalence of partial and generalized lipodystrophies is about 2 to 3 cases per million people, although this figure may be underestimated due to underdiagnosis. Women are more affected and predisposed to insulin resistance and its complications: T2DM, hypertriglyceridemia, reduced HDL, HTN, metabolic-associated fatty liver disease (MAFLD), atherosclerosis, and cardiovascular risk. **Final comments:** Lipodystrophy, despite being common, is underdiagnosed, making it urgent to understand its different phenotypes, as it is associated with an increased risk of cardiovascular diseases and pancreatitis. Proper recognition and treatment are crucial to preventing severe complications and improving patients' quality of life. For this patient, treatment of metabolic disorders was proposed, including the use of antidiabetic and lipid-lowering agents, such as statins and fibrates, as well as lifestyle changes and genetic screening for lipodystrophy. **Keywords:** lipodystrophy; hypertriglyceridemia; diabetes mellitus.

ENDOCRINOLOGIA BÁSICA

2241

THE EFFECTS OF METFORMIN ON PATIENTS WITH PROSTATE CANCER UNDERGOING ANDROGEN DEPRIVATION THERAPY: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Androgen deprivation therapy (ADT), used in the treatment of advanced and metastatic prostate cancer, is associated with anthropometric and metabolic changes that lead to an increased cardiovascular risk and the development of metabolic syndrome, affecting the non-oncological morbidity and mortality of these patients. The potential of METFORMIN in preventing the metabolic modifications of ADT is being analyzed. **Objective:** To evaluate the impact of METFORMIN on anthropometric and metabolic parameters in patients diagnosed with prostate cancer undergoing androgen deprivation therapy. **Methods:** We performed a systematic review and meta-analysis following the recommendations of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). We searched PubMed, Scopus and Embase Library databases for randomized controlled trials (RCT) studies of the effects of metformin on patients with prostate cancer undergoing androgen deprivation therapy. Statistical analysis was performed in R software 4.3.1. A random-effects model was employed to compute mean differences (MD) and risk ratios (RR) with 95% confidence intervals (CI) for continuous and binary endpoints, respectively. Heterogeneity was examined with Cochran Q test and I2 statistics. A p-value of < 0.05 was considered statistically significant. **Results:** A total of 6 RCTs with 327 patients were included in the analysis. There were 161 patients 49,23% in the METFORMIN group. The mean follow-up time was 7.4 months. The METFORMIN group presented a significant decrease in weight (MD -2.78; 95% CI -2.89 to -2.67; p < 0.00001; I2 = 100%), HOMA IR (MD -0.17; 95% CI -0.27 to -0.07; p = 0.003; I2 = 70%), systolic blood pressure (MD -9.22; 95% CI -10.52 to -7.92; p = 0.005; I2 = 81%), diastolic blood pressure (MD -1.84; 95% CI -2.28 to -1.39; p = 0.003; I2 = 83%) and waist circumference (MD -1.37; 95% CI -1.47 to -1.27; p < 0.00001; I2 = 94%). **Conclusion:** In patients with prostate cancer undergoing androgen deprivation treatment, the use of metformin is associated with a reduction in weight, HOMA IR, systolic blood pressure, diastolic blood pressure and waist circumference compared to the placebo group. In view of its low cost, favorable toxicity profile and positive effect on metabolic parameters, metformin should be considered as an effective agent to be used for metabolic syndrome arising from androgen deprivation therapy. **Keywords:** metformin; prostatic neoplasms; metabolic syndrome.

DISLIPIDEMIA E ATEROSCLEROSE

2242

ATHEROSCLEROSIS AND ITS IMPACT ON HOSPITALIZATION RATES IN BRAZIL BETWEEN 2018 AND 2023

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Introduction: For decades, atherosclerosis has been considered an arterial pathology triggered by the clustering of cholesterol molecules, causing endothelial damage and consequent accumulation of the smooth muscle layer. Despite this, subsequent studies have identified that the inflammatory response represents a regulatory process that links risk factors to arterial alterations. Multiple studies have shown the condition to be a chronic inflammatory disease, which can be converted into an acute clinical episode due to plaque rupture and/or thrombosis. **Objective:** To determine the rate of hospitalizations due to atherosclerosis, during 2018 and 2023, in Brazil according to the distribution by Brazilian region. **Methods:** This was a retrospective, descriptive cross-sectional study based on an analysis of data available on the Hospital Information System (SIH/DATASUS) over a period of 6 years. The data was organized into tables using the Tabnet tool, using the filter "period from 2018 to 2023" and "ICD-10 morbidity list: arteriosclerosis". Additional variables for analysis were hospitalizations by region, age, gender and race. **Results:** A total of 155,302 hospitalizations for atherosclerosis were identified in Brazil during the period under analysis. In this respect, 75,636 of the cases were recorded in the southeast (48.70%), 37,886 in the northeast (24.39%), 29,045 in the south (18.70%), 9,257 in the center-west (5.96%) and 3,478 in the north (2.23%). Within this range, there was exponential growth between 2018 and 2022, reaching 29,007 cases/year in 2022. During the specified period, patients aged 60-69 were the most affected, accounting for 33.45% of individuals with the condition. This was followed by patients aged 70-79 (28.33%) and 50-59 (16.38%). In this study, men accounted for 87,552 cases (56.37%), while women accounted for 67,750 cases (43.62%), representing a difference of 12.75% between males and females. In addition, the brown race was predominant (40.81%) compared to white (35.87%) and black (5.65%). However, a significant number of patients did not state their color/race (16.54%). **Conclusion:** This study showed that atherosclerosis is a major cause of hospitalization in Brazil. The condition affects patients in the southeast to a greater extent. The groups aged between 60 and 69 were the most affected during the period analyzed. In addition, it was not possible to indicate a race with a greater predisposition to developing atherosclerosis. **Keywords:** atherosclerosis; epidemiology; Brazil.

DIABETES MELLITUS

2243

PORTRAIT OF THE SELF-CARE OF PATIENTS WITH TYPE 2 DIABETES MELLITUS IN A FAMILY HEALTH UNIT ENVIRONMENT: REPORT OF AN EXTENSION ACTION EXPERIENCE

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Introduction: We know that few endocrinologists are available to treat the population with diabetes, so primary care is essential to manage cases. Primary care should ideally be multidisciplinary to ensure access and comprehensive care. The Department of Health recommends eating fruit and vegetables and avoiding foods high in saturated fat, as well as 150 minutes of physical activity per week, smoking cessation, and annual eye examination and proteinuria testing. **Objective:** To report the experience of an extension activity in a Family Health Unit (FHU) on self-care in diabetes mellitus. **Materials and methods:** The action took place in an FHU composed of 4 teams responsible for 5,000 patients in Recife. A total of 90 patients with diabetes were randomly selected. **Results:** 87 people responded to the questionnaire. The questions were about diabetes self-care and were asked within 7 days of the questionnaire. Among them, 75% were overweight or obese, the average age was 61.5 years, and 28% had diabetes for more than 15 years. Regarding their dietary habits, more than half said they did not follow a diet recommended by a health professional, 40.2% did not eat enough fruit and/or vegetables and 30% ate foods high in fat during the 7 days. 70% did no specific physical activity (not including home or work activities) and 50% did no continuous exercise for 30 minutes or more during the week. Regarding smoking, 12.6% had smoked in the last 7 days and 46.4% had never smoked. When it came to self-monitoring of blood glucose, just over half did not do so. 66% checked their feet at least once a day, 54% checked their shoes before putting them on and 56% dried their toes after washing. When it came to medication, a quarter of the patients using insulin did not follow the prescribed regimen correctly, 10% used insulin inappropriately at least once, 25% of the patients using insulin did not use it correctly and 25% of patients using oral medication used it incorrectly on at least one day. Regarding fundoscopy, 9% had never had one and only 36% had had one in the last year. Regarding proteinuria, 2.3% had never been tested and only 56% had been tested in the last year. **Conclusions:** The self-care of patients with diabetes in primary care is rather precarious, which is a major challenge for the multidisciplinary team caring for these patients. **Keywords:** diabetes mellitus; primary health care; family health.

DIABETES MELLITUS

2244

NEW WEEKLY BASAL INSULINS FOR GLYCEMIC CONTROL IN PATIENTS WITH DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Basal insulins are fundamental in the treatment of diabetes mellitus, new once-weekly options have been developed. The insulins Fc (fusion protein that combines a single-chain insulin variant with a human immunoglobulin G fragment crystallizable domain) and Icodec (insulin analog acylated with a C20 fatty diacid side chain) are those in the most advanced development. **Objective:** To evaluate changes in HbA1c, fasting blood glucose (FBG) and weight with the use of Fc and Icodec insulins, compared to daily basal insulins, for 26 weeks. **Methods:** It is a systematic review, in accordance with PRISMA (PROSPERO CRD42024563453). The following bases were searched: PubMed, Web of Science and Scopus. Only randomized clinical trials with a control group were included. The articles were selected through consecutive steps of removing duplicates, reading titles, abstracts and the full article. Data were extracted into an Excel spreadsheet and synthesized through meta-analysis for the difference in mean variation in HbA1c, FBG and weight, in R4.4.1. **Results:** The searches obtained 235 studies, of which 5 were included. Of these, 2 used Fc insulin and 3 used Icodec insulin, including 1,924 patients. The control group in all studies was composed of patients who used daily basal insulins (Glargine or Degludec). In 3 studies the patients had type 2 DM and in 2 studies they had type1 DM. The meta-analysis demonstrated that, in 26 weeks, the difference in mean variation in HbA1c, compared to the control group, was -0.02% (CI95% -0.15;0.1) for the use of Icodec insulin and 0.12% (CI95% -0.02;0.26) for Fc insulin, with no statistical difference between the use of Fc insulin and Icodec insulin (p = 0.13). For the difference in mean variation in FBG compared to the control group, the meta-analysis resulted in 3.93 mg/dL (CI95% -10.31;18.17) for Icodec insulin and 5.41 mg/dL (CI95% 0.25;10.56) for Fc insulin, with no difference between both insulins (p = 0.85). There was also no difference between the use of Fc insulin and Icodec insulin for mean difference in weight change (p = 0.77), compared to the control group, with the meta-analysis resulting in 0.27 kg (CI95% -0.2;0.74) for Icodec insulin and 0.4 kg (CI95% -0.31;1.11) for Fc insulin. **Conclusion:** There was no inferiority of Fc and Icodec insulins compared to the control group, which used daily basal insulins, for variation in HbA1c, FBG and weight in 26 weeks. Also, there was no difference between Fc insulin and Icodec insulin in these parameters. **Keywords:** diabetes mellitus; insulin; glycemic control.

DIABETES MELLITUS

2245

PROFILE OF TYPE 2 DIABETES MELLITUS IN A FAMILY HEALTH UNIT SETTING: EXTENSION ACTION EXPERIENCE REPORT

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Introduction: Diabetes mellitus (DM) has an estimated prevalence of 9.8% in adults in Brazil. Complications related to diabetes are responsible for a reduction in life expectancy and a high mortality rate, of around 6 to 8 years. It is well established that good glycemic control reduces its microvascular and macrovascular complications, which are related to higher risk of hospitalizations and amputations and health treatment costs. **Objective:** To report the experience of an extension action in a Family Health Unity (FHU) in screening for diabetes complications. **Materials and methods:** The FHU where the action took place is made up of 4 teams responsible for 5,000 patients in Recife. 90 patients were selected and 87 attended. Medical students were trained by an experienced endocrinologist and vascular surgeon to advise on the correct use of insulin, examine the diabetic foot using a tuning fork and monofilament to detect neuropathy and perform the ankle-brachial index (ABI) using Doppler. The service was organized into stations with: measuring blood pressure and blood glucose levels, training in the use of insulin application devices and a diabetic foot sensitivity test. At the end, the patients attended lectures on caring for diabetic patients. **Results:** Among the 87 patients seen: the average age was 61.5 years, only 16% had completed high school or higher education, 75% were overweight or obese, average BMI: 29.4 kg/m², 65% had 5 years or more of diagnosed disease, half of the patients used insulin, and around 27% had altered vibration sensitivity in the malleolus or hallux. In addition, patients with severe alterations in the ABI were referred to specialized services in the region. Blood glucose measurements, carried out on 79 patients, showed an average of 187 mg/dL (maximum 567 mg/dL) and 58% of patients had altered blood pressure at the time of measurement (greater than 140 mmHg in systolic pressure and/or 90 mmHg in diastolic). **Conclusion:** The target audience of the action were patients followed up in primary care and the profile of the patients shows that they are severe patients on insulin, with poor glycemic control and multiple complications related to diabetes. By promoting this event, we aimed to provide health education for this population, giving patients autonomy over their disease. **Keywords:** diabetes mellitus; primary health care; diabetic foot.

OBESIDADE

2246

EFFECT OF ORAL SEMAGLUTIDE AND ORFORGLIPRON, ORAL GLP-1 ANALOGUES, ON BODY WEIGHT AND GLYCATED HEMOGLOBIN IN PATIENTS WITH OBESITY AND/OR TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: GLP-1 analogues represented a revolution in the treatment of diabetes mellitus and obesity. Oral semaglutide and orforglipron are new oral formulations that facilitate patient compliance and have a significant impact on weight and glycated hemoglobin (HbA1c). **Objective:** Assess weight and HbA1c variation with the use of oral semaglutide and orforglipron over 26 weeks. **Methods:** This is a systematic review, in accordance with PRISMA (PROSPERO CDR42022368930). The following bases were searched: PubMed, Cochrane, Web of Science and Scopus, on 03/19/2024. Only randomized clinical trials with a control group, that used oral semaglutide or orforglipron in patients with obesity and/or type 2 diabetes mellitus were included. The selection of articles was made with consecutive steps of removing duplicates, reading titles, abstracts and of the full article. Variations in body weight and HbA1c were summarized through meta-analysis. **Results:** The searches obtained 775 articles, of which 7 were included. In 2 studies, orforglipron was used, with doses ranging from 3 to 45 mg. Oral semaglutide was used in 5 other studies, with doses ranging from 2.5 to 40 mg. The number of patients in the included studies was 2881. The meta-analysis for mean weight change over 26 weeks obtained a value of -3.41 kg (95%CI -4.41;-2.4) for the use of oral semaglutide 14 mg and -11.68 kg (95%CI -14.81;-8.54) for the use of orforglipron 45mg. The subgroup test revealed superiority for orforglipron ($p < 0.01$). Compared to placebo, the mean difference in weight change was -2.77 kg (95%CI -4;-1.53) for oral semaglutide 14 mg and -9.49 kg (95%CI -12.72;-6.26) for orforglipron 45 mg, with orforglipron also being superior ($p < 0.01$). For mean variation in HbA1c, in 26 weeks, the meta-analysis demonstrated no statistical difference between oral semaglutide and orforglirpon ($p = 0.76$), when oral semaglutide 14 mg was used, this variation was -1.48% (95%CI -1.83;-1.13), whereas for orforglipron 45 mg it was -1.2% (95%CI -2.96;0.57). The mean difference in HbA1c variation, compared to placebo, was -1.15% (95%CI -1.49;-0.81) for oral semaglutide 14mg and -1.02% (95%CI -2.27;0.22) for orforglipron 45 mg, with no difference between oral semaglutide and orforglipron ($p = 0.85$). **Conclusion:** Both oral semaglutide and orforglipron were superior to placebo in weight and HbA1c reduction at 26 weeks. Orforglipron generates greater weight reduction compared to oral semaglutide, as for HbA1c variation, both drugs were similar. **Keywords:** GLP-1 agonists; body weight; glycated hemoglobin.

ENDOCRINOLOGIA PEDIÁTRICA

2247

MCCUNE-ALBRIGHT SYNDROME: CASE REPORT OF A RARE AND MULTISYSTEMIC DISEASE WITH MULTISPECIALTY APPROACH

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A 13-year-old male patient began medical follow-up with an endocrine pediatrician in July 2023 in the postoperative period of neurosurgery. A craniectomy and cranioplasty were performed to resect a bone tumor, with findings of expressive bone thickening and cerebral alterations described in the skull MRI, including hemimegalencephaly. With regard to the diagnosis of McCune-Albright syndrome (MAS), this came about after interposition with a geneticist and an endocrinologist, in a confluence of important findings: café-au-lait spots on the hemiface and back, polyostotic fibrous dysplasia and hemimegalencephaly. In addition, the patient showed signs of precocious puberty at the age of 10, inappropriate sexual stimulation, aggressiveness and a Colles fracture. On physical examination, he had 180.5 cm, acromegalic facies, generalized asymmetry on the right and testicular enlargement. Laboratory tests ruled out thyroid alterations, but showed high serum levels of calcium (10.7 mg/dL) and magnesium (3 mg/dL). He is currently taking Pamidronate every 4 months, Risperidone, Levozine and Carbamazepine, and is being followed up by a psychiatrist. MAS is a rare disease characterized by the triad of polyostotic fibrous dysplasia, café-au-lait spots and endocrine hyperfunction, caused by somatic mutations in the GNAS gene. Endocrine manifestations can include precocious puberty, acromegaly, hyperprolactinemia, hypercortisolism and hyperparathyroidism. The mutation results in the substitution of arginine at position 201 of the alpha subunit of the Gs protein, increasing the production of cAMP and results in hyperfunction of the affected tissues. In the case presented, the association of bone deformities, abnormal testicular growth and early osteoporosis (Colles' fracture), associated with behavioral disorders of aggression and learning difficulties demonstrate the multisystemic involvement of a disease that has been insufficiently documented. The management of MAS is complex and requires a multidisciplinary approach. Collaboration between endocrinologists, neurologists, psychiatrists and orthopedists is essential to provide comprehensive care and improve the patient's quality of life, and the factors shall be considered together, given the possibility that these hormonal responses may be confused with other pathogenic conditions. Case reports such as this one are essential to increase understanding of the clinical variability and best management practices for MAS. **Keywords:** polyostotic fibrous dysplasia; precocious puberty; hemimegalencephaly.

TIREOIDE

2248

ACUTE PSYCHOSIS: CASE REPORT OF AN ATYPICAL PRESENTATION OF HYPOTHYROIDISM

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Case report: We present the case of a 16-year old male who's father sought help at the emergency department after the teenager began showing behavioral abnormalities and disorganized speech, along with auditory hallucinations and intrusive thoughts in the last 15 days. The patient was subjected to neuroimaging (brain CT scan), with no pathological findings, and was then referred to a psychiatrist for evaluation of primary psychosis. Upon physical examination, hypothyroid facies (periorbital and facial edema, bilateral semiptosis, brittle hair) along with dry, rough skin were observed. Blood tests and bone imaging were ordered, and revealed very high levels of thyroid-stimulating hormone (784 µUI/mL; reference range: 0.5-5.0 µUI/mL) and low levels of free T4 (0.04 ng/dL; reference range: 0.7-1.48 ng/dL) along with a 4-year delayed bone age measured by wrist radiography evaluation. The patient was readily admitted to the hospital for clinical management. There was major improvement after a three-day loading-dose levothyroxine protocol, and no corticosteroids were administered. Further lab tests ordered during hospitalization and received a few days later showed high thyroid-peroxidase antibodies (924 U/mL; normal reference value: <9 U/mL). The patient was discharged and psychiatric symptoms have not recurred in subsequent outpatient follow-up consults within two months. **Discussion:** psychotic syndrome is most often associated with hyperthyroidism, and is a very rare manifestation of hypothyroidism when there is no associated Hashimoto's encephalopathy. Although the underlying cause of hypothyroidism was Hashimoto's disease, in this case, our patient showed major improvement in symptoms without corticosteroid usage and after thyroid hormone levels were corrected, which is not expected in thyroid-peroxidase antibody encephalopathy. **Conclusion:** This case report aims to describe an uncommon manifestation of the disease that could be misconducted as primary, non-organic psychiatric illness. It is important to consider organic differential diagnosis in psychotic syndromes. Although hyperthyroidism is a much more prevalent cause of psychosis, there is evidence to support that hypothyroidism may also manifest as such, even when Hashimoto's encephalopathy is not present. **Keywords:** acute; psychosis; hypothyroidism.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2249

MATERNAL AND FETAL OUTCOMES OF PUERPERAL WOMEN WITH HYPERGLYCEMIA DURING PREGNANCY FOLLOWED UP IN HIGH-RISK AND NORMAL-RISK PRENATAL CARE

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Introduction: Gestational diabetes mellitus (GDM) is a metabolic disorder characterized by glucose intolerance diagnosed during pregnancy, which can lead to severe maternal-fetal complications such as preeclampsia, preterm labor, higher rates of neonatal mortality, macrosomia, and neonatal hypoglycemia. Patients with GDM require special attention regarding the prevention and identification of worsening metabolic conditions, like glucose level monitoring and pharmacological and non-pharmacological treatment strategies, which will indicate the need for either high-risk or standard prenatal care. **Objective:** To investigate adverse outcomes in parturients with hyperglycemia during pregnancy who received high-risk and standard prenatal care. **Materials and methods:** This study is a retrospective cohort of 49 puerperal women with hyperglycemia during pregnancy followed up in Natal/RN, Brazil, from January to June 2023. Sociodemographic information, lifestyle habits, type of prenatal care, and maternal-fetal outcomes were collected: maternal ICU admission, prematurity, macrosomia, intrauterine growth restriction (IUGR), neonatal ICU admission, and neonatal weight adequacy. The Chi-square test was used to analyze the association between type of prenatal care and maternal-fetal outcomes, with a significance level of 5% for all analyses. **Results:** There were statistically significant associations between type of prenatal care and the following outcomes: adult ICU admission ($\chi2(1) = 4,709$, $p = 0,030$) and prematurity ($\chi2(1) = 4,075$, $p = 0,044$). Among women receiving high-risk prenatal care, lower proportions were observed for maternal ICU admission (8.1% *vs.* 33.3%). There was no statistically significant association for macrosomia ($\chi2(1) = 2,406$, $p = 0,121$) or neonatal weight adequacy ($\chi2(1) = 0,177$, $p = 0,674$). However, among women receiving high-risk prenatal care, lower proportions were observed for macrosomia (8.1% *vs.* 25.0%) and small or large for gestational age classification (27.0% *vs.* 33.3%). **Conclusion:** Women with hyperglycemia during pregnancy who received care at the High-Risk Prenatal Care Clinic had lower rates of maternal ICU admission, neonatal macrosomia, and small or large for gestational age classification. Thus, care at the High-Risk Prenatal Care Clinic appears to be a protective factor for women with hyperglycemia during pregnancy. **Keywords:** hyperglycemia; gestation; prenatal care.

NEUROENDOCRINOLOGIA

2250

GIANT INVASIVE GH-SECRETING PITNET: CASE REPORT

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Case presentation: A 42-year-old woman with a history of extremity enlargement for 6 years associated with wrist, lumbar spine, knee, and ankle arthralgia, amenorrhea, galactorrhea, visual changes, recurrent headaches, macroglossia, frontal prominence, and prognathism. Pituitary MRI revealed a sellar/suprasellar lesion measuring 5.1 x 5.0 x 4.3 cm, compressing the optic chiasm, hypothalamus, and floor of the third ventricle, invading the cavernous sinuses. Campimetry showed bitemporal hemianopsia. Laboratory tests: GH 100 ng/mL and IGF1 791 ng/mL (reference range: 88.1-224), also diagnosed with panhypopituitarism (gonadotropic and thyrotropic deficiencies). Underwent transcranial surgery for tumor debulking in March 2024, postoperative course complicated by bacterial meningitis and SIADH, resolved with antibiotic therapy and measures for hyponatremia. Discharged on a first-generation somatostatin analog due to lack of surgical cure. **Discussion:** Acromegaly is a rare and insidious disease, usually caused by a pituitary tumor (PitNET) secreting GH (~98%), leading to increased IGF1 production. In the vast majority of cases, a macroadenoma (~80%) is diagnosed, but < 5% of these are giant tumors (>4 cm). Mass effect of the tumor can trigger hypopituitarism and peripheral vision loss. Delayed diagnosis and treatment initiation increase the risk of developing metabolic, cardiovascular, and neoplastic diseases. First-line therapy is transsphenoidal tumor resection, followed by medication use and, in some cases, adjuvant radiotherapy if surgical cure is not achieved. Intrassellar micro and macroadenomas have a remission rate of 60%-80%. With increasing tumor size and invasion beyond sellar limits, the remission rate gradually decreases, nearing 0% for giant somatotroph PitNETs. **Final comments:** Despite acromegaly presenting with distinctive facial changes, its diagnosis often occurs with significant delay. This case report aims to emphasize the importance of early diagnosis, which combined with effective treatment, reduces morbidity and mortality rates in these patients. Giant somatotroph PitNETs have a low rate of surgical cure, but an aggressive multimodal approach has a reasonable chance of achieving disease control in these patients. **Keywords:** acromegaly; giant pituitary tumor; somatotroph.

DISLIPIDEMIA E ATEROSCLEROSE

2253

HYPERCHYLOMICRONEMIA: GENETIC, CLINICAL, AND LABORATORY ASPECTS

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Introduction: Hyperchylomicronemia is characterized by persistently elevated plasma concentrations of chylomicrons after a fasting period of 12 hours, manifested as severe hypertriglyceridemia (HTG) (>880 mg/dL). It can be classified into familial chylomicronemia syndrome (FCS), a rare form resulting from monogenic alterations in the genes *LPL*, *APOC2, APOA5*, *GPIHBP1*, and *LMF1*, and multifactorial chylomicronemia syndrome (MCS) which is related to polygenic variants and associated with triggering factors such as obesity, diabetes mellitus, medications, and alcohol. Both conditions can develop eruptive xanthomas, lipemia retinalis, recurrent abdominal pain, and hepatosplenomegaly. The primary complication is acute pancreatitis with a high risk of morbidity and mortality. Currently, the familial chylomicronemia syndrome (FCS) score contributes to the clinical evaluation of these patients, aiming at optimizing treatment, since triglyceride concentration does not distinguish different etiologies. **Objective:** To characterize patients with severe HTG between FCS and MCS through genetic, clinical, and laboratory evaluations. **Methods:** Data collection was conducted through a review of medical records of patients with severe HTG followed up at the Lipid Unit, *Hospital das Clínicas FMUSP*. **Results:** Sixty-six patients with severe HTG were identified. Fifty-two patients were evaluated using a genetic panel, of whom 11 were diagnosed with FCS (max TG, mean ± SD, 5731 ± 4942 mg/dL), including 9 with variants in the *LPL* gene (4 homozygous and 5 compound heterozygous) and 2 with homozygous variants in *GPIHBP1*, 5 with familial partial lipodystrophy (FPL) (max TG 4554 ± 3342), and 36 with MCS (max TG 3456 ± 2695), with 3 cases presenting heterozygous variants in the *LPL*, *APOC2*, and *APOA5* genes. The median (min-max) scores for patients with FCS, MCS, and FPL were 11 (10-14), 5 (1-13), and 8 (3-10) points, respectively. The frequency of acute pancreatitis was higher in the FCS group compared to the MCS group (64% *vs.* 44%). The presence of diabetes mellitus was higher in the MCS group compared to the FCS group (75% *vs.* 36%) as well as the presence of obesity (33% *vs.* 9%). **Conclusion:** The study highlights the clinical profiles of patients with hyperchylomicronemia, emphasizing the importance of clinical screening and the application of the FCS score in distinguishing etiologies. The use of genetic testing, when possible, contributes to establishing an accurate diagnosis. **Keywords:** hyperchylomicronemia; severe hypertriglyceridemia; pancreatitis.

TIREOIDE

2254

EPIDEMIOLOGICAL ANALYSIS OF HOSPITALIZATIONS DUE TO HYPERTHYROIDISM IN BRAZIL: AN OVERVIEW OF THE PAST 10 YEARS

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Introduction: Hyperthyroidism is a condition characterized by excessive production of thyroid hormones, leading to various health complications such a as cardiovascular issues and metabolic disturbances. Sudden exacerbations of hyperthyroidism symptoms may occur with infection or stress, resulting in hospitalizations. In Brazil, the prevalence of this condition has raised concerns, necessitating a detailed epidemiological analysis for the formulation of effective public health policies. **Objective:** This study aims to analyze the distribution and outcomes of hospitalizations due to Hyperthyroidism in Brazil in the past 10 years (2014-2024). **Methods:** We conducted a retrospective epidemiological study using data from the Ministry of Health´s DATASUS, through the Morbidity Hospital System of SUS (SIH/SUS). The study included individuals hospitalized due to hyperthyroidism between June 2014 and May 2024 in Brazil. Evaluated variables were: geographic distribution, gender disparities, age-related patterns, associated mortality rates, total hospitalization costs, and average length of stay. **Results:** The Southeast region reported n = 4.096 (61.66%) internations by hyperthyroidism, Northeast n = 1.116 (16.80%), South n = 790 (11.89%), Central-West n = 394 (5.93%), and North n = 247 (3.72%). Females n = 5.176 (77.92%) were more affected with n = 5.176 (77.92%) hospitalizations compared to n = 1.467 (22.08%) for males. Age distribution showed a predominance in the 20-49 years age group(58.99%) followed by 50-80+ (34.11%) and <1-19 (6.89%). The total healthcare cost attributed was BRL 3.900.626,72. There were 120 reported deaths, with a mortality distribution of 3.33% in <1-19, 49.17% in 20-49, and 47.50% in 50-80+. The average length of stay was 6.6 days. **Conclusion:** The Southeast region had the highest number of hospitalizations, with more than 60% of all cases in the country, while the North region had the lowest, with only 3.72%. Females were more affected than males, with a difference of over 3,000 cases. Adults aged 20-49 years comprised more than half of total cases followed by the elderly population (34,11%). Mortality rates were similar between children/teenagers and adults, both around 48%. The cost of the hospitalizations was substantial. These findings emphasize the importance of regional and demographic considerations in development of effective public health strategies to combat hyperthyroidism outcomes in Brazil. **Keywords:** hyperthyroidism; epidemiological analysis; cost.

TIREOIDE

2255

ASSESSMENT OF THE CLINICAL AND EPIDEMIOLOGICAL PROFILE OF INDIVIDUALS TREATED AT THE THYROID TASK FORCE IN A CITY IN THE INTERIOR OF BAHIA

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Introduction: Thyroid nodules are found in 6.4% of women and 1.5% of men on routine physical examination. Although the majority are asymptomatic, the portion that is symptomatic may present symptoms of hypothyroidism or hyperthyroidism, justifying the importance of clinical evaluation. **Objective:** To identify the clinical and epidemiological characteristics of individuals who attended a Thyroid Awareness Task Force through the extension project in a city in the interior of Bahia. **Materials and methods:** This is an observational analysis carried out at an educational institution in the interior of southern Bahia on May 18, 2024, with the aim of raising awareness among the university population about the importance of the thyroid. The sample consisted of individuals who came to the joint effort on free demand, informed through social networks, email and the educational institution's radio. Anthropometric data was collected (weight, height, body mass index [BMI]), clinical assessment of the thyroid by palpation, as well as an interview guided by a questionnaire which included information about signs and symptoms suggestive of thyroid involvement, family history of thyroid disease and thyroid cancer. **Results:** The sample consisted of 146 individuals, 115 women and 31 men, with a mean age of 37.8 and 39.1 years respectively. The prevalence of overweight and obesity was higher in women compared to men, with a mean BMI of 26.8 for women and 26.51 for men. There was a significant association between BMI and the presence of alterations on thyroid palpation for women ($p = 0.03$). Finally, in the clinical assessment of the thyroid, 22.6% presented alterations on palpation, 84.9% of which were more common in women. **Conclusion:** The prevalence of thyroid symptoms was higher in women, as was the clinical alteration of the thyroid on physical examination associated with a higher BMI. It is therefore necessary to carry out interventions to raise awareness of the importance of the palpation method in screening for thyroid disorders. **Keywords:** thyroid; nodules; observational.

NEUROENDOCRINOLOGIA

2257

CLINICALLY NONFUNCTIONING PITUITARY ADENOMA MIMICKING MACROPROLACTINOMA: CASE REPORT

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Case presentation: A 59-year-old woman complained of spontaneous nipple discharge, visual field alterations, diplopia, divergent strabismus and headache. Laboratory tests showed prolactin levels of 223 ng/dL and signs of hypopituitarism (central hypogonadism, hypothyroidism, and adrenal insufficiency). Magnetic resonance imaging (MRI) of the pituitary gland revealed a 3.4 x 3.2 x 2.9 cm pituitary macroadenoma compressing the optic chiasm and invading the cavernous sinuses bilaterally. Visual campimetry showed no significant changes. Prolactin dilution was performed, without hook effect. The patient was evaluated together with a neurosurgeon and clinical treatment was decided, given the possibility of macroprolactinoma. After 3 months of treatment with Cabergoline 0.5 mg twice a week, prolactin levels returned to normal, but the size of the lesion on the pituitary MRI remained unchanged. Given the lack of response to clinical treatment and the progressive worsening of visual complaints, the patient underwent transsphenoidal resection of the sellar mass. The postoperative course showed complete regression of symptoms, but hypopituitarism persisted. Immunohistochemistry (IHC) did not reveal hormone production by the tumor. **Discussion:** Clinically nonfunctioning adenomas (CNFA) account for 25%-35% of pituitary adenomas and do not cause hormonal hypersecretion. Their clinical presentation is related to mass effect, mainly causing visual disturbances and headache. In some cases, they can compress the pituitary stalk, causing hypothalamic-pituitary disconnection and blocking the passage of dopamine, reducing the inhibitory effect on lactotrophs and leading to hyperprolactinemia. To differentiate these cases from true prolactinomas, it is considered that in those tumors the prolactin levels generally do not exceed 100 ng/mL or, more rarely, 250 ng/mL. In the case reported, the patient had prolactin of 223 ng/dL, a value that could correspond to hormone production by the tumor, but was due to compression of the stalk, which made the initial diagnosis difficult. The lack of response to clinical treatment suggested that it was ACNF and IHC confirmed this diagnosis. **Final comments:** The possibility of ACNF should always be considered, even in cases of hyperprolactinemia greater than 100 ng/dL, especially when there is no rapid response to clinical treatment. Paying attention to this hypothesis can confirm an accurate diagnosis of ACNF more quickly. **Keywords:** hyperprolactinemia; pituitary adenoma; prolactinoma.

DIABETES MELLITUS

2258

NEW ONSET TYPE 1 DIABETES MELLITUS IN A 76-YEAR-OLD PATIENT AFTER CORONAVIRUS INFECTION

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Case: Female patient, 76-years-old, with a previous diagnosis of pre diabetes years ago, well controlled with metformin since then. In January 2022, after a mild coronavirus infection, she began to complain of polyuria, polydipsia, non-intentional weight loss as well as significant hyperglycemia (≥300 mg/dL), without adequate control despite the use of multiple oral anti-diabetics. In August 2022, insulin was started and auto antibodies were measured to investigate this atypical pattern of diabetes evolution. Positive islet antigen 2 autoantibody (3,547 U/mL) and anti-glutamate acid decarboxylase (>2,000 U/mL), in addition to C-peptide < 0.01 ng/mL, confirmed the diagnosis of type 1 diabetes mellitus (T1D). **Discussion:** Here, we describe the case of a patient with T1D diagnosed at 76 years of age, after a coronavirus infection. This case described reinforces the importance of investigating type 1 diabetes (T1D) even in older individuals, as the disease can occur at any age and is frequently misdiagnosed in older age groups. In addition, post-viral new-onset diabetes has been an important feature of the COVID-19 pandemic. Although many cases appear to be T1D, it is still unclear if SARS-COV2 can cause autoimune diabetes. Those who survive COVID-19 remain at an elevated risk for diabetes at least in the first year, even if the infection is not severe. **Final comments:** Type 1 diabetes can occur at any age. It is crucial to consider the possibility of T1D when typical symptoms are present, including in older age groups. There is a possibility that COVID-19 has increased the number of T1D cases across multiple age groups, which requires further investigation. If this is true, there may be misdiagnosed cases of autoimmune diabetes inadequately treated as Type 2 diabetes in current clinical practice, which would require laboratory investigation to reevaluate clinical management. **Keywords:** type 1 diabetes; COVID-19; misdiagnosis.

DIABETES MELLITUS

2259

EVALUATION OF CAPILLARY KETONEMIA AS A SEVERITY CRITERION FOR DIABETIC KETOACIDOSIS

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Introduction: Diabetic ketoacidosis (DKA) is an acute complication in diabetic patients, characterized by excess production of beta-hydroxybutyrate (BOHB) due to insulin deficiency and high glucagon levels. The severity of DKA is associated with ketone body production, but the measurement of ketonemia has only recently been included in clinical guidelines. The 2023 Diabetic Ketoacidosis Diagnosis and Treatment Guideline by the Brazilian Diabetes Society (SBD) sets ketonemia value > 6 mmol/L as a severity criterion. However, the evidence supporting this in practice is uncertain. **Objective:** To evaluate capillary BOHB levels as DKA severity criteria. **Methods:** This retrospective study analyzed medical records of DKA cases treated at a tertiary hospital from Jan 1, 2023, to Jan 31, 2024. All patients aged ≥ 12 years, diagnosed with DKA by the criteria: blood glucose > 200 mg/dL, metabolic acidosis (blood pH < 7.3 and HCO^3 ≤ 15 mEq/L) and capillary BOHB > 3 mmol/L measured by point-of-care test were included. The severity of DKA was classified according to pH as mild (7.2-7.3), moderate (7.1-7.2) or severe (<7.1), and patients were divided into two groups according to capillary BOHB levels < 6 mmol/L and ≥ 6 mmol/L, groups 1 and 2 respectively. Data were analyzed by the chi-square test (X^2). **Results:** Sixty-six patients were included in the study, 52 in group 1 and 14 in group 2. In group 1, 24 (46.1%) had mild DKA, 10 (19.2%) moderate, and 18 (34.6%) severe. In group 2, 9 (64.2%) were mild, 1 (7.1%) moderate, and 4 (28.5%) severe. The low proportion of severe cases in group 2 suggests that capillary BOHB may be unreliable as an indicator of DKA severity. This aligns with studies showing that point-of-care capillary BOHB testing at a cutoff of 1.5 mmol/L was highly sensitive (98.1%) for detecting DKA, but lost accuracy at levels above 5 mmol/L. We also evaluated both groups for DKA severity according to bicarbonate levels (HCO^3 < 5 mEq/L), another criterion suggested by the SBD, and found no association (p = 0.493). However, testing the association between HCO3 levels and pH showed a strong association (p = 0.001). **Conclusion:** Our results indicate that measuring capillary BOHB levels is useful for diagnosing DKA but not reliable for assessing severity or monitoring treatment response, as shown by the lack of association with established severity criteria. This raises the question about the applicability of capillary BOHB levels as a severity criterion in DKA. **Keywords:** diabetic ketoacidosis; capillary ketonemia; severity criteria.

ENDOCRINOLOGIA PEDIÁTRICA

2260

CHALLENGES IN EARLY DIAGNOSIS OF MONOGENIC DIABETES TYPE 3 (MODY) IN A YOUNG PATIENT

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A 10-year-old male patient presented with complaints of polyuria and polydipsia, with an HbA1c of 9.2% in 2018. He denied weight loss or hospitalization due to diabetic ketoacidosis. His family history included a mother, brother, and maternal aunt with diabetes, all of whom were using insulin. On physical examination, the patient was obese with a Body Mass Index (BMI) Z-score of +2.3. The initial diagnostic hypothesis was type 2 diabetes, and treatment was started with metformin 2g/day, rapid-acting insulin as needed, and lifestyle modifications were advised. At this time, the probability of MODY, according to the calculator, was 7.2%. Anti-GAD and anti-IA2 antibodies were requested, both of which were negative. C-peptide was 2.4 ng/mL (reference value 1.1 - 4.4 ng/mL). One year after starting therapy, the patient was asymptomatic, with a BMI chart in the overweight range, hardly using insulin, and with good laboratory control, HbA1c 7.3%. The patient continued follow-up, maintaining HbA1c below 7%. The probability of MODY was recalculated, with an estimated risk of 75%, and genetic testing for monogenic diabetes was indicated. In May 2024, the genetic test result confirmed a mutation in the HNF1A gene, confirming the diagnosis of MODY type 3 diabetes. At that time, the patient had an HbA1c of 7.1%, metformin was discontinued, and treatment with gliclazide 30 mg/day was started. **Discussion:** The early diagnosis of monogenic diabetes type 3 (MODY 3) presents significant challenges due to its rarity and the similarity of its clinical features with those of type 1 diabetes mellitus (T1DM) and type 2 diabetes mellitus (T2DM). This case report illustrates the complexity of diagnosing MODY, highlighting the importance of detailed clinical evaluation and the use of appropriate diagnostic tools, such as genetic testing. **Final comments:** This case study underscores the importance of accurate and early diagnosis of monogenic diabetes type 3 (MODY 3). The detailed clinical approach, combined with the use of diagnostic tools such as the MODY calculator and genetic testing, were crucial for the appropriate management of the patient. Treatment with sulfonylureas proved to be effective, emphasizing the importance of individualized therapeutic strategies. **Keywords:** diabetes; MODY; genético.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2261

EFFECTS OF GENDER-AFFIRMING HORMONE THERAPY ON THE CONNECTIVITY OF INTRINSIC BRAIN NETWORKS

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Introduction: There has been an increase in the number of transgender people seeking gender-affirming hormone therapy (GAHT). However, the neural effects of GAHT are still not well-known. Particularly, few studies have examined the effects of Gender Affirming Hormone Therapy (GAHT) on brain connectivity. The hormonal effects on the brain may be mediated via its influence on intrinsic connectivity. **Objectives:** To characterize the effects of GAHT on patterns of intrinsic connectivity of the default mode network (DMN) and salience network (SN). **Patients and methods:** A prospective study of transgender individuals receiving GAHT was conducted. Participants were scanned using functional magnetic imaging (fMRI) at rest at two timepoints: baseline, and 6 months after GAHT. Data were preprocessed using fmriprep, and whole brain connectomes generated for each participant. Regions of interest (ROI) were generated for key nodes anchoring DMN and SN, the posterior cingulate cortex (PCC) and the dorsal anterior insula (dAI). Maps of average connectivity were generated for each participant. Baseline and 6-month connectivity maps were then compared, generating a single group level map of significant differences between timepoints for each seed at $p < 0.05$, uncorrected. **Results:** 14 transgender individuals receiving GAHT (estradiol/spironolactone n = 7, testosterone n = 7), mean age 26.63 ± 5.27 years were enrolled. Six months of testosterone treatment led to a reduction in connectivity to the PCC seed in DMN nodes including the precuneus, superior frontal gyrus, and parahippocampal gyrus/hippocampus and to the dAI seed in salience network nodes including amygdala, insula, and anterior cingulate cortex. Estradiol increased connectivity after 6 months of treatment to the PCC seed in one DMN node, the precuneus. Six months of estradiol treatment reduced connectivity from the dAI seed to two salience network nodes, the mid-cingulate cortex and the orbitofrontal cortex. **Conclusions:** Our findings indicate that GAHT can alter patterns of intrinsic connectivity within brain networks. While testosterone treatment reduced connectivity in both salience and default mode networks, estradiol treatment increased connectivity in one node of DMN. This study sheds light on the brain's remarkable ability to adapt and change in response to cross-sex hormone therapy. A better understanding of GAHT effect on the brain could improve treatment regimens and minimize side effects. **Keywords:** gender-affirming hormone therapy; brain connectivity; transgender.

OBESIDADE

2262

PREVALENCE OF OVERWEIGHT AND OBESITY IN PUBLIC SCHOOL STUDENTS IN THE INTERIOR OF CEARÁ

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Introduction: The accumulation of body fat, influenced by genetic, behavioral and social factors, is an important risk factor for the health of the population, especially in children and adolescents, leading to an epidemic situation of obesity and overweight. As well as increasing the risk of chronic non-communicable diseases, it interferes with growth and final stature. In Ceará, for example, the overweight rate among adolescents is the highest in the Northeast. Thus, studies that assess the nutritional status of students are essential to support interventions, especially in schools, which have emerged as an important environment for consolidating habits. **Objectives:** To analyze the prevalence of overweight and obesity in elementary school II students in the municipal public network in the interior of Ceará. **Methods:** This is a cross-sectional study based on the collection of anthropometric data from eighth grade students, by randomly drawing classrooms in 2023. A BMI percentile of 4 to 84 was considered to be eutrophic, malnutrition ≤ 3, overweight 85 to 94 and obesity ≥ 95. **Results:** 48 adolescent students aged between 12 and 14 took part in this study, of whom 21 (43.75%) were female and 27 (56.25%) male. It was analyzed that 35 students (72.9%) were normal weight, 5 (10.4%) were obese, 6 (12.5%) were overweight and 2 (4.2%) were underweight. It was also observed that the average BMI percentile was 59.6 and that overweight was prevalent in males (63.6%). **Conclusion:** This study found that although the majority had an adequate nutritional status, around 22.9% were overweight (overweight and obese), reflecting a national trend. The findings suggest the importance of developing educational programs and interventions focused on the prevention and treatment of these conditions, as well as reinforcing physical activity practices and food education in schools to tackle these public health challenges. **Keywords:** overweight; obesity; students.

METABOLISMO ÓSSEO E MINERAL

2263

4D TOMOGRAPHY IN THE DIAGNOSTIC CHALLENGE OF PRIMARY HYPERPARATHYROIDISM IN A PATIENT WITH PSYCHIATRIC ILLNESS

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Case presentation: 47-year-old woman, admitted to the psychiatric sector of the hospital with severe depression associated with auditory hallucinations, psychomotor agitation, persecutory delirium, asthenia and food refusal. Previous diagnosis of major depression, schizophrenia and bipolar affective disorder. On admission physical examination she was catatonic, with active negativity, severe malnutrition, using a nasoenteric tube. Main tests: total calcium 14.5 mg/dL; ionic calcium 1.89 mmol/L; albumin 3.8 g/dL; phosphorus 2.6 mg/dL; magnesium 1.89 mg/dL; parathyroid hormone (PTH) 106.2 pg/mL; vitamin d 29.93 ng/mL; alkaline phosphatase 110 U/L; creatinine 0.8 mg/dL; confirming laboratory diagnosis of primary hyperparathyroidism (PHPT); kidney and urinary tract ultrasound with signs of bilateral nephrocalcinosis; cervical ultrasound, parathyroid scintigraphy and radiological inventory were unremarkable. Psychiatric treatment without clinical response and with worsening serum calcium and PTH levels, the patient underwent the first surgery with removal of 2 parathyroids, without improvement in the clinical and laboratory conditions. Cervical tomography was performed without changes. The affected parathyroid was identified only on cervical 4D tomography (4D CT), which showed a 1.0 cm nodulated image in the lower third of the right thyroid lobe, with a typical appearance of parathyroid adenoma. The patient underwent a second surgery to remove the affected gland; anatomopathological report confirmed parathyroid adenoma. The patient developed hypoparathyroidism and was treated with calcium and calcitriol. There was a clinical and laboratory improvement. **Discussion:** PHPT has been associated with melancholy, depression (the most common), anxiety, psychosis, cognitive impairment, memory loss and mental confusion. Other non-classic symptoms are weakness and fatigue due to neuromuscular involvement. When the indicated treatment is surgery, the location of the affected parathyroid increases the success of the treatment. 4D-CT has proven useful in cases where the affected parathyroid is not identified with other imaging tests like cervical ultrasound and parathyroid scintigraphy. **Final comments:** The non-specific symptoms of PHPT can be confusing and worsen an already existing psychiatric condition. The location of the affected parathyroid can be a challenge and delay treatment, worsening comorbidities and causing relevant limitations for the patient. **Keywords:** 4D tomography; primary hyperparathyroidism; psychiatric illness.

TIREOIDE

2264

EPIDEMIOLOGICAL PROFILE OF THE THYROID DISEASE OUTPATIENT CLINIC AT THE ENDOCRINOLOGY REFERENCE SERVICE IN THE STATE OF PARÁ

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Introduction: Thyroid diseases are highly prevalent in the population and can manifest clinically in varied and nonspecific ways. They are primarily described by hyperthyroidism, hypothyroidism, thyroid nodules, and thyroid cancer. Understanding the demographic profile of patients attending specialized thyroid disease clinics helps in better organizing services and managing patient flow. **Objective:** To investigate demographic aspects, thyroid disease diagnoses, consultations with other medical specialties, and follow-up times of patients seen at the Endocrinology and Metabolism Service of *Hospital João de Barros Barreto* (HUJBB) in Belém do Pará. **Methods:** A retrospective study was conducted, including 484 patients with thyroid diseases. Data were collected from electronic medical records available in the system to University Hospital Management (AGHU) from January 2021 to December 2022. We analyzed age, gender, thyroid disease diagnoses, consultations with other medical and multidisciplinary specialties, and follow-up time. Statistical analysis was performed using BioEstat version 5.0 and Jamovi version 2.3.26. The project was approved by the hospital's Human Research Ethics Committee. **Results:** The average age of patients was 54.8 years, with a predominance of females, representing 93% of the sample. Hypothyroidism was the most common diagnosis, affecting 31.8% of patients. Hyperthyroidism and thyroid nodules were also frequent diagnoses, observed in 27.1% and 28.1% of cases, respectively. Thyroid cancer was diagnosed in 13.0% of cases. Regarding thyroid disease and consultations with other specialties ($p < 0.05$), there were a total of 4,510 consultations across all specialties. Internal medicine was the most sought-after specialty (33.5%), followed by cardiology (27.5%) and nutrition (18.8%). Regarding follow-up time and thyroid disease ($p < 0.05$), thyroid cancer had an average follow-up of approximately 9 years, hypothyroidism 8 years, hyperthyroidism around 7 years, and toxic and non-toxic multinodular goiter were followed for 5 years. **Conclusion:** The study demonstrated that among patients seen at the endocrinology service of HUJBB during the study period, there was a significant association between thyroid diseases and the need for multidisciplinary follow-up, with a considerable duration of patient follow-up. **Keywords:** thyroid diseases; epidemiological profile; outpatient clinic.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2265

COMPARISON OF BRAIN'S INTRINSIC CONNECTIVITY BETWEEN CISGENDER AND TRANSGENDER INDIVIDUALS PRIOR TO HORMONE THERAPY

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Introduction: The human brain connectivity, which refers to the brain's default network connectivity patterns, plays a crucial role in understanding aspects of human behavior, cognition, and identity. There is a growing interest in the comparison of brain connectivity between cisgender and transgender individuals. Understanding the intrinsic connectivity of cisgender and transgender individuals can provide insights into the neurobiological underpinnings of gender identity. **Objectives:** To compare brain's intrinsic connectivity of the default mode network (DMN) and salience network (SN) between cisgender and transgender individuals prior to gender-affirming hormone therapy (GAHT) **Patients and methods:** A crossectional study of cisgender and transgender participants prior to GAHT was conducted. Participants were scanned using functional magnetic imaging at rest. Data were preprocessed using fmriprep, and whole brain connectomes generated for each participant. Regions of interest were generated for key nodes anchoring DMN and SN, the posterior cingulate cortex (PCC) and the dorsal anterior insula (dAI). Connectivity maps were generated for each participant. Scans of transgender were compared with cisgender participants assigned the same sex at birth (trans women *vs.* cis men and trans men *vs.* cis women). Baseline connectivity maps were then compared between groups for each seed ($p < 0.05$, uncorrected). **Results:** 18 cisgender (9 females) and 14 transgender individuals (7 trans women) were enrolled. The mean age was 25.72 ± 4.75 years for cisgender and 26.63 ± 5.27 years for transgender participants. Compared to trans women, cis men showed reduced connectivity from the PCC seed to some DMN nodes (superior frontal gyrus, medial prefrontal cortex, and hippocampal formation). Additionally, cis men showed reduced connectivity to a core SN node (ventral anterior insula). Compared to trans men, cis women showed greater connectivity from the dAI to some DMN nodes (precuneus, posterior cingulate, and medial prefrontal cortex). **Conclusions:** Our findings indicate some observed differences between transgender individuals prior to GAHT *vs.* cisgender participants. These differences could correlate with gender dysphoria experiences and how transgender individuals process emotions. These insights can contribute to better mental health support and targeted interventions for transgender individuals. Future research should continue to explore these differences with larger sample sizes. **Keywords:** transgender; cisgender; brain connectivity.

TIREOIDE

2266

THE USE OF ZOLEDRONIC ACID IN CASES OF THYROID CANCER: A CASE REPORT WITH LITERATURE REVIEW

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Introduction: Thyroid cancer is the most common malignant neoplasm of the endocrine system. Of all cases, 2% to 13% develop bone metastases. Therefore, studying the effectiveness of bisphosphonates, such as Zoledronic Acid (ZA), in treating these patients is of utmost importance. **Objective:** To report a case and conduct a literature review on a patient with thyroid cancer and bone metastasis, focusing on the effects of ZA as a therapeutic alternative. **Methods:** Case description with literature review of a patient undergoing treatment for thyroid cancer bone metastases at the Endocrinology and Metabolism Service of Hospital João de Barros Barreto. Articles were searched in PubMed, Embase, and SciELO databases. The study population included patients treated with ZA as a therapeutic alternative. **Case report:** L.F.S.A., 65 years old, diagnosed with follicular thyroid cancer, underwent total thyroidectomy. She subsequently developed bone metastasis and suffered a pathological fracture at T10, considered a skeletal-related event (SRE). ZA treatment was initiated to reduce bone resorption and the risk of further SREs. The patient reported symptom improvement and no new fractures occurred. **Results:** Several studies indicate that treatment of bone metastasis from differentiated thyroid cancer with ZA significantly reduces SREs. Recent case-control studies observed a 3-year survival rate without SREs of 86% with bisphosphonate use, compared to 50% in the control group. Additionally, there was a reduction in overall SREs and specifically in components such as pathological fractures (7.1 *vs.* 4.5%) and spinal compression (36 *vs.* 4.5%) among patients treated with ZA compared to the control group. **Conclusion:** The data suggest that Zoledronic Acid may be an effective option for treating symptomatic bone metastases in patients with differentiated thyroid cancer, significantly reducing the risk of SREs and pathological fractures, thereby improving their quality of life. However, randomized clinical trials are needed for further elucidation of this hypothesis. **Keywords:** thyroid cancer; bone metastasis; zoledronic acid.

METABOLISMO ÓSSEO E MINERAL

2267

GIANT CELL GRANULOMA ASSOCIATED WITH NOONAN SYNDROME CAUSED BY MUTATION IN SOS1 GENE

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A male patient presented with a history of bilateral mandibular and left maxillary enlargement since 10 years old. He noticed rapid growth in the early years followed by a slowdown and experienced compressive symptoms (orthopnea). He had neuropsychomotor development delay, underwent cardiac surgery at age of 2 due to pulmonary valve stenosis and orchidopexy at age 4. At the onset of follow-up at age 17, he presented with short stature (1.55 m; <3rd percentile), adequate weight (BMI 19 kg/m^2; 15th-50th percentile), bilateral mandibular and left maxillary deformity, webbed neck, pectus excavatum and low hairline. Serum levels of calcium, phosphorus, alkaline phosphatase, PTH, vitamin D and CTX were normal, but osteocalcin was increased (50.8 ng/mL; reference range: 7-28 ng/mL). Karyotype analysis showed normal results (46,XY). Molecular evaluation with a Noonan syndrome and RASopathies panel identified a heterozygous variant in the SOS1 gene; no pathogenic variants were detected in the SH3BP2 gene. Computed tomography of the face revealed multiple expansive osteolytic lesions with an insufflative, multiloculated appearance. In the maxillary region, the lesion occupied the entire maxillary sinus, causing elevation of the orbital floor and extending into the nasal cavity. Biopsy confirmed a central giant cell granuloma (CGCG). Due to worsening respiratory symptoms and ocular proptosis, surgical intervention was performed. Osteoplasty of the midface and nasal cavity resulted in clinical improvement. Histopathological examination confirmed CGCG. Current imaging shows partial resection of the lesion with progressive ossification of the mandibular portion and no apparent increase in size. Noonan syndrome, an autosomal dominant condition with multisystemic manifestations, results from mutations that amplify signal transduction in the RAS-MAPK pathway. SOS1 gene mutation, the second most common, is associated with a higher prevalence of pulmonary stenosis, ectodermal abnormalities, and uncommon neoplasms. In this case, we describe the development of CGCG, a benign intraosseous lesion typically characterized by slow, painless mandibular growth. Lesion size, cortical perforation and proportion of giant cells in histopathology are features indicating greater aggressiveness. Keywords: Noonan syndrome; SOS1 gene; central giant cell granuloma.

TIREOIDE

2268

INVASIVE PARATHYROID CARCINOMA AND PAPILLARY THYROID CARCINOMA: A RARE ASSOCIATION

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Parathyroid carcinoma (PC) accounts for 1% of all causes of primary hyperparathyroidism. Diagnostic suspicion often arises with the occurrence of severe hypercalcemia, fragility fractures and nephrolithiasis. PC is associated with other neoplasms, rarely with papillary thyroid carcinoma (PTC). Papillary carcinoma is the most common subtype of thyroid neoplasia, accounting for 80%-85%. We aim to report a case highlighting the rare association between PC and PTC. M.A.F., 51-year-old man, suffered a fracture of the left tibia after a car accident. Associated with the fracture, he presented an ipsilateral nodular lesion about 10 years ago, and the diagnosis of a brown tumor was confirmed by biopsy. On laboratory investigation, serum calcium = 17.6 mg/dL (RV 8.6-10.6) and PTH = 1,738 pg/mL (RV 15-65). Three-phase bone scintigraphy (SPECT/CT) demonstrated a nodule adjacent to the lower pole of the right thyroid lobe, suggesting parathyroid lesion. Furthermore, a radiotracer hyper concentration was seen in the axial and appendicular skeleton. The hypothesis of PC was made, and he underwent right lower parathyroidectomy with right lobectomy and central lymphadenectomy (level VI). The pathological examination confirmed the diagnosis of parathyroid carcinoma, measuring 3 x 2.6 x 2 cm, with areas of ischemic necrosis, a mitotic index of 4 atypical mitoses/10 CGA, venous vascular carcinomatous invasion and ipsilateral thyroid infiltration. Unexpectedly multifocal papillary thyroid carcinoma, classic and follicular subtypes, was detected, the largest measuring 0.5 x 0.3 cm, with lymph node metastasis (3/4). Awaiting completion of thyroidectomy. Clinical manifestations, when present, are due to hyperparathyroidism, making preoperative diagnostic association between the two types of neoplasm difficult. There are currently no image assessment or specific biochemical markers that predict this association. Therefore, diagnostic suspicion, especially related to CP, must be carried out early in order to decide the best surgical approach for the patient. **Keywords:** thyroid; parathyroid; carcinoma.

METABOLISMO ÓSSEO E MINERAL

2269

NON-PARATHYROID HYPERCALCEMIA SECONDARY TO GRANULOMATOUS DISEASE CAUSED BY MINERAL OIL INJECTIONS: A CASE REPORT

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A 42-year-old man presented with chronic fatigue, myalgia, recurrent urinary infections and hematuria was admitted to a tertiary hospital for investigation. In laboratory tests he had a serum calcium of 11.7 mg/dL, PTH of 8.54 pg/mL, 25-hydroxyvitamin D 21.9 ng/mL (LLN 20), 1,25-dihydroxyvitamin D of 86.3 pg/mL (ULN 79), phosphorus of 5.0 mg/dL and increased creatinine (5,11) and urea (127). He had a past history of anabolic steroid use for cosmetic purpose. He also injected mineral oil into muscles, including the forearm, biceps, trapezius, chest, quadriceps and calves. On physical examination, he presented bulging in areas where mineral oil had been applied, with the impression that they represented calcified skin nodules in some of the regions; in the others, he presented movable, non-hardened bulging. He performed USG of the kidneys and urinary tract, with nephrocalcinosis and findings suggestive of chronic kidney disease, in addition a bladder lithiasis, with a stone measuring approximately 3 cm. Due to chronic kidney disease, patient underwent renal replacement therapy. In view of non-parathyroid hypercalcemia with increased calcitriol levels, the hypothesis of granulomatous disease secondary to mineral oil implants was raised. The patient was treated with prednisone 40 mg/day. Two and a half weeks later, calcium levels were within normal limits (9.3) and he was discharged from hospital, using prednisone, undergoing renal replacement therapy, for outpatient follow-up. **Keywords:** non-parathyroid hypercalcemia; granulomatous disease; mineral oil injections.

ENDOCRINOLOGIA BÁSICA

2270

TELOGEN EFFLUVIUM AS A RESULT OF SEMAGLUTIDE WITHOUT MONITORING: CASE REPORT

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Telogen effluvium is the condition in which there is excessive hair loss due to premature interruption of the anagen phase – responsible for growth – and consequently the precocious inflow of an accentuated proportion of strands in the telogenic phase – in which the strand of hair is naturally eliminated. This condition can be triggered by a variety of factors, including sudden weight loss, physiologic stress, hormonal changes, nutritional deficiencies or the use of certain medications. Semaglutide, an analogue of the GLP-1 receptor, is widely used in the treatment of type 2 diabetes mellitus – without need of prescription for its acquisition, having its access and popularity have disseminated recently. This paper reports the case of a 23-year-old, female patient that developed acute telogen effluvium associated to the off-label use of semaglutide – not having diabetes mellitus, with the sole aim of losing weight, without doctor supervision or physical activity during the period. Main complaint of exacerbated hair loss for 3 months (normal: loss of 100 strands/day; in the patient's case approximately 600 strands/day) – factor which, investigated through trichoscopy, confirmed the growth of new strands – despite accentuated loss and anisotrychia – differentiating this case from an androgenic alopecia. The case report aims to emphasize the importance of a holistic approach integrated to the administration and management of adverse reactions of semaglutide – based on nutritional control and physical activities while considering physiologic factors and mental health which can be crucial in the prevention and treatment. Finally, the report reinforces the eminence of medical supervision to prevent and adequately treat susceptible adverse reactions such as telogen effluvium. **Keywords:** telogen effluvium; semaglutide; over-the-counter medicine.

DIABETES MELLITUS

2273

EVALUATING THE IMPACT OF THE COVID-19 PANDEMIC ON PANCREAS TRANSPLANT RATES: A COMPARATIVE ANALYSIS OF PRE-PANDEMIC AND PANDEMIC PERIODS

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Introduction: On March 11, 2020, COVID-19 was characterized by the WHO as a pandemic, profoundly affecting global healthcare systems, including the transplant sector. Pancreas transplantation, which involves the surgical replacement of pancreatic beta cells, is a reliable therapy for achieving euglycemia and is generally indicated for patients with type 1 diabetes mellitus, uncontrolled diabetes, and pancreatitis. **Objective:** To analyze and evaluate if there was a change in the rate of pancreas transplants and the pancreas transplant waiting list during the pandemic. **Methods:** A study was conducted using data from the Brazilian Transplant Registry (RBT), covering the years preceding the pandemic, 2018 and 2019, and two years during the pandemic, 2020 and 2021. This analysis focused on how this period affected the total pancreas transplant rate, as well as how the waiting list and the mortality rate of the waiting list were impacted. **Results:** In the years 2018 and 2019, preceding the pandemic, an increase from 147 to 176 (19.72%) pancreas transplants was observed. In the first year of the pandemic, 2020, there was a reduction from 176 to 145 (17.61%) in total transplants compared to the last pre-pandemic year. In 2021, there was a smaller reduction from 176 to 161 (8.52%). Regarding the waiting list, a decrease from 434 to 401 (7.60%) was observed from 2018 to 2019. In the first year of the pandemic, 2020, the waiting list saw a 32.16% reduction compared to 2019, with 272 patients. In 2021, there were 301 patients, a 24.93% reduction compared to 2019. Among the patients who joined the waiting list, the mortality rate was as follows: 2018: 13.24% (31 deaths), 2019: 28.77% (80 deaths), 2020: 39.13% (72 deaths), and 2021: 30.23% (114 deaths). **Conclusion:** During the pandemic, there was a significant reduction in the number of pancreas transplants. The waiting list saw a reduction in the first two years of the pandemic, reflecting a significant increase in the mortality rate among patients on the waiting list. Despite the higher number of deaths during the pandemic and a higher rate of potential donor notifications, the number of effective donors decreased, as transplants were highly contraindicated during the pandemic due to the unknown risk of transmission, especially at the beginning. **Keywords:** COVID-19 pandemic; diabetes mellitus, type 1; pancreas transplantation.

TIREOIDE

2275

PAPILLARY THYROID MICROCARCINOMA ASSOCIATED WITH MARINE-LENHART SYNDROME

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A 49-year-old female patient with toxic multinodular goiter for 20 years, using tapazole, was admitted to the emergency with severe chest pain, cough, tachypnea, palpitations and pain in the cervical region, without fever. Electrocardiogram showed Atrial Fibrillation and chest X-ray showing pneumonia and right pleural effusion. The thyroid was diffusely enlarged, with a hardened consistency, painless and without palpable nodules, mobile on swallowing, a negative Pemberton maneuver, and mild exophthalmos (CAS 0). During hospitalization, thyroid function was measured, with TSH < 0.01, FT4 548 and T3 > 7.7, and treatment with methimazole and beta-blocker was initiated. In outpatient follow-up, thyroid ultrasound was performed, with goiter (69.5 cm^3), thyroiditis and isoechoic nodular image in the left lobe (3.1 x 2.9 cm). Thyroid scintigraphy revealed a topical gland with preserved morphology and increased dimensions, with diffuse hyperuptake of the radioisotope, and positive TRAB, suggesting a concomitant diagnosis of Graves' disease (GD) and toxic nodular goiter (TNG), the Marine-Lenhart syndrome (MLS). Due the maintenance of thyroid dysfunction (TSH 0.01 FT4 4.5) and a progressive increase in the size of the gland, with compressive symptoms, the patient was referred for total thyroidectomy. The anatomopathological showed papillary thyroid carcinoma (PTC) (pT1a) and complementary treatment with radioiodine was not indicated, since this is a disease with a low risk of recurrence. Reported cases of MLS are few. Although patients with GD are more likely to have thyroid nodules, the association is greater with non-functioning nodules. In MLS, thyroid function is controlled with antithyroid drugs and there are not enough studies to determine the treatment with the best efficacy. However, patients usually respond well to radioiodine therapy or partial or total thyroidectomy. In the case described, in addition to MSL, the patient was associated with PTC, a case with little description in the literature. One review reported a 3.1% prevalence of carcinoma in hyperfunctioning nodules of patients undergoing thyroidectomy. However, there is still no evidence that patients with GD have a higher incidence of thyroid cancer compared to the general population. The MLS is rare in the literature and thyroid cancer should be investigated in these patients in a manner similar to the investigation in the general population. **Keywords:** Graves disease; Marine-Lenhart syndrome; papillary thyroid carcinoma.

METABOLISMO ÓSSEO E MINERAL

2276

ACUTE RENAL FAILURE RELATED TO VITAMIN D INTOXICATION – A CASE REPORT

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This is a case report of a patient who was admitted to emergency with a previous diagnosis of rheumatoid arthritis, presenting with weight loss, anorexia, nausea, and vomiting, coinciding with the use of a formulated medication, "ozonotherapy," and "neural therapy." Due to polyarthritis, she sought outpatient care with a Rheumatologist, who identified renal dysfunction (Ur 84.6 mg/dL and Cr 3 mg/dL) and referred the patient to the Emergency Unit. During hospitalization, hypercalcemia were observed, treated with intravenous hydration and bisphosphonates. Further investigation revealed low PTH (11.3 pg/) and 25-OH-vitamin D > 320 ng/mL, suggesting Vitamin D intoxication. After diagnosis, the patient reported using compounded Vitamin D (Vitamin D 200.000 IU). She showed progressive improvement in renal function and hypercalcemia and was discharged after clinical and laboratory improvement, with outpatient follow-up scheduled with an Endocrinologist and Rheumatologist. Vitamin D is an important fat-soluble hormone in bone metabolism and serum calcium control. Screening and treatment should be conducted in populations at risk for bone disease, such as those with hyperparathyroidism and rheumatologic diseases. Prescription should be cautious due to potential adverse effects of excessive Vitamin D levels, such as hypercalcemia and acute renal dysfunction. However, despite the risk of Vitamin D intoxication, its indiscriminate use has been associated with promises of improved quality of life. At admission, there were confounders for diagnosis. The patient had a previous diagnosis of hemoglobinopathy presenting as anemia. Anemia, hypercalcemia, renal dysfunction, weight loss, and polyarticular pain, led us to think about the diagnosis of multiple myeloma, which investigation includes serum protein electrophoresis and immunofixation, and, in our patient, these tests did not show monoclonal peaks. For causes of hypercalcemia with low PTH, granulomatous diseases were considered. The absence of other suggestive symptoms for this group of diseases and the test result of 25-OH-Vit D > 320 ng/mL revealed the intoxication. This case shows the importance of maintaining clear communication between physician and patient regarding prescribed medications, clarifying dosage, schedule, risks, and benefits of the medication. Healthcare providers involved in compounding medications need to understand the consequences of vitamin D overdoses. **Keywords:** vitamin D intoxication; calcium; renal dysfunction.

NEUROENDOCRINOLOGIA

2277

CHEK2 MUTATION IN A PATIENT WITH PHEOCHROMOCYTOMA AND BREAST CANCER: CASE REPORT

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Case presentation: Previously healthy woman diagnosed with left breast neoplasm, luminal B subtype, at 30 years old. Treated with chemotherapy, quadrantectomy with axillary dissection in January 2022 and radiotherapy. In addition to being diagnosed with breast cancer at a young age, the patient also had a family history of colon cancer in her father and paternal grandfather, as well as a history of breast cancer in her great-aunt, great-grandmother and maternal aunt, the latter being diagnosed before of 30 years. A genetic panel was requested, which showed a probably pathogenic CHEK2 mutation. Subsequently, the presence of such mutation in his father's genetic panel was also demonstrated. During follow-up, she was diagnosed with pheochromocytoma due to an incidental finding of a lesion in the left adrenal gland (4.6 cm) and evidence of elevated serum and urinary metanephrines and normetanephrines. Patient without symptoms suggestive of the condition, reporting, subsequently, only intermittent blood pressure spikes. She underwent left adrenalectomy in September 2022 after adequate preparation, without major surgical complications. Pathology and immunohistochemistry confirmed the diagnosis of pheochromocytoma. Bilateral salpingo-oophorectomy, aiming to block ovulation, and hysterectomy are also indicated due to the increased risk of endometrial cancer secondary to the use of selective estrogen response modulators. **Discussion:** The CHEK2 gene encodes checkpoint kinase 2, associated with the repair of deoxyribonucleic acid damage, cell cycle regulation and apoptosis. The transmission associated with the variants is autosomal dominant, with incomplete penetrance, leading to a greater risk of various types of cancer throughout life, and the risk may vary according to the identified variant and family history. Among these, the risk of breast cancer stands out, but is also associated with the risk of colorectal, prostate, thyroid cancer, among others. Around 40% of patients with pheochromocytomas or paragangliomas present germline mutations, with studies suggesting increased susceptibility also with mutations in the CHEK2 gene, in addition to case reports that reinforce this association. **Final comments:** At least 20 different susceptibility genes for pheochromocytoma/paraganglioma have been reported in the literature. There are few reports of association with the CHEK2 mutation. The case described alerts the scientific community to this new relation. **Keywords:** pheochromocytoma; checkpoint kinase 2; germ-line mutation.

DIABETES MELLITUS

2278

EFFECT OF USE OF METFORMIN OR DPP-4 INHIBITOR AS INITIAL THERAPY FOR THE TREATMENT OF PEOPLE WITH DRUG-NAÏVE TYPE 2 DIABETES MELLITUS

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The initial treatment of type 2 diabetes mellitus (DM2) has been controversy. Currently, most countries recommend metformin as the drug of first choice due to its high efficacy, safety, low cost and reduced risk of hypoglycemia. However, countries such as Japan adopt DPP-4 inhibitors (iDPP-4) as the drug of first choice in non-obese T2DM patients. The objective of the study was to evaluate the effectiveness of iDPP-4 in our population compared to metformin in glycemic control in patients with newly diagnosed DM2. Two prospective clinical trials were carried out in newly diagnosed and drug-naïve DM2 patients, who were treated with monotherapy with iDPP-4 or metformin for 12 weeks. The first study was a randomized, controlled, double-blind study in which patients received only iDPP-4 (evogliptin or sitagliptin, n = 61). The second was prospective, non-randomized using only metformin (n = 89). Both the metformin group and the iDPP-4 group showed an effective and similar reduction in glycemic levels assessed by HbA1c (1.1% *vs.* 1.4%, NS, respectively). Additionally, the groups showed similar efficacy in achieving the glycemic target (HbA1c < 7%) (iDPP-4 group 19/42 (31%) and metformin group 23/45 (34%) p = NS). A ROC (Receiver Operating Characteristic) curve was performed to evaluate whether pre-treatment HbA1c levels could be used as predictors to establish which patients at diagnosis would be able to achieve the glycemic target after treatment with monotherapy with metformin or iDPP-4. This was significant only with iDPP-4 (AUC = 0.75; CI = 0.63-0.88; p = 0.0017) showing sensitivity 53% and specificity 76% for a cutoff value of 8.6% in HbA1c. This is the first randomized, controlled, double-blind study in drug-naïve patients with DM2 to demonstrate that monotherapy with iDPP-4 led to a 1.4% glycemic reduction in HbA1c levels, particularly in the Brazilian population in the Amazon region. There was similar efficacy in glycemic control between iDPP-4 and metformin. Although HbA1c levels at diagnosis can be considered in the decision to start treatment with monotherapy or double drug therapy, these should not be considered in isolation but rather in conjunction with the inherent aspects of each individual, defining the approach to these patients as individualized. **Keywords:** metformin; DPP-4 inhibitor; type 2 diabetes mellitus.

DIABETES MELLITUS

2279

VITAMIN D, QUALITY OF LIFE AND HIGH RISK OF DEPRESSION IN INDIVIDUALS WITH TYPE 2 DIABETES MELLITUS AND DIABETIC KIDNEY DISEASE: A CROSS-SECTIONAL STUDY

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Clinical Depression is highly prevalent in patients living with diabetic kidney disease (DKD) and diabetes mellitus 2 (DM2) and is related to high morbidity and mortality, in addition, Health-Related Quality of Life (HRQoL) is also potentially impacted in these patients. Vitamin D (VD) deficiency has been associated with depression and worse HRQoL in patients with DRD. This study aimed to investigate the association between vitamin D levels, HRQOL and depression in patients with DRD who are not receiving dialysis treatment. To this end, this was a cross-sectional study, which included 51 patients with DM2 and DKD, not on dialysis and with severely elevated albuminuria. To measure depressive symptoms (SD), the Beck Depression Inventory (BDI) was used and HRQoL was analyzed using the EQ-5D-5L instrument. Additionally, the Glomerular Filtration Rate estimate was calculated by CKD-EPI Refit. The prevalence of depression was 46.9% and was strongly associated with quality of life levels assessed by the EQ-5D. Impacting both domains and utility indices (Domain "Pain and discomfort" 0.7 ± 0.8 *vs.* 1.1 ± 0.8, $p < 0.05$; Utility index "United States" 0.89 [[0.78-1] *vs.* 0.71 [0.60-0.84], $p < 0.05$). Worse quality of life was even associated with the severity of depression. With regard to DV, it directly impacted HRQoL, but no direct association was found between DV and depression. Models with simple logistic regression showed that patients with peripheral neuropathy (PN) had a six times greater risk of experiencing depression (OR 6.56, $R^2 = 0.12$, $p < 0.05$). Additionally, the duration of DM2 was also important, with each year of illness increasing the risk of depression by 12% (OR 1.135, $R^2 = 0.18$, $p < 0.05$). The data suggested that depression has a high prevalence in patients with T2DM and DKD and is strongly associated with low levels of HRQoL. DV impacted quality of life, but was not directly associated with the prevalence and severity of depression. **Keywords:** diabetic kidney disease; vitamin D; depressive symptoms.

DIABETES MELLITUS

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VITAMIN D AND CHRONIC KIDNEY DISEASE IN TYPE 2 DIABETES MELLITUS

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Diabetic kidney disease (DKD) is one of the microvascular complications of type 2 diabetes mellitus (DM2), which affects up to 40% of patients with diabetes mellitus (DM), leading to increased morbidity and mortality in these patients. In last few years, studies have demonstrated that vitamin D (VD) has an important role to do with DM, and reduced levels of VD may be associated with DM complications. The aim of this study was to evaluate the association between vitamin D levels and kidney function in patients with DM2 and DKD with severely elevated albuminuria. A cross-sectional study was conducted with 51 patients with DM2 and DKD with severely increased albuminuria (>300 mg/g). The results demonstrated an association between reduced levels of VD and increased albuminuria excretion in patients with DM2 and DKD. Higher levels of albuminuria were associated with decreased levels of vitamin D. However, this particularly only occurred when 25(OH)D levels were below 20 ng/mL. Which is considered a deficiency according either to the Institute of Medicine or the Endocrine Society. Vitamin D levels distributed according to tertiles of albuminuria on a logarithmic basis demonstrated a clear and inverse association between 25(OH)D levels and excretion of albumin in urine. Therefore, the vitamin D level was below normal, i.e. <20 ng/mL, in a patient with the highest tertile of albumin excretion in the urine (T3; 2.84 - 3.68). Additionally, our regression data showed that, in those patients, each unit of increase in vitamin D values inferred a reduction of around 38.3 mg/g of albuminuria. Our study suggests that high vitamin D levels would be associated with improved kidney function by reducing albuminuria levels in DM2 and DKD patients with severely elevated albuminuria. **Keywords:** vitamin D; type 2 diabetes mellitus; chronic kidney disease.

ADRENAL E HIPERTENSÃO

2281

CARNEY COMPLEX – A RARE CAUSE OF CUSHING'S SYNDROME

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Case presentation: Male patient initially attended the endocrinology outpatient clinic for investigation of headache and weight gain. He showed progressive worsening over the subsequent 10 years, evolving with anasarca, hypertension, centripetal obesity with violaceous striae, psychosis, and mental confusion. Laboratory investigation confirmed ACTH-independent hypercortisolism, and an abdominal CT scan demonstrated bilateral nodules. A preoperative transthoracic echocardiogram identified a lesion suggestive of atrial cardiac myxoma. Suspecting Carney complex, the patient underwent genetic testing for a PRKAR1A gene mutation, which confirmed the diagnostic hypothesis. Surgical resection of the cardiac myxoma and subsequent bilateral adrenalectomy were then performed. The patient evolved without complications, with resolution of hypercortisolism symptoms. He is currently in outpatient follow-up with regular use of fludrocortisone and prednisone. **Discussion:** Carney complex is a genetic disease caused by mutations in the PRKAR1A gene, activating protein kinase A. It is inherited in an autosomal dominant manner, but 27% of cases do not present this specific mutation. Manifestations include ACTH-independent hypercortisolism, lentiginosis, cutaneous and cardiac myxomas, testicular tumors, schwannomas, gynecomastia, ovarian cysts, acromegaly, and thyroid tumors. Diagnosis requires two major clinical criteria or one major criterion with a positive family history or PRKAR1A mutation. Follow-up includes annual echocardiogram, testicular and thyroid ultrasound, hormonal exams, bone densitometry, and mammography. **Final comments:** A multidisciplinary approach and early surgical treatment are essential for the effective management of Carney complex, resulting in significant improvement of symptoms and quality of life for the patient. Continuity of regular follow-up is crucial to monitor for possible recurrences and new manifestations of the disease. **Keywords:** Carney complex; Cushing's syndrome; atrial myxoma.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2283

HOT FLASHES IN TRANSGENDER MAN DESPITE TESTOSTERONE USE: CASE REPORT

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Case report: A 50-year-old transgender man, undergoing gender affirmation hormonal therapy since 2016, complains of daily episodes of hot flashes without sweating, associated with irritability, occurring 4 to 5 times a day, mostly in the afternoon and at night, lasting a few minutes each time and impacting daily activities. He attributes the onset of symptoms to starting Testosterone Cypionate 200 mg in 2016, with significant worsening after gender affirmation surgery in 2019 (hysterectomy and bilateral oophorectomy). Currently, he is using Testosterone Undecanoate 250 mg every 3 months, maintaining a total serum testosterone level of 744 ng/dL. He also has comorbidities of grade 1 obesity (BMI 30.1) and anxiety disorder, treated with citalopram 40 mg and levomepromazine 50 mg. **Discussion:** Hot flashes are subjective sensations of heat that may be associated with irritability, palpitations, and anxiety. It is estimated that over 80% of cisgender women experience hot flashes during menopausal transition, impacting their quality of life. In the reported patient, there was a significant worsening of symptoms after bilateral oophorectomy. Abrupt cessation of ovarian function due to oophorectomy in cisgender women is associated with vasomotor symptoms. In transgender men, oophorectomy is part of the therapeutic arsenal for gender affirmation surgery. Regarding the decision to retain or remove ovaries in the context of chronic testosterone therapy, long-term implications data are limited. Some studies suggest that estradiol levels may be higher in individuals choosing ovarian retention, but this has not been clearly demonstrated, nor described the impact on the evolution of vasomotor symptoms. Literature on treating hot flashes in transgender men is scarce. There is a case report of severe hot flashes in a transgender man after oophorectomy. In such a case, increasing the testosterone dose was attempted, as studies show higher levels of estradiol in men using injectable testosterone. However, complete resolution of hot flashes only occurred after adding transdermal estradiol 0.0375 mg twice a week to testosterone therapy. **Conclusion:** Hot flashes can occur in transgender men despite testosterone use and should be assessed during follow-up visits. Further studies are needed to guide treatment of these symptoms, which significantly impact quality of life. **Keywords:** transgender; hot flashes; testosterone.

METABOLISMO ÓSSEO E MINERAL

2284

CLINICAL CHARACTERISTICS OF PATIENTS PRESENTING WITH PRIMARY HYPERPARATHYROIDISM AND FRACTURES: A SERIES OF CASES

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Introduction: Primary hyperparathyroidism is defined as inappropriate hypersecretion of parathyroid hormone (PTH) resulting in disturbances in calcium and phosphorus homeostasis and associated complications, including worsening of bone mineral density. The associated bone loss represents a significant risk to fractures, which significantly impacts ones quality of life and life expectancy. **Objective:** Describe a series of patients followed at an endocrinology reference center with hyperparathyroidism and radiologically evident fractures, focusing on characteristics that may have contributed to the development these events. **Patients and methods:** Analysis of a sample of patients followed-up at an outpatient clinic specialized in bone metabolism in an endocrinology reference center with previous diagnosis of hyperparathyroidism. Retrospective analysis of physical and digital medical records was performed to retrieve information regarding demographic data, medical history, laboratory and imaging studies. **Results:** Out of a sample of 45 patients followed for hyperparathyroidism, 11 individuals with previous fractures were identified. All of them were female, aged 69.9 on average. A total of 6 patients (54%) undergone surgical treatment for primary hyperparathyroidism. Out of the 11 observed fractures, 7 were vertebral fractures found on periodical radiographies (1 of which followed an episode of fall), 1 traumatic femoral fracture and 1 wrist fracture. One patient had both femoral and vertebral fractures, and another one had a fracture related to a brown tumour. Seven (63%) presented evidence of lumbar spine osteoporosis on DXA scan, 4 (36%) demonstrated osteoporosis of the femoral neck and 2 of total femur. The highest calcium levels ranged from 8.5 to 16 mg/dL, with average 25-OH-vitamin D levels of 34. Five patients performed 24-hour urinary calcium testing, with an average result of 3.15 mg/kg/day. None of these patients presented evidence of renal impairment, with one patient with ultrasonographic evidence of renal stones which did not require surgical intervention. **Conclusion:** Hyperparathyroidism is a disorder of bone metabolism frequently associated with poor bone health and bone fractures. This study demonstrated a proportion of exclusively women, with mostly spinal fractures diagnosed radiologically. Most patients presented evidence of osteoporosis on DXA scan, and no significant evidence of renal impairment related to the diagnosis of hyperparathyroidism. **Keywords:** hyperparathyroidism; bone fractures; bone metabolism.

TIREOIDE

2285

ANALYSIS OF THE CORRELATION BETWEEN THYROID HORMONE LEVELS AND SERUM LIPID LEVELS

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Introduction: Thyroid hormones (TH), such as thyroxine (T4) and triiodothyronine (T3), act in homeostasis, regulating lipid profile and acting on the hepatic metabolism of these molecules. Dyslipidemia acts as a risk factor for cardiovascular diseases, therefore, the analysis of the thyroid hormonal profile can be correlated with lipid levels, making possible the development of specific therapies and preventive mechanisms. **Objective:** To describe the correlation between TH levels and serum lipid levels. **Methods:** This is a systematic review following PRISMA guidelines, through the PubMed platform, using as descriptors: "Thyroid" AND "lipid metabolism" OR "lipid levels", Randomized clinical trials and observational studies, published in the last 10 years, in English or Portuguese. Incomplete studies, and those that restricted the population sample to non-adult individuals were excluded. The search returned 139 publications, which, after analysis on the Rayyan platform, by blinding the evaluators, and using the criteria, resulted in the selection of 14 studies. **Results:** The studies revealed serum T3 levels to be negatively correlated with serum HDL-c levels, which are positively related to T4 levels. Free T4 levels were negatively correlated with triglycerides (TG), total cholesterol (TC) and LDL-c levels. Patients with glomerulonephritis, who presented a reduction in T3 levels had a significant increase in TC, TG and LDL, corroborating a negative correlation between these parameters. Adult individuals who had regression of dyslipidemia without the use of medication had high serum levels of T4, which functioned as a predictor of this reversal. Regarding hormone replacement therapies, patients with subclinical hypothyroidism (SCH) treated with levothyroxine (LT4) had a reduction in TC, LDL and HDL levels, without significant changes in TG. Similar data were observed when using supra-physiological dosages of LT4. **Conclusion:** Significant correlations were evidenced between TH levels and lipid profile. In addition, hormone replacement therapies significantly influenced serum lipid levels. Therapeutic approaches involving the endocrine axis and dyslipidemia can influence the outcome of cardiovascular diseases. **Keywords:** dyslipidemias; endocrinology; thyroid.

OBESIDADE

2286

THE DAILY SUPPLEMENTATION OF COLECALCIFEROL IS MORE EFFECTIVE IN REDUCING PARATHYROID HORMONE LEVELS IN BARIATRIC PATIENTS: A RANDOMIZED TRIAL

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Introduction: Bariatric surgery can significantly affect vitamin D absorption. Post-surgery, vitamin D deficiency prevalence increases (up to 50%). Numerous studies have highlighted that 25-hydroxy-vitamin D_3 ($25(OH)D_3$) levels below 20 ng/mL adversely impact bone metabolism, leading to long-term complications such as osteoporosis and hyperparathyroidism. Despite this, consensus remains elusive regarding the optimal cholecalciferol supplementation regimen for bariatric patients. **Objectives:** To compare two different strategies for vitamin D intake, daily or weekly, in terms of serum levels of $25(OH)D_3$ and parathyroid hormone (PTH). **Methods:** A 1:1 randomized clinical trial that included 42 stable-weight patients who had undergone bariatric surgery. Participants were randomly assigned to ingest either 21,000 UI of cholecalciferol weekly or 3,000 IU daily. The follow-up period was 6 months, with a crossover at 3 months to account for seasonal variations in solar exposure. Serum levels of $25(OH)D_3$ and PTH were assessed at baseline, 3 months and 6 months. Linear mixed models were employed for repeated measures, considering the hierarchical stratification of variables and capturing individual random effects over time. A significance level of 5% was considered. **Results:** Twenty individuals in the weekly treatment group (SSD) and twenty-two in the daily treatment group (DDS) completed the study protocol. The groups were comparable in terms of age, weight, type of bariatric surgery and sex at baseline and during follow-up. The carryover effect was observed only for PTH, resulting in the exclusion of the analysis following the crossover for this outcome. The group-time interaction for $25(OH)D_3$ in the first period (3 months) and the second period (6 months) did not reach statistical significance ($p = 0.72$ at 3 months and $p = 0.82$ at 6 months, respectively). However, the group-time interaction for PTH showed statistical significance at 3 months ($p = 0.03$). Post hoc analysis revealed a reduction in mean PTH levels only in the daily vitamin D group (mean reduction of 8.0 ± 3.7 pg/mL in the daily group, $p = 0.03$, compared to an elevation of 4.3 ± 3.8 pg/mL in the weekly group, $p = 0.26$). **Conclusion:** Although the colecalciferol supplementation regimens did not differ significantly for $25(OH)D_3$ levels at 3 and 6 months, there was a reduction in PTH levels after 3 months specifically in the daily group. This favors daily supplementation as a means to reduce hyperparathyroidism. **Keywords:** bariatric surgery; obesity; colecalciferol.

OBESIDADE

2287

IMPACT OF METABOLIC PARAMETERS ON WEIGHT LOSS FOLLOWING BARIATRIC SURGERY: A RETROSPECTIVE STUDY

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Introduction: Bariatric surgery represents an effective intervention for treating patients with severe obesity. However, understanding how initial metabolic parameters relate to subsequent weight loss is crucial. **Methods:** Forty-two individuals who underwent bariatric surgery had their surgical and metabolic data collected retrospectively, covering the 30-day period before surgery. These data were compared with current parameters. The chosen level of statistical significance was 5%. **Results:** The average age was 51.0 ± 12.4 years, and the initial body mass index (BMI) was 40.1 ± 4.4 kg/cm². The majority were female (88%), and 74% underwent gastric bypass. Type II diabetes mellitus was present in 17% of the total sample, with a mean pre-surgery glycated hemoglobin (HbA1c) of 6.3 ± 1.1% and a triglycerides-to-HDL ratio of 3.1 ± 1.4 mg/dL. Post-bariatric surgery data (with a median surgical follow-up time of 37 months, ranging from 6 to 240 months) indicated significant improvements of metabolic parameters. Notably, glycated hemoglobin decreased to 5.3 ± 0.5% (mean difference of 0.9 ± 0.1%, $p < 0.01$), and the triglycerides-to-HDL ratio improved to 1.64 ± 0.82 mg/dL (mean difference of 1.2 ± 0.1 mg/dL, $p < 0.01$). There was no difference in average weight loss between diabetic and non-diabetic patients. In the multivariate regression analysis of metabolic variables related to weight loss, only the initial BMI had a significant impact on the weight loss range. This effect was adjusted for age, sex, and type of surgery (regression coefficient linked to the BMI variable showed a statistically significant outcome, $p = 0.01$). **Conclusions:** Bariatric surgery led to correction of metabolic parameters, and the initial BMI emerged as the primary factor associated with weight loss. These findings emphasize the importance of individualized assessment and ongoing metabolic monitoring after surgery. **Keywords:** obesity; bariatric surgery; metabolic parameters.

DIABETES MELLITUS
2288

EVALUATION OF THE SENSITIVITY AND SPECIFICITY OF DIAGNOSTIC TESTS FOR CARDIOVASCULAR AUTONOMIC NEUROPATHY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AND DIABETIC KIDNEY DISEASE

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Diabetes neuropathies (DN) are among the most common chronic complications of diabetes mellitus (DM), affecting more than 50% of patients. Among the DN, Cardiovascular Autonomic Neuropathy (CAN) is one of the most important implications of DM, as its presence is associated with a worsening in the prognosis of patients' quality of life, especially when associated with diabetes kidney disease (DKD). The aim is to evaluate the sensitivity and specificity of the parameters of the NAC diagnostic tests in patients with DM2 and DKD with severely increased albuminuria. This is a cross-sectional, analytical study carried out on patients with DM2 and DKD with severely increased albuminuria. A total of 51 patients were recruited, of whom 48 underwent the NAC evaluation tests and 75% (n = 36) had their diagnosis confirmed. To assess the test parameters, the patients were divided into two groups (with and without NAC), and the variables VLF (Very Low Frequency), LF (Low Frequency) and SDNN (Standard Deviation of Normal RR intervals) were the ones that showed a difference between the groups ($p < 0.05$). In terms of sensitivity and specificity, VLF and LF were 100% specific, while SDNN had the best sensitivity (69.44%) and accuracy (68.75%). In addition, VLF and LF had a positive predictive value of 100%, while VLF had the best negative predictive value (77.42%). Regarding the cross-analysis of parameters, the association between VLF and LF achieved a sensitivity of 75.11% and specificity of 100%. The study allows us to propose the possibility of using only heart rate variability parameters to diagnose NAC, such as the association between VLF and LF, thus avoiding more uncomfortable and long-lasting maneuvers for patients. **Keywords:** type 2 diabetes mellitus; cardiovascular autonomic neuropathy; diagnostic tests.

DIABETES MELLITUS
2289

ASSOCIATION BETWEEN VITAMIN D AND LOSS OF NOCTURNAL BLOOD PRESSURE FALL IN PATIENTS WITH DM2 AND DIABETES KIDNEY DISEASE

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Vitamin D (VD) has been investigated as a possible agent of diabetes kidney disease (DKD) typical glomerular and excretory changes – a set of renal function abnormalities and structural damage resulting from diabetic complications, common in 20%-40% of individuals with diabetes mellitus (DM) and recurrently related to pressure changes. However, the hypothesis of the VD role in the pathophysiology of hemodynamic parameters in DKD, such as the loss of the physiological noctural blood pressure (BP) fall during sleep, called nocturnal dipping (ND) has not yet been demonstrated. The aim of this study was to evaluate the association between VD levels and ND in patients with DM2 and DKD with severely elevated albuminuria. A cross-sectional study was carried out on 47 patients of both sexes with DM2 and DKD with severely elevated albuminuria (>300 mg/g), between 2023 and 2024. The patients underwent Ambulatory Blood Pressure Monitoring, the findings of which allowed the calculated ND values to be obtained. Besides, the presence of Cardiovascular Autonomic Neuropathy (CAN) in these patients was evaluated, in order to further investigate the role of the autonomic nervous system (ANS) in the associations between VD and ND. There was an association between 25(OH)D levels and the 24-hour blood pressure rhythm, with a reduction in ND in line with the fall in VD levels (1.7 ± 7.8 *vs.* -6.2 ± 10.9; $p < 0.05$ and -6.2 ± 10.9 *vs.* 3.3 ± 8; $p < 0.05$). Additionally, lower VD levels were found in patients with reverse dipper (30.9 ± 7.6 *vs.* 26.7 ± 9.3; $p < 0.05$), which is a condition of increased nocturnal BP and strongly associated with strong cardiovascular risk. The presence of CAN was also related to reduced ND ($p < 0.01$), and lower VD serum levels were observed in patients diagnosed with CAN, compared to the group without this complication ($p < 0.05$). As we know, this is the first study to demonstrate an association between VD and ND levels in patients with DM2 and DKD with severely elevated albuminuria. More researchs are needed to determine the influence of vitamin D supplementation in patients of this group, as well as to better understand the mechanisms involved in this association. **Keywords:** type 2 diabetes mellitus; noctural blood pressure fall; vitamin D.

METABOLISMO ÓSSEO E MINERAL

2290

DENOSUMAB USE IN PEDIATRIC OSTEOGENESIS IMPERFECTA: A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS AND OBSERVATIONAL STUDIES

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Introduction: Bisphosphonates (BP) are commonly used to treat pediatric osteogenesis imperfecta (OI), but they may have long-term side effects since they bind to the bone for years. Denosumab, a monoclonal antibody that inhibits the interaction of RANK ligands with their receptor, inactivating osteoclasts, is used in the treatment of primary osteoporosis and is emerging as a new alternative for OI. Due to the complete degradation of the antibody after a few months, denosumab presents an intriguing alternative, yet data on its effectiveness in pediatric OI remain severely limited. **Objectives:** This systematic review aims to assess the efficacy and safety of denosumab in pediatric OI patients. **Methods:** We systematically searched PubMed, Scopus and the Cochrane Library for randomized controlled trials and controlled observational studies in pediatric patients taking denosumab, following the PRISMA protocol. The search strategy included the keywords "Denosumab", "RANK", and "Osteogenesis Imperfecta". Inclusion criteria were open-access studies on pediatric patients with OI treated with Denosumab, with no restrictions on language, time or country of publication. Exclusion criteria included studies with missing data or data derived from previous research. Article selection was performed independently by two reviewers. **Results:** We included 10 studies with a total of 91 patients. There was no improvement in patient mobility, nor did the medication affect children's growth. However, all studies showed an increase in bone mineral density (BMD) and its Z-score, with 16 fractures reported during the trials. Additionally, 16 episodes of rebound hypercalcemia were noted, linked to denosumab's rapid degradation. Mitigation strategies included calcium supplementation before administration and considering previous BP use. Transient hypercalcemia episodes might have been missed, as serum calcium levels were only monitored during injections. **Conclusion:** Denosumab effectively increased BMD and its Z-score, which may be crucial for reducing bone fragility, without negatively impacting growth or mobility in pediatric patients. However, hypercalcemia was a notable concern, emphasizing the need for vigilant monitoring. The rarity of OI was a limitation for our review, due to the small sample sizes of the included studies. Further research is essential to advance treatment options for OI by providing more data on the efficacy and safety of denosumab in pediatric populations. **Keywords:** denosumab; osteogenesis imperfecta; children.

OBESIDADE

2291

IRISIN ATTENUATES SARS-COV-2 ENTRY INTO CELLS AND CELL DAMAGE IN 2D AND 3D CULTURES OF HUMAN SUBCUTANEOUS ADIPOCYTES

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Introduction: COVID-19 has become known due to its inflammatory pathophysiological aspect. When in association with chronic diseases, such as obesity, it can trigger severe infections and impose increased death risk. Irisin, a hormone produced by skeletal muscle during constant physical activity, has demonstrated therapeutic effects against metabolic disorders. Because of its anti-inflammatory and antioxidant effects, there is great interest in investigating irisin's influence on the interaction between SARS-CoV-2 and host cells. **Objective:** To investigate the role of irisin in viral infection, oxidative stress levels, and cytotoxicity in 2D and 3D cell cultures of human subcutaneous adipocytes infected with a SARS-CoV-2 pseudovirus (PV). **Materials and methods:** Cells were cultivated in monolayers (2D) or 3D. Human subcutaneous preadipocytes were cultivated into mature adipocytes and were divided into four groups: Group 1: adipocytes with no treatment (G1); Group 2: adipocytes optimized for angiotensin-converting enzyme 2 (ACE2) expression (G2); Group 3: adipocytes optimized for ACE2 expression and then exposed to PV (ACE2+PV) (G3); and Group 4: adipocytes treated with 20nM irisin for 24h, optimized for ACE2 expression, and then exposed to PV (ACE2+I+PV) (G4). For all groups, cell cultures were evaluated concerning fluorescence levels of PV, ACE2, lactate dehydrogenase (LDH) activity to investigate cytotoxicity, and malondialdehyde (MDA) and protein carbonylation to access oxidative stress levels. **Results:** Irisin treatment significantly reduced PV capture levels by human subcutaneous adipocytes in 2D (G3, 48553 ± 62 *vs.* G4, 44745 ± 207) and 3D (G3, 50436 ± 41 *vs.* G4, 45433 ± 158). In addition, a reduction in cytotoxic levels was observed by reduced LDH release in 2D (G3, 110 ± 3,9 *vs.* G4, 86 ± 2,2) and 3D (G3, 113 ± 1,6 *vs.* G4, 89 ± 0,9). Irisin also reduced MDA in 2D (G3, 22307 ± 297 *vs.* G4, 16832 ± 99) and 3D (G3, 25675 ± 134 *vs.* G4, 20199 ± 149) conditions, along with reduced protein carbonylation levels in 2D (G3, 636,9 ± 14 *vs.* G4, 282,4 ± 11) and 3D (G3, 813 ± 15 *vs.* G4, 459 ± 15). **Conclusion:** The present investigation indicates irisin as a promising therapeutic target against COVID-19 pathophysiology since it decreases the virus entry into adipose cells. Irisin also reduces cytotoxicity and oxidative stress indicators. Further studies are mandatory to enable a more profound understanding of the involved mechanisms of action. **Keywords:** obesity; irisin; 3D culture.

DIABETES MELLITUS

2292

ASSOCIATION BETWEEN VITAMIN D AND BLOOD PRESSURE VARIABILITY IN PATIENTS WITH DIABETES MELLITUS TYPE 2 AND DIABETES KIDNEY DISEASE

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Blood pressure variability (BPV) is a quality of BP which, despite lacking guidelines that standardize normal levels, is related to the autonomic cardiovascular balance and has prognostic value for cardiovascular outcomes. The reduction in blood pressure (BP) fluctuations over the circadian cycle is observed in patients with diabetes kidney disease (DKD). Although increasing studies have investigated the role of vitamin D (VD) deficiency in the progression of type 2 diabetes mellitus (DM2) complications, the relation between VD and decrease in BPV in patients with DKD has not yet been contemplated. The aim of this study was to evaluate the possible association between levels of VD and BPV in patients with DM2 and DKD with severely elevated albuminuria. A cross-sectional study was carried out on 47 patients of both sexes with DM2, DKD and severely elevated albuminuria (>300 mg/g), between 2023 and 2024. The patients underwent Ambulatory Blood Pressure Monitoring, the findings of which allowed us to obtain BPV values according to the variables standard deviation (SD), variance, coefficient of variation (CV) and amplitude of BP and heart rate (HR). We found an association between 25(OH)D levels and BPV, so that lower values of SD, CV and variance of total diastolic BP ($p < 0.05$) and in wakefulness ($p < 0.05$) occurred at deficient levels of VD (<20 ng/dL). In the analysis of HR, a correlation was found between VD and SD and CV of total HR (SD: r: 0.425; $p < 0.01$ and CV: r: 0.459; $p < 0.01$) and in the sleep period (SD: r: 0.292; $p < 0.05$ and CV: r: 0.393; $p < 0.01$), as well as a difference in SD, CV and variance of HR in sleep between the VD sufficiency (>40 ng/dL) and deficiency (<20 ng/dL) groups ($p < 0.05$). As we know, this is the first study to demonstrate an association between VD levels and BP variability in DM2 and DKD patients with severely elevated albuminuria. More studies are needed to elucidate the mechanisms of VD influence in lack of BP physiological variations and to investigate the benefits of VD supplementation in patients of this group.
Keywords: type 2 diabetes mellitus; blood pressure variability; vitamin D.

ENDOCRINOLOGIA PEDIÁTRICA

2293

ASSOCIATION BETWEEN SOY CONSUMPTION AND CENTRAL EARLY PUBERTY IN BOYS: A CASE-CONTROL STUDY

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Central precocious puberty (CPP) is defined as premature activation of the hypothalamic-pituitary-gonadal axis associated with testicular growth in boys before the age of 9 years. This process can be stimulated by exogenous factors, such as phytoestrogens present in soy-based foods. The objective of this work was to evaluate the relationship between soy consumption and PPC in boys attended at a reference center. A case-control study was carried out, with a total of 56 boys divided into two groups: 15 patients diagnosed with CPP made up the case group and 41 patients without a diagnosis of CPP (with normal onset of puberty) formed the control group. When comparing the two groups, it was found that soy consumption was associated with an increased prevalence of PCP in boys (46.6% *vs.* 14.63%; $p < 0.05$). The PP group had a higher total soy intake during childhood ($p < 0.05$). The use of soy-based formula ($r = 0.33$; $p = 0.01$), as well as the daily amount of soy intake ($r = 0.27$; $p = 0.04$), were found to be a risk factor for CPP in boys. Exclusive breastfeeding (EBF) lasting more than 6 months was shown to be a possible protective factor in the development of CPP ($r = -0.42$; $p = 0.012$). Therefore, it is concluded that the use of soy is associated with CPP in boys and that the use of soy-based formulas and total soy intake proved to be risk factors for the development of idiopathic CPP. On the other hand, EBF for more than 6 months was identified as a protective factor. **Keywords:** central precocious puberty; soy consumption; boys.

ENDOCRINOLOGIA BÁSICA

2294

COMPARISON OF 2D *VERSUS* 3D CELL CULTURES IN HUMAN VISCERAL ADIPOCYTE LINES TREATED WITH IRISIN ON THE EFFECTS OF PSEUDO SARS-COV-2

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Introduction: Since the beginning of the COVID-19 pandemic, there has been a collective effort aimed at understanding the behavior of the SARS-CoV-2 virus and, thus, developing effective treatments. However, the literature on the relationship between the virus and the adipose tissue is scarce. Obesity is among the biggest negative prognostic factors given its chronic pro-inflammatory characteristic. Irisin, an endogenous myokine produced during physical exercise, can influence viral infection in obese individuals. Although monolayer (2D) cell culture studies are the standard for preclinical studies, three-dimensional (3D) culture is more similar to the *in vivo* environment, enabling the investigation and the development of new drugs which could mimic the repercussions of the various possible interactions more faithfully. The comparison of different techniques and methods of investigation enable the development of more reproducible studies. **Objective:** To compare 2D and 3D cell cultures of human visceral adipocyte lineage treated with irisin and infected by Pseudo SARS-CoV-2 (PV). **Materials and methods:** Cells were cultivated in 2D or 3D. Human visceral preadipocytes were cultivated into mature adipocytes and were divided into four groups: Group 1: adipocytes with no treatment (G1); Group 2: adipocytes optimized for angiotensin-converting enzyme 2 (ACE2) expression (G2); Group 3: adipocytes optimized for ACE2 expression and then exposed to PV (ACE2 +PV) (G3); and Group 4: adipocytes treated with 20 nM irisin for 24 h, optimized for ACE2 expression, and then exposed to PV (ACE2+I+PV) (G4). For all groups, cell cultures were evaluated concerning fluorescence levels of PV and ACE2. **Results:** Irisin treatment promoted a significant decrease in PV uptake levels in 2D (G3, 48796 ± 321 *vs.* G4, 44801 ± 328; $p \leq 0.0001$) and 3D conditions (G3, 51540 ± 214 *vs.* G4, 47027 ± 165; $p \leq 0.0001$). **Conclusion:** Both culture models of human visceral adipocytes, 2D and 3D, presented similar results, suggesting that both techniques are valuable research tools and can be used in future studies with this cell type. **Keywords:** 2D and 3D culture; irisin; obesity.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2295

EVALUATION OF THE ASSOCIATION BETWEEN PREMATURE OVARIAN INSUFFICIENCY, QUALITY OF LIFE AND SEXUAL FUNCTION: INITIAL RESULTS OF A CASE-CONTROL STUDY

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Introduction: Menopause, defined as the loss of ovarian follicular function, usually occurs between the ages of 49 and 52 and is clinically defined by the cessation of menstruation for at least 12 months. Premature ovarian insufficiency (POI) occurs when ovarian follicular function is interrupted before the age of 40 and, like menopause, can be associated with hypoestrogenism symptoms: hot flashes, sadness, sleep disturbances, and sexual dysfunction, which significantly impact women's quality of life. Furthermore, POI has been linked to unfavorable cardiometabolic changes, such as modifications in the lipid profile and a higher occurrence of metabolic syndrome. **Objective:** To compare the quality of life, sexual function, and cardiovascular risk of women with POI and menopause after the age of 45. **Methods:** A case-control study is being conducted at the Gynecological Endocrinology Unit of the *Hospital de Clínicas de Porto Alegre*. Women with POI, currently aged 45 or older (case group), will be compared with women with natural menopause starting at age 45 (control group). The MRS (Menopause Rating Scale) questionnaire is applied to assess quality of life in menopause, and the FSFI-6 (Female Sexual Function Index) is used to evaluate sexual function. Metabolic and clinical profiles are measured to assess cardiovascular risk. A sample size of 204 participants was calculated. **Results:** Forty-five participants have already been included in the study (POI group n = 16, mean age 55 ± 10 years; menopause group n = 29, mean age 56 ± 5 years). The POI group showed worse quality of life, with greater severity of hypoestrogenism symptoms (total MRS score 20.5) compared to the menopause group (total MRS score 12) $p = 0.03$. Psychological symptoms were more severe in the POI group ($p = 0.01$). Somatic and urogenital domains did not differ between the groups and showed moderate to severe intensity. Sexual dysfunction (FSFI-6 < 19) was prevalent in both groups. **Conclusions:** These initial data indicate that although both groups experience reduced quality of life related to hypoestrogenism symptoms, the severity of symptoms was higher in women with POI. The continuation of the study will allow for understanding whether factors such as time to diagnosis, duration of hypoestrogenism, and use of estrogen therapy may influence these outcomes. Funding sources: CNPq/Fapergs/INCT *Hormônios e Saúde da Mulher*, Brazil. **Keywords:** premature ovarian insufficiency; menopause; quality of life.

DIABETES MELLITUS

2296

BULLOSIS DIABETICORUM: UNUSUAL DERMATOLOGICAL PRESENTATION OF A COMMON DISEASE

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Case report: A 65-years-old male patient was diagnosed with type 2 diabetes mellitus (DM) 17 years ago, reported the spontaneous appearance of a bullous lesion on his right foot that had evolved over 5 days, unrelated to trauma or insect bites. He had good glycemic control (glycated hemoglobin of 5.8%), using metformin 1,000 mg/day, gliclazide 60 mg/day and dapagliflozin 10 mg/day. However, he already had several microvascular complications related to diabetes: severe non-proliferative diabetic retinopathy, diabetic kidney disease (G3aA2), and peripheral neuropathy. He had no history of intermittent claudication or peripheral arterial occlusive disease. On physical examination, a single bullous lesion was found, with a tense, painless surface, without signs of inflammation, in the dorsal region of the right foot, measuring approximately 5.0 x 5.0 cm. Pedal and posterior tibial pulses on the right leg were filiform. Hypothesis of bullosis diabeticorum suggested. The blister was drained and the serous contents were released. Dressing and local hygiene care were guided. The pathological analysis of the lesion revealed pauci-inflammatory suprabasal intraepidermal bullous dermatosis compatible with the possibility of bullosis diabeticorum. **Discussion:** Bullosis diabeticorum is an uncommon complication, exclusive to individuals with DM, particularly those diagnosed with peripheral neuropathy. It is clinically manifested by asymptomatic bullous lesions, from a few millimeters to several centimeters in size, with a sudden appearance and which disappear spontaneously in 2 to 6 weeks, without residual scarring. The contents of the blisters are fluid, clear and sterile, eventually they can be hemorrhagic. Although its pathophysiology is not yet well understood, it is believed to be multifactorial. Due to the acral predominance of this condition, the association with trauma has been suggested. However, the history of trauma is negative in many cases. A biopsy may be necessary for definitive diagnosis. Management involves local dressings or aspiration of liquid contents in cases of large blisters. **Final comments:** Bullosis diabeticorum is a rare condition specific to patients with DM. However, the real prevalence may be higher due to lack of knowledge on the part of healthcare professionals, leading to misdiagnosis and inappropriate treatments, like the use of antibiotics. **Keywords:** diabetes; bullosis; bullosis diabeticorum.

TIREOIDE

2297

SEVERE PULMONARY COMPLICATIONS FOLLOWING RADIOACTIVE IODINE THERAPY IN PATIENTS WITH ADVANCED DIFFERENTIATED THYROID CANCER AND LUNG METASTASES

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Case presentations: Case 1: A 18-year-old man diagnosed with papillary thyroid carcinoma (PTC) underwent thyroidectomy in 09/16. Post-surgery, there was evidence of pulmonary metastasis, and radioiodine therapy (RAIT) with 200 mCi was performed in 04/17. He developed mild dyspnea and post-RAIT pneumonitis was confirmed by spirometry and CT. However, new RAIT were necessary due to persistence of lung metastasis, in 05/18 and 11/19, 100 mCi each. In accordance with pulmonology, due to mild symptoms, pre-treatment with corticosteroids was carried out and low doses were used with a long interval between doses. Still, in 2022, spirometry showed severe pulmonary fibrosis and the RAIT was suspended. NTrak mutation screening for attempted targeted therapy was negative. The patient's condition deteriorated, leading to death in 04/23. Case 2: A 54-year-old man underwent surgery in 09/19 due to PTC with larynx and lung metastases. RAIT with 200 mCi was performed in 02/20. He developed dyspnea, with spirometry and CT suggested RAIT-induced pneumonitis progressing to fibrosis, in addition to being diagnosed and treated for tuberculosis. In a joint decision with pulmonology, a new RAIT was performed in 06/21 and 03/23 due to the persistence of metastatic lung disease. Corticotherapy, dose reduction (150 mCi) and spacing was also performed in this case. Despite efforts, symptoms worsened, RAIT was suspended and treatment for fibrosis continued with pulmonology, but with progression, leading to death in 01/24. **Discussion:** RAIT has been used in managing patients with differentiated thyroid cancer (DTC) post-surgery to ablate residual tissue, treat metastatic cancer and minimize recurrence in some cases. However, it presents risks, including radiation-induced lung injury manifesting as pneumonitis or chronic fibrosis, which affects 1%-7% of DTC patients with lung metastases. Both cases underscored severe and rare complications of RAIT in PTC leading to fatal outcomes. **Final comments:** Although often effective in controlling thyroid cancer in metastatic scenarios, the potential for serious pulmonary complications of RAIT must be a concern, particularly in patients with pulmonary conditions or extensive metastases. Detection of post-RAIT lung injury is crucial so that care can be taken to mitigate progression, such as avoiding the use of high doses or frequent administrations, using pre-treatment corticosteroids in addition to pulmonological monitoring and fibrosis treatment. **Keywords:** thyroid cancer; radioiodine therapy; pulmonary fibrosis.

TIREOIDE

2298

EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS AND DEATHS FROM THYROTOXICOSIS IN WOMEN IN BRAZIL FROM 2019 TO 2023

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Introduction: Thyrotoxicosis, whose most common cause is Graves' disease, is a syndrome resulting from the excess of circulating thyroid hormones. In Brazil, thyrotoxicosis mainly affects women, so that, between 2014 and 2023, hospitalizations for thyrotoxicosis in women increased by 40.93%. **Objective:** To describe the epidemiological profile of hospitalizations and deaths from thyrotoxicosis in women in Brazil from 2019 to 2023. **Methods:** This is an ecological study with data from the Hospital Information System of the Unified Health System (SIH/SUS), obtained through the Department of Informatics of the Unified Health System (DATASUS). Variables related to hospitalizations and deaths due to thyrotoxicosis were analyzed, considering the female gender and the years 2019 to 2023. A descriptive analysis was performed with the following variables: region, year, type of care, age group, and color/race. **Results:** In the observed period, there were 2,728 hospitalizations for thyrotoxicosis in women in Brazil. The highest number of hospitalizations was recorded in the Southeast region (62.1%), and the lowest number in the North region (3.81%). In 2023, there was the highest number of hospitalizations (22.21%), and, in 2020, the lowest number (13.89%). Most hospitalizations occurred on an urgent basis (54.11%). Women aged 40 to 49 were the most affected (23.24%), while hospitalizations of girls under 5 years of age were a minority (0.26%). Hospitalizations of brown patients predominated (37.46%), and indigenous patients were the least affected (0.22%). As for deaths, 47 deaths were recorded. The majority occurred in the Southeast (44.68%), and the minority in the North (6.38%). In 2019, there was the highest number of deaths (27.66%), and, in 2023, the lowest number (14.89%). Deaths predominated in women aged 40 to 49 years (19.15%), and in people under 1 year of age and 1 to 9 years of age, there were no deaths. The white color/race had the highest number of deaths (34.04%), while the indigenous had no deaths. **Conclusion:** Hospitalizations prevailed in the Southeast in 2023, mainly affecting brown women aged 40 to 49 years. Most deaths also occurred in the Southeast in 2019, mainly victimizing white women of the same age group. Therefore, it is essential to implement measures that enable early diagnosis and appropriate treatment of thyrotoxicosis, in order to reduce the number of hospitalizations and deaths from this cause. **Keywords:** epidemiological profile; thyrotoxicosis; women.

DISLIPIDEMIA E ATEROSCLEROSE

2299

NOVEL PPARG MUTATION LEADING TO FAMILIAL PARTIAL LIPODYSTROPHY TYPE 3 IN A BRAZILIAN FAMILY

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Case presentation: We present two siblings referred to a specialized outpatient clinic for lipodystrophies. Case 1 is a 64-year-old woman with diabetes and severe hypertriglyceridemia (TG 599 mg/dL) diagnosed when she was 58. Her liver fibrosis index (FIB4) was 0.99, and her leptin level was 3.1 ng/mL. Case 2 is a 60-year-old pre-diabetic man with impaired glucose tolerance (A1 5.6%) treated with metformin. Additionally, he has hypertriglyceridemia (TG 476 mg/dL despite fenofibrate therapy) and low HDL (18 mg/dL). His FIB4 score was 19.59. Both siblings exhibit centripetal fat accumulation and prominent lower limb musculature. Their body mass index (BMI) were 21.6 and 32.3, respectively. Dual-energy X-ray Absorptiometry (DXA) measurements showed lower limb fat percentages of 23.1% and 21.1%, and the Fat Mass Ratio (FMR) was 1.41 and 1.98. The thigh skinfold measurements were 6 mm and 7 mm, respectively. In both cases, genetic testing revealed a heterozygotic mutation in the peroxisome proliferator-activated receptor γ (PPARG) gene, specifically the deletion of lysine at codon 188 (p.Lys188del). **Discussion:** Familial partial lipodystrophies (FPLD) are dominantly inherited and characterized by subcutaneous adipose tissue loss, predominantly from the upper and lower extremities. Affected individuals may present with primarily cosmetic problems, whereas others may develop severe metabolic complications such as insulin resistance, diabetes, and hypertriglyceridemia. Six different types of FPLD have been characterized so far. Type 3 is related to PPARG mutation, a significant regulator of adipogenesis and adipose tissue maintenance. To date, it is known that several mutations in PPARG cause lipodystrophic phenotypes or metabolic symptoms. The variant chr3:12,405,911 GAGA>G, shown in both cases, promotes the deletion of the amino acid lysine at codon 188 (p.Lys188del) without altering the reading frame (in-frame). This variant is absent in approximately 125,000 individuals from a population database and has not been previously described in the medical literature. **Conclusion:** We reported the case of 2 siblings with phenotypic and metabolic characteristics of FPLD, carrying a novel PPARG mutation (p.Lys188del) never described in the literature. This description contributes to a better understanding of genotype-phenotype in this rare subtype of FPLD. **Keywords:** familial partial lipodystrophy; hypertriglyceridemia; PPARG.

OBESIDADE

2300

HOSPITALIZATIONS FOR OBESITY IN ADULTS IN THE NORTHEAST REGION OF BRAZIL: AN ECOLOGICAL STUDY

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Introduction: Obesity is increasingly present in people's daily lives and affects, in Brazil, around 19.8% of the adult population. Furthermore, this disease is characterized by causing several other pathologies, with hypertension and type 2 diabetes mellitus being the most common. **Objective:** To describe hospitalizations for obesity in adults in the Northeast region of Brazil from 2019 to 2023. **Methods:** This is an ecological study carried out based on data from the Hospital Information System of the Unified Health System (SIH/SUS), obtained through the Information Technology Department of the Unified Health System (DATASUS). Variables related to hospitalizations for obesity were analyzed, considering the states of the Northeast region and the years 2019 to 2023, such as: year of processing, region and Federation Unit, age group, sex and color/race. **Results:** 4,480 hospitalizations due to obesity were reported in the Northeast region of Brazil. Based on this, there was a drastic reduction in the number of hospitalizations in 2020 when compared to 2019, ranging from 1,063 notifications to 425, and a gradual increase in subsequent years, until reaching its peak in 2023, with 1,118 hospitalizations. It was also observed that Pernambuco had the highest number of hospitalizations throughout the analyzed period, totaling 1,738 cases (38.8%). Finally, regarding age group, sex and color/race, hospitalizations of individuals aged 35 to 39 years old, female and of mixed color/race predominated, with 940 (21%), 3,856 (86.1%) and 2,740 notifications (61.2%), respectively. **Conclusion:** The majority of hospitalizations occurred in 2023, predominating in the state of Pernambuco and affecting, above all, people aged 35 to 39 years, female and of mixed color/race. Therefore, given the high number of hospitalizations for obesity in adults in the Northeast region of Brazil, it is necessary to adopt strategies focused on the prevention, diagnosis and treatment of obesity, which should involve, above all, health education, in order to reduce the incidence of this disease. **Keywords:** obesity; adults; Brazil.

MISCELÂNEA

2301

USE OF ANABOLIC STEROIDS AS A CAUSE OF HEART FAILURE IN A BODYBUILDING ATHLETE: CASE REPORT

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Case introduce: Bodybuilder patient, 33 years old, without comorbidities, started with paroxysmal nocturnal dyspnea, orthopnea and dyspnea on exertion for about 1 year with progressive worsening. Due to the flu syndrome, there was worsening of dyspnea, need for oxygen and progression to respiratory failure. Admitted to the ICU, intubated and hemodynamically compensated with norepinephrine. Diagnosed with Influenza A upon admission. He developed septic and cardiogenic shock with renal dysfunction and the need for high doses of vasoactive drugs. Despite this, he was extubated 5 days later with good clinical evolution, when he was transferred to the ward until discharge. As a background, the patient reported using anabolic hormones (testosterone, boldenone and trenbolone) on his own for 7 years with the aim of gaining muscle mass. The echocardiogram on admission showed significant concentric hypertrophy, enlarged heart chambers and ejection fraction of 23%, which explains the chronic symptoms that were aggravated by the viral condition, culminating in shock. After 9 months of optimized pharmacological treatment and cardiac rehabilitation, there was an improvement in the ejection fraction to 40%, although changes in segmental contractility persisted. **Discussion:** One of the causes of heart failure that has attracted attention is the use of androgenic and anabolic steroids for aesthetic purposes, to gain muscle mass (aesthetics) and to improve sports performance. There is an association between prolonged use of anabolic steroids and the development of heart failure, increased blood pressure due to reduced nitric oxide production and interference with the renin-angiotensin-aldosterone system. Such metabolic endocrine changes are dose dependent and generally irreversible. One of the main formulations used as anabolic steroids is boldenone, a synthetic derivative of testosterone used as a veterinary medicine and not approved for use in humans. Humans can develop hypertrophic cardiomyopathy over time, which can lead to acute myocardial infarction and complications in other organs, such as liver and kidney failure, as well as an increased risk of malignant arrhythmias. **Conclusions:** The use of anabolic steroids for aesthetic purposes and to improve performance has become increasingly common. It is necessary to discuss the subject in scientific circles to clarify the relationship between its prolonged use, especially by athletes, and adverse effects. **Keywords:** anabolic steroids; heart failure; boldenone.

ENDOCRINOLOGIA PEDIÁTRICA

2302

EFFICACY AND SAFETY OF PUBERTY INDUCTION THERAPY IN GIRLS WITH PRADER-WILLI SYNDROME

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Introduction: Prader-Willi syndrome (PWS) is a genetic disorder characterized by hypothalamic-pituitary deficiencies, including hypogonadism. Hypogonadism can lead to alterations in body composition, inadequate uterine development, reduced bone mineral density, increased cardiovascular risk, and impaired psychosocial adaptation. There is no consensus on pubertal induction in girls with PWS. It is believed that a well-described approach to puberty induction could significantly benefit PWS patients. **Objective:** To evaluate the efficacy and safety of puberty induction therapy in girls with PWS. **Methods:** This open-label multicenter clinical trial was conducted at two specialized PWS centers. Girls diagnosed with PWS, aged 12 years or older, with absence of breast development (telarche), lack of progression of pubertal maturation, or irregular menstrual cycles were included. Patients were divided into a treated group receiving puberty induction therapy and an untreated group. The evaluation included physical examination, laboratory tests, imaging studies, and psychiatric assessment. **Results:** A total of 11 patients were included, seven in the treated group. The mean age at telarche was 10.7 years; however, patients exhibited delayed or absent pubertal progression. The treated group showed satisfactory development of secondary sexual characteristics, which was not observed in the untreated group. All treated patients completed puberty induction in a mean time of 11.2 months. In the treated group, adequate uterine growth was evident throughout the study, with an initial volume of 18 cm^3 and a final volume of 30 cm^3. Conversely, in the untreated group, uterine volume was initially 11 cm^3 and then 12 cm^3 at study completion. Bone densitometry improved the treated group's lumbar spine (0.95 SDS increase) and whole body (1.14 SDS increase) z-scores. **Conclusions:** This was the first open-label intervention study with hormonal replacement therapy and a comparative group in girls with PWS, providing a detailed description of puberty induction regarding dosage, duration, benefits, and associated risks. It demonstrated the beneficial effect of proposed puberty induction therapy in girls with PWS, including adequate development of sexual characteristics, uterine growth, and bone mineral density. Moreover, it established the safety of this treatment during the study period. **Keywords:** Prader-Willi syndrome; puberty; hypogonadism.

TIREOIDE

2303

THYROTOXIC HYPOKALEMIC PERIODIC PARALYSIS: CASE REPORT IN RIBEIRÃO PRETO – SÃO PAULO

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Case presentation: This is a male patient, 20 years old, Brazilian with oriental ancestry, born in Ribeirao Preto-SP; healthy, denied addictions and comorbidities; no previous personal or family history similarly to the picture presented. In January 2024; the patient began, suddenly, with weakness followed by flaccid paralysis in the lower limbs, progressing within a few hours to plegia of the upper limbs as well, preserving respiratory movements, associated with hypertension and tachyarrhythmia, evidenced on an electrocardiogram in the emergency department. Upon admission to the hospital, he was diagnosed with severe hypokalemia and was referred to the ICU for compensation and intravenous potassium replacement, with consequent clinical improvement. Approximately 30 days after the first episode, in February 2024, the patient began experiencing a new episode of weakness in the lower limbs, being immediately taken to the hospital and diagnosed with a new episode of severe hypokalemia. After treatment, he was referred for outpatient investigation of hypokalemia, when he was diagnosed with hyperthyroidism, with the signs of suppressed TSH, increased free T4 and anti-TSH receptor antibodies (TRAb), in addition to signs of diffuse thyroidopathy and a diffusely enlarged thyroid on ultrasound. Continuous treatment with methimazole 30 mg/day orally was started and, after 90 days of use, the patient did not present any new episodes of paralysis or hypokalemia, attending the consultation with a physical examination and vital signs without changes and without complaints. **Discussion:** The case report highlights a rare complication of hyperthyroidism, called thyrotoxic hypokalemic periodic paralysis (PPHT). This condition occurs predominantly in Asian countries and with a predilection for males. Patients with this condition present intense flaccid paralysis in the lower limbs with an ascending character, as in the report. **Final comments:** Considering that PPHT has a positive prognosis when identified and treated appropriately, it is extremely important for health professionals to have knowledge about the pathophysiological mechanisms of this condition, in order to carry out early and correct diagnosis and treatment. **Keywords:** hyperthyroidism; hypokalemia; paralysis.

DIABETES MELLITUS

2304

ANALYSIS OF DIABETES MELLITUS AND COMPLICATED DIABETIC FOOT IN THE SUS: 2019-2023

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Introduction: Diabetes mellitus is a chronic disease characterized by high blood glucose levels due to inadequate production of insulin or the body's inefficiency in using it. A common complication is diabetic foot, which is a multifaceted interaction between neuropathy, infections, and peripheral arterial occlusive disease. **Objective:** To compare the profile of patients diagnosed with diabetes mellitus with patients undergoing treatment for complicated diabetic foot in the Public Health System from 2019 to 2023. **Methods:** Temporal, quantitative ecological study, carried out in June 2024, with data obtained from DATASUS in Health Care with records in Hospital Production (SIH/SUS), on the treatment of complicated diabetic foot. Data from the Epidemiological and Morbidity sector with records in SUS Hospital Morbidities (SIH/SUS) on diabetes mellitus were also used. The variables were Brazilian regions and year of medical care (January 2019 to December 2023), nature of care, average length of stay, deaths and mortality rate. **Results:** Between 2019 and 2023, there were a total of 664,117 hospitalizations for diabetes mellitus, with emphasis on the Southeast region (243,216). In the same period, 120,969 patients received treatment for complicated diabetic foot, predominantly in the Northeast region (48,559). Hospitalizations for diabetes mellitus were concentrated in 2023 (138,082), while diabetic foot treatment was higher in 2022 (26,984). Regarding the treatment of diabetic foot, 96% (116,183) of cases were urgent, while 4% (4,785) were elective. The average length of stay was 7.8 days, with the highest average in the North and Northeast regions (7.9 days) and the lowest in the South (6.5). In terms of mortality, diabetes mellitus was associated with 3 million deaths in the period, with a total mortality rate of 5.15%, with the Southeast region having the highest percentage (6%). At the same time, treatment for complicated diabetic foot was linked to a total of 3,321 deaths and an overall mortality rate of 2.75%, with the Northeast being the region with the highest proportion (2.98%). **Conclusion:** The profile of patients diagnosed with diabetes mellitus presents a predominance of hospitalizations in the Southeast, while the treatment of complicated diabetic foot predominates in the Northeast and on an urgent basis. The mortality rate from complicated diabetic foot is equivalent to more than half the rate of patients hospitalized with diabetes mellitus. **Keywords:** diabetes mellitus; diabetic foot; health profile.

DISLIPIDEMIA E ATEROSCLEROSE

2305

SHORT-TERM USE OF LIRAGLUTIDE IN CONGENITAL GENERALIZED LIPODYSTROPHY: EVALUATION OF METABOLIC PARAMETERS AND SATIETY

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Introduction: Liraglutide, a glucagon-like peptide-1 receptor agonist (aGLP1), is widely used to manage diabetes mellitus. However, its efficacy in congenital generalized lipodystrophy (CGL) is unknown. This study is the first to evaluate the effects of aGLP1 in patients with CGL. **Objective:** Assess the effectiveness of liraglutide on metabolic parameters and satiety in patients with congenital generalized lipodystrophy (CGL). **Materials and methods:** An open intervention study was conducted between January and April 2024 with CGL patients aged 18 to 50 from a referral outpatient clinic in Fortaleza, Ceará, Brazil. Patients were treated with liraglutide for 12 weeks. Data such as age, sex, weight, body mass index (BMI), glycemic (A1c) and lipid profiles (TG), liver fibrosis risk index (FIB4), and satiety assessment using the Visual Analog Scale (VAS) and dietary recall were collected before and after 3 months of treatment. **Results:** The initial sample consisted of 6 patients with CGL, of whom 3 (50%) discontinued medication in the first month due to gastrointestinal intolerance. Of the 3 patients who completed the 12-week treatment, 2 had a mutation in the AGPAT2 gene (type 1) and 1 in the BSCL2 gene (type 2). The male patient with type 1 CGL was 44 years old (case 1), the female patient was 40 years old (case 2), and the male patient with type 2 CGL was 24 years old (case 3). All had normal BMIs (24.0; 22.6; 24.5 kg/m^2) and were on metformin 1.5; 2.0; 2.0 grams/day and insulin at a total dose of 0.5; 2.7; 1.4 IU/kg/d. At the end of the study, insulin dosage was reduced, being discontinued in case 1 and decreased by 20% (2.7 to 2.1 IU/kg/d) in case 2, with no change in case 3. A1c decreased by at least 1% in all patients: in case 1 from 8.6 to 7.3%, in case 2 from 8.8 to 6.3%, and in case 3 from 10.6 to 9.5%. Additionally, serum triglyceride (TG) levels reduced, decreasing from 435 to 210 mg/dL, 182 to 118 mg/dL, and 242 to 157 mg/dL in cases 1, 2, and 3 respectively. Regarding FIB4, case 3 showed a decline from 1.05 to 0.82. The others remained unchanged. In terms of weight, case 2 had a reduction of 3.4% (61.7-59.6 kg), with a considerable increase in satiety and a decrease in food intake by 444 kcal. The other two cases showed no variation in weight and satiety. **Conclusion:** Our study demonstrates, for the first time, that liraglutide has therapeutic potential in diabetic patients with CGL, resulting in benefits for various metabolic parameters and satiety. **Keywords:** congenital generalized lipodystrophy; glucagon-like peptide-1 receptor agonist; hipertrygliceridemia.

TIREOIDE

2307

EPIDEMIOLOGICAL PROFILE OF MORTALITY FROM HYPOTHYROIDISM IN PARAÍBA: 2018-2022

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Introduction: Thyroid hormones are essential for human homeostasis since intrauterine life. Hypothyroidism occurs due to low levels of thyroid hormones, presenting in a variety of ways, from asymptomatic patients to severe cases such as myxedema coma. **Objective:** Characterize mortality due to hypothyroidism in Paraíba in the Public Health System between 2018 and 2022. **Methods:** Temporal and quantitative ecological study, carried out in July 2024, using data from DATASUS of Vital Statistics, specifically ICD-10 Mortality records in Paraíba on subclinical hypothyroidism due to iodine deficiency and other hypothyroidisms. The variables analyzed were municipality, year of death (2018 to 2022), age group, sex, education and place of occurrence. **Results:** The sample totaled 39 deaths. The highest number of deaths occurred in 2021, representing 38.46% (n = 15), and the lowest in 2022, with 5.13% (n = 2). The cities with the most deaths were Campina Grande (56.4%, n = 22), João Pessoa (7.7%, n = 3) and Princesa Isabel (5.1%, n = 2). The most prevalent age group was 80 years or more (53.84%), followed by 70 to 79 years (23.07%) and 60 to 69 years (15.38%). In terms of sex, 74.4% of deaths were women and 25.6% men. The highest mortality in females was in the age group of 80 years or over (46.15%), while in males it was between 70 and 79 years (10.25%). Regarding education, 48.7% of deaths had education ignored, followed by 1 to 3 years of education (28.2%) and 12 years or more (7.7%); 8 to 11 years old, 4 to 7 years old and illiterate corresponded to 5.1% each. Regarding the place of occurrence, 82.06% of deaths occurred in hospitals, followed by homes (15.38%) and other health establishments (2.56%). Deaths at home were recorded in people over 70 years of age, occurring in Campina Grande, Gurjão, Paulista, São José de Piranhas, Teixeira and Vieirópolis, each representing 16.66% of home deaths. **Conclusion:** The year 2021 had the highest number of deaths due to hypothyroidism, while 2022 had the lowest. The majority of deaths occurred in Campina Grande and in patients aged 80 or over, predominantly women. The majority of deaths occurred in hospitals, with a significant prevalence of home deaths among the elderly. **Keywords:** hypothyroidism; mortality; health profile.

DISLIPIDEMIA E ATEROSCLEROSE

2308

FAMILIAL PARTIAL LIPODYSTROPHY: ARE THE CURRENT DIAGNOSTIC CRITERIA SUFFICIENT?

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Introduction: Familial partial lipodystrophy (FPLD) is a rare condition with predominantly autosomal dominant transmission, characterized by loss of adipose tissue in the limbs and/or trunk and may lead to progressive accumulation of fat in the cervical, facial, and intra-abdominal regions. Although genetic tests can identify several subtypes (LPFD 2-7), the diagnosis is eminently clinical and should be suspected in early manifestations of metabolic syndrome. However, anthropometric parameters are considered fundamental for the diagnosis, with the reduction of adiposity in the lower limbs being an essential criterion. The present study aims to describe the clinical characteristics and severity of a series of patients with lipodystrophy followed at a reference center in Brazil. **Methods:** Data from 30 patients who presented clinical and phenotypic characteristics of LPFD were analyzed. Patients with a negative KoB Index and genetic study were included, using a specific panel including the genes ADRA2A, AKT2, CAV1, CIDEC, LIPE, LMNA, LMNB2, PLIN1, POLD1, PPARG, PSMA3, PSMB4, PSMB8, PSMB9, TBC1D4, ZMPSTE24c. All patients underwent a complete anthropometric assessment, including thigh folds and body composition analysis by DEXA, thus obtaining the Fat Mass Ratio and adiposity percentage in the lower limbs. **Results:** All the subjects were females, with an average age of 51 ± 12 years old. The median body mass index (BMI) was 31 kg/m² (22-49). diabetes mellitus diagnosis occurred at a mean age of 38 ± 11 years old and was present in 100% of patients. The mean glycated hemoglobin was 10.37 ± 1.83%. Diabetic nephropathy, retinopathy, and neuropathy were present in 10, 27, and 43% of patients, respectively. Regarding dyslipidemia, 77% had low HDL-c, 97% had hypertriglyceridemia (HTG) with a median of 321 mg/dL (156-5,745), and 30% had severe HTG (>500 mg/dL). Only 10% had a history of pancreatitis. Systemic arterial hypertension was observed in 70%, while coronary artery disease in 27% of patients. In the evaluation for metabolic liver disease, 67% showed hepatic steatosis through ultrasound. **Conclusion:** The present study presents an important series of patients with lipodystrophy and high early morbidity but with a negative genetic profile and KoB Index. Although broader genetic studies (Whole Exome Sequencing) can help in this regard, these data suggest the need to expand clinical criteria and include other subtypes of this disease. **Keywords:** familial partial lipodystrophy; metabolic syndrome; diabetes.

NEUROENDOCRINOLOGIA

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CAUSAL ASSOCIATION BETWEEN HYPOTHYROIDISM AND DEPRESSIVE DISORDER: A SYSTEMATIC REVIEW

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Introduction: Thyroid disorders and depressive disorders are prevalent clinical conditions that significantly impact public health. Hypothyroidism, characterized by insufficient hormone production by the thyroid gland, can lead to various symptoms, including fatigue, weight gain, and neuropsychiatric disorders. Depressive disorder, in turn, is characterized by a clinical condition that affects the mood and behavior of affected individuals. **Objective:** This study aims to analyze the causal association between hypothyroidism and depressive disorder. Material and Methods: This is a systematic review constructed based on PRISMA guidelines. The review was conducted through articles published in the last 5 years (2019-2024) in the PubMed and Medline databases, where the search terms used were "Depressive disorder" and "Hypothyroidism." Studies in English and Portuguese that addressed the researched topic and allowed full access to the study content were included. Two independent reviewers performed the data analysis, and disputes regarding any data inclusions in this study were resolved through consensus. **Results:** Initially, 65 articles were identified through the search, of which 12 were selected using the inclusion criteria. Through the analysis, it was observed that the prevalence of depressive disorder is higher in patients with hypothyroidism than in euthyroid patients. Furthermore, the literature indicates that individuals, especially females, who present depressive complaints concomitant with hypothyroidism when undergoing treatment for thyroid dysfunction end up contributing to the regression of psychiatric symptoms. However, the response to treatment may vary, and some patients may require additional therapeutic management for their depressive condition since psychiatric complaints may not be directly related to the thyroid condition. **Conclusion:** The systematic review demonstrates a consistent association between hypothyroidism and depressive symptoms. However, establishing a direct causal relationship is challenging due to the multifactorial nature of depressive disorder and the limitations of observational studies. Therefore, new prospective studies are necessary to analyze this causal association. **Keywords:** hypothyroidism; depressive disorder; association.

ADRENAL E HIPERTENSÃO

2310

SAFETY AND EFFICACY OF USING OSILODROSTAT IN THE TREATMENT OF CUSHING'S DISEASE IN ADULT PATIENTS: A SYSTEMATIC REVIEW

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Introduction: Osilodrostat is a new synthetic oral therapy and potent 11β-hydroxylase (CYP11B1) inhibitor for the treatment of Cushing's disease. Studies have shown that this drug can be used as an alternative to quickly reduce cortisol, testosterone, dehydroepiandrosterone (DHEA) and aldosterone. **Objective:** To evaluate the current evidence of the safety and efficacy of the use of osilodrostat in the treatment of Cushing's disease in adult patients. **Methods:** This is a systematic review conducted in accordance with PRISMA guidelines. Searches were carried out in the PubMed, Embase and Lilacs databases, in the first half of 2024, by two independent people. The search strategy included the descriptors (osilodrostat) AND (Cushing's disease OR Pituitary ACTH Hypersecretion), clinical trials and observational studies, from the last 5 years, which investigated the relationship between the use of Osilodorstat and the reduction of cortisol in patients with Cushing's disease. Reviews, case reports, comments, editorials, studies with animals or cells and divergent topics were excluded. Bias assessment was performed using the GRADE tool. Data extraction focused on study settings, participant characteristics, and relevant outcomes. **Results:** Of the 216 publications selected, 7 studies were included, using randomized controlled trials, cohort and real-world studies. The total sample was 413 adult patients with endogenous or non-pituitary Cushing's disease and the duration of use ranged from 2 to 72 weeks. All demonstrated a reduction in adrenal hormone levels compared to placebo. In 6 studies, there was a sudden reduction in mean urinary free cortisol (mUFC), in relation to the baseline level, which ranged from 53% to 99.7% (81.1 ± 16.6), after monotherapy with a dose of 1 to 30 mg/day, over an average period of 12 weeks, stabilizing during long-term treatment. Of these, two studies demonstrated a mean increase in ACTH from 13.5 pmol/L to 36.3 pmol/L. The other study showed normalization of testosterone, DHEA and aldosterone levels, at a dose of 7.4 mg/day, in 48 weeks. All reported adverse effects, such as asthenia, nausea and adrenal insufficiency. **Conclusion:** Compared to placebo, monotherapy with osilodrostat promoted a significant reduction and normalization of cortisol levels in patients with Cushing's disease, suggesting that this alternative therapy is effective and safe. **Keywords:** Cushing disease; osilodrostat; adrenal glands.

DIABETES MELLITUS

2311

IS THE ROLE OF LABORATORY INVESTIGATION SIGNIFICANT IN ELUCIDATING CASES OF DIABETES WITH UNCERTAIN CLASSIFICATION?

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Introduction: Diabetes classification is not always clinically obvious. Autoantibodies and C-peptide measurement, as well as genetic evaluation, can be valuable tools for complementary investigation. **Objective:** This study aimed to investigate whether the measurement of glutamic acid decarboxylase antibodies (GADA) and islet tyrosine phosphatase 2 (Anti-IA2), random C-peptide (CP), and genetic tests for Maturity Onset Diabetes of the Young (MODY), when indicated, were useful in classifying adults with diabetes of uncertain classification and varying disease duration. **Methods:** This was a cross-sectional study that included adults (18 years of age or more) with diabetes of indeterminate classification. Medical records were reviewed to retrieve clinical and epidemiological information. GADA, anti-IA2, and CP were measured. A genetic panel for MODY was conducted in cases with three or more generations with diabetes, negative autoantibodies, and detectable CP. **Results:** The sample included 80 patients (61.3% females and 38.8% males), with a mean age, age at onset and duration of diabetes of 49.4 (±15.31), 32.8 (±32.85) and 16.6 (±10.35) years, respectively. Among them, 94.7% used insulin for diabetes treatment. GADA and anti-IA2 were detected in 14.1% and 7.8%, respectively. Their mean titers were 821.7 IU/mL (reference value: >10 IU/mL) and 374.3 IU/mL (reference value: >10 IU/mL), respectively. CP was detectable in 41 patients, with a cutoff > 0.6 ng/mL (mean = 1.8 ± 1.86). The initial probable classification distribution was: type 1 diabetes (T1D) in 22.5%, type 2 diabetes (T2D) in 47.5%, MODY in 3.75% and undetermined in 26.5%. GADA was detected in 22.2% T1D, 5.2% T2D, 0% MODY, 23.8% undetermined. Anti-IA2 was detected in 11.1%, 0%, 0%, 19%, respectively. After laboratory investigation, 33.75%, 53.75%, 3.75% and 8.75% were classified as T1D, T2D, MODY and undetermined, respectively. In this sample, 21.25% changed their classification after laboratory investigation. Age at onset was associated with the final classification (p = 0.004). In the one case of MODY, the detected mutation was in glucokinase (GCK) gene. **Conclusion:** In this sample of adults with uncertain diabetes classification, most of whom were insulin users with varying disease durations, the measurement of GADA, anti-IA2, CP, and MODY investigation proved helpful in correctly classifying a significant number of cases. **Keywords:** diabetes classification; autoantibodies; C-peptide.

NEUROENDOCRINOLOGIA

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BILATERAL ADRENALECTOMY FOR REFRACTORY CUSHING'S DISEASE: CASE REPORT FROM CLINICAL SURVEILLANCE

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Case presentation: A 38-year-old woman diagnosed with Cushing's disease (CD) at 25 years of age underwent transsphenoidal surgery for resection of a 1,9 x 1,2 x 1,2 cm pituitary adenoma, followed by radiotherapy (RT) and treatment with ketoconazole and cabergoline without disease control, eventually undergoing bilateral adrenalectomy (BA) in 2015. Post-BA plasma ACTH levels ranged from 74.3 to 598 pg/mL, without a clear trend upwards. Serial magnetic resonance imaging (MRI) scans showed no adenoma growth. The patient remains under clinical surveillance for Nelson's syndrome (NS) with ACTH and MRI assessments, and is receiving oral hydrocortisone replacement therapy (35 mg/day) and fludrocortisone (0.2 mg/day). **Discussion:** The primary medium- to long-term complication of BA in refractory CD patients is NS. The exact incidence remains unclear due to the lack of standardized diagnostic criteria and heterogeneous populations. NS can manifest anywhere from 2 months to 24 years post-BA, typically within the first 2 years. Prior RT and adequate glucocorticoid replacement reduce the risk of NS. The patient had received prior RT and underwent oral hydrocortisone replacement adjusted for body surface area to mimic cortisol circadian rhythm pharmacokinetics, but studies comparing hydrocortisone, prednisone, or prednisolone use and NS risk are lacking. Monitoring ACTH as a tumor marker is susceptible to interpretation confusion; morning measurement respecting circadian rhythm and at least 12 hours after the last exogenous glucocorticoid dose is recommended. ACTH measurement 2 hours after glucocorticoid administration is also useful to evaluate negative feedback preservation and mitigate aggressive behavior of autonomous corticotropinomas. The patient's highest ACTH level was 598 pg/mL during a nonspecific viral gastrointestinal infection and adrenal insufficiency symptoms. Subsequent measurements showed a nearly 50% decrease, ruling out NS. Since there is no consensus on ACTH cutoff values for NS, successive levels serve as a reference. Additionally, pituitary MRI surveillance, enhancing early diagnosis and facilitating NS management. Similar to ACTH levels, there is no consensus on the percentage of tumor growth as a radiological criterion for NS. **Final comments:** NS is a well-known complication of BA. This rarity of NS makes it challenging to gather sufficient data to establish universally accepted management, relying on practical guidance from small patient series. **Keywords:** Cushing's disease; Nelson's syndrome; adrenal.

NEUROENDOCRINOLOGIA

2314

EFFICACY AND SAFETY OF ONCE-DAILY ORAL PALTUSOTINE IN MEDICALLY UNTREATED PATIENTS WITH ACROMEGALY: RESULTS FROM THE PHASE 3, RANDOMIZED, PLACEBO-CONTROLLED PATHFNDR-2 STUDY

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Introduction: Paltusotine is a non-peptide, highly selective SST2 receptor agonist in development as a once-daily, oral treatment for patients with acromegaly or carcinoid syndrome. **Objective:** To assess efficacy and safety of paltusotine in a phase 3, randomized, placebo-controlled trial in medically untreated patients with active acromegaly (PATHFNDR-2; NCT05192382). **Methods:** Eligible patients were stratified as stratum 1: not medically treated (those who were medication-naïve with IGF-I ≥ 1.3 × ULN and ≥ 1 pituitary surgery ≥ 3 months prior and those previously treated but stopped medications ≥ 4 months prior with IGF-I ≥ 1.3 × ULN); or stratum 2: washed out (previously controlled on injected octreotide or lanreotide and underwent washout with IGF-I increase ≥ 30% to ≥ 1.1 × ULN). Patients were randomized to paltusotine or placebo for 24 weeks. The starting dose was 20 mg once daily, with titration to 40 mg (if tolerated) at Wk 2 and then to 60 mg (Wks 6-12) if IGF-I was > 0.9 × ULN. Acromegaly Symptom Diary (ASD) was completed daily. **Results:** A total of 111 patients (stratum 1, n = 82; stratum 2, n = 29) were randomized and received study medication (paltusotine, n = 54; placebo, n = 57). The primary endpoint was met: 55.6% of paltusotine-treated patients had IGF-I ≤ 1.0 × ULN (mean of Wks 22 and 24) *vs.* 5.3% for placebo (OR: 42.81; 95% CI: 8.44, 455.8; $P < 0.0001$). Primary endpoint results were consistent within both strata (pre-specified sensitivity analysis): stratum 1 (not medically treated), 42.5% *vs.* 2.4% ($P < 0.0001$); stratum 2 (washed out), 92.9% *vs.* 13.3% ($P < 0.0001$). All secondary endpoints were met. Mean (±SE) change from baseline IGF-I was -0.82 ± 0.08 × ULN with paltusotine *vs.* 0.09 ± 0.08 × ULN with placebo ($P < 0.0001$). IGF-I was < 1.3 × ULN in 66.7% *vs.* 14.0% of patients (OR: 18.32; 95% CI: 5.64, 79.16; $P < 0.0001$). Mean (±SE) change from baseline ASD score indicated improvement (-2.7 ± 1.4) with paltusotine *vs.* worsening (+2.8 ± 1.4) with placebo ($P = 0.004$). GH (5-sample mean) was < 1.0 ng/mL in 57.4% *vs.* 17.5% of patients (OR: 7.59; 95% CI: 2.78, 23.48; $P < 0.0001$). In the paltusotine group, IGF-I was reduced in 92.6% of patients at end of treatment, with the majority of the effect seen by Wks 2 to 4. The most common AEs were characteristic of somatostatin receptor ligands or acromegaly symptoms. There were no serious AEs in the paltusotine group. **Conclusions:** Paltusotine demonstrated rapid and sustained response in patients with active acromegaly and was well tolerated. **Keywords:** paltusotine; acromegaly; SST2 receptor agonist.

TIREOIDE

2315

HIGH DOSES OF RADIOIODINE IN THE TREATMENT OF DIFFERENTIATED THYROID CARCINOMA: AN ANALYSIS OF ITS USE OVER A 10-YEAR PERIOD IN THE STATE OF CEARÁ

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Introduction: Differentiated thyroid carcinoma (DTC), whose main subtypes are papillary and follicular, is the most prevalent endocrine neoplasm and accounts for more than 90% of thyroid carcinomas. Radioiodine (I131) may be indicated in TDC for adjuvant therapy, ablative therapy of thyroid remnants, or, at higher doses, for the treatment of persistent/recurrent structural disease. **Objective:** To analyze the use of high doses of radioiodine, represented by concentrations ≥ 100 mCi, for the treatment of TDC in the state of Ceará from April 2013 to April 2023, comparing five-year intervals. **Materials and methods:** This was a cross-sectional, retrospective, and quantitative study based on information obtained from the SUS Information Technology Department (DATASUS) database. The following variables were considered: number of hospitalizations in the period and number of procedures performed per municipality, with doses ranging from 100 to 250 mCi. **Results:** In the period from April 2013 to April 2018, the number of hospital procedures using radioiodine in the treatment of CDT was 1772, of which the dose of 100 mCi accounted for 864 (48.7%), 150 mCi accounted for 773 (43.6%), 200 mCi accounted for 121 (6.8%), and 250 mCi accounted for 14 (0.8%). In contrast, in the period from May 2018 to April 2023, the total number of procedures recorded was 1062, of which the 100 mCi dose accounted for 519 (49%), 150 mCi accounted for 483 (45.5%), 200 mCi accounted for 59 (5.5%), and the 250 mCi dose was indicated in only one case. When comparing the two five-year periods, we observed a 40% reduction in the total number of radioiodine treatments, with greater percentage reductions for the 200 and 250 mCi doses. All the procedures recorded during the study period took place in the city of Fortaleza, the state capital. **Conclusion:** There has been a significant reduction in the use of high doses of radioiodine for the treatment of DTC in Ceará over the last 10 years. This finding is in line with the current literature, which recommends individualizing the indication of radioiodine based on stratification of the risk of disease recurrence and the biochemical and cervical imaging evolution after total thyroidectomy. In addition, the use of low doses should be the choice whenever possible. **Keywords:** differentiated thyroid carcinoma; radioiodine; treatment.

NEUROENDOCRINOLOGIA

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DIAGNOSTIC AND THERAPEUTIC CHALLENGES OF SHEEHAN'S SYNDROME: A CASE REPORT

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Case presentation: A 56-year-old woman presented with drowsiness, hypoactivity, fatigue, and lower limb pain for the past 5 months, along with occasional falls. She sought medical attention due to hypotension and difficult-to-control hypoglycemia, leading to hospital admission. Electrolyte disturbances and reduced levels of T4 (0.69 ng/dL), FSH (4.5 mIU/mL), LH (0.9 mIU/mL), and PRL (2.39 ng/mL) were identified, suggesting secondary panhypopituitarism due to Sheehan's syndrome (SS). She had a history of early menopause and postpartum hemorrhage 23 years ago, accompanied by severe headache, fever post-uterine curettage, and meningitis. After clinical stabilization, she was referred for follow-up. Serum cortisol, ACTH, FSH, LH, and PRL tests showed low values, indicating hypogonadotropic hypogonadism associated with SS. An MRI of the sella turcica was requested for diagnostic confirmation. **Discussion:** SS is a rare cause of hypopituitarism associated with severe obstetric hemorrhage, more prevalent in developing countries due to inadequate medical care. The incidence ranges from 1% to 5% in women with severe postpartum hemorrhage. In developed countries, the prevalence is lower due to advances in obstetric care. In this case, the patient experienced postpartum hemorrhage requiring blood transfusion, an event that can lead to anterior pituitary necrosis due to ischemia. SS can present acutely (hypotension, hypoglycemia, hyponatremia, extreme fatigue) or chronically (agalactia, dizziness, fatigue, dry skin, nausea, vomiting). These symptoms were observed in the patient. Diagnosis is based on clinical history, hormone assays, and imaging studies, such as MRI or CT of the sella turcica, which has been requested for this patient. Treatment involves hormone replacement therapy for TSH, gonadotropins, GH, and corticotropin. The patient is already on levothyroxine for T4 replacement. Hydrocortisone is essential for treating adrenal insufficiency, and prolactin may be necessary to treat postpartum agalactia, with the patient using prednisone for this purpose. **Final comments:** SS, though rare, can cause severe hormonal deficiencies if not diagnosed and treated early. This case highlights the importance of adequate diagnosis and treatment with hormone replacement therapy to ensure a normal life for patients. Raising awareness about SS and continuous improvements in obstetric care are essential to prevent and manage this condition. **Keywords:** Sheehan's syndrome; hypopituitarism; hormone replacement therapy.

ADRENAL E HIPERTENSÃO

2317

RETROPERITONEAL HEMATOMA LEADING TO THORACOABDOMINAL PAIN AS THE FIRST MANIFESTATION OF PHEOCHROMOCYTOMA

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Case: Male, 39 years, admitted with squeezing pain in thoracoabdominal region that migraine to flank, associated to nausea, vomiting and high blood pressure (systolic pressure 240 mmHg). Acute Coronary syndrome was ruled out and prescribed anti-hypertensive drug (Valsartana 160 mg/day). Because of the maintenance of the symptoms, the patient has been to a new evaluation which showed high blood pressure (160 mmHg), superficial pain in right hypochondrium and flank, voluntary abdominal defense, without intestinal disability, marfanoid habits or neuroma. The abdominal tomography revealed right adrenal incidentaloma (7,8 x 6,6 cm – 25 HU) with recently bleending signs and retroperitoneal hematoma. Denied dyspnea, headache, palpitations, sweating, faint, hypertensive disease or use of other medications. He has had a fibula surgery after an accident 10 months ago, without intercurrences. During the investigation of the endocrinological disease, was excluded hypercortisolism and hyperaldosteronism. Identified elevated urinary metanephrines due to norepinephrine (4x the reference value). **Discussion:** Pheochromocytoma is a rare adrenal tumor related to catecholamine hypersecretion that causes metabolic disorders. Premature diagnosis can lead to good prognostic, although nonspecific symptoms and the association with other thirty pathologies embarrass the disease recognition. 19% of the cases may have life-threatening manifestations. This particular case became relevant not only for being a norepinephrine producer pheochromocytoma, but because of the local bleeding, a rare condition. The association with many syndromes was explored, discarding MEN 2A, 2B and Von Hippel-Lindau disease. It was made a surgical prepare using alpha adrenergic blockade, blood pressure control, volemic expansion and hypersodium diet (>5 g/day). Then, beta blockade and after 30 days submitted to adrenalectomy. **Final comments:** Diagnosis of norepinephrine producer pheochromocytoma represents 18% of the cases and it is difficult to identify for the absence of the classic triad (headache, palpitations, diaphoresis) during the first admission in the hospital. Few cases of bleeding due to pheochromocytoma has being documented and are overall lethal. It demonstrates the significance of this case, performing an elective surgery without a negative outcome. **Keywords:** pheochromocytoma; retroperitoneal hematoma; norepinephrine producer.

OBESIDADE

2318

EPIDEMIOLOGICAL PROFILE OF ADMISSIONS FOR OBESITY IN PARAÍBA (2018-2022)

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Introduction: Obesity is a multifactorial disease that constitutes a risk factor for chronic non-communicable diseases, such as diabetes and cardiovascular diseases, associated with high mortality in Brazil. This condition represents a challenge for public health, requiring an interdisciplinary approach to developing effective policies. **Objective:** To characterize the profile of hospitalizations for obesity in Paraíba in the Public Health System between 2018 and 2022. **Methods:** This is a temporal, quantitative ecological study, carried out in July 2024, with data obtained from DATASUS, specifically from Hospital Morbidity records (SIH/SUS). Hospitalizations for obesity in Paraíba were analyzed, considering the variables of municipality and year of processing (2018 to 2022), nature of medical care, establishment, average length of stay, sex, age group, deaths and mortality rate. **Results:** The sample totaled 267 hospitalizations, 98.9% in João Pessoa and 1.1% in Campina Grande. The year with the highest number of hospitalizations was 2019 (n = 82), while the lowest was 2018 (n = 35). In João Pessoa, most hospitalizations were in 2019 (n = 82), and in Campina Grande, in 2022 (n = 2). The *Hospital Universitário Lauro Wanderley* (HULW) was responsible for 98.12% of hospitalizations. Regarding the nature of medical care, 94.8% of hospitalizations were elective and 5.2% were urgent. There was only one death, which occurred in Campina Grande, where the patient was admitted to the emergency department of the *Hospital Universitário Alcides Carneiro* (HUAC), resulting in a mortality rate of 33.33% in Campina Grande. Average hospital stay was 3.4 days, the longest in João Pessoa (3.4 days) and the shortest in Campina Grande (1.7 days). The majority of patients were female (86.5%), while 13.5% were male. The prevalent age group was 40 to 49 years old (33.7%), followed by 30 to 39 years old (29.6%) and 50 to 59 years old (21.3%). The age group with the highest number of hospitalizations for both sexes was 40 to 49 years old, with 44.44% men and 32.03% women. **Conclusion:** The majority of hospitalizations due to obesity occurred in João Pessoa, especially in 2019. HULW was the institution that received the most patients, most of them elective. Mortality was higher in Campina Grande, where the only recorded death occurred, while in João Pessoa there were no deaths recorded. The majority of patients were female and between 40 and 49 years old. **Keywords:** obesity; hospitalization; health profile.

NEUROENDOCRINOLOGIA

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PROFILE OF HOSPITAL ADMISSIONS FOR HYPOPHYSECTOMY IN BRAZIL OVER THE LAST 5 YEARS (2019-2023)

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Introduction: Hypophysectomy is a transsphenoidal surgical approach for pituitary removal, commonly used to treat pituitary-dependent hypercortisolism (HPD). HPD is an endocrinopathy caused by a pituitary tumor secreting adrenocorticotropic hormone (ACTH). Hypophysectomy is also applied in the treatment of other pituitary neoplasms, non-functioning adenomas and Cushing's disease. **Objective:** This study aims to describe the profile of hospital admissions for hypophysectomy in Brazil. **Methods:** This is an ecological, observational, retrospective, descriptive, and quantitative study. Data were obtained from the Hospital Information System of SUS (SIH/SUS), made available by the Unified Health System Information Technology Department (DATASUS). **Results:** A total of 2,384 transsphenoidal hypophysectomy procedures were recorded in Brazil from 2019 to 2023, distributed regionally as follows: Southeast (1,440); Northeast (394); South (286); Central-West (235); and North (29). The highest number of procedures was recorded in 2019 (594), followed by 2023 (511); 2022 (495); 2020 (400); and 2021 (388). São Paulo, in the Southeast region, recorded the highest number of hypophysectomy procedures in the country, totaling 1,066, while Rondônia, in the North region, had the lowest number, with only one procedure performed. Regarding the type of care, 1,439 procedures (60.3%) were elective, while 949 (39.7%) were urgent. The North region had the longest average length of stay, with 17.74 days, while the Southeast region had the shortest, with 9.04 days. The average cost of hospitalizations varied by region, with the South region presenting R$ 5,208.78, followed by Central-West with R$ 5,104.30, Northeast with R$ 5,071.29, Southeast with R$ 5,025.19, and North with R$ 4,962.63. The Central-West region had the highest mortality rate at 2.5725%, while the Southeast region had the lowest rate at 0.93%. **Conclusion:** The majority of hypophysectomy procedures occur in the Southeast region, primarily in São Paulo, contrasting with the North region, which has a reduced number of interventions. Most of these procedures are elective, with a longer length of stay in the North region and a shorter length of stay in the Southeast region. There is a variation in the average cost of hospitalizations, with the South region having the highest cost and the North region the lowest. Finally, the Central-West region has a higher mortality rate, while the Southeast region has the lowest. **Keywords:** hypophysectomy; hospital admissions; patient demographics.

OBESIDADE

2320

USE OF LIRAGLUTIDE 3MG IN PATIENTS WITH A BMI GREATER THAN OR EQUAL TO 45 KG/M² OR HIGHER AT A PUBLIC HOSPITAL IN RIO DE JANEIRO

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Introduction: The current obesity pandemic is a public health issue due to being a chronic, multifactorial disease associated with various comorbidities that lead to reduced life expectancy. Studies estimate that 41% of the Brazilian population may be affected by 2035. The basis of its treatment is lifestyle change strategies associated with drug therapy. In Brazil, the most effective and commercially available class of medication for obesity treatment is GLP-1 analogs, such as liraglutide 3 mg. This is the first study using the medication in patients with a body mass index (BMI) greater than or equal to 45 kg/m². **Patients and methods:** Patients with BMI ≥ 45 kg/m² followed at a public hospital in Rio de Janeiro have been included. They have undergone weekly dose escalation of the medication according to the label up to the therapeutic dose of 3 mg/day, administered subcutaneously. Patients have been clinically evaluated monthly by a multidisciplinary team comprising an endocrinologist, a nutritionist, and a physical education professional, and laboratory assessments were conducted every three months. **Results:** As preliminary results, 66 patients have been evaluated so far, with a mean age of 45 years, of whom 54 were women. The average duration of medication use was 179 days. The initial mean weight was 148.5 kg, and the BMI was 55.77 kg/m², with an average weight loss of 7.07% over six months. Among the 62 patients who experienced weight loss, the most significant reduction was 22.6 kg, corresponding to 12.45% of the initial weight. Between the 26 patients with type 2 diabetes mellitus, 19 had an average reduction in glycated hemoglobin of 1.7%, and in 6 patients, it was not possible to analyze. There was a nearly 20% increase in patients engaging in physical activity during this period. No patients discontinued treatment due to adverse events. **Conclusion:** The regular use of liraglutide 3 mg/day, combined with lifestyle change strategies, such as regular physical activity and healthy eating, is effective and safe for treating obesity in patients with a BMI greater than or equal to 45 kg/m², and it could be an important public health measure in controlling this pandemic. **Keywords:** obesity; liraglutide; weight loss.

TIREOIDE

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SUBACUTE THYROIDITIS RELATED TO SARS-COV-2 INFECTION: A SYSTEMATIC REVIEW

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Introduction: Subacute thyroiditis (SAT) is a self-limited inflammation of the thyroid gland characterized by cervical pain or discomfort and a tender diffuse goiter, usually triggered by an upper respiratory tract viral infection. The COVID-19 pandemic, caused by the SARS-CoV-2 virus, has revealed various health complications and observations suggesting that this viral infection can be a potent trigger for SAT. **Objective:** To analyze the causal relationship between SARS-CoV-2 infection and the occurrence of SAT. **Methods:** This is a systematic review of articles published between 2020 and 2024 in the PubMed and Medline databases using the search terms “Subacute Thyroiditis” and “SARS-CoV-2”. The work was conducted based on the PRISMA standard, with two independent reviewers performing data analysis. Inclusion criteria involved original articles addressing cases of SAT associated with SARS-CoV-2 infection, excluding studies with insufficient data that did not specify the relationship between the conditions or that related SAT to the COVID-19 vaccine. **Results:** Thirty-seven relevant articles describing cases related to SARS-CoV-2 infection were identified. Most patients were women (67%), and the age range varied between 24 and 67 years. In most cases, SAT symptoms appeared approximately 3 to 6 weeks after SARS-CoV-2 infection. The main reported symptoms included cervical pain, fever, and fatigue. Laboratory tests showed elevated inflammatory markers such as C-reactive protein and erythrocyte sedimentation rate, as well as thyroid hormone dysfunction. Complete recovery of thyroid function was observed in most patients in approximately 3 to 4 months. However, 10 studies indicated the persistence of thyroid symptoms. Data analysis suggests that SAT may be an extrapulmonary complication of SARS-CoV-2 infection, possibly triggered by an exaggerated immune response to the virus. Future studies should focus on understanding the pathophysiological mechanisms and establishing targeted guidelines for the clinical management of SAT in post-COVID-19 patients. **Conclusion:** There is evidence of a causal relationship between SARS-CoV-2 infection and the occurrence of SAT, highlighting the need for clinical vigilance and further research to enhance the understanding and treatment of this condition. **Keywords:** De Quervain’s thyroiditis; COVID-19; infection.

OBESIDADE

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EFFECTS OF MIRABEGRON AND QUINOLONE ON THE ACTIVATION OF BROWN ADIPOSE TISSUE IDENTIFIED BY FDG-PET/CT IN HUMANS (MIRAQL-BAT STUDY)

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Introduction. Brown adipose tissue (BAT) has regulatory functions on thermogenesis, and glucose and lipid homeostasis. Drugs such as β3-adrenergic agonists and quinolones are candidates for activating BAT for therapeutic purposes. **Objective:** To evaluate the effects of mirabegron (β3-adrenergic agonist), ciprofloxacin (quinolonone), or the combination of both, on the activation of BAT, glucose and lipid homeostasis. We present here the preliminary results of this ongoing study. **Methods**: Prospective, double-blind, randomized, crossover study. Twenty participants [18-40-year-old women, BMI 27-35 kg/m², insulin resistance (HOMA-IR > 2,7)]. Two random-order interventions: mirabregron 100 mg/day (4 weeks) (M intervention); mirabregron 200 mg/day (2 weeks), followed by mirabregron 200 mg/day plus ciprofloxacin 1,000 mg/day (2 weeks) (MQ intervention). Ten of the participants were also randomized to a third intervention: placebo for 2 weeks, followed by ciprofloxacin 1,000 mg/day (2 weeks). Washout period between interventions: 4 weeks. Outcomes: BAT activation after each intervention [fluorodeoxyglucose positron emission tomography/computed tomography (PET/CT) at room temperature25 ºC; BAT SUVmax]; changes in weight and circumference of the waist, hip and neck; changes in glucose, insulin, hemoglobin A1c, total cholesterol and fractions and triglycerides. **Results:** Thirteen participants were included so far (median age 31 years, range 19-38 years; median BMI 32.9 kg/m², range 29.3-35.0 kg/m². The median HOMA-IR was 6.4 (range 3.7-8.6). Anthropometric and metabolic parameters did not change significantly after interventions. BAT was not activated by ciprofoxacin alone (n = 10). Ten participants completed both M and MQ. BAT activation was observed after neither of the interventions in four participants, only after MQ in one, only after M in two, and after both M and MQ in three. Compared to M, one participant had higher SUVmax after MQ (22.7 *vs.* 12.1) and two had lower SUVmax after MQ (15.1 *vs.* 23.5; 4.78 *vs.* 6.7). **Conclusion:** Mirabegron-stimulated BAT activation at room temperature is viable in a tropical country. BAT is not activated by ciprofloxacin alone, but may be activated by mirabegron, either alone or in combination with ciprofloxacin. However, mirabregron effect lacks consistency across interventions and the effect of drug combination is not clear yet. **Keywords:** brown adipose tissue; obesity; insulin resistance.

NEUROENDOCRINOLOGIA

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EFFECTIVENESS OF LONG-ACTING PASIREOTIDE IN PATIENTS WITH FIRST-LINE SOMATOSTATIN-RESISTANT ACROMEGALY: EXPERIENCE FROM A DIABETES AND ENDOCRINOLOGY REFERENCE CENTER OF BAHIA

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Introduction: Resistance to first-line somatostatin analogues (SSAs) in acromegaly presents a significant clinical challenge. Approximately 20% to 30% of patients with acromegaly do not achieve adequate biochemical control with first-line SSA therapy. Pasireotide is a long-acting SSA used for the treatment of acromegaly, particularly in patients who are resistant to other SSAs such as octreotide and lanreotide. **Objective:** Investigate the effectiveness of pasireotide treatment in patients with first-line somatostatin-resistant acromegaly. **Patients and methods:** We present data from a retrospective chart review of patients with active acromegaly resistant to first-line SSAs from the Center for Diabetes and Endocrinology of Bahia. **Results:** Four patients (2 females), mean age 44 ± 7.16 years were included in the review. The mean baseline insulin-like growth factor 1 (IGF-1) at diagnosis was 3.6 times the upper limit of normal (ULN). All patients underwent pituitary surgery but continued to have active acromegaly despite treatment with a first-generation SSA. Immediately before starting pasireotide long-acting release (LAR), three patients were on SSA monotherapy, and one was on a combination of SSA and cabergoline. The mean IGF-1 level before initiating pasireotide was 2.1 times the ULN. The initial dose of pasireotide for all patients was 40 mg every 4 weeks. After six months of pasireotide treatment, IGF-1 levels normalized in one patient, while two other patients maintained IGF-1 levels between 1.1 and 2.3 times the ULN. One patient had IGF-1 measurement only after three months of treatment (1.6 times the ULN). Regarding glycemic control, three patients had been diagnosed with type 2 diabetes mellitus (DM2) before starting pasireotide, with an average glycated hemoglobin (HbA1c) of 6.1%. The most recent average HbA1c is 6.3%, and these three patients continue to use only metformin for DM2 management. The patient without a prior DM2 diagnosis developed a slight increase in HbA1c to 5.8% after 3 months on pasireotide but the level is currently at 4.7%. **Conclusion:** Pasireotide LAR offers a valuable treatment option for patients with somatostatin-resistant acromegaly. Its broad receptor affinity allows it to effectively reduce GH and IGF-1 levels in patients who do not respond adequately to other treatments. Monitoring the use of pasireotide in patients with acromegaly is essential to ensure effectiveness and manage potential side effects such as hyperglycemia. **Keywords:** acromegaly; pasireotide; somatostatin-resistant.

OBESIDADE

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EPIDEMIOLOGY OF OBESITY AND PATIENT PROFILE: A 10-YEAR ANALYSIS USING OF GOVERNMENT DATA

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Introduction: Obesity is currently a major threat to global public health, not only as a pathology in itself but also as an aggravator and risk factor for leading causes of non-violent deaths in Brazil and worldwide, such as hypertension, diabetes, and malignant tumors. **Objective:** Given the issue of obesity concerning patient health, this study aims to describe the profile of patients over a 10-year period, from 2014 to 2024, to determine which life stages are most affected and if there is a higher prevalence in any specific population. **Materials and methods:** The study analyzed retrospective data on hospital admissions sourced from the health data platform TabNet/DATASUS. Data collection utilized the R software with the "microdatasus" package (R. F. SALDANHA, 2019), including variables such as gender, age, place of residence, and race or ethnicity. Following data collection, analyses were conducted using Excel for better data organization. **Results:** Out of a total of 715,954 patient admissions related to metabolic diseases, 10,172 were attributed to obesity (1,35%). This population exhibited a higher prevalence in the 30-39 age group, predominantly in women, at a ratio of 7 to 1. No significant statistical differences were observed regarding race/ethnicity and place of residence. Other findings include a concerning increase in obesity cases over the years, with a 50% rise in annual cases between 2014 and 2023, increasing from 818 to 1,248 cases, and totaling 959 cases in 2024. **Conclusion:** From the research, it was inferred that obese patients are typically aged between 30 and 39 years and predominantly female. The observed increase in cases underscores a lack of success in preventing this disease. Urgent measures are needed, including more awareness campaigns and the development of solutions to curb the growth of this condition, which serves as a risk factor for worse prognoses with cancer, diabetes, and hypertension. **Keywords:** obesity; metabolic diseases; epidemiological profile.

TIREOIDE

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DEATHS FROM THYROTOXICOSIS: AN EPIDEMIOLOGICAL ANALYSIS FROM 2008 TO 2024

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Introduction: Hyperthyroidism refers to conditions resulting from the overactivity of the thyroid gland, which can be caused by various possible etiologies. The hormones produced accelerate cellular metabolism, leading to symptoms such as weight loss, profuse sweating, weakness, heat intolerance, and tremors, associated with tachycardia and a consumptive syndrome. Thyrotoxicosis refers to the clinical syndrome resulting from excess circulating hormone. It is crucial in the clinical context to achieve an accurate diagnosis and appropriate treatment of thyrotoxicosis to balance cellular metabolism. **Objective:** To assess the history of deaths due to thyrotoxicosis in Brazil using hospital morbidity data, aiming to understand this prevalent endocrine condition. Patients and method: An observational ecological study utilizing a time series analysis. The review was conducted using a public domain database, DATASUS, with the TabWin program. For analyzing deaths due to thyrotoxicosis, ICD-10 code E05, the annual averages from 2008 to 2024 were considered. All age groups were included in this analysis. **Results:** In 2008, a total of 248,846 deaths due to thyrotoxicosis occurred in Brazil, which remained the same in 2009. However, in 2010, a significant increase of approximately 21% ($p > 0.05$) was observed. Between 2011 and 2013, there was a steady decline, resulting in a 33% reduction by the end of this period, representing 98,139 fewer deaths. During the years 2014 to 2019, fluctuations occurred, but the upward trend continued, reaching 402,515 deaths due to thyrotoxicosis by the end of this period, an increase of nearly 60% ($p < 0.05$) compared to the values previously analyzed in 2008. During the COVID-19 pandemic, in 2020, there was surprisingly a decrease in deaths, returning to pre-peak levels. However, in 2021 and 2022, there was a significant increase in deaths by 47% ($p < 0.05$) compared to the isolation period, indicating a new change in the death pattern, reaching a total of 494,063 cases. In 2023, the highest value of the period was recorded, with 615,526 deaths. After a period of decreasing trend, there was a new increase in the number of cases, resulting in a doubling of annual deaths due to thyrotoxicosis when evaluating the entire period. **Conclusions:** Deaths due to thyrotoxicosis in Brazil are highly significant. There is an upward trend in these deaths. The COVID-19 pandemic may have significantly affected morbidity patterns. **Keywords:** thyrotoxicosis; cellular metabolism; deaths.

DIABETES MELLITUS

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MUCORMYCOSIS ASSOCIATED WITH BRAIN ABSCESS: A CASE REPORT

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Case presentation: 40-year-old woman with untreated diabetes mellitus (DM), admitted to the emergency department with diabetic ketoacidosis (DKA), fever, and general deterioration. Following clinical worsening, she was transferred to the ICU, where she developed left orbital edema, ptosis, absence of pupillary reflex, ophthalmoplegia and visual cloudiness. A CT scan revealed pansinusopathy, edematous infiltration of left periorbital fat and suspected cerebritis. After ICU discharge, she had new febrile episodes in the ward. Suspecting mucormycosis, treatment with Amphotericin B and surgical debridement was initiated. An AngioMRI indicated cerebritis with brain abscess, which was drained. Mycological research confirmed Rhizopus spp. The patient started Liposomal Amphotericin and continued with surgical debridements. Despite clinical improvement, a new MRI revealed another brain abscess, requiring further drainage. The patient remained stable and was discharged, continuing treatment with Liposomal Amphotericin. **Discussion:** Mucormycosis is a severe fungal infection, predominantly in immunosuppressed patients with uncontrolled DM and DKA. The rhino-orbital-cerebral form is the most common in these patients and is characterized by a febrile, rapidly evolving, and severe toxic condition. Although rare, such a presentation can occur without clear immunocompromising risk factors, making early diagnosis essential due to its rapid progression and high mortality. Symptoms like unilateral facial edema, ptosis, ophthalmoplegia and necrosis, similar to those in the case, require immediate intervention. Diagnosis is made through histological and imaging exams, which may reveal an association with brain abscess, indicating poor prognosis. Early management can improve prognosis, reducing morbidity and mortality, and includes glycemic control, conventional Amphotericin B or, in refractory cases, liposomal Amphotericin and surgical debridement. A multidisciplinary approach and continuous antifungal treatment are crucial to stabilize the condition and prevent recurrences. **Final comments:** Immunosuppressed patients with nasal sinus symptoms, such as diabetics in ketoacidosis, have an increased risk of developing mucormycosis, an acute, invasive, severe infection with a poor prognosis. In the reported case, despite intracranial involvement indicating a poor prognosis, the patient responded well to treatment, highlighting the importance of early and appropriate intervention. **Keywords:** diabetes mellitus; mucormycosis; brain abscess.

DIABETES MELLITUS

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FREQUENCY OF POSITIVE AUTOANTIBODIES AND THEIR ASSOCIATION WITH OTHER AUTOIMMUNE DISEASES IN PATIENTS WITH TYPE 1 DIABETES

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Introduction: Type 1 diabetes (T1D) is an autoimmune disease that leads to the destruction of pancreatic β cells, resulting in a deficiency in insulin secretion. The presence of antibodies, such as glutamic acid decarboxylase (GADA) and islet tyrosine phosphatase 2 (ANTI-IA2), is crucial for disease classification. **Objective:** The study aims to evaluate the frequency of GADA and ANTI-IA2 antibodies and their associations with other autoimmune diseases and random C-peptide levels in patients with T1D. **Methods:** This was a cross-sectional study that included a review of medical charts and measurement of GADA and ANTI-IA2 in patients with a clinical diagnosis of T1D, followed up at a tertiary center. Data were collected on age, gender, age at diagnosis, duration of disease, GADA and ANTI-IA2 titers, body mass index (BMI), random C-peptide levels, and diagnosis of other autoimmune diseases. **Results:** The sample comprised 282 patients with mean age, age at onset and disease duration of 35.34, 15.8, and 20.3 years and standard deviation (±15,86), (±10,69) and (±12,41), respectively. Thyroid diseases, vitiligo, celiac disease, psoriasis, and autoimmune hepatitis were found in 13%, 0.3%, 1.4%, 0.3%, and 0.3% of the cases, respectively. GADA (+) was detected in 40.2% of cases and was associated with other autoimmune diseases ($p = 0.006$) and presence of preserved C-peptide (≥0,6). Preserved C-peptide was identified in 16.6% of cases (46) and in 10.2% of those with more than 5 years of disease, whose average titles were 0,53 and 0,45, respectively. ANTI-IA2 was positive in 7.9% of the cases. It was not associated with either preserved C-peptide ($p = 1.0$) or other autoimmune diseases ($p = 0.519$). In patients with more than 10 years of disease, there was a difference in the levels of C-peptide ($p = 0.05$) and ANTI-IA2 ($p = 0.046$), but not for ANTI-GAD ($p = 0.689$) and the prevalence of other autoimmune diseases ($p = 0.616$). **Conclusion:** In this sample with long-standing T1D, a relevant proportion of patients remained with positive serum autoantibodies. Although GADA was the most common antibody, anti-IA2 was also detected in a few cases. While long-standing GADA was associated with a higher frequency of other autoimmune diseases and C-peptide, the same was not observed for anti-IA2. **Keywords:** type 1 diabetes; antibodies; anti-GAD.

METABOLISMO ÓSSEO E MINERAL

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ASSOCIATION OF CHANGES IN PROTEIN ELECTROPHORESIS WITH HIGH RISK OF FRACTURE

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Introduction: Monoclonal gammopathy of undetermined significance (MGUS) is an important cause of secondary osteoporosis. This is a hematological disorder characterized by the abnormal production of monoclonal paraprotein < 3 g/dL on serum protein electrophoresis (SPEP), bone marrow infiltration by plasma cells < 10%, but without target organ involvement (hypercalcemia, renal failure, anemia and bone lesions). **Methods:** Eleven patients with osteoporosis at high risk of fracture and positive screening for monoclonal gammopathy in SPEP were selected and followed up for one year at a reference medical center in Bahia. **Case series:** The average age at diagnosis of osteoporosis was 65 years, 90% female. The prevalence of fractures was 54%, diagnosed on average at age 73, the majority vertebral fractures, with two cases involving vertebral and humeral fractures simultaneously. Regarding target organ lesions, the highest mean values for creatinine and calcium were 1.0 mg/dL and 10.3 mg/dL, respectively. Two patients developed anemia. The chain most affected in SPEP was gamma globulin. Only two patients had confirmation of elevated monoclonal protein on immunofixation: J.R.M., male, 83 years old, SPEP with gamma globulin and immunofixation with kappa and lambda, T-SCORE of L1-L4 -2.8, fracture of 4 thoracic vertebrae; E.F.L.S., 76 years old, female, SPEP with gamma globulin, immunofixation with IgA lambda, T-SCORE of L1-L4 -3.6, no fractures. Regarding the treatment of osteoporosis in the first year after diagnosis, 72% of patients used oral bisphosphonates, 2 used zoledronic acid, and one used teriparatide. All showed improvement in bone mineral density in the lumbar spine, while 2 had slight worsening in the femoral neck. **Discussion:** A recent meta-analysis reported that patients with MGUS are at increased risk of any fracture, particularly vertebrae. The most common immunoglobulin and light chain types were IgG (68.9%) and kappa (62.0%), respectively, and one of the selected patients confirmed this profile. In our series, we observed that a positive screening was indicative of osteoporosis with a high or very high risk of fracture, despite the small number of patients who had the diagnosis confirmed. **Conclusion:** Positive screening for MGUS appears to correlate with an increased fracture risk. Identifying and treating patients with MGUS and osteoporosis can reduce skeletal events and improve quality of life. **Keywords:** gammopathy; osteoporosis; fracture.

DIABETES MELLITUS

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HOSPITALIZATIONS FOR DIABETES MELLITUS IN BRAZIL FROM 2019 TO 2023: AN ECOLOGICAL STUDY

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Introduction: Diabetes mellitus remains a significant global public health challenge, with increasing prevalence contributing to substantial morbidity and mortality. In Brazil, the burden of diabetes has led to a growing number of hospitalizations, stressing the healthcare system. **Objective:** Define the profile of diabetes mellitus patients hospitalized in Brazil. **Methods:** This is an ecological, retrospective, descriptive, and quantitative analysis of hospitalizations for diabetes mellitus (ICD-10 E10), using secondary data from the Hospital Information System (SIH/SUS) available in DATASUS. **Results:** During the study period, the total number of hospitalizations due to diabetes mellitus was 655,595. The Southeast region had the highest number of admissions (36.6%), while the Central-West region had the lowest (6.9%). The year 2020 saw the fewest hospitalizations, contrasting with 2022, which had the highest number. Regarding demographic variables such as race, gender, and age, the predominant profile consisted of individuals who were predominantly *pardos* (mixed-race Brazilians) at 46.1% out of a total of 664,477, followed by the white population at 27.5%. Notably, 18.5% did not provide a response (equivalent to 122,723 people). In terms of gender, there were predominantly men hospitalized in the Southeast, North, and Central-West regions, while the majority of hospitalized individuals were women in the Northeast and South regions. Concerning age groups by region, the 60-69 age group predominated in the Southeast region, totaling 36.6%. The mortality rate in the Northeast exceeded that of the Southeast, where more occurrences were reported. The average cost per hospitalization was R$ 908.77, with a gradually increasing total average value over the period, ranging from a low of R$ 793.01 in 2019 to a high of R$ 1019.25 in 2023. Finally, the average length of stay during the analyzed period was 6.54 days, with the Northeast having the longest average stay (7.04 days) and the South the shortest (5.48 days). The highest and lowest average stays per year were in 2022 (6.8 days) and 2020 (6.3 days), respectively. **Conclusion:** Between 2019 and 2023, there was an observed rise in hospitalizations, peaking in 2022. The Northeast region exhibited the highest mortality rate, whereas the Southeast recorded a greater frequency of hospitalizations. Data on the duration and average costs of hospital stays exhibited notable fluctuations throughout the specified timeframe. **Keywords:** diabetes mellitus; hospital admissions; ecological.

TIREOIDE

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MACRO TSH: A DIFFERENTIAL DIAGNOSIS OF PERSISTENTLY ELEVATED TSH

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Case presentation: A 30 years-old woman presented elevated TSH[1] (6.4) in the preconception evaluation and started levothyroxine (LT4). However, even with progressive doses (>2 mcg/kg), the TSH remained high (>10), and she was referred to an endocrinologist. At the first evaluation, she reported tachycardia, hypertension, hair loss and 10% weight loss. She denied poor adherence, symptoms of malabsorptive disease and personal/family history of thyroid disease. Remaining clinical examination was unremarkable. Thyroid function tests revealed elevated TSH, fT4 and total T4 with normal T3. LT4 was suspended and tests were repeated after 30 and 90 days, with persistent increase in TSH (12.8 and 12.2, respectively) but fT4, total T3 and T4 within reference intervals. Additional investigation showed no changes. Resistance to TSH (rTSH) or analytical interference was suspected. The patient serum was subjected to polyethylene glycol (PEG) solution using a procedure commonly performed for macroprolactinemia. The post-PEG TSH was 3.42 (28,5% recovery) suggesting that the interfering antibodies were macro-TSH (mTSH). Thyroid function tests were repeated on another more sensitive immunoassay platform to recognize mTSH and the TSH resulted in 0.74. **Discussion:** Persistently elevated TSH despite LT4 treatment suggests poor adherence, malabsorption and, rarely, rTSH or analytical interference. mTSH is an inactive macromolecule resulting from the complex binding of TSH to immunoglobulins, which results in falsely increased TSH by reacting with immunoassay antibodies. The prevalence is uncertain, less than 1% of cases of subclinical hypothyroidism. Authors suggest investigating mTSH whether TSH > 10 with normal thyroid hormones, but there is no defined protocol. Gel filtration chromatography is the gold standard, but PEG precipitation is easier and more affordable. Case reports suggest that some platforms are more sensitive to discriminate mTSH from bioactive TSH, such as Roche Cobas®, which was used in our case. **Final comments:** With universal TSH screening in pregnant women and subsequent treatment with LT4 in cases with TSH > 4, it is expected that more cases of persistently elevated TSH despite the use of LT4 will be detected. To avoid iatrogenic thyrotoxicosis, it is necessary to know the differential diagnoses, such as the presence of mTSH, even in cases of moderately elevated TSH. PEG precipitation may be a useful test in this suspicion. [1]TSH = 0.40-4.30 mUi/mL. **Keywords:** Macro-TSH; elevated TSH; analytical interference.

METABOLISMO ÓSSEO E MINERAL

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SEVERE PRIMARY HYPERPARATHYROIDISM IN A YOUNG PATIENT WITH ECTOPIC PARATHYROID HYPERPLASIA

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Case presentation: A 16-year-old woman, with kidney stones, presented with elevated PTH (642 pg/mL) and calcium (15.2 mg/dL). Cervical US showed a 2 cm nodule superior to the left thyroid lobe, with abnormal retention in the same region on parathyroid scintigraphy. Bone densitometry (DXA) was normal. The patient underwent left superior parathyroidectomy in 01/2022, and histopathology revealed parathyroid hyperplasia. Postoperatively, she maintained high calcium and PTH levels (505 pg/mL), and DXA indicated low bone mass. In 10/2022, she was hospitalized for severe symptomatic hypercalcemia. A new scintigraphy showed abnormal retention inferior to the left submandibular gland, confirmed by a 4D cervical CT, suggesting ectopic parathyroid. Due to the possibility of primary hyperparathyroidism (PHPT) associated with multiple endocrine neoplasias and the unavailability of genetic testing, we investigated metanephrines and catecholamines, calcitonin, abdominal CT, and pituitary MRI, along with calcium kinetics in first-degree relatives. All tests were negative. In 06/2023, a second surgery was performed, with left inferior (not described in the pathology report) and ectopic parathyroidectomy. The histopathology confirmed an ectopic submandibular gland, also hyperplastic. She developed mild permanent hypoparathyroidism, with no evidence of hyperplasia in the remaining glands to date. **Discussion:** PHPT is characterized by PTH hypersecretion and elevated calcium levels. Its incidence varies from 4 to 120 cases per 100,000 person-years, and is more prevalent in women aged 50-65. Up to 16% of recurrent PHPT cases may be due to ectopic parathyroid glands. Intraoperative PTH measurement is valuable for early diagnosis and prevention of reoperations, confirming the removal of all hyperfunctioning glands. This case is discussed due to the atypical presentation of severe PHPT in a young patient, with nephrolithiasis, severe hypercalcemia and low bone mass, complicated by the presence of an ectopic gland, this one with hyperplasia, associated with hyperplasia of only one other topical gland. **Conclusion:** Ectopic parathyroid hyperplasia, although rare, is significant and can complicate the approach of PHPT. Preoperative screening and postoperative management are essential to mitigate complications like osteoporosis and nephrolithiasis. This case underscores the complexity of PHPT, highlighting the importance of careful evaluation and intraoperative techniques to optimize outcomes. **Keywords:** ectopic parathyroid; parathyroid hyperplasia; primary hyperparathyroidism.

METABOLISMO ÓSSEO E MINERAL

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CALCIFEDIOL DOSE TITRATION IN A WOMAN WITH OSTEOPOROSIS, OBESITY, AND CHRONIC LIVER DISEASE: A CASE REPORT

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Introduction: Vitamin D deficiency is a worldwide issue, and calcifediol is an alternative to cholecalciferol for achieving and maintaining optimal levels of vitamin D. Calcifediol in the formulation of 10 mcg per dose has been available in Brazil since last year, despite the limited data in the literature on daily use and the lack of international guidelines for calcifediol treatment and dose recommendations. **Case report:** A 58-year-old woman with osteoporosis and a medical history of type 2 diabetes, obesity, and Child A liver cirrhosis was evaluated by endocrinology. Classical treatment with calcium, cholecalciferol, and bisphosphonate was instituted, but supplementation failed to obtain the target vitamin D levels during follow-up. Then, calcifediol was introduced at a dose of 10 mcg per day and increased to 20 mcg daily after one month. Although 25-hydroxyvitamin D [25(OH)D] levels reached 43.9 ng/mL in the first month, they exceeded 60 ng/mL with the 20 mcg dose (68.4 and 80.4 ng/mL in subsequent months). Initially, the dose was halved, but as levels remained at 81.1 ng/mL, calcifediol was discontinued. Subsequently, levels gradually decreased to 28 ng/mL over 2.5 months. Upon the dosage of calcifediol 10 mcg three times a week, serum levels were maintained at 35 ng/mL after 2 months. **Discussion:** Calcifediol offers some advantages over cholecalciferol, including better intestinal absorption, not requiring hepatic hydroxylation, a more rapid increase in 25(OH)D levels, and a more linear dose-response curve, as well as being 3-6 times more potent. It is a safe option, with few reports of intoxication. Current guidelines recommend considering calcifediol in cases of obesity, malabsorption syndromes, chronic liver diseases, and medications that interfere with cytochrome P-450, such as anticonvulsants, although the optimal doses remain uncertain, especially daily doses. **Conclusion:** More studies are needed to define the safe daily dose to be used. Considering the commercially available tablet in our country, we suggest starting calcifediol at 10 mcg per day and titrating according to 25(OH) D levels. **Keywords:** calcidiol; cholecalciferol; vitamin D deficiency.

METABOLISMO ÓSSEO E MINERAL

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CLINICAL PRESENTATION OF HEREDITARY PRIMARY HYPERPARATHYROIDISM (PHPT) FORMS AT A TERTIARY SERVICE IN SÃO PAULO

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Introduction: PHPT is characterized by hypercalcemia and unsuppressed or elevated PTH levels. It can be caused by a single parathyroid adenoma, multiglandular disease, or parathyroid carcinoma. The clinical-laboratory profile of hereditary PHPT forms is useful for early diagnosis and therapeutic planning. **Objective:** Assessment of clinical and laboratory characteristics of patients with hereditary PHPT. **Materials and methods:** This observational study was based on the review of medical records of all patients with a clinical suspicion of hereditary PHPT who were regularly followed up at a tertiary endocrinology service. Inclusion criteria were patients with PHPT associated with one or more endocrinopathies, family history of PHPT, positive genetic analysis for familial PHPT, or age ≤ 40 years at diagnosis. Data were collected and subjected to descriptive analysis. **Results:** The total sample comprised 59 patient records with suspected hereditary PHPT, with the majority being women (72.8%). The median age was 51 years, and the median age at diagnosis was 39 years, with the highest frequency in the age group > 30 years (76.3%). The endocrinopathies associated with PHPT included: pancreatic (11) and duodenal (1) neuroendocrine tumors; medullary thyroid carcinoma (3); acromegaly (1); prolactinoma (8); Cushing's disease (1); adenoma producing PRL and GH (1), producing PRL and ACTH (1), and non-functioning (5); Cushing's syndrome (2); pheochromocytoma (1); non-functioning adrenal adenoma (4); lipoma (7) and fibroma (2). There were 3 cases of parathyroid carcinoma, 1 case of PHPT + jaw tumor, and 4 cases of possible familial hypocalciuric hypercalcemia. Target organ lesions included nephrocalcinosis (5%), nephrolithiasis (59.3%), brown tumor (10.2%), and fracture (22%). The laboratory profile at PHPT diagnosis showed an average of: PTH = 446.5 pg/mL (reference range: 18.5-88.0), serum calcium = 11.7 mg/dL (reference range: 8.6-10.2), 25OH vitamin D = 24.5 ng/mL, and creatinine = 0.87 mg/dL. Bone densitometry scan analysis revealed cases of osteoporosis (11.9%), low bone mass (11.9%), osteopenia (20.3%), and normal result (20.4%). **Conclusion:** Although the hereditary form of PHPT is described in the literature as presenting early, we observed in our service an average age greater than that reported in the literature. This demonstrates a delay in recognizing hereditary forms, necessitating greater awareness among the medical team and improved healthcare assistance. **Keywords:** primary hyperparathyroidism; hereditary; familial hyperparathyroidism.

DIABETES MELLITUS

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METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC PANCREAS DISEASE (MASPD): A RISK FACTOR FOR INSULIN RESISTANCE?

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Introduction: "Metabolic dysfunction-associated steatotic pancreas disease" (MASPD) is not yet a term or condition described in the medical literature. The MASPD is a relatively new and emerging condition that has garnered significant attention in the field of metabolic disorders. This disease is characterized by pancreatic fat infiltration in the absence of chronic pancreatitis. Although the exact pathogenesis of MASPD remains unclear, there is growing evidence suggesting an association between MASPD and insulin resistance (IR). **Objective:** To investigate the association between metabolic dysfunction-associated steatotic pancreas disease (MASPD) and insulin resistance (IR) and explore the potential mechanisms that may contribute to this relationship. **Materials and methods:** This cross-sectional study involved 157 participants diagnosed with MASPD based on ultrasonography criteria. Baseline demographic data were collected, including age, gender, and body mass index. Serum levels of fasting glucose, insulin, lipid profile (including total cholesterol, triglycerides, high-density lipoprotein cholesterol, and low-density lipoprotein cholesterol), glycated hemoglobin and insulin were measured using standardized laboratory techniques. Abdominal ultrasonography was performed on all participants using convex transducer (frequency range, 3,5 MHz) by experienced radiologist blinded to the clinical data. The association between MASPD and IR was assessed using logistic regression analysis, adjusting for potential confounders. Statistical significance was set at a p-value of less than 0.05. **Results:** The logistic regression analysis was performed to verify whether MASPD was a risk factor for IR. After adjusting for gender and age, the results demonstrate a significant correlation between MASPD and markers of IR. TyG index: OR (95% IC) 5.72 (1.90 – 16.00), *P* 0.021, and HOMA-IR: OR (95% IC) 6.20 (2.1-22.00) *P* 0.037. **Conclusion:** This study presents the first description of MASPD and its association with IR indices. Our findings demonstrate a significant correlation between MASPD and markers of IR. These results suggest that MASPD may contribute to the development of insulin resistance and further highlight the importance of pancreatic health in metabolic disorders. **Keywords:** pancreatic steatosis; metabolic dysfunction; insulin resistance.

MISCELÂNEA

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TREATMENTS FOR DISORDERS OF OTHER ENDOCRINE GLANDS: AN EPIDEMIOLOGICAL ANALYSIS FROM 2014 TO 2024

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Introduction: The endocrine system is composed of a set of glands that produce and release hormones directly into the bloodstream, regulating various body functions. In addition to the main glands, such as the pituitary, there are other important endocrine glands. For the treatment of disorders of other endocrine glands, such as the parathyroid, pituitary, adrenal, Cushing's syndrome, and androgenic disorders, we use a specific descriptor in Brazil. **Objective:** To evaluate the history of treatments for disorders of other endocrine glands in Brazil through hospitalization data, aiming to understand this prevalent endocrine condition. Patients and method: Observational ecological study using a time series analysis. The review was conducted using a public domain database, DATASUS, with the TabWin program. To analyze Disorders of other endocrine glands ICD-10 code E35, the annual averages of the last ten years, from 2014 to 2024, were considered. All age groups were included in this analysis. **Results:** Treatments for disorders of other endocrine glands may include medications to restore hormonal balance, hormone replacement therapy, and surgery to remove tumors. In 2014, a total of 1,621 treatments occurred in Brazil. Between 2014 and 2016, the number of procedures remained stable. However, in the following year, 2017, there was a 7% increase, and the value remained the same in 2018. In 2019, there was a slight decrease of 6.5%, returning to previous values. During the COVID-19 pandemic, in 2020, a total of 1,120 treatments were performed, a significant decline compared to 2014. Treatments for endocrine gland disorders remained low in 2021, considering the period of isolation. In the subsequent year, 2022, there was an increase, with a total of 1,558 treatments performed, a 40% increase compared to the previous year. In 2023, the number returned to the levels of 2014, with 1,750 treatments. After a trend of reduction, a significant increase in treatments for endocrine gland disorders is observed. This is evident in the comparison of the months from January to May 2024, where the comparative period with previous years reaffirms the upward trend. **Conclusions:** Treatments for disorders of endocrine glands are common in Brazil. After a progressive decline in the number of treatments, the COVID-19 pandemic brought an increasing trend. Attention is drawn to the upward trend in treatments. **Keywords:** endocrine system; disorders endocrine glands; epidemiological.

TIREOIDE
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AUTOMATED THYROID ULTRASOUND ANALYSIS: HASHIMOTO'S THYROIDITIS

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Introduction: Thyroid ultrasound provides valuable insights for thyroid disorders but is hampered by subjectivity. Automated analysis utilizing large datasets holds immense promise for objective and standardized assessment in screening, thyroid nodule classification, and treatment monitoring. However, there remains a significant gap in the development of applications for the automated analysis of Hashimoto's thyroiditis (HT) using ultrasound. **Objective:** To develop an automated thyroid ultrasound analysis (ATUS) algorithm using the C# programming language to detect and quantify ultrasonographic characteristics associated with HT. **Materials and methods:** This study describes the development and evaluation of an ATUS algorithm using C#. The algorithm extracts relevant features (texture, vascularization, echogenicity) from preprocessed ultrasound images and utilizes machine learning techniques to classify them as "normal" or indicative of HT. The model is trained and validated on a comprehensive dataset, with performance assessed through metrics like accuracy, sensitivity, and specificity. The findings highlight the potential for this C#-based ATUS algorithm to offer objective and standardized assessment for HT diagnosis. **Results:** The program preprocesses images (grayscale conversion, normalization, etc.), segments the thyroid region, extracts features (texture, echogenicity), and utilizes a pre-trained model for classification ("normal" or "suspected Hashimoto's thyroiditis"). Using a sample image, the program successfully preprocessed, segmented, and extracted features. The predicted classification ("suspected HT") with high probability (0.92) aligns with the pre-established diagnosis, suggesting potential for objective HT assessment. **Conclusion:** C#-based ATUS algorithm successfully detects and quantifies Hashimoto's thyroiditis features, showcasing the potential of advanced programming in medical image analysis. **Keywords:** thyroid ultrasound; Hashimoto's thyroiditis; automated analysis.

TIREOIDE
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BRAIN METASTASES FROM DIFFERENTIATED THYROID CARCINOMA: A RETROSPECTIVE SINGLE-CENTER STUDY

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Introduction: Brain metastases (BM) originating from differentiated thyroid carcinomas (DTC) are uncommon. Given the limited number of documented cases in the literature, the management of these patients remains uncertain. This study aimed to analyze the clinical features and outcomes of patients with DTC and BM. **Materials and methods:** We retrospectively analyzed 10 patients with DTC and radiologically confirmed BM from a cohort followed at a university hospital in southern Brazil from 1986 to 2024. Data included demographics, histology, treatment history, clinical and radiological features of BM, and outcomes. Data from electronic medical records were summarized using descriptive statistics. Tumor response to the first therapy was evaluated using RECIST criteria, version 1.1. Overall survival was estimated from BM diagnosis to last follow-up or death. Further, the Kaplan-Meier method was used to estimate survival and curve comparison was performed using the Log-rank test. **Results:** Of 1,532 patients, 10 (0.65%) had DTC-derived BM. The mean age was 54.6 years at DTC diagnosis and 59 years at BM diagnosis. Radiological features of BM included single lesions in 90% of cases and peritumoral brain edema in 80% of cases. All patients had distant metastases at other sites: lungs (n = 8, 80%), bones (n =7, 70%), liver (n = 2, 20%), and adrenal glands (n = 1, 10%). Regarding the first BM treatment, two patients underwent neurosurgery, five had stereotaxic radiosurgery, two received radioactive iodine, and one underwent palliative care exclusively. After the first therapy, two patients had disease progression, three had stable disease, one was not yet evaluated for tumor response, one had a partial response, and two had a complete response. Remarkably, the two patients with a complete response were the only who underwent neurosurgery. Mean overall survival was 24.7 months after BM diagnosis. Moreover, patients with performance status (PS) ≤ 2 had significantly better survival than those with PS > 2 (mean survival of 34.6 vs. 9.8 months, P = 0.012). **Conclusion:** BM is associated with a poor prognosis in patients with DTC. The disease burden is higher due to concomitant metastatic involvement of other sites, more frequently lungs. Therefore, further studies are needed to primarily assess the most effective treatment strategies for these patients, particularly for those exhibiting a good performance status and a heightened potential for undergoing aggressive therapeutic interventions. **Keywords:** brain metastases; differentiated thyroid cancer; survival.

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ABDOMINAL PAIN IN LONG-STANDING DM 1: A MANIFESTATION OF GASTROINTESTINAL COMPLICATIONS

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Case presentation: A 43-years-old man, with hypertension and type 1 diabetes mellitus (DM) for 20 years on insulin therapy and depressive disorder. Hallux amputation was performed 3 months before admission. Admitted due to upper abdominal pain for 2 months, associated with 20kg weight loss in 9 months, recurrent vomiting for 8 years and constipation. On physical examination, a significant decrease in vibratory and painful sensitivity was seen in the lower limbs/upper limbs, in addition to a negative monofilament test. No other findings. During investigation, EDA with biopsy for H. Pylori, colonoscopy, abdominal ultrasound, magnetic resonance cholangiography, and angiography showed no relevant findings. Laboratory tests demonstrated a urinary albumin/creatinine ratio of 2102mg and HBA1c of 5.3%. He reported no monitoring of comorbidities, no tests to evaluate target organ lesions. During hospitalization, he continued to experience abdominal pain and vomiting even with optimized analgesia and prokinetics. Thus, due to the long-standing diabetic and depressive conditions, we discussed with the psychiatry and psychology team and decided to start pregabalin 150 mg/day and duloxetine 30 mg/day, with the patient showing significant improvement in the depressive condition and no recurrence of abdominal pain. **Discussion:** Diabetic gastroparesis (GD) is a neuropathy that affects the gastrointestinal tract of patients with DM, causing slow gastric emptying, epigastric discomfort, nausea, vomiting, diarrhea, early satiety and abdominal distension, without organic interference. Delayed gastric emptying and the symptoms associated with this condition can result in inadequate glycemic control, malnutrition, dehydration, increased frequency of hospitalizations and compromised quality of life, leading to anxiety and depression. It has a low incidence in the general population, but diabetic patients have a significant risk of developing this condition: 7 times higher in DM2 and 30 times higher in DM1. The diagnosis is based on delayed gastric emptying, excluding gastric obstruction. Gastric scintigraphy is the gold standard. The treatment of GD includes 4 strategies: glycemic control, lifestyle changes, therapies aimed at the pathogenesis of GD and symptomatic rupture of neuropathic pain. **Final comments:** Association between DM and gastroparesis is a complication that causes morbidity in these patients. Proper diagnosis and treatment are essential for a better quality of life. **Keywords:** diabetic neuropathies; diabetes mellitus, type 1; abdominal pain.

TIREOIDE

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CORRELATION BETWEEN TIRADS ULTRASONOGRAPHIC CLASSIFICATION AND BETHESDA CYTOPATHOLOGIC CLASSIFICATION OF THYROID NODULES PUNCTURED BETWEEN 2018 AND 2024 AT A UNIVERSITY HOSPITAL

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In the assessment of potential malignancy in a thyroid nodule, ultrasonography (US) plays a pivotal role. The use of an ultrasonographic classification system that combines various characteristics of nodules, such as the TIRADS classification, is highly useful in determining whether and which nodules should undergo fine needle aspiration biopsy (FNAB). To stratify the number of nodules biopsied within the TIRADS and Bethesda classifications, evaluating the correlation between both, and comparing these data with the relationships described in the literature. US and cytopathological descriptions of 274 thyroid nodules biopsied at a University Hospital between 2018 and 2024 were used. All nodules were classified using the TIRADS classification based on their ultrasonographic descriptions and compared with cytopathological results (Bethesda classification). Finally, the data were compared with proportions described in the literature. Of the 274 biopsied nodules, 4 were excluded due to incomplete data. Of the remaining 270, 16 were TIRADS 1, 43 TIRADS 2, 124 TIRADS 3, 82 TIRADS 4, and 5 TIRADS 5. Regarding cytopathological results, 42 were classified as Bethesda 1 (15%), which is inconclusive for diagnosis, 202 as Bethesda 2 (benign), 13 as Bethesda 3, 1 as Bethesda 4, 4 as Bethesda 5, and 8 as Bethesda 6 (both being considered potentially malignant). Excluding inconclusive cytopathological analyses, 5.3% of the results were potentially malignant, while 88.6% were identified as benign. Correlating the TIRADS and Bethesda classifications, malignant cases were found as expected, except in TIRADS 2 nodules, where 3 cases (7%) of potential malignancy were found, while the literature describes < 1%; and in TIRADS 5 nodules, which presented a single case (20%) of potential malignancy, lower than described (26-87%). There was a slight but unexpected higher number of malignancy cases in nodules classified as TIRADS 2, which may be related to the limitation of US description (which is operator-dependent), as well as a possible selection bias, since most TIRADS 2 cases would not initially be subjected to FNAB. The low malignancy rate in TIRADS 5 nodules may be related to the small number of cases. **Keywords:** TIRADS; Bethesda; thyroid nodule.

METABOLISMO ÓSSEO E MINERAL

2344

IMPACT OF HYPERCALCIURIA ON LABORATORY RESULTS IN PATIENTS WITH HYPERPARATHYROIDISM AT A REFERENCE ENDOCRINOLOGY CENTER IN BRAZIL

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Introduction: Hypercalciuria can be a determinant for parathyroidectomy in cases of primary hyperparathyroidism due to the risk of complications such as nephrolithiasis and nephrocalcinosis, among others. Clinical guidelines recommend this surgery for patients with severe hypercalciuria, a history of kidney stones, reduced renal function, osteoporosis, significant hypercalcemia, or life-threatening episodes. **Objective:** This study aimed to correlate hypercalciuria with laboratory results and undergoing parathyroidectomy, highlighting the importance of endocrinological follow-up for timely treatment. **Patients (materials) and methods:** Data from 48 patients with hyperparathyroidism, treated between June 2023 and June 2024 at a Reference Endocrinology Center in Bahia/Brazil, were analyzed. Hypercalciuria was studied considering variables such as serum calcium levels, PTH, renal function, osteoporosis, and nephrolithiasis. Patient confidentiality was ensured. **Results:** Of the 48 patients, 14 had hypercalciuria (29.16%) and 34 did not (70.83%). Among those with hypercalciuria, 12 were women (85.71%) and 2 were men (14.29%), with a mean age of 66.64 years old. Of the 14, 8 (57.14%) underwent parathyroidectomy. The analysis by hypercalciuria ranges (A: 250-350 mg/24 h, B: 351-450 mg/24 h, C: above 450 mg/24h) showed that 2 (28.57%) from range A, 3 (75%) from B, and 3 (100%) from C underwent surgery. Patients with serum calcium levels more than 1 mg/dL above the upper limit had high surgery rates: 2 of 3 in range A (66.66%), 3 of 3 in B (100%), and 3 of 3 in C (100%). The mean creatinine levels were 0.70 mg/dL (A), 1.07 mg/dL (B), and 0.66 mg/dL (C). The mean PTH levels were 144.57 pg/mL (A), 129.5 pg/mL (B), and 179.33 pg/mL (C). For nephrolithiasis, 2 of 14 (14.28%) developed the condition, of which 1 was operated on (50%). In range A, 1 of 7 (14.28%) had nephrolithiasis; in B, 1 of 4 (25%). The data highlight the correlation between severe hypercalciuria, higher calcium levels, and an increased likelihood of parathyroidectomy. There was no direct relationship between urinary calcium ranges, creatinine levels, or PTH levels. **Conclusion:** The identification and classification of patients according to the severity of hypercalciuria are fundamental for therapeutic decisions and optimization of treatment, ensuring better quality of life and prevention of future complications. **Keywords:** hypercalciuria; hyperparathyroidism; therapeutic decisions.

DISLIPIDEMIA E ATEROSCLEROSE

2345

EFFECTS AND EFFICACY OF USING A THYROID HORMONE AGONIST IN THE TREATMENT OF LIVER DISEASES: A SYSTEMATIC REVIEW

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Introduction: Resmetirom is a selective agonist of the thyroid hormone receptor beta (THR-b) that acts on the liver's metabolic pathways, possessing high absorption and specific selectivity for the liver. This selectivity can be beneficial in liver diseases. An example of this is the non-alcoholic steatohepatitis (NASH), a progressive form of fatty liver disease that causes inflammation and loss of hepatocytes, which can result in fibrosis or not, and other associated comorbidities. Patients with NASH generally have low levels of thyroid hormones and the disease has a high prevalence, with approximately 25% of the global population being affected. This situation justifies this study, considering that this medication may contribute to the reduction of morbidity, mortality and associated complications. **Material and method:** This systematic review was based on the PRISMA protocol, in which the descriptors "Resmetirom" and "Liver Disease" were used, articulated by the Boolean operator "AND" on the Medline/PubMed database. After applying filters, reviews and paid articles were excluded, resulting in 6 articles, one of which was discarded after full reading for not fitting the theme, totaling 5 articles. **Results:** Based on the analysis of scientific studies, an important response in the treatment of NASH with resmetirom was seen. In all studies, the group receiving the medication showed a significant reduction in liver fat compared to the placebo. The studies had samples ranging from 31 to 1143 patients divided into double-blind arms, using doses ranging from 80 to 100mg, and all showed a positive response, with a reduction in the percentage of liver fat ranging from 42 to 52.3% and a decrease in at least one stage of liver fibrosis. Additionally, improvements were also observed in other aspects such as fibrosis markers, cholesterol and triglycerides, apolipoprotein B, and patients' quality of life, with few adverse effects. **Conclusion:** Therefore, the efficacy of resmetirom has been demonstrated compared to the placebo group, showing highly positive results, which justifies the continuation of study phases for its future officialization as a treatment. **Keywords:** resmetirom; liver disease; treatment.

TIREOIDE

2348

DECOMPENSATION OF AUTOIMMUNE LIVER DISEASE DUE TO GRAVES' DISEASE: A CASE REPORT

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Case presentation: Female, 48 years old, 66.50 kg, followed up by an endocrinologist for almost two years due to excess weight and with a hepatologist for Primary Biliary Cirrhosis (PBC) and Ulcerative Retocolitis (UC). In January 2024, the patient presented TSH of 0.06 mUI/mL (VR: 0.3 - 4.5), FT4 of 1.25 ng/dL (VR: 0.54 - 1.24) and anti-TPO of 28 UI/mL (VR: <60), and an investigation for thyroid dysfunction was requested. In May 2024, the patient returned with severe jaundice (BbT: 12 mg/dL), worsening fatigue, palpitation on minimal effort and a 9.1 kg loss in body weight (subcutaneous semaglutide was restarted in January 2024). She had been diagnosed with cholestasis (cholangioresonance showed bile duct stones, she had previously undergone cholecystectomy) and started on ceftriaxone. On investigation for thyroid dysfunction, she had clinical hyperthyroidism, with TSH of 0.01 mUI/mL, FT4 of 1.97 ng/dL and TRAb of 9.16 UI/L. On USG, the thyroid showed heterogeneous texture and a 0.54 cm x 0.38 cm nodule in the lower lobe, on the left. Iodine uptake scintigraphy showed a hyperuptake thyroid and a cold nodule. Treatment with iodine therapy was chosen due to the hepatotoxicity of synthetic antithyroid drugs, resulting in partial improvement of the liver condition. On June 8th, she had a TBb of 6.0 mg/dL, direct Bb of 2.7 mg/dL and indirect Bb of 3.3 mg/dL. On June 13, she underwent iodine therapy with 15 MCI, which led to a faster correction of the hepatic decompensation. **Discussion:** Studies indicate that autoimmune conditions may predispose the occurrence of others, possibly because of an underlying genetic condition or common triggering environmental factors. Although an association of CBP and Hashimoto's Thyroiditis is well documented, the concomitance of CBP and hyperthyroidism due to GD is rare. The inclusion of UC makes the picture situation even more complex. In this patient, the coexistence of autoimmune diseases led to screening for thyroid dysfunction and a diagnosis of hyperthyroidism secondary to GD. In patients with GD, uncontrolled hyperthyroidism can exacerbate the underlying liver disease. Treatment with radioactive iodine for GD proved to be effective, causing a significant and short-term improvement in the patient's hepatic decompensation. **Final comments:** In patients with autoimmune diseases, it is important to remember the possible association with other autoimmune diseases, especially in cases of decompensation of an underlying disease. **Keywords:** Graves' disease; liver decompensation; polyautoimmunity.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2349

POLYCYSTIC OVARY SYNDROME AND ASTHMA AS TWO FACES OF THE SAME COIN: A SYSTEMATIC REVIEW

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Introduction: Both polycystic ovary syndrome (PCOS) and Asthma are diseases commonly found in adult females daily-basis causing them such a great impact on mental and physical health. A possible association between these two entities has been supported by mounting evidence in the scientific world through physiopathological and epidemiological studies. From this perspective, it urges to clarify the bond between PCOS and Asthma as the first step to develop more effective therapeutic and preventive approaches. **Objectives:** To address the correlation between PCOS and Asthma. **Materials and methods:** PubMed, MEDLINE Complete, Cochrane Library and Prisma databases were searched for publications between January of 2020 and July of 2024 using MeSH terms "Polycystic Ovary Syndrome" and "Asthma" combined by the Boolean operator "AND". Studies were included if they matched inclusion criteria: reports published in the last 5 years with free full text available and that dealt with the proposed theme on the PCOS-Asthma axis. **Results:** From 20 identified publications, 9 met inclusion criteria. Based on their analysis, the whole mechanism which connects both diseases is still unknown. However, both entities have similar physiopathological pathways related to environmental pro-inflammatory molecules, such as high IL-6 and TNF-Alpha levels in bloodstream, especially when talking about the pediatric presentation of Asthma. Cross-sectional studies have signed that Asthma in childhood is an independent risk factor for PCOS (95% IC = 1.02-2.41) and that those diagnosed with this respiratory obstructive disturb before 25-year-old were at higher risk of receiving a PCOS diagnosis afterwards (95% IC = 1.17-2.76). Another point is that childhood obesity was significantly related to developing an adult on-set of Asthma on women living with PCOS (p-value < 0,022). The last publications showed that women who dealt daily with the PCOS-Asthma binomial had an incredibly low Health-Related Quality of Life (p < 0,01), that consuming a healthy diet did not impact on less risk of exacerbations outcomes (95% IC = 1.02-1.78) and that nonalcoholic fatty liver disease related to the obesity, found in several women with PCOS, decreases pharmacological response to Asthma therapy. **Conclusion:** Asthma and PCOS seem to be sharing similar metabolic pathways, but we have no reliable long-term study that measures this correlation, which may shed light on optimizing nowadays approaches and therapies. **Keywords:** polycystic ovary syndrome; asthma; obesity.

OBESIDADE

2350

THERAPEUTIC POTENTIAL OF BIMAGRUMAB IN TREATMENT OF OBESITY: A SYSTEMATIC REVIEW

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Introduction: Bimagrumab is a monoclonal antibody that binds to activin type II receptors in skeletal muscle, preventing the binding of myostatin and other muscle growth-limiting factors. Studies demonstrate that bimagrumab may be associated with increased lean mass, reduced total body fat, reduced HbA1c levels and other beneficial properties in the treatment of obesity. This highlights a promising new perspective to be further explored in the approach to this disease. **Objective:** The focus of this study is to evaluate the therapeutic potential of bimagrumab in treatment of obesity. **Material and method:** This study is a systematic review guided by the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) using the Medical Subject Headings (MeSH) terms "bimagrumab" AND "obesity" in PubMed, Embase, and Cochrane databases in June 2024. Inclusion criterion was the availability of free full text. There was no exclusion criteria. **Results:** Out of 69 articles found, 3 were eligible. Samples of 16 to 84 patients, aged 18 to 85 years, with or without type 2 diabetes, with or without insulin resistance and with BMI between 18 and 45 were used. It was found that a single dose of 3 to 30 mg/kg or repeated doses every 1 or 4 weeks of 10 to 30 mg/kg for 10 to 48 weeks resulted in body fat reductions of 1.6 to 20.5%, lean mass gain of 2.4 to 6.0%, HbA1c reduction of 0.21 to 0.76%. One article evaluated seven groups that received treatment with bimagrumab or placebo by different routes (intravenous and subcutaneous) and different doses (52.5 to 1,500 mg), demonstrating body fat reduction and lean mass increase, and that weekly subcutaneous administration may present a pharmacokinetic profile and pharmacodynamic effects comparable with monthly intravenous dose. Bimagrumab was generally safe and well-tolerated, with the most common adverse events observed being classified as mild and moderate, such as diarrhea, acne, muscle spasms, myalgia, and upper respiratory tract infection. However, one study reported 3 serious adverse events among participants. **Conclusion:** Bimagrumab exhibits effects in reducing total body fat, increasing lean mass, and improving HbA1c levels. The subcutaneous route of administration presented results suggesting the feasibility of the drug in clinical treatment for obesity.
Keywords: bimagrumab; obesity; treatment.

METABOLISMO ÓSSEO E MINERAL

2351

DESCRIPTION OF X-LINKED HYPOPHOSPHATEMIC RICKETS CASES IN A FAMILY: GENETIC SEQUENCING AND THE IMPACT OF LATE DIAGNOSIS

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Cases presentation: This case series of X-linked hypophosphatemic rickets (XLH) describes the cases of a pair of siblings and illustrates the clinical and genetic manifestations of this rare condition. Both siblings have a history of follow-up for short stature and lower limb bone deformities since childhood. Currently, at 41 and 40 years of age, they exhibit typical laboratory abnormalities, short stature, bone pain, and severe skeletal deformities, such as genu varum, and have undergone multiple orthopedic surgeries, which have limited their quality of life. Sequencing of the PHEX gene revealed a heterozygous mutation at position chrX:22,056,469 – 22,056,708, with exon 2 deletion, confirming the diagnosis of XLH (#307800) only in adulthood. Upon starting burosumab treatment, both showed improvement in bone pain. **Discussion:** X-linked hypophosphatemic rickets (XLH) is an autosomal dominant hereditary condition caused by mutations in the PHEX gene, leading to elevated FGF-23 protein levels, increased renal phosphorus loss, hypophosphatemia, and reduced 1,25 $(OH)_2D$. In both cases, the severity of clinical manifestations in XLH and the complexity of managing this rare condition are highlighted. The burosumab treatment may help control symptoms, prevent additional complications, and improve the quality of life for these patients, even in adulthood. **Conclusions:** This case study highlights the importance of early diagnosis and integrated management for patients with XLH. A multidisciplinary approach involving endocrinologists, geneticists, orthopedic surgeons, and physical therapists is essential for the care of these patients. The clinical experience with burosumab in these cases underscores the efficacy of this targeted therapy and the necessity of strict adherence to treatment to maintain bone health and patient functionality. Future research should focus on preventive strategies and improvements in therapeutic protocols for this population to minimize invasive interventions and maximize long-term outcomes. Additionally, the observation of familial cases emphasizes the relevance of family evaluations and genetic counseling for managing hereditary diseases.
Keywords: hypophosphatemic rickets; XLH; late diagnosis.

METABOLISMO ÓSSEO E MINERAL

2352

SECONDARY OSTEOPOROSIS WITH SPONTANEOUS FEMUR FRACTURES IN A YOUNG PATIENT ASSOCIATED WITH TYPE 1 RENAL TUBULAR ACIDOSIS: A CASE REPORT

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Case report: We present a 16-year-old female patient referred to evaluation due to four episodes of bilateral spontaneous femur fractures in 2023, treated surgically. She had a history of multiple episodes of renal lithiasis between 10 and 16 years of age. The patient was previously healthy, practiced Muai Thay for years without complications, and did not have a family history of osteometabolic diseases. Whole body bone densitometry demonstrated low bone mass for age (Z score -3.8 SD), and initial investigation for secondary causes identified the presence of Metabolic Acidosis in addition to Hypercalciuria and Hypocitraturia, with all other tests normal. She was submitted to water restriction test to assess urinary acidification capacity, which confirmed the diagnosis of type 1 renal tubular acidosis. **Discussion:** Renal tubular acidosis is the consequence of a dysfunction in urinary acidification, type 1 (or distal) being related to dysfunction of the intercalated alpha cells of the collecting tubule which culminates in a decrease in hydrogen (H+) excretion. H+ retention leads to a reduction in renal calcium reabsorption, with an increase in bone calcium release, leading to bone mineral disease in addition to hypercalciuria, which justifies the association of fractures with recurrent nephrolithiasis and nephrocalcinosis. Recent references have also identified that acidic blood pH is associated with osteoclastic activation and decreased osteoblastic activity, demonstrating that chronic acidosis is related to bone disease also at the cellular level, and not just in hydroelectrolyte homeostasis. In addition to the primary/genetic causes, there are also secondary causes, highlighting the strong association between type 1 ATR and Sjogren's syndrome, which should always be tracked. Treatment involves dietary guidance and the prescription of alkaline agents to control acidosis. **Final comments:** Oral treatment with sodium bicarbonate and potassium citrate was initiated, and the patient progressed with adequate control of her acidosis, with no new fractures since then. She underwent a bone biopsy with a diagnosis of osteoporosis with low remodeling, and treatment with recombinant anabolic PTH (teriparatide) began in February. Whole exome sequencing was also carried out to assess genetic causes, as screening for rheumatological diseases was negative, with detection of a variant of undetermined clinical significance (VUS) in heterozygosity in the H1-4 gene. **Keywords:** secondary osteoporosis; type 1 renal tubular acidosis; spontaneous femur fractures.

TIREOIDE

2353

ASSOCIATION BETWEEN THYROID CANCER AND BREAST CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Thyroid cancer (TC) and breast cancer (BC) represent common malignancies affecting mainly females, and intriguingly, there is growing evidence suggesting a higher-than-expected co-occurrence of these cancers within the same individuals. The purpose of this systematic review and meta-analysis was to evaluate the relationship between TC and BC and to examine the likelihood of developing BC following TC (TC1-BC2) and vice versa (BC1-TC2). Methods: A systematic search was performed using the PubMed and Embase databases. We searched for articles containing epidemiological evidence of TC after BC and vice-versa, published until 2024. In addition, for BC1-TC2 studies there was sufficient and comparable data for subgroup analysis regarding age at the time of BC diagnosis and the type of treatment, which included radiotherapy and chemotherapy. The type of chemotherapy received was not specified in the studies. The standardized incidence ratio (SIR) was used to calculate the risk of second primary malignancy. The MOOSE (Meta-analyses Of Observational Studies in Epidemiology) guidelines were followed, and the Newcastle-Ottawa Scale was used to assess the quality of the studies. **Results:** Seventeen articles were included in the meta-analysis of TC1-BC2, comprising 360,032 patients. An increased risk of developing BC was observed (SIR = 1.4, 95% CI 1.2-1.6, $p < 0.01$) in patients with previous TC when compared to the adjusted population risk. Moreover, for BC1-TC2, 28 articles were included, comprising 2,486,870 patients. An increased risk of developing TC following BC was also found (SIR = 1.5, 95% CI 1.3-1.7, $p < 0.01$). In addition, the risk of TC was higher for patients diagnosed with BC before the age of 50 (SIR = 2.1, 95% CI 1.6-2.6). Also, patients who received chemotherapy for BC had a higher risk of developing TC (SIR = 1.6, 95% CI 1.5-1.7). Radiotherapy for BC was not associated with increased risk of a secondary malignancy. **Conclusions:** This study demonstrated an increased risk of developing TC or BC as secondary malignancies. Further studies are needed to provide a more in-depth understanding of this association, which could have potential implications for patient follow-up and management strategies. **Keywords:** breast cancer; thyroid cancer; second primary malignancy.

DIABETES MELLITUS

2354

THE PERCEPTION OF DIABETIC PATIENTS FROM THE OUTPATIENT DEPARTMENT OF A PHILANTHROPIC HOSPITAL ABOUT THE DISEASE

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Introduction: When seeking complete adherence to treatment and regular monitoring of patients with diabetes mellitus (DM), it is essential that they understand their complete state of health, since factors such as prognosis, evolution and even the interpersonal relationship with the doctor can influence the patient's attitudes towards their condition and thus minimize complications such as Diabetic Retinopathy. **Objective:** To understand patients' perception of DM and Diabetic Retinopathy at the Endocrinology outpatient service of a philanthropic hospital. **Patients and methods:** The study was conducted in 2024/1, involving DM patients at the Endocrinology service of a philanthropic hospital. All patients over 18 years old diagnosed with DM and who had signed the Informed Consent Form were included in the study, which included a questionnaire with 13 questions about the patient's knowledge of DM and Diabetic Retinopathy. **Results:** Among the 62 diabetic participants, 43 women and 19 men were assessed, the majority of whom were white (27) followed by brown (25). Concerning schooling, 17 patients said they had attended school from the 1st to the 4th grade of elementary school, another 17 patients said they had completed high school and, five patients had higher education, while another six patients said they were not literate. Regarding these patients' perception of diabetes, 45 of them said they had had this comorbidity for more than 10 years. When asked what type of DM they had, 49 could correctly inform, 46 DM2 and 3 DM1, while 13 patients said they didn't know this information. As for the complications of DM, 54 individuals reported that they believe that diabetes can cause changes in other parts of the body and the possibility of causing eye complications. When asked what kind of changes in the eyes diabetes would interfere with, only 14 patients answered correctly, while the majority (25) responded that it would be related to ocular refraction. Finally, only 14.51% of those interviewed said they knew what Diabetic Retinopathy was, while 59.67% were unaware of this condition. **Conclusion:** Most of the diabetic patients interviewed recognized the existence of complications related to DM, but only a minority (14.51%) specifically recognized the existence of Diabetic Retinopathy. It is necessary to find ways of better educating patients about the risks inherent in the disease so that they can act as active subjects in their health. **Keywords:** diabetic retinopathy; diabetes mellitus; perception.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2356

GUT MICROBIOTA AND GUT-DERIVED METABOLITES ARE ALTERED AND ASSOCIATED WITH DIETARY GLYCEMIC LOAD IN WOMEN WITH POLYCYSTIC OVARY SYNDROME

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Introduction: Disturbances in the gut microbiome may act as mechanisms influencing the interplay between dietary factors and metabolic disorders. Studies have demonstrated that alterations in the gut microbiota are associated with the diagnosis of PCOS. However, there is limited knowledge of the impact of diet on the gut microbiota and how gut-derived metabolites are modified in PCOS. **Objective:** To investigate associations between gut microbiota, metabolites (short-chain fatty acids, SCFA and indole-3-propionic acid, IPA) generated by gut, and dietary intake in women diagnosed with PCOS. **Methods:** A cross-sectional study involving 24 women with PCOS, who were previously recruited for two studies at our research center, was conducted. Additionally, 14 age-matched healthy controls were included for comparison. The mean age of the 38 participants was 33.3 ± 7.5 years and the mean BMI was 29.5 ± 4.8 kg/m^2. Outcomes included the analysis of the gut microbiota by sequencing the V4 region of the 16S rRNA gene; serum IPA levels measured by liquid chromatography/triple-quadrupole mass spectrometry (LC-QqQ-MS); and fecal and plasma SCFA levels, measured by LC-MS/MS. **Results:** Diversity, composition, and metabolic pathways of the gut microbiota differed between the PCOS and control groups. A lower abundance of two operational taxonomic units (OTUs) specialized in complex carbohydrate metabolism was observed in women with PCOS. The PCOS group also exhibited a less favorable dietary pattern compared to healthy women, and a significant correlation was observed between PCOS gut microbiota composition and dietary glycemic load (GL, r = 0.314, P = 0.03 in Mantel test). Multiple adjusted linear regression models indicated that lower IPA concentration and higher circulating levels of two SCFA – acetic acid and propionic acid, were independently associated with the diagnosis of PCOS. **Conclusions:** Our data support the differentiation between women with PCOS and healthy controls through analysis of gut microbiota. Moreover, alterations in gut bacteria and their metabolites could be, at least in part, the biological mechanism by which low GL diets may potentially improve reproductive and cardiometabolic outcomes associated with PCOS. **Keywords:** polycystic ovary syndrome; gut microbiota; diet.

MISCELÂNEA

2358

CASE STUDY ON THE SEVERITY OF METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE (MASLD) IN A PATIENT WITH CONGENITAL GENERALIZED LIPODYSTROPHY: IS SCREENING FIB-4 THE BEST OPTION?

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Case presentation: A 24-year-old male patient with poorly controlled diabetes mellitus (total insulin dose > 2 IU/kg/day) and hypertriglyceridemia (maximum TG: 242 mg/dL), diagnosed with congenital generalized lipodystrophy (CGL) at 1 year and 9 months old, with a heterozygous mutation in the BSCL2 gene, presented with muscle hypertrophy, generalized reduction of subcutaneous adipose tissue, acanthosis nigricans, and hepatomegaly on physical examination, in addition to a positive family history (sister with CGL). Upon screening for metabolic dysfunction-associated steatotic liver disease (MASLD), findings included hepatomegaly, severe hepatic steatosis, enlarged portal vein, and homogeneous splenomegaly on abdominal ultrasound (US), and the presence of thrombocytopenia with a Fibrosis-4 (FIB-4) Index for Liver Fibrosis of 1.05. Other causes of thrombocytopenia were excluded, attributing it to chronic liver disease. Hepatic elastography by FibroScan® revealed grade 1 hepatic steatosis (CAP 250 dB/m) and grade 4 hepatic fibrosis (23 kPa). **Discussion:** MASLD is a common and early complication of CGL. As described in the case, screening with abdominal US + FIB-4 may not be the most appropriate method for this population since, even in patients with more advanced fibrosis, there was no evidence of an increase in FIB-4 or signs of fibrosis on abdominal US. This suggests that more specific hepatic evaluations, such as elastography or even biopsy, are necessary for early diagnosis. **Final considerations:** Due to the significant morbidity and mortality of MASLD, screening should be initiated early in patients with CGL, and hepatic elastography by FibroScan® emerges as a more suitable alternative. **Keywords:** MASLD; congenital generalized lipodystrophy; FIB-4.

OBESIDADE

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EXOCRINE PANCREATIC INSUFFICIENCY AFTER ROUX-EN-Y GASTRIC BYPASS: A CASE REPORT

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Case presentation: A 43-year-old female patient with a history of Roux-en-Y gastric bypass surgery in 2009 for obesity (pre-surgery BMI 39.5 kg/m²) associated with type 2 diabetes mellitus (remission post-surgery). She reported no postoperative complications and achieved a weight loss of 30 kg over 24 months. During clinical follow-up, she developed severe vitamin D deficiency refractory to oral supplementation. Thirteen years after surgery, she complained of daily diarrheal episodes, 6-7 times a day, with oily, pasty stools with no mucus or blood, accompanied by abdominal distension. Celiac disease screening yielded negative results. Due to steatorrhea, a fecal Elastase-1 test was performed, showing a result of < 6 mcg/g, confirming a diagnosis of secondary Exocrine Pancreatic Insufficiency due to Roux-en-Y gastric bypass. The patient started regular use of Pancreatin with meals and reported significant improvement in diarrheal episodes, maintaining 1-2 bowel movements per day without new complaints. **Discussion:** Exocrine pancreatic insufficiency (EPI) can be caused by pancreatic and non-pancreatic disorders, being a complication already reported in the literature after bariatric procedures around the world. Symptoms of EPI, such as steatorrhea, weight loss, and nutrient malabsorption, often resemble gastric bypass sequelae, which can complicate diagnosis. Fecal Elastase-1 testing is a useful diagnostic tool in such cases. Upon diagnostic confirmation, exogenous pancreatic enzyme administration forms the cornerstone of treatment for patients with digestive symptoms and steatorrhea. These patients are also at risk of fat-soluble vitamin deficiencies, other micronutrient deficits, and bone disease. Post-surgical changes such as pyloric loss, dumping syndrome, and motility disorders may cause asynchrony, as pancreatic enzyme administration may not synchronize with meal transit through the upper intestine. A multidisciplinary approach at specialized bariatric surgery centers is crucial for managing these cases effectively. **Final remarks:** EPI should be considered in all post-bariatric surgery patients with prolonged gastrointestinal complaints suggestive of malabsorption or digestive issues, aiming for early identification and appropriate treatment. **Keywords:** exocrine pancreatic insufficiency; bariatric surgery; steatorrhea.

OBESIDADE

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DRUG COMBINATION IN OBESITY TREATMENT: CASE REPORT

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Obesity is a globally recognized chronic, heterogeneous, recurrent, and progressive disease with significant impacts on public health and the economy. The energy imbalance is related to genetic, behavioral, and environmental factors. By 2035, it is projected that up to 35% of the population will have obesity, highlighting the urgency of recognizing and treating this pandemic, as it is estimated that only 1% of clinically indicated people currently receive treatment. This case report describes a 46-year-old female patient with grade III obesity, illustrating the daily clinical challenge of treatment and the effectiveness of an intensive multidisciplinary approach. After previous treatments with sibutramine and fluoxetine, which were not durably successful due to side effects, she started an institutional program with hospitalization and daily follow-up that included a ketogenic diet, physical activity, and optimization of pharmacological treatment. The combination of naltrexone-bupropion was initiated, followed by the addition of liraglutide when weight loss plateaued, resulting in a total weight loss of 39.9 kg in ten months (21.56% of initial weight), totaling a reduction of more than 80 kg (64.6%) compared to her highest lifetime weight. Outpatient follow-up is maintained, as well as the maintenance of lost weight with a decrease of 45 cm in abdominal circumference, and she is awaiting bariatric surgery. The discussion emphasizes the need for a synchronized team for effective obesity management, combining medical, nutritional, psychological, and pharmacological interventions. Medications such as naltrexone-bupropion and liraglutide are highlighted as effective options, mainly acting on appetite control and metabolic regulation, showing excellent results when associated at an opportune moment, enhancing weight loss. Furthermore, the importance of close and continuous follow-up is highlighted to avoid therapeutic inertia. The final considerations underline obesity as a public health challenge that requires interdisciplinary and continuous treatment. Recent advances in medications offer new hope and should be encouraged in clinical practice based on the patient's profile, phenotype, financial condition, and availability, highlighting the possibility of therapeutic association to combat obesity and its metabolic consequences, aiming to enable a better personal quality of life and long-term reduction of the burden on the public health system. **Keywords:** obesity; anti-obesity agents; weight loss.

DIABETES MELLITUS

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EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS OF CHILDREN AND ADOLESCENTS DUE TO DIABETES MELLITUS IN THE NORTHEAST REGION OF BRAZIL

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Introduction: Diabetes mellitus (DM) corresponds to a group of metabolic dysfunctions related to glucose metabolism, which are classified according to their etiopathogenesis. Among the types of DM, type 2 DM stands out as the most prevalent, while type 1 DM occurs in 5% to 10% of diabetics, and its most common etiology is the destruction of pancreatic beta cells by an autoimmune process. Diabetes mellitus, especially type 1, stands out as an important cause of hospitalizations in children and adolescents. This occurs mainly when there is a significant deficiency of insulin in the body that leads to a complication known as diabetic ketoacidosis, which is defined as an endocrine emergency. **Objective:** To analyze the epidemiological profile of children and adolescents hospitalized in the Northeast for diabetes mellitus between 2008 and 2023. **Materials and methods:** Cross-sectional, retrospective, and quantitative study based on information obtained from the SUS Information Technology Department's (DATASUS) database. The data was collected and processed using R software using the "microdatasus" package (R. F. Saldanha, 2019). The following variables were considered: number of hospitalizations in the Northeast region between 2008 and 2023, age between 1 and 19 years, gender, endocrine diseases, diabetes mellitus, and place of residence. **Results:** Out of a total of 186,086 hospitalizations for endocrine and metabolic system diseases in children and teenagers, 34,358 cases of diabetes mellitus were identified. There has been an annual increase of 1,000 cases per year from 2008 to 2023. The majority of cases occurred in girls between the ages of 10 and 14 and in patients of mixed race. The mortality rate was 9.4 deaths per 1,000 inhabitants, but this number decreased by 55% over the years, dropping from 12/1,000 in 2008 to 5.3/1,000 in 2023. **Conclusion:** The analysis suggests an improvement in the quality of treatment and monitoring for children and adolescents with diabetes mellitus. However, the concerning annual increase in cases indicates a possible deterioration in DM prevention campaigns. Knowing that lifestyle habits and patterns contribute significantly to most cases, there is an urgent need for more effective campaigns to control this rising trend of DM among children and teenagers. **Keywords:** diabetes mellitus; epidemiological profile; hospitalizations of children and adolescents.

TIREOIDE

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COMPARATIVE ANALYSIS OF HOSPITALIZATION PROFILES FOR THYROID DISORDERS RELATED OR NOT TO IODINE DEFICIENCY (2014-2023)

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Introduction: The thyroid secretes two main hormones for metabolism, thyroxine (T4) and triiodothyronine (T3), whose synthesis depends on thyrostimulating hormone (TSH) and the presence of intracellular iodine. However, iodine deficiency or excess can cause various endocrine pathologies. **Objective:** To compare the profiles of hospitalizations for thyroid disorders associated with iodine deficiency and other thyroid disorders in the *Sistema Único de Saúde* (SUS) from 2014 to 2023. **Methods:** This is an ecological, observational, retrospective, descriptive, and quantitative study, using data from DATASUS in Hospital Morbidity (SIH/SUS) regarding thyroid disorders related to iodine deficiency and other thyroid disorders from 2014 to 2023. The variables analyzed were: number of hospitalizations, year and nature of care, region, total and average value per hospitalization, gender, age group, average length of stay, and mortality. **Results:** During this period, there were 31,242 hospitalizations due to thyroid disorders. Of these, 59.8% were elective and 40.2% were urgent, while 8.2% were related to iodine deficiency and 91.8% were unrelated. The year 2019 and the Southeast region recorded the most hospitalizations. The age group most affected by iodine deficiency thyroid disorders was 40-49 years (20.6%), with a prevalence in women (81.9%). In the other disorders, the most affected age group was 50-59 years (20.6%), with a prevalence in women (84.1%). The mean duration of iodine deficiency dysfunctions was 4.5 days, while for other disorders it was 4.1 days. The mortality rate was higher in iodine deficiency-related disorders (4.55%) compared to unrelated disorders (1.33%). The total expenditure on iodine deficiency dysfunctions was R$ 1.9 million and the average cost was R$ 789.2 per hospitalization. For the unrelated, the total expenditure was R$18.9 million and the average cost was R$ 673.7 per hospitalization. **Conclusion:** Iodine deficiency disorders had a lower hospitalization rate compared to other thyroid dysfunctions. However, the 40-49 age group was most affected, showing a higher average length of stay, cost per hospitalization, and mortality rate than other disorders. In contrast, other thyroid disorders had higher total expenses and hospitalization rates among individuals aged 50-59. Despite this, both types of thyroid disorders predominantly affected women and were concentrated in the Southeast region and in 2019, with a majority of cases being elective. **Keywords:** thyroid gland; endocrine diseases; hospitalization profile.

ADRENAL E HIPERTENSÃO

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UNILATERAL PHEOCHROMOCYTOMA IN A PATIENT WITH NEUROFIBROMATOSIS TYPE 1: CASE REPORT

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Case presentation: Woman, 52 years old, with arterial hypertension (SAH) neurofibromatosis type 1 (NF1), was admitted to a hospital unit due to a suicide attempt due to exogenous poisoning in August 2023. Requested Chest tomography to evaluate complications associated with pulmonary infection, revealing an adrenal incidentaloma. During hospitalization, he had persistent tachycardia and blood pressure spikes. Upon discharge, she was referred for investigation of pheochromitoma. Laboratory investigation ruled out hyperaldosteronism, Cushing's syndrome and suggested the diagnosis of pheochromocytoma due to a result of total urinary metanephrines greater than 5,000 mcg/24 hours, metanephrines 2,257 mcg/24 hours, normetanephrines 3,091 mcg/24 hours. The tomography with adrenal protocol showed bilateral nodules: in the left adrenal measuring 3.8 x 3.1 x 3.1 cm with absolute washout of 56% and relative washout of 35% suggestive of pheochromocytoma/neoplasia and in the right adrenal measuring 1.2 x 1.0 with absolute washout of 77% suggestive of lipid-poor adenoma. The patient underwent conventional left adrenalectomy in December 2023 and pheochromocytoma was confirmed by pathology/immunohistochemistry. After the surgical procedure, antihypertensive medications were suspended and the lipid-poor adenoma was monitored with imaging. **Discussion:** Approximately 3% of patients with NF1 develop catecholamine-secreting tumors. In these patients, the pheochromocytoma is usually unilateral and benign, occasionally bilateral, and rarely a periadrenal abdominal paraganglioma. In the reported case, the patient had bilateral adrenal lesions, but the imaging findings (absolute washout < 60% and relative washout < 40%) suggested that the pheochromocytoma was unilateral, originating from the left adrenal. Histopathology and immunohistochemistry were confirmatory. Despite the indication of screening for pheochromocytoma in patients with NF1, hypertensive patients or those with paroxysmal symptoms, aged over 30 years, we had a reported case of an adrenal incidentaloma. **Final considerations:** The diagnosis of pheochromocytoma should always be considered in patients with NF1, especially in those with SAH. In case of bilateral lesions, image characteristics on tomography or magnetic resonance imaging can help in recognizing pheochromocytoma. **Keywords:** pheochromocytoma; neurofibromatosis type 1; adrenal incidentaloma.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

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GENETIC VARIANTS IN A CASE OF SRY-NEGATIVE 46,XX OVOTESTICULAR DIFFERENCES IN SEX DEVELOPMENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS: INSIGHTS FROM WHOLE EXOME SEQUENCING

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Sex-specific differences in immune responses contribute to varying susceptibility to autoimmune diseases (AID) in men and women. Research shows a strong link between AID and female sex, influenced by X chromosome dosage and female sex hormones. Individuals with Klinefelter syndrome (47,XXY) have a higher incidence of systemic lupus erythematosus (SLE) related to the double X chromosome dosage. **Case report:** A child with atypical genitalia and a 46,XX karyotype was diagnosed with ovotesticular disorders of sex development (OT-DSD) after undergoing exploratory laparoscopy and bilateral gonadectomy (2 years), which revealed bilateral ovotestis. At 11 years of age, male puberty was induced with testosterone, resulting in the development of male secondary sexual characteristics. At 14-year-old, he began showing symptoms of rheumatologic diseases and was later diagnosed (17-year-old) with SLE and Sjogren's syndrome. The patient's genomic DNA was analyzed by whole exome sequencing (WES) on the Illumina HiSeq 2500 platform and the identified allelic variants were analyzed using the Franklin by Genoox platform, incorporating frequency databases and prediction tools. The variants were categorized according to the ACMG criteria. Despite the analysis, no allelic variants were found in genes previously related to gonadal development in the WES results. A deleterious heterozygous variant in the Iroquois Homeobox 6 (*IRX6*) gene (16q12.2) was identified. IRX6 is part of the IRXB cluster, which includes IRX3 and IRX5, within the homeobox transcription factor family. The variant p.Arg155Gln, c.464G>A (NM_024335.3) was classified as pathogenic in Varsome and as a VUS in the Franklin platform. In mice, abnormalities in the IrxB cluster genes have been associated with defects in primordial germ cell proliferation and disruptions in somatic-germ cell interactions, leading to gonadal abnormalities in both sexes. This suggests that *IRX6* may be a potential candidate gene for the patient's gonadal abnormalities. A 2.4kb deletion in C4B (exons 20-28) was identified. Reduction in total C4 copy number is linked to genetic risk factors associated with SLE, suggesting that this deletion in C4B might increase the individual's susceptibility to SLE. The case involved a rare example of an *SRY*-negative 46,XX OT-DSD patient with SLE-JS. While the molecular findings are preliminary and necessitate further study, they highlight the utility of WES in the diagnostic investigation of this patient. **Keywords:** DSD; 46,XX ovotesticular disorders of sex development; autoimmune disease.

ENDOCRINOLOGIA BÁSICA

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TREATMENTS FOR METABOLIC DISORDERS: AN EPIDEMIOLOGICAL ANALYSIS FROM 2015 TO 2024

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Introduction: Metabolic disorders represent a broad category of conditions that affect the balance and efficiency of the biochemical processes essential for maintaining bodily homeostasis. Metabolism, a complex set of chemical reactions occurring in cells, is crucial for converting nutrients into energy, synthesizing cellular components, and eliminating waste. Any dysfunction in these processes can lead to significant health consequences. **Objective:** To evaluate the history of treatments for metabolic disorders in Brazil through care data, aiming to understand this prevalent endocrine condition. Patients and method: An observational ecological study using a time series analysis. The review was conducted using a public domain database, DATASUS, with the TabWin program. To analyze Metabolic Disorders ICD-10 code E889, the annual averages from the last ten years, 2015 to 2024, were considered. All age groups were included in this analysis. **Results:** Endocrine and metabolic dysfunctions in our country are highly significant, particularly obesity, which can lead to diabetes and cardiovascular risks. In 2015, a total of 54,268 treatments were conducted in Brazil. Between 2015 and 2019, there was a slight decrease of 15%. During the COVID-19 pandemic, a total of 34,882 treatments were performed in 2020, a decline of 19,386 compared to 2015, representing a 36% decrease during this period. Metabolic disorders remained low in 2021, considering the isolation period. In the following year, 2022, an increase occurred with a total of 47,868 treatments, a 30% rise compared to the previous year. In 2023, the numbers returned to 2015 levels, with 54,382 treatments. After a trend of reduction, a significant increase in the treatment of metabolic disorders was observed. This is evident when comparing the months of January to May 2024 with previous years, reaffirming the growing trend. **Conclusions:** Metabolic disorders are prevalent in Brazil. After a progressive decline in the number of treatments, the Covid-19 pandemic brought about an increasing trend. Attention is drawn to the rising trend in treatments for metabolic disorders. **Keywords:** metabolic disorders; metabolic syndrome; endocrine comorbidities.

METABOLISMO ÓSSEO E MINERAL

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ATYPICAL FRACTURES IN FOREARM AND FEMUR IN A PATIENT WITH CORTICOSTEROID-INDUCED OSTEOPOROSIS ON CHRONIC RISEDRONATE THERAPY

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Case report: A 51-year-old female diagnosed with systemic lupus erythematosus at age 13 has been on corticosteroid therapy since then, developing corticosteroid-induced osteoporosis with multiple typical fractures. Over 19 years, she used bisphosphonates (BP) (monthly risedronate 150 mg) prescribed by a rheumatologist. Initially reporting right thigh pain, never investigated, she later experienced severe left thigh pain resulting in a fall. Radiographs revealed non-comminuted fractures in both femoral shafts and the left radial shaft, with minimal trauma. She underwent osteosynthesis surgeries, ceased BP, and started anabolic therapy. **Discussion:** Prolonged bisphosphonate (BP) use increases the risk of atypical femoral fractures (AFFs), occurring between the lesser trochanter and supracondylar region of the femur (subtrochanteric or diaphyseal), either incomplete (affecting the lateral cortex) or complete with a transverse pattern, often with minimal trauma. BP treatment is thought to reduce bone turnover, leading to increased and more uniform mineralization of the bone matrix, potentially contributing to AFF pathogenesis. The benefit-to-risk ratio of AFFs for 3 to 5 years of BP therapy in osteoporotic women is highly favorable: approximately 1200 fractures, including 135 hip fractures, are prevented for each AFF caused by BP. Certain groups, such as glucocorticoid users and Asian patients, are at higher risk and require close monitoring. Patients on prolonged BP therapy should be assessed for thigh pain, with imaging if symptomatic. Isolated reports suggest AFF-like fractures in bones other than the femur among BP users, including ulna, humerus, tibia, and clavicle fractures, often with minimal trauma and a transverse pattern. A small case-control study linked BP use to low-energy humeral shaft fractures, and a 2015 systematic review identified seven cases of ulnar fractures in elderly Asians using BP extensively (7-14 years). **Conclusion:** The patient not only presented with an atypical femoral fracture but also an atypical radial fracture, an even rarer occurrence. This scenario highlights the importance of vigilant management in patients on prolonged BP treatment, especially those with risk factors such as glucocorticoid use and potential symptoms of atypical fractures, as seen in this patient's case. Non-femoral fractures associated with BP use appear to be extremely rare, although endocrinologists should be aware of these possibilities. **Keywords:** atypical fractures; bisphosphonates; osteoporosis.

TIREOIDE

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ASSOCIATION BETWEEN SYSTEMIC LUPUS ERYTHEMATOSUS AND GRAVES' DISEASE: A CASE REPORT

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Case presentation: Female, 49 years old, diagnosed with systemic lupus erythematosus (SLE) since 2012. History of lupus myocarditis, systemic arterial hypertension (SAH), corticosteroid-induced glaucoma, and osteoporosis. Initial tests revealed ANA: 1/1280, C3: 124, leukopenia, TSH: 0.01, and FT4: 3.65, leading to the initiation of treatment with propylthiouracil and propranolol for hyperthyroidism. The patient is currently on methotrexate and folic acid. Presented with exophthalmos, goiter, tremors, tachycardia, and weight loss. A thyroid ultrasound with Dopplers showed increased vascularity and heterogeneous echotexture. TRAb of 15.90 confirmed the diagnosis of Graves' disease (GD), treated with iodine therapy. **Discussion:** Patients with SLE have a higher prevalence of thyroid diseases, with thyroid antibodies frequency about three times higher than matched controls. GD is the leading cause of hyperthyroidism in these patients, potentially leading to complications such as cardiac arrhythmias, heart failure, osteoporosis, and increased mortality. The patient already has osteoporosis, SAH, and a history of lupus myocarditis. The prevalence of hyperthyroidism in SLE patients is about six times higher than in the general population. Recent studies indicate that SLE increases the risk of developing GD by 15%, influenced by mutations in HLA genes and polymorphisms in genes such as PTPN22, IFIH1, and ITPR3. In patients with SLE, hyperthyroidism rates range from 3% to over 9%. Although the association between SLE and GD is rare, SLE is more commonly associated with hypothyroidism. Furthermore, studies suggest that antithyroid medications used to treat Graves' disease can induce SLE, and Graves' disease itself may be a factor in developing SLE due to chronic oxidative stress. The incidence of SLE was 8.81 in the case group and 2.83 in the control group. The interaction between SLE and GD requires careful monitoring and appropriate treatment to avoid serious complications. This case highlights the importance of a multidisciplinary approach in managing patients with multiple autoimmune conditions. **Final comments:** The coexistence of SLE and GD can exacerbate the symptoms of both diseases, highlighting the complexity of their interaction. It is crucial to emphasize the importance of clinical surveillance and a multidisciplinary approach for patients with SLE who present with suspected or diagnosed thyroid diseases, aiming to minimize the impacts on quality of life. **Keywords:** Graves' disease; systemic lupus erythematosus; autoimmune responses.

DIABETES MELLITUS

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THE RELATIONSHIP BETWEEN GUT MICROBIOTA AND GLYCEMIC CONTROL IN PATIENTS WITH TYPE 1 DIABETES MELLITUS: A SYSTEMATIC REVIEW

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Introduction: Type 1 diabetes mellitus (T1DM) is a chronic disease characterized by the autoimmune destruction of pancreatic beta cells in the islets of Langerhans, leading to glycemic dysregulation due to low insulin production. It is also known that the disease results from genetic susceptibility and environmental factors. Studies have investigated that the gut microbiota can be one of the environmental agents, and its composition and diversity are related to intestinal permeability, inflammatory response, and glycemic control in T1DM patients. **Objectives:** The aim of this study is to analyze the bidirectional influence of gut microbiota on glycemic control, considering changes in intestinal bacterial composition, the interference of probiotics, and their correlations with metabolic regulation. **Methods:** The method used was a systematic review without meta-analysis, using the PRISMA tool. Articles were selected from the PubMed and LILACS databases, published in the last 5 years, using the descriptors "type 1 diabetes," "gut microbiota," and "glycemic control." Of the 89 articles found in the search, 12 were selected for the research. **Results:** The studies included in the review indicated an association between gut microbiota composition and glycemic control in patients with type 1 diabetes mellitus. This association was initially considered by comparing bacterial agents in the intestines of T1DM patients and healthy individuals. The results showed that the proportions of some bacteria such as Firmicutes, *Akkermansia muciniphila*, and *Faecalibacterium prausnitzii* decreased in T1DM patients, while species such as *Prevotella copri* and *Eubacterium siraeum* increased. Therefore, it is essential to understand that an imbalanced gut microbiota facilitates the development of certain bacteria and compromises the growth of others, thus affecting the production of essential substances such as butyrate and mucin, which regulate GLP-1 secretion in the gut, promote the suppression of fat accumulation, improve insulin sensitivity, and preserve intestinal permeability, respectively. Furthermore, HbA1c levels in selected T1DM patients improved after probiotic administration. **Conclusion:** In conclusion, the gut microbiota plays a crucial role in glycemic control in T1DM patients. Additionally, its low diversity is linked to the pathogenesis and complications of the disease, and the use of probiotics can be extremely relevant in the therapeutic management of the pathology. **Keywords:** gut microbiota; type 1 diabetes; glycemic control.

ENDOCRINOLOGIA PEDIÁTRICA

2371

THE INFLUENCE OF OBESITY ON THE DEVELOPMENT OF PREDIABETES IN CHILDREN: A SYSTEMATIC REVIEW

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Introduction: Childhood obesity has emerged in recent decades as a global public health issue, with increasing prevalence in diverse populations. This alarming rise is associated with various metabolic disorders occurring at younger ages. Among the metabolic changes related to obesity, there is a focus on its association with the development of prediabetes in children – a condition that increases the risk of type 2 diabetes mellitus and negatively impacts long-term quality of life. **Objectives:** To analyze the influence of obesity on the development of prediabetes in children based on scientific literature published in the last five years (2019-2024). **Methods:** A systematic review without meta-analysis, following the selection methodology recommended by the PRISMA protocol, based on reliable databases in the health sciences field, including: PubMed, Virtual Health Library, and Lilacs, using the descriptors: Obesity; Children; Prediabetes. **Results:** Out of 643 articles found, 15 met the rigorous inclusion criteria. At first, it is noteworthy that visceral and subcutaneous adipose tissue secretes free fatty acids and pro-inflammatory cytokines into the bloodstream, contributing to insulin resistance and affecting the complex interaction between pathophysiological processes and the development of prediabetes in childhood. Additionally, there is a prevalence of high-sensitivity C-reactive protein (hsCRP) in obese children compared to non-obese children, promoting a state of chronic inflammation in these individuals and influencing the pathogenesis of prediabetes, as well as elevated levels of alanine transaminase (ALT) in these patients. Furthermore, serum levels of substances that damage pancreatic beta cells through oxidative stress, exhaustion, or autoimmune reaction are elevated in children with childhood obesity compared to those without, such as insulin-like growth factor 1 (IGF-1) and anti-islet autoantibodies (GAD, IA2, and ICA). **Conclusion:** From the analyzed studies, it can be concluded that obesity and its metabolic implications are significant risk factors for the development of prediabetes in children, driven by complex mechanisms including the substantial roles of inflammatory and metabolic biomarkers. These findings underscore the urgent need for strategies to prevent and combat childhood obesity, aiming to mitigate the negative impact of this condition. **Keywords:** obesity; children; prediabetes.

OBESIDADE

2372

HOSPITALIZATIONS DUE TO OBESITY IN THE NORTHEAST REGION BETWEEN 2014 AND 2024: EPIDEMIOLOGICAL ANALYSIS

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Introduction: Obesity is a metabolic disorder with high worldwide prevalence. As triggering factors, obesity has genetic factors and environmental factors closely associated with the patient's lifestyle. The disease is commonly associated with other metabolic disorders such as diabetes and hypertension, which can lead to the exacerbation of other diseases, such as atherosclerotic disease, increasing the risk of hospitalization for these patients. Given this and the particularities of each region, this study aims to characterize the hospitalized population due to obesity in the northeast region. **Objective:** To describe the epidemiological profile of patients hospitalized due to obesity over a period of 10 years in the northeast region. **Materials and methods:** This was a cross-sectional study that used data from hospital admissions of patients due to obesity in the northeast region, from May 2014 to May 2024. The information was obtained from the online data-base of the Brazilian Health Ministry (Datasus), selecting category E66 from the ICD-10. The data were tabulated for subsequent descriptive statistical analysis. The data are in the public domain and approval by a research ethics committee is not required. **Results:** There were, during the analyzed period, 9,920 hospitalizations related to obesity, with the majority of cases recorded in women (85.81%). Regarding age group, the most prevalent was the 35-39 years age group (20.16%), followed by 40-44 years (17.59%) and 30-34 years (15.87%). It was observed that the majority of admissions were individuals of mixed race (59.49%), followed by white individuals (8.56%) and Asian individuals (5.01%), although a significant proportion (23.93%) had no race/ethnicity recorded. **Conclusion:** Therefore, it is noted that the highest number of hospitalizations due to obesity consists of females, with a significant representation of mixed-race individuals, and with an age range of 35-39 years. Thus, preventive and health promotion measures need to be prioritized, especially for the most affected groups. **Keywords:** obesity; hospitalization; public health.

TIREOIDE

2373

TREATMENT OF THYROID GLAND DISORDERS *VERSUS* OTHER ENDOCRINE GLANDS: EVOLUTION AND CURRENT PANORAMA IN BRAZIL (2019-2023)

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Introduction: Endocrine glands are distributed throughout the body and include the hypothalamus, pituitary gland, thyroid, parathyroids, pancreatic islet cells, adrenal glands and testes. The thyroid is essential for regulating the basal metabolic rate, promoting somatic and psychic growth, and has a crucial role in calcium metabolism. **Objective:** To compare the current panorama of the treatment of disorders of the thyroid gland and the treatment of disorders of the other endocrine glands in the Brazilian Unified Health System (SUS). **Methods:** This is an ecological, observational, retrospective, descriptive and quantitative study. The data were obtained through the Hospital Information System of SUS (SIH/SUS) made available by the Unified Health System Information Technology Department (DATASUS). **Results:** The sample totaled 14,134 procedures. Of this total, 49.8% were for the treatment of thyroid gland disorders and 50.2% for other endocrine glands, while 76% were urgent and 24% elective. The year 2019 recorded the highest number of treatments and the Southeast region carried out the majority of procedures, with 3,308 related to the thyroid and 3,203 to other glands. Total spending on thyroid treatment was R$ 4.6 million, with an average cost of R$ 660.4 per procedure. For the treatment of other endocrine glands, the total expenditure was R$ 5.3 million, with an average cost of R$ 747.5 per hospitalization. The average length of stay for thyroid treatment was 7.3 days. For other glands, the average stay was 8.1 days. The mortality rate was higher when treating disorders of the thyroid gland (2.97%) compared to those of other endocrine glands (2%). **Conclusion:** The treatment of thyroid disorders represents almost half of the procedures for the treatment of endocrine glands, encompassing a significant portion of the study population. The high rate of emergencies points to the need for control and prevention within the scope of Primary Care. The year with the most hospitalizations was 2019. The Southeast region was the one with the most hospital care, mainly for thyroid disorders. The total amount spent on other glands and the average cost of hospitalization are higher than the treatment of thyroid disorders. However, the mortality rate related to the thyroid is higher than that of other glands. **Keywords:** treatment; thyroid gland; endocrine glands.

DIABETES MELLITUS

2374

WOMEN WITH DMG DIAGNOSED BEFORE 20TH WEEKS OF PREGNANCY. ARE THEY DIFFERENT?

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According to World Health Organization (WHO) 2013 criteria, Gestational diabetes mellitus (GD) is hyperglycemia first recognized at any time in pregnancy that is below the diagnostic threshold for undiagnosed diabetes. In Brazil, routine screening is recommended in the first prenatal visit, but there are still controversies whether treatment of GD before 20 weeks improves pregnancy outcomes. Nevertheless, in literature, around 40% of GD are diagnosed earlier than the 20th week of pregnancy, and the association with adverse pregnancy outcomes is reported. For this reason, it is important to evaluate the differences among early-onset GD women compared to late-onset GD women in our population. **Objective:** To compare the characteristics of pregnancy in a group of GD patients, diagnosed before (eGDM) or after (lGD) 20th week of pregnancy. **Methods:** An observational study designed to compare the characteristics of pregnancy between two groups of GD patients attending a public health care unit in northeast Brazil from 2018 to 2020, diagnosed before and after 20th weeks of pregnancy, according to WHO 2013 criteria. Overt diabetes was excluded. Data was collected by structured questionnaire and chart review. Study was approved by the local Ethics Committee, approval number 2.521.562. **Results:** Data of 279 GD women, aged from 20 to 46 (33 ± 5) years, gestational age at diagnosis from 8 to 32 weeks of which 34% were eGD, were evaluated. There was no significant difference in age, parity, education, sedentary lifestyle and previous diagnosis of hypertension among patients eGD or lGD. Those with eGD had higher pre-pregnancy BMI (30.8 ± 5.6 versus 29.4 ± 5.5; p = 0.05) and higher fasting blood glucose at diagnosis (103.1 ± 23 mg/dL versus 95.9 ± 15.4 mg/dL; p < 0.01). Furthermore, eGD had less weight gain throughout pregnancy (5.4 ± 5.3 kg versus 8.6 ± 6.1 kg; p = 0.02) and more frequently required medication to control hyperglycemia (P = 0.04). Despite this, there was no difference between HbA1c or blood pressure at the end of pregnancy. Regarding pregnancy outcomes, there was no difference among the groups, with a tendency towards higher blood glucose levels in the postpartum OGTT assessment (p = 0.07) in eGD patients. **Conclusion:** In this study, eDM was found in 34% of the GD evaluated, and was more frequent among higher BMI women. Interestingly, despite the greater fasting blood glucose at diagnosis and the greater need for pharmacological treatment, there were no differences in pregnancy outcomes. **Keywords:** gestational diabetes; public health; endocrinology.

OBESIDADE

2375

PREVALENCE OF METABOLIC SYNDROME AND METABOLIC PROFILE IN PEOPLE LIVING WITH HIV UNDER OUTPATIENT CARE

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Introduction: Metabolic syndrome (MS) is a global and silent epidemic, characterized by a set of conditions that increase the risk of cardiovascular diseases, stroke, and diabetes mellitus. According to the 2013 National Health Survey (PNS) by the Brazilian Institute of Geography and Statistics (IBGE), this syndrome affects 29.6% of Brazilians. The prevalence of MS has increased among people living with HIV (PLHIV) due to the higher life expectancy in this population, resulting from therapeutic advancements. This increased longevity, along with the long-term effects of the virus and antiretroviral therapy (ART), predisposes these individuals to MS. **Objective:** To determine the prevalence of MS and the metabolic profile of HIV-infected patients who are followed up at the infectious disease outpatient clinic of a hospital in Vitória. Methods: This is a descriptive cross-sectional study, approved by the Human Research Ethics Committee (approval number 6798079). The research was conducted at the infectious disease outpatient clinic with PLHIV undergoing ART treatment. Anthropometric measures were collected and medical records were analyzed to obtain the necessary data according to the International Diabetes Federation (IDF) criteria, in addition to a baseline questionnaire. **Results:** Data collection took place from May to July 2024, with 30 participants. The average age was 54.1 years (±13.54), and 86.6% of the patients had been diagnosed and started treatment more than 10 years ago. Regarding the current therapy, 40% were on dual therapy, with 58% using lamivudine (3TC)+dolutegravir (DTG). Among the 60% on triple therapy, 72% were on the tenofovir (TDF)+3TC+DTG regimen. The main outcome of the study was that the prevalence of MS was 63%. Concerning comorbidities, 77% of the patients had altered waist circumference, 27% had fasting blood glucose ≥ 100 mg/dL or were on oral hypoglycemic agents, 40% presented elevated blood pressure at the consultation or had a diagnosis of systemic arterial hypertension, 70% had triglycerides ≥ 150 mg/dL, low HDL levels (<40 mg/dL in men and <50 mg/dL in women), or were undergoing treatment for dyslipidemia. **Conclusion:** The high prevalence of MS in PLHIV, compared to the general Brazilian population, highlights the need for integrated management strategies with preventive measures. The importance of early diagnosis is crucial to avoid negative cardiovascular outcomes. **Keywords:** antiretroviral therapy, highly active; metabolic syndrome; HIV infections.

DIABETES MELLITUS

2377

ANALYSIS OF HOSPITALIZATIONS AND DEATHS IN THE ELDERLY WITH DIABETES MELLITUS IN CEARÁ OVER A 5-YEAR PERIOD: IMPACT OF THE COVID-19 PANDEMIC ON THESE DATA

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Introduction: Diabetes mellitus (DM) is a chronic metabolic syndrome characterized by significant morbidity and mortality, especially in the elderly population. At the same time, it is important to monitor the epidemiological indicators related to this syndrome in order to implement measures capable of reducing the complications, consequent hospitalizations, and deaths caused by this pathology. **Objective:** To assess the pattern of hospitalizations and deaths of elderly patients with DM in the state of Ceará between 2018 and 2022, in the context of the pandemic. **Methods:** This is a cross-sectional, retrospective, and quantitative epidemiological study using information taken from the SUS Information Technology Department (DATASUS) database between 2018 and 2022 in the state of Ceará. The following variables were considered: number of hospitalizations of patients with DM in the defined period, age (>60 years), and mortality rate in relation to the number of hospitalizations. **Results:** Among the period analyzed, 1,3451 hospitalizations of patients over 60 with DM were recorded, of which 797 progressed to death, representing a mortality rate of 5.92 deaths per 100 hospitalizations, with the 65-69 age group accounting for the largest share of hospitalizations, while deaths were concentrated in the 80 and over age group. When evaluating individual years, in 2018, there were 2766 hospitalizations and 153 deaths, with a mortality rate of 5.53; in 2019, there were 2831 hospitalizations, 191 deaths, and a mortality rate of 6.74. During the COVID-19 pandemic period, in 2020, the number of hospitalizations for DM fell to 2451 and deaths to 150, with a resulting mortality rate of 6.11. In 2021, the number of hospitalizations and deaths was, respectively, 2576 and 138 (mortality rate 5.35); in 2022, hospitalizations reached similar proportions to the pre-pandemic period with 2827 and 165 deaths (mortality rate 5.87). **Conclusion:** It is thus possible to correlate the impact of the COVID-19 pandemic with the difficulty of access to health services by this public, given the reduction in the number of hospitalizations in the period referring to the pandemic. In 2022, the figures are once again close to the pre-pandemic indicators, which reveals the persistence of a significant number of hospitalizations and deaths in elderly patients with DM. This shows the need for continued government efforts to reduce morbidity and mortality indicators for this group. **Keywords:** diabetes mellitus; analysis of hospitalizations and deaths; COVID-19.

MISCELÂNEA

2378

FAMILIAL PARTIAL LIPODYSTROPHY TYPE 3: A NEW VARIANT DESCRIBED IN A PATIENT WITH HYPERANDROGENIC SYNDROME

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Clinical case presentation: A 69-year-old female patient under investigation for postmenopausal virilizing syndrome. She started hirsutism 7 years ago, predominantly on the face, abdomen, chest and androgenic alopecia. She had regular menstrual cycles prior to menopause, which happened at age 52, G3P3A0. She was diagnosed with hypertension at 33 years of age, hemorrhagic stroke at 57 years of age, diabetes mellitus (DM) at 60 years of age, in addition to hypertriglyceridemia and hepatic steatosis (FIB4 = 0.96). On physical examination, BMI = 24.7 kg/m², Ferriman score = 22, loss of subcutaneous fat in the limbs. Daughter also had fat loss in extremities. Laboratory tests showed testosterone = 231 ng/dL (RV: 8.6-36 ng/dL, chemiluminescence), 17OH-progesterone and androstenedione within the reference values. Abdominal magnetic resonance imaging showed no abnormalities in the adrenal glands, and the right and left ovaries measured 4.2 cm³ and 4.3 cm³, respectively. In view of the clinical picture and pathological history, a molecular panel for familial partial lipodystrophy (PFL) was requested, which showed a mutation in the heterozygous PPARgamma gene, compatible with type 3 PFL, with a variant never described (chr3:12.392.702 G>A). **Discussion:** LPF type 3 is a rare, autosomal dominant genetic condition characterized by partial loss of subcutaneous tissue, especially in the upper and lower extremities, which begins in adulthood, secondary to mutation in the PPARgamma gene. Metabolic alterations include insulin resistance, early-onset DM, SAH, hypertriglyceridemia, polycystic ovary syndrome, hepatic steatosis, and early cardiovascular disease. In this case presented, the long-standing hyperandrogenism was confused with the loss of subcutaneous fat in the limbs, leading to late diagnostic suspicion. However, the multiple metabolic complications and lipotrophic phenotype similar to that of the daughter led to the hypothesis of LPF. **Final comments:** This was the first case in the medical literature to describe a patient with type 3 LPF with the variant chr3:12.392.702 G>A, which promotes substitution of the amino acid cysteine at codon 160 (highly conserved) by tyrosine. Deleterious substitution in the same codon has been reported, suggesting that this site is functionally important. The combination of the molecular mechanism and the clinical picture of the patient under discussion indicate that a new pathogenic variant in the PPARgamma gene has been identified. **Keywords:** familial partial lipodystrophy; new variant; hyperandrogenism.

ENDOCRINOLOGIA BÁSICA

2379

GENERATING PITUITARY CELLS FROM IPSCS FOR PITUITARY DISEASE MODELING AND DRUG DISCOVERY

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Introduction: Combined pituitary hormone deficiency (CPHD) is the reduction of pituitary hormones due to genetic or organic causes and *PROP1* variants are the most frequent cause. Induced pluripotent stem cells (iPSC) are used to generate patient pituitary cells for disease modeling and therapy improvement. **Objective:** To differentiate pituitary cells from healthy and CPHD individuals and use them for disease modeling and drug discovery. **Methods:** Peripheral blood was collected from patients harboring *PROP1* pathogenic variants and controls. Cells were expanded prior to nucleoporation with pluripotency plasmids (*OCT4* and *SOX2*; *cMYC* and *KLF*) and transferred to Geltrex coated plates to be fed with E8, NaB and âFGF until iPSC colonies were formed. iPSCs were differentiated into cranial placode using pituitary placode conditioned medium (PPCM) until day 15. For pituitary cell maturation, pituitary conditioned medium (PPCM without SB431542) was used until day 30. qPCR and flow cytometry using the Kit BD Stemflow (BD) for stem cells (SOX2, NANOG and OCT3/4) and the eBioscience™ Foxp3/Fixation/Permeabilization (Thermo Fisher) for the placode and pituitary markers (PAX6, SIX1, LHX3, PROP1) were used for cell characterization. Pituitary hormonal levels from cell supernatant were measured. For drug discovery, pituitary cells were passaged into 384 well plates and treated with FDA-approved library with 3113 compounds at 1 µM for 72h (#L1300, Selleckchem). Cells were stained with ACTH and imaged on ImageXpress® HCS. ACTH intensity was normalized to total cell number using MetaXpress Software and z-score was calculated considering ±2.5 for analysis. Gene and pathway enrichment were performed to determine target drugs. **Results:** We generated iPSCs from patient cells with more than 90% positivity for pluripotency markers. Pituitary cells were generated with positivity for the placode marker SIX1 (58%) and pituitary markers (LHX3-56% and PROP1-59%). Control cell lineages expressed pituitary hormones at days 15 and 30 while patient cells failed to induce hormone-producing cells. We performed a high throughput drug screen using pituitary cells leading to the discovery of 17 compounds that might be used for pituitary disease treatment. **Conclusion:** We generated pituitary hormone producing cells. Patient cells mimic human phenotype. The present study elucidates CPHD basis in patients specific background, develop pituitary disease cell model as well as elucidates possible new treatments. **Keywords:** iPSCs; CPHD; high throughput drug screening.

DISLIPIDEMIA E ATEROSCLEROSE

2380

LMF1 HETEROZYGOUS MUTATION IN A PATIENT WITH PARTIAL LIPODYSTROPHY TYPE 1 (KÖBBERLING SYNDROME): CAUSE OR COINCIDENCE?

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Case report: A 63-year-old woman presented to the outpatient endocrinology clinic with poorly controlled type 2 diabetes, combined dyslipidemia, MAFLD, and primary hypothyroidism. Her medication regimen included Alogliptin 25 mg, Metformin 850 mg, Gliclazide MR 60 mg, Simvastatin 40 mg, and Levothyroxine 37.5 mcg. Physical examination revealed a BMI of 24.1 kg/m², a waist circumference of 87 cm, a Köb index 7.14, and blood pressure of 139/81 mmHg. Additionally, she had non-proliferative diabetic retinopathy. Given her uncontrolled diabetes (A1c 8.6%), NPH insulin 10 IU at bedtime was initiated. Despite this, her lipid profile (TC 180 mg/dL, LDL 73 mg/dL, TG 584 mg/dL) remained off target, prompting the addition of Ezetimibe 10 mg/day and Ciprofibrate 100 mg/day. The Köb index suggested a diagnosis of type 1 familial partial lipodystrophy (FPLD1), leading to a genetic panel analysis of 45 genes. This panel identified a heterozygous variant of uncertain significance (VUS) in the Lipase Maturation Factor 1 (LMF1) gene. Notably, the patient has 12 siblings with similar lipid profiles who have not yet undergone genetic testing. **Discussion:** Familial partial lipodystrophies (FPLDs) are a diverse group of disorders marked by partial loss of adipose tissue, insulin resistance, hypertriglyceridemia, and hepatic steatosis. The patient's clinical presentation strongly suggests FPLD, with a Köb index greater than 3.47, indicating a potential diagnosis of Köbberling syndrome (FPLD1). Laboratory findings, including insulin-dependent diabetes, hypertriglyceridemia, and hepatic steatosis, support this diagnosis. However, the genetic panel revealed a heterozygous mutation in the LMF1 gene, commonly associated with familial chylomicronemia syndrome (FCS). LMF1 plays a crucial role in the maturation of lipoprotein lipase, and mutations in this gene are not typically linked to FPLD. **Final comments:** Both FPLD and FCS are associated with hypertriglyceridemia. It is not unusual to encounter a mutation linked to one of these conditions in a patient suspected of having the other. Whether the detected LMF1 mutation is causally related to the patient's disease or is merely a coincidental finding requires further investigation. **Keywords:** lipodystrophy; mutation; familial chylomicronemia syndrome.

TIREOIDE

2381

LOCALLY ADVANCED PAPILLARY THYROID CARCINOMA ASSOCIATED WITH LARYNGEAL INVOLVEMENT: A RARE PRESENTATION

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Papillary thyroid carcinoma (PTC) originates from follicular epithelium and is part of the subgroup of differentiated thyroid carcinomas with a good prognosis in most cases. A 77-year-old female patient, with a history of total thyroidectomy for PTC performed in 2013, began experiencing weight loss, dysphagia, and dysphonia two years ago. These symptoms were associated with the development of cervical nodulation, which progressed to form a tumor mass approximately 9 cm in size, affecting levels IB, II, III, V, and VI on the left, with infiltration, ulceration, and the formation of a cutaneous fistula. Laryngoscopy and cervical tomography revealed a mass involving the right vocal cord, with adjacent lymphadenopathy, invasion of the left internal jugular vein with a tumor embolus inside, and involvement of the left accessory and vagus nerves. The tumor mass was excised, along with a radical cervical dissection and prophylactic tracheostomy. Initially, due to the aggressiveness and location of the lesion, a transglottic laryngeal tumor was suspected, likely squamous cell carcinoma. However, histopathological analysis was consistent with metastases from PTC, confirmed by immunohistochemistry through the expression of thyroglobulin (TG) and thyroid transcription factor-1 (TTF-1) markers. Although PTC typically shows a favorable prognosis and indolent growth, atypical clinical presentations can occur. When locally advanced, the larynx is involved in only 12% of cases. Recognizing atypical cases and early clinical suspicion facilitates diagnosis at early stages and allows for appropriate surgical resection, resulting in a positive impact on prognosis and survival. In locally advanced cases, such as the one described here, the presence of residual tumor is a factor of poorer prognosis, even when subjected to adjunctive therapies (radiotherapy and chemotherapy). Therefore, the removal of all macroscopic evidence of disease remains the preferred therapy for greater disease-free survival. In this report, we describe a case of PTC with unusual location and invasive behavior, highlighting the diversity of presentations of this disease and the need for differential diagnosis with laryngeal tumors and undifferentiated thyroid tumors. **Keywords:** papillary thyroid carcinoma; laryngeal tumor; locally advanced.

DIABETES MELLITUS

2382

CONTINUOUS GLUCOSE MONITORING OF PATIENTS WITH GCK MODY: NO RISK OF DEVELOPING COMPLICATIONS?

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Introduction: Monogenic diabetes due to a mutation in the glucokinase gene (GCK) usually leads to mild fasting hyperglycemia, which generally does not need pharmacological treatment. However, there is a lack of studies that evaluate continuous glycemic monitoring (CGM) in these patients. **Objective:** To evaluate the glycemic profile through continuous glycemic monitoring in patients with a molecular genetic diagnosis of GCK MODY. **Patients and methods:** Patients with molecular genetic diagnostic confirmation of GCK MODY (Sanger sequencing) underwent blinded intermittent CGM for 14 days (Freestyle Libre with a cover in the reader's display). Reports generated by the LibreView system were evaluated. Information such as estimated glycated hemoglobin (hba1c), time in range (between 70-180 mg/dL), time in tight range (between 70-140 mg/dL), time below range (below 70 mg/dL) and time above range (above 180 mg/dL) were retrieved. **Results:** Of the 20 selected patients, 7 presented pathogenic mutations not previously described and 13 had previously described mutations. Their mean age at onset was 16 years old, 65% were females and their mean HbA1c was 6.9 + - 0,2%. In the CGM analysis, the estimated mean hba1c was 6.29%. IRR, TITR, TBR, TAR and TR were 97.9%, 80%, 0.35%, 1.75% and 80%, respectively. Although all presented TIR > 90%, 75%, 35% and 20% presented TITR < 90%, < 80% and < 70%, respectively. Likewise, no patient had a TITR > 97%, a marker reported in a study for individuals without diabetes. **Conclusion:** Although patients with GCK MODY had good glycemic control, with estimated Hba1c and TIR on target, the assessment of TITR by CGM proved to be above what is expected for patients without diabetes. Further studies are necessary to assess whether MODY GK really does not require pharmacological treatment and does not present a risk of chronic complications. **Keywords:** diabetes; MODY; CGM.

TIREOIDE

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EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS FOR THYROID DISORDERS IN THE BRAZILIAN UNIFIED HEALTH SYSTEM (2019-2023)

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Introduction: The thyroid gland produces two thyroid hormones: 3,5,3'-triiodothyronine (T3) and 3,5,3',5'-tetraiodothyronine (T4). Thyroid problems can result in hyperthyroidism or hypothyroidism. **Objective:** To epidemiologically describe the profile of hospitalizations for thyroid disorders in the Brazilian Unified Health System (SUS) from 2019 to 2023. **Methods:** This is an ecological, observational, retrospective, descriptive and quantitative study. The data were obtained through the Hospital Information System of SUS (SIH/SUS), made available by the Department of Informatics of the Unified Health System (DATASUS), referring to thyroid disorders (consolidated from the categories – thyroid disorders related to iodine deficiency; thyrotoxicosis; other thyroid disorders), selecting categories E00-E07 from ICD-10. The variables analyzed were: number of hospitalizations, nature of care, sex, color/race, age group, total and average cost of hospitalizations, average length of stay and mortality rate by Brazilian region. **Results:** The sample totaled 14,878 hospitalizations, with the most percentage being in the Southeast region (53.4%) and the year 2023 with the highest number of hospitalizations. Of the total registrations: 57.5% were elective and 42.5% were urgent. The most affected age group for thyroid disorders was 40-49 years (20.4%), followed by 50-59 years (20.3%). There was a prevalence in females (82.6%) and in the mixed-race individuals (49.6%). Total expenditure on thyroid disorders was approximately R$ 11.04 million, with an average cost of R$ 741.89 per hospitalization. The average length of stay was 4.3 days, with the Central-West region having the highest average (5.5 days) and the Southeast region the lowest (3.9 days). The mortality rate was 1.53%, being highest in the Central-West region (3.49%) compared to the lowest in the Southeast region (1.22%). **Conclusion:** The Southeast region recorded the highest number of hospitalizations, and 2023 was the year with the most records. Although the elective nature is predominant, there is still a significant number of emergency admissions. The highest number of hospitalizations occurred in the age group of 40 to 49 years, with a predominance of females and the mixed-race individuals. The average length of stay in hospitalizations was 4 days. In terms of mortality, the Central-West region had the highest rate, while the Southeast had the lowest. **Keywords:** epidemiological profile; hospitalization; thyroid diseases.

NEUROENDOCRINOLOGIA

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HEMOCHROMATOSIS AGGRAVATED BY PANHYPOPITUITARISM AND DIABETES MELLITUS: CASE REPORT

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Case presentation: A 57-year-old male patient with a history of diabetes mellitus (DM) for 2 years, using NPH and regular pre-meal insulin, hypothyroidism for 3 months, associated with dyslipidemia and overweight (BMI 27.2 kg/m^2). He presented with cognitive impairment, decreased joint mobility, fatigue and asthenia, and anemia (HGB 11.8 g/dL, HCT 36%, VCM 90.7 fL). The etiological investigation revealed ferritin: 1,288 ng/mL; transferrin saturation: 54.01%; vitamin B12: 304 pg/mL and creatinine: 1.13 mg/dL. The patient was referred to hematology, a diagnosis of hemochromatosis was made and phlebotomy was proposed. During follow-up, a reduction in TSH to below normal levels was noted, with free T4 in the lower tertile, associated with total testosterone < 0.025 ng/dL and LH 0.46 mUI/mL, compatible with central hypothyroidism and hypogonadotrophic hypogonadism, respectively. Magnetic resonance imaging of the sellar region showed a partially empty sella turcica. **Discussion:** Hemochromatosis is a disease related to chronically high levels of iron in the body, resulting in progressive accumulation in the tissues, with potential dysfunction. It can be asymptomatic or progressive and non-specific, leading to late diagnosis and endocrinopathies such as diabetes and hypopituitarism. Studies indicate that the development of diabetes mellitus may be related to the oxidative power of excess iron in pancreatic β-cells. Progressive hormonal deficiency occurs in the pituitary region, preferentially affecting the gonadotrophic axis. The case above deals with a patient with hemochromatosis, DM and panhypopituitarism. It is noteworthy that the diagnosis of hemochromatosis was made during the etiological investigation of anemia. As the patient had associated hypogonadism, with extremely low levels of total testosterone, it can be assumed that his hemoglobin and hematocrit levels were within the normal range for a female. **Final comments:** Hemochromatosis should be considered in patients with high ferritin levels and concomitant endocrinopathies, such as DM and dysfunctions in the hypothalamic-pituitary-target gland axis, seen in the patient reported. The case also reveals the importance of investigating the etiology of anemia before administering iron. Early diagnosis and treatment can prevent the onset of complications. **Keywords:** hemochromatosis; panhypopituitarism; diabetes mellitus.

OBESIDADE

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EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS FOR OBESITY IN BRAZIL IN THE PERIOD 2020-2024

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Introduction: According to the World Health Organization, obesity is a chronic, progressive pathology and a global epidemic. Studies indicate that the percentage of obese individuals in Brazil will reach 88.1% of the population by 2060, resulting in an economic impact of more than R$1.3 trillion. In addition, it is associated with various complications, such as type 2 diabetes mellitus, hypertension, obstructive sleep apnea, some types of cancer and psychological disorders due to social stigma. **Objectives:** To describe the hospital epidemiological profile of obesity-related hospitalizations in Brazil between January 2020 and May 2024. **Methods:** This is a descriptive, ecological, time-series study based on the collection of data from the Hospital Information System of the Unified Health System (SIH-SUS) on hospital morbidity due to obesity (ICD-10 E66) between January 2020 and May 2024 in Brazil. Variables analyzed: number of hospitalizations; total value; average value per hospitalization; average length of stay; mortality rate; geographic region; gender; color/race and age group. **Results:** During the period, 35,204 hospitalizations for obesity were recorded, with a total cost of R$ 191,724,970.83. The Southeast region accounted for 46.7% of hospitalizations, corresponding to 48.54% of total spending. The average cost per hospitalization was R$ 5,660.28, with an average length of stay of 2.7 days. The highest mortality rate was in the Southeast, with 0.26. Females accounted for the majority of hospitalizations, with 87.2% of the total. The distribution of hospitalizations by race was: 48.08% white, 5.13% black, 37.49% brown, 1.68% yellow, 0.002% indigenous and 7.60% did not have this information. The 40-49 age group accounted for 32.19% of hospitalizations, followed by the 30-39 age group with 31.17%. **Conclusion:** This study reveals a significant number of hospitalizations between 2020 and 2024. The Southeast region led the way in terms of the number of hospitalizations and associated costs, as well as having the highest mortality rate. The majority of hospitalizations occurred among women, aged between 40 and 49, with a predominance of white and brown people. The high costs and average length of stay per hospitalization highlight the economic burden on the health system. This highlights the need for multidimensional approaches, including prevention, treatment and public policies to improve quality of life and reduce the impact generated by this pathology. **Keywords:** obesity; epidemiology; hospitalization.

METABOLISMO ÓSSEO E MINERAL

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CASE SERIES AND EPIDEMIOLOGICAL EVALUATION OF HYPOPARATHYROIDISM: INSIGHTS FROM AN ENDOCRINOLOGY REFERENCE CENTER IN SALVADOR, BAHIA

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Introduction: Hypoparathyroidism is characterized by the reduction in function of 1 or more parathyroid glands caused by either auto-immunity, drug toxicity or parathyroid gland removal. This leads to reduction of serum calcium levels and increase of phosphorus associated with reduced parathyroid hormone concentrations, which requires multidisciplinary intervention to avoid complications. **Objective:** Describe a series of patients with hypoparathyroidism followed at an endocrinology reference center, focusing on their clinical characteristics, prescribed treatment and associated comorbidities. **Patients and methods:** Retrospective analysis of medical records of patients with hypoparathyroidism followed at an endocrinology reference center at Salvador, Bahia. We included patients aged between 18-90 years old. We searched for data in medical records regarding their demographic characteristics, surgical history, laboratory and imaging results, as well as prescribed medications. **Results:** Our sample included 11 patients, including only 1 male, with a mean age of 63.5 years. All cases occurred post total thyroidectomy, two of which included parathyroidectomy for primary hyperparathyroidism associated with non-toxic multinodular goiter and laryngeal cancer, respectively. Six cases of multinodular(including one diving) goiter were identified, and 2 cases of papillary thyroid carcinoma. Mean PTH level was 9.3 pg/mL. Patients required between 1,000 and 3,000 mg (mean of 1,350 mg) of calcium, and between 0 and 1.75 mcg of calcitriol (mean of 560 mcg/day) during follow-up. Mean concentrations for the lowest and highest serum calcium during follow-up were 7.2 mg/dL (reference range 8.5 to 11.0 mg/dL) and 9.9 mg/dL, respectively. The serum calcium at the latest visit ranged from 7.8 to 9.9 mg/dL (mean of 8.5 mg/dL). The estimated glomerular filtrate rate (CKD-EPI formula) ranged from 49-103 mL/min/1.73 m². Six patients performed urinary tract ultrasonography, with only one case of renal lithiasis of 0.4 cm. **Conclusion:** Our sample included mostly women who performed total thyroidectomy for benign thyroid pathology, with few cases of malignancy. Patients varied calcium concentrations during follow-up using regular doses of calcium and calcitriol, with most of them attaining adequate calcium concentrations with no significant renal complications during follow-up. This represents what is often depicted in the current literature, and highlights the importance of regular medical care with specialized teams. **Keywords:** hypoparathyroidism; bone metabolism; calcium metabolism.

NEUROENDOCRINOLOGIA

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A MULTICENTER STUDY SUPPORTING THE ANALYSIS OF THE AIP AND MEN1 GENES IN 25 UNRELATED PATIENTS WITH A CLINICAL DIAGNOSIS OF FAMILIAL ISOLATED PITUITARY ADENOMA (FIPA) OR GIGANTISM

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Introduction: Familial isolated pituitary adenoma (FIPA) is clinical disorder characterized by presence of at least two family members with pituitary neuroendocrine tumor (PitNET) without phenotypic features related with known genetic syndromes predisposing to PitNET as multiple endocrine neoplasia type 1, Carney Complex, and others. FIPA accounts for 2-4% of all apparently sporadic PitNET. A germline mutation in the *AIP* suppressor tumor gene is found in 20% of the families with FIPA and in up to 30% of the cases with gigantism. All PitNETs subtypes were associated with FIPA: GH-secreting PITNETs are the most frequent followed by prolactinomas and GH-Prolactin co-secreting PitNETs. *AIP*-mutated FIPA is an autosomal dominant genetic syndrome with PitNET penetrance of 20%. **Objectives:** To investigate *AIP* germline mutations in patients diagnosed with gigantism or FIPA in four tertiary reference services. **Casuistic/Methods:** 25 index-cases, being 20 FIPA (5, acromegaly, 1 giant; 9, prolactinoma; 4, non-functioning; 1, Cushing) and 5 with isolated gigantism. Coding areas and splice sites of the *MEN1* and *AIP* genes were covered by Sanger. Multiplex Ligation-dependent Probe Amplification (MLPA) assay, to detect large deletions/amplifications (*AIP/CDKN1B/MEN1* genes), was performed in all *MEN1*-and *AIP*-negative-cases by Sanger. **Results:** 19 index-cases and one giant had FIPA while other 5 index-cases had gigantism. There was no case with *MEN1* mutation, but two of them had a pathogenic germline *AIP* variant (8%). **Case 1** was a giant boy (14y), with FIPA (mother, prolactinoma). A stop codon germline *AIP* mutation, in heterozygosis (c.804C>A, p.Tyr268*; rs 121908356) was documented. **Case 2**, male, 48y, isolated gigantism at the 13y-old, with *AIP* heterozygous deletion of the exon 2 by MLPA confirmed by two different bands seen in agarose gel electrophoresis from amplification of long-range PCR covering full open reading frame of the *AIP* gene. **Conclusions:** We reinforce previous reports documenting that isolated Gigantism or associated with FIPA are more frequently associated with *AIP* germline mutation. The first case presented the same mutation p.Tyr268* previously reported for us in one other unrelated family. However, the possibility of founder effect cannot be excluded yet. Large deletions were exceptionally reported (13 cases: 11 had gigantism or acromegaly). Despite rarity, this last case reinforces the importance of investigate large *AIP* deletions, especially in gigantism. **Keywords:** FIPA; MEN1; AIP.

DIABETES MELLITUS

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MAURIAC SYNDROME: CASE REPORT

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Case: A 15-year-old male with an 11-year history of type-1 diabetes mellitus (T1DM) was admitted in the emergency room with diabetic ketoacidosis. The patient was noncompliant with his insulin therapy due to poor social conditions. It was noticed on physical examination short stature (<3 percentile), abdominal distension and hepatomegaly. CT scan showed enlarged liver. Laboratory studies showed HbA1c of 11,7%, cholesterol of 245 mg/dL, low-density lipoprotein cholesterol was 114 mg/dL and triglycerides level was 633 mg/dL. The hepatic panel was normal. Due to the history of poor glycemic control, hepatomegaly, low stature and delayed puberty, he was diagnosed with Mauriac syndrome (MS). He was put on an intensive insulin regimen and was discharged after insulin dose was adjusted, for upcoming follow up. **Discussion:** Mauriac syndrome (MS) is a metabolic complication of poor glycemic control in children with T1DM. The condition is characterized by short stature, delayed puberty, and hepatomegaly from deposition of glycogen. This syndrome is seen in children who have been under very poor glycemic control for several years, with HbA1c usually > 10%. The etiology of the growth retardation is not entirely clear, but the effect of chronic insulinization on the growth hormone–IGF-1 axis has been implicated in the pathogenesis of the growth failure. Studies have shown a loss of function mutation in the catalytic subunit of liver glycogen phosphorylase kinase in patients with MS. Glycogen phosphorylase kinase activates glycogen phosphorylase, the enzyme that catalyzes the first step in breakdown of glycogen. The inhibition of glycogen phosphorylase results in blocking glycogenolysis, leading to massive hepatomegaly that is characteristic of MS. The syndrome is rare in developed countries, mostly seen as blunting of the pubertal growth spurt, but the more severe forms with hepatomegaly and growth failure can be found in areas where healthcare and information are less available. The management consists in maintaining good metabolic control and symptoms such as hepatomegaly and short stature can be partially or totally reversed. **Conclusion:** In spite of advancement in diabetic management, Mauriac syndrome, an uncommon complication in poorly controlled T1DM, still exists especially in less developed areas. A high index of suspicion is needed in T1DM with delayed growth and puberty since good metabolic control could reverse this condition. **Keywords:** Mauriac syndrome; type 1 diabetes mellitus; diabetes complications.

NEUROENDOCRINOLOGIA

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HEREDITARY HEMOCHROMATOSIS AND ITS RELATIONSHIP WITH HORMONAL DEFICIENCIES: A SYSTEMATIC REVIEW

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Introduction: Hereditary hemochromatosis (HH) is a rare metabolic disease related to abnormal iron metabolism and systemic overload, resulting in the multiple organ dysfunction. This disorder has an insidious onset and is usually diagnosed at a late stage, leading to medical attention being sought when serum iron, ferritin and transferrin saturation levels are already very high. **Objective:** To elucidate the pathophysiological mechanisms involved in the development of HH complications, particularly the impact of iron deposition in the pituitary gland and its relationship with the hormonal deficiencies. **Methods:** A systematic review based on the Prima system was carried out using the CAPES, VHL and PubMed databases, limiting itself to articles published between 2014 and 2024 in Portuguese and English. Initially, 23 articles were selected, 8 of which were chosen because they comprehensively addressed the topic, while 15 were excluded due to insufficient information. **Results:** The most frequent endocrine complication associated with hereditary hemochromatosis, apart from diabetes, is hypogonadism. The primary defect seems to be located mainly in the pituitary gland, where iron is deposited in the gonadotrophic cells, compromising their function and hormone secretion. Hypogonadotropic hypogonadism is often observed in isolation, although there are rare reports of it being associated with other pituitary deficiencies, especially prolactin and somatotropin deficiencies. Thyrotropin and corticotropin deficiencies are uncommon, as are primary dysfunctions of the gonads, adrenals, thyroid and parathyroid. However, osteopenia and osteoporosis are relatively common, due to the direct effect of iron on bone resorption and the associated androgen deficiency. Removal of excess iron by phlebotomy reduces severity, metabolic abnormalities can be improved and hormonal dysfunctions can be reversed if treatment is started in the early stages of the disease. **Conclusion:** HH represents a significant clinical challenge due to its insidious nature and multiple systemic complications. Therefore, understanding the underlying pathophysiological mechanisms, such as iron accumulation in the pituitary gland, is fundamental for the appropriate and personalized management of patients. Furthermore, further research is essential to improve strategies for the diagnosis, treatment and multidisciplinary management of this pathology, with a view to improving quality of life and prognosis. **Keywords:** hereditary hemochromatosis; hormonal deficiencies; hypophysis.

OBESIDADE

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COMPARATIVE ANALYSIS OF METABOLIC SYNDROME AND METABOLIC PROFILE IN PEOPLE LIVING WITH HIV UNDER TRIPLE *VERSUS* DUAL THERAPY

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Introduction: Metabolic syndrome (MS) is characterized by cardiovascular risk factors, including insulin resistance and central fat accumulation. According to the International Diabetes Federation (IDF), MS is defined by an abnormal waist circumference (WC), plus at least two of the following: fasting blood glucose ≥ 100 mg/dL or a diabetes mellitus diagnosis; triglycerides ≥ 150 mg/dL or treatment for dyslipidemia; systolic blood pressure ≥ 130 mmHg and/or diastolic blood pressure ≥ 85 mmHg or treatment for hypertension; HDL cholesterol < 40 mg/dL in men or < 50 mg/dL in women or treatment for dyslipidemia. Antiretroviral therapy (ART) is considered a risk factor for unfavorable metabolic outcomes and association with cardiovascular diseases. With the advancement of clinical studies, ART, initially composed of three drugs, began to be administered in a dual regimen, aiming to reduce its toxicity. **Objective:** To compare the prevalence of MS in people living with HIV (PLHIV) under dual therapy with those under triple therapy. **Methods:** This descriptive cross-sectional study, approved by the Human Research Ethics Committee (approval number 6798079), was conducted at the infectious disease outpatient clinic, with PLHIV under ART. Anthropometric data were collected and digital records analyzed per IDF criteria and a baseline questionnaire. **Results:** Data collection between May and July 2024, involving 30 participants, 40% on dual therapy. The switch from triple to dual therapy was due to decreased renal function (41%), ease of adherence (25%), MS (25%), and osteoporosis (8%). When comparing dual and triple therapy, 75% of patients on dual therapy and 77% on triple therapy had altered WC. Triglycerides were ≥ 150 mg/dL or treated for dyslipidemia in 66.6% on dual and 72.2% on triple therapy. Blood glucose was ≥ 100 mg/dL or treated with hypoglycemic agents in 25% on dual and 27.7% on triple therapy. Hypertension was found in 50% on dual and 33.3% on triple therapy. HDL below target was seen in 50% on dual and 83.3% on triple therapy. Applying IDF parameters, the prevalence of MS was 67% on triple and 58% on dual therapy. **Conclusion:** Our study showed a lower rate of metabolic syndrome in patients on dual therapy, corroborating the possible benefit of changing the regimen in metabolic parameters, associated with simplification of the therapeutic regimen. Limiting factors such as the number of participants and the length of follow-up encourage future research on the topic. **Keywords:** antiretroviral therapy, highly active; metabolic syndrome; HIV infections.

DIABETES MELLITUS

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ANALYSIS OF MUSCLE MASS REDUCTION AND GAIT SPEED IN WOMEN WITH TYPE 2 DIABETES

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Introduction: The natural aging process is commonly associated with a progressive loss of muscle mass and strength in the lower limbs and, consequently, a reduction in gait speed. In older adults, every 0.1 m/s of slower gait speed is associated with a 12% higher mortality rate. With increasing life expectancy and its strong association with chronic diseases such as type 2 diabetes mellitus, sarcopenia has gained significant attention because it is associated with declining mobility, frailty, disability and increased hospitalizations. **Objective:** This study aims to assess the differences in muscle mass and gait speed in women with type 2 diabetes and non-diabetic women. **Methods:** Two hundred and fifty participants were selected, including 125 women with type 2 diabetes and 125 non-diabetic women. All participants completed a data questionnaire, performed a physical assessment, and underwent BIA. The participants were selected from the endocrinology outpatient clinic of Agamenon Magalhães Hospital in Recife, Brazil. The data was analyzed using GraphPad Prism 8.1. The Shapiro-Wilk test was used to assess data distribution, and the Student's t-test was used to compare means. The significance level adopted was $p \leq 0.05$. **Results:** Statistical analysis revealed that the group of women with type 2 diabetes mellitus (WDM) showed significantly lower values when compared to the average of the group of non-diabetic women (WNDM) for muscle mass (WDM: 49.5 ± 8.1 *vs.* WNDM: 51.2 ± 8.9, $p = 0.00$) as well as for the variable of gait speed (WDM: 2.0 ± 0.06 *vs.* WNDM: 3.1 ± 4.3, $p = 0.00$). **Conclusion:** This study showed that women with type 2 diabetes mellitus have significantly lower values for muscle mass and gait speed compared to non-diabetic women. These findings highlight the importance of specific interventions to improve muscle health and mobility in these patients in order to reduce the risk of mortality and morbidity associated with sarcopenia. **Keywords:** muscle mass; gait speed; type 2 diabetes.

NEUROENDOCRINOLOGIA

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TEMOZOLOMIDE EFFICACY AND SAFETY IN AGGRESSIVE PITUITARY TUMORS: A MULTI-CENTER STUDY FROM BRAZIL

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Introduction: Temozolomide (TMZ), an oral chemotherapeutic agent, is recommended for treating aggressive and metastatic pituitary neuroendocrine tumors (PITNets). Despite promising outcomes, global experience with TMZ in this context remains limited. This study presents preliminary results from a multicenter Brazilian investigation into TMZ's efficacy and safety in treating aggressive PITNets. **Objectives:** To evaluate the therapeutic response and safety profile of TMZ in patients with aggressive or metastatic PITNets across multiple reference centers in Brazil. **Methods:** This retrospective multicenter study involved 9 reference centers in Brazil. Inclusion criteria comprised patients who received at least one TMZ cycle and had a minimum 6m follow-up. Aggressive PITNets were defined by tumor progression despite standard treatments and carcinomas by the presence of metastases. We evaluated tumor proliferation, size, functionality, treatment timing, radiotherapy (RTX), TMZ duration, adverse effects, and radiological response using RECIST criteria. **Results:** The cohort included 5 women and 6 men (mean age 39.4 years). Two patients had Cushing's disease, five had prolactinomas, four had NF-PitNET. All were macroadenomas, 54% being giant (>4 cm). The mean tumor size at diagnosis was 4.7 cm. Ki-67 was >3% in ten cases, averaging 13.88%. P53 expression was positive in 43% of seven evaluated cases. Three were carcinomas with metastases. The mean time from diagnosis to TMZ initiation was 113.9 months, primarily due to disease progression. The average number of transsphenoidal surgeries was 1.8, with 7 requiring transcranial approaches. 72% received RTX before TMZ. An average of 4.6 TMZ cycles was administered. Good response was present in 64%, considering both partial and stable disease by RECIST criteria, and disease progression was seen in 36%. Progression-free survival for responders averaged 29.4 months. Side effects included grade 1 nausea and vomiting in 50%, with one dose adjustment for thrombocytopenia. Four patients had a second TMZ course after an average of 24.66 months. **Conclusion:** TMZ demonstrates a favorable response rate of 64% in treating aggressive PITNets, with manageable side effects, highlighting TMZ's potential to control tumor progression. However, the variability in treatment duration and initiation timing underscores the need for optimized treatment protocols. Early intervention with TMZ, coupled with rigorous monitoring, could enhance patient outcomes. **Keywords:** temozolomide; pituitary tumor; therapeutics.

DIABETES MELLITUS

2395

GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONISTS ON MAJOR ADVERSE CARDIOVASCULAR EVENTS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: A BAYESIAN NETWORK META-ANALYSIS

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Introduction: The use of glucagon-like peptide-1 receptor agonists (GLP-1RA) has been linked to a notable decrease in the occurrence of major cardiovascular events (MACE) in individuals with type 2 diabetes mellitus (T2DM), indicating a potential cardioprotective effect. Nevertheless, the most effective GLP-1RA for reducing MACE is yet to be established. **Methods:** PubMed, Embase, and Cochrane Central databases were searched to identify randomized controlled trials (RCTs) that compared the safety of GLP-1RA with that of placebo in patients with T2DM. Studies were included if they had a primary outcome of cardiovascular mortality, non-fatal myocardial infarction, or nonfatal stroke (outcomes required by regulatory agencies for cardiovascular safety studies in diabetes). A Bayesian network meta-analysis was conducted to estimate the relative effects between treatments using risk ratios (RR) and to rank each one according to the Surface Under the Cumulative Ranking Curve (SUCRA). **Results:** Nine RCTs comprising 60.080 patients with T2DM were included. The assessment of SUCRA values indicated that Semaglutide (0.74) and efpeglenatide (0.71) emerged as the most effective treatments for reducing MACE. Moreover, semaglutide demonstrated superior efficacy compared to albiglutide (0.67), oral semaglutide (0.60), liraglutide (0.51), dulaglutide (0.44), exenatide (0.33), lixisenatide (0.21), and placebo (0.20). The risk of MACE was significantly higher for lixisenatide (RR 1.0; credible interval [CrI] 0.66, 1.6), exenatide (RR 0.93; CrI 0.62, 1.4), dulaglutide (RR 0.88; CrI 0.6, 1.3), liraglutide (RR 0.86; CrI 0.58, 1.3), oral semaglutide (RR 0.79; CrI 0.48, 1.3), albiglutide (0.77; CrI 0.52, 1.2), efpeglenatide (RR 0.74; CrI 0.46, 1.2), semaglutide (RR 0.72; CrI 0.45, 1.2). **Conclusion:** In this network meta-analysis comparing the use of different GLP-1RA in patients with T2DM, semaglutide is the GLP-1RA with the highest likelihood of lower MACE and may be a preferable option. Lixisenatide showed the lowest likelihood of preventing MACE. Further analyses are needed to establish the effect of different GLP-1 analogues on patients with a previous history of CVD. **Keywords:** cardiovascular; glucagon-like peptide-1 receptor agonists; cardioprotective.

ADRENAL E HIPERTENSÃO

2396

CLINICAL AND EPIDEMIOLOGICAL PROFILE OF ADULT PATIENTS WITH ADRENAL INSUFFICIENCY FOLLOWED AT A UNIVERSITY HOSPITAL IN THE NORTHEAST

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Introduction: Adrenal insufficiency (AI) is characterized by decreased serum levels of adrenal steroids. It can be primary when due to disease of the adrenal gland itself or secondary/tertiary due to disease of the hypothalamic-pituitary axis generating deficiency in the secretion of adrenocorticotropic hormone (ACTH). It is a rare entity with an estimated prevalence of around 150 cases per 1 million inhabitants. It has a broad clinical presentation, consisting in most cases of non-specific signs and symptoms. Its diagnosis is based on determining cortisol levels associated with ACTH values to differentiate between the causes. The basis of treatment is glucocorticoid replacement, which may require association with mineralocorticoids in selected cases. Diagnosing, treating and monitoring patients with AI can still be considered a challenge in some services, which may result in increased mortality associated with a reduction in the quality of life of affected patients. **Objective:** To determine the clinical-epidemiological profile of adult patients with adrenal insufficiency followed at a university hospital in the northeast. **Methods:** A cross-sectional, descriptive and quantitative study was carried out from December 2022 to February 2023, collecting data from available medical records of patients over 18 years of age, with AI, followed at the endocrinology outpatient clinic. **Result:** 19 medical records of patients with AI were identified, with a predominance of age in the age range between 15-64 years, with 53% being male and most of the diagnoses were carried out in the outpatient clinic. Secondary AI accounts for 74% of diagnoses, with surgical treatment for pituitary adenoma being the predominant etiology. Of the patients, 42% were asymptomatic at diagnosis, deficiencies of other pituitary hormones were common. In primary AI, all patients are treated with prednisone and fludrocortisone, and in secondary AI only with prednisone. During diagnosis, 21% of patients had experienced at least one episode of adrenal crisis. **Conclusion:** The study population included young and middle-aged adult patients, predominantly male, with secondary IA being the most frequent, with surgical treatment for pituitary adenoma as the main etiology. The data obtained in the study are in agreement with those in the literature. **Keywords:** adrenal insufficiency; epidemiological; clinical.

TIREOIDE

2397

PAPILLARY CARCINOMA IN MALIGNANT STRUMA OVARII AS A DIFFERENTIAL DIAGNOSIS OF OVARIAN MASSES: A CASE REPORT

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Case presentation: S.M.S.C., female, 46 years old, presented with pelvic pain. On gynecological follow-up, transvaginal ultrasound revealed a uterus with fibroid formations and a left ovary enlarged to 11.0 cm in diameter, predominantly cystic with a solid component inside. She underwent hysterectomy with bilateral oophorectomy. Histopathology of the left ovary showed a teratoma with a dental element in its lumen and struma ovarii malignum in its parenchyma, histologically compatible with well-differentiated classic papillary carcinoma, with peritoneal involvement. The uterus, right ovary, and both fallopian tubes were free of disease. Given the papillary carcinoma finding, staging CT scan showed thyroid gland with heterogeneous attenuation and multiple nodular images, confirmed by thyroid ultrasound revealing diffuse nodules, the largest measuring 2.1 cm. Three nodules were biopsied, with Bethesda I cytology, leading to total thyroidectomy showing colloid follicular adenoma without malignancy. She underwent radioiodine therapy with a metastatic dose of 200 mCi, showing excellent biochemical and structural response. **Discussion:** Struma ovarii is a rare condition characterized by a specialized form of mature ovarian teratoma predominantly composed of thyroid tissue (>50%), representing the most common type of monodermal ovarian teratoma, accounting for about 1% of all ovarian solid tumors. It typically occurs between the third and fifth decades of life and can be benign or, less commonly, malignant. Most patients are asymptomatic, although pelvic pain, local pressure, abdominal enlargement, and menstrual irregularities may occur. Diagnosis can be challenging and is confirmed by histopathological examination of the tumor tissue. The primary treatment involves tumor excision, often followed by adjuvant radioiodine therapy, similar to standard treatment for papillary thyroid carcinoma, with no standardized iodine dose for these cases. Prognosis is generally favorable, particularly in cases of localized disease, although ongoing surveillance is necessary due to the potential for recurrence. **Final comments:** A case of malignant struma ovarii has been described, requiring radioiodine therapy, highlighting the importance of considering struma ovarii as a differential diagnosis for adnexal masses, particularly due to its potential for malignancy. It is a condition with a favorable prognosis when localized and diagnosed early, as illustrated in this case. **Keywords:** malignant struma ovarii; papillary carcinoma; radioiodine therapy.

DIABETES MELLITUS

2398

DIABETES MELLITUS SECONDARY TO A GAIN-OF-FUNCTION MUTATION IN STAT1: CASE REPORT

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Case presentation: A 15-year-old male patient with short stature (140 cm, Z score -2.54) and diabetes mellitus since the age of 3. During his evolution, he presented with chronic diarrhea, arthritis, stomatitis, disseminated histoplasmosis resulting in enucleation of the left eye, airway infections which resulted in right lung lobectomy, as well as recurrent skin infections, oral and genital candidiasis. In 2018, immunological investigation and exome sequencing revealed a gain-of-function mutation in the STAT1 gene, associated with Immunodeficiency 31 A, B and C, a new event with a variant not found in the literature. Recent tests showed fasting glucose 109 mg/dL; HbA1C 9.39%; creatinine 0.54 mg/dL; total cholesterol 215.3 mg/dL; HDL 45.6 mg/dL; LDL 114.13 mg/dL; triglycerides 450.1 mg/dL; TGO 28 U/L; TGP 46 U/L; hemoglobin 14.7 g/dL; leukocytes 4,980/mm^3; platelets 454,000/mm^3; TSH 0.83 µIU/mL; LH 1.24 mIU/mL; testosterone < 2.5 ng/dL; IGF-1 25 ng/mL and bone age of 11 years, according to the Greulich-Pyle method. He currently uses insulin glargine 22 IU in the morning and 22 IU in the evening, insulin glulisine 6 IU before the main meals, escitalopram 10 mg a day, itraconazole 200 mg a day, azithromycin 500 mg three times a week and somatropin 4 IU a day. **Discussion:** Signal transducers and activators of transcription (STATs) are proteins that regulate gene expression related to immune regulation, cell growth and differentiation. STAT1 gain-of-function (GOF) mutation is an immunodeficiency syndrome with variable clinical features, which is associated with potentially fatal recurrent infections and autoimmune diseases. Autoimmunity predominantly affects the endocrine organs, with diabetes mellitus being one of the most common manifestations. The mechanism involved is possibly related to inappropriate lymphocyte activation and signaling. Studies on patients with impaired STAT1 function have shown that the function of Th17 cells and type I IFN were among the most impaired. Among the treatment options for this pathology are targeted therapies, such as the Janus-kinase (JAK) inhibitor, and hematopoietic stem cell transplantation. **Final comments:** The case illustrates the complexity of primary immunodeficiency syndromes, the importance of early diagnosis and appropriate management to improve clinical outcomes in patients with genetic mutations predisposing to these conditions. **Keywords:** diabetes mellitus; STAT1 protein; autoimmunity.

TIREOIDE

2400

SPATIAL DISTRIBUTION AND EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS FOR THYROID DISORDERS RESULTING FROM IODINE DEFICIENCY IN PERNAMBUCO FROM 2013 TO 2023: AN ECOLOGICAL STUDY

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Introduction: Iodine deficiency, an essential micronutrient for the synthesis of T3 and T4, can lead to goiter, hypothyroidism, and cretinism, as well as impact cognitive and physical development. In Brazil, salt iodization is effective in preventing these deficiencies but requires constant vigilance to ensure the ongoing effectiveness of the program. **Objective:** To assess the spatial distribution and epidemiological profile of hospitalizations due to thyroid disorders resulting from iodine deficiency in Pernambuco. **Materials and methods:** This is a descriptive ecological study based on aggregated morbidity data from the SUS (SIH/SUS) from 2013 to 2023, available on the Department of Information and Informatics of the Unified Health System (DATASUS) platform. Data were collected on the number of consultations and hospitalizations for thyroid disorders related to iodine deficiency in Pernambuco. The following variables were considered: sex, age, race, and health macroregion. **Results:** During the evaluated period, Pernambuco was found to be the northeastern state with the highest incidence of both consultations and hospitalizations for thyroid disorders related to iodine deficiency. In absolute numbers, the state had 332,607 consultations, representing more than 53.4% of all consultations in the Northeast region. No increasing or decreasing pattern in the number of consultations was observed in Pernambuco until 2018, with fluctuations averaging 39,941 cases. However, the following year saw the highest number of consultations for the entire period analyzed, totaling 48,541 records. Between 2020 and 2023, there was a progressive decrease in consultations attributed to the endocrine pathology in question. This pattern is also observed in the number of hospitalizations, with Pernambuco leading compared to other states in the region, accounting for 53.8% of all hospitalizations for thyroid dysfunctions due to iodine deficiency in public health hospitals in the Northeast. Of these, 83.5% were female patients, 68.2% were mixed-race, 24.6% were aged 40-49 years, and 92.2% lived in the metropolitan region. **Conclusion:** A prevalence of thyroid disorders resulting from iodine deficiency was observed in Pernambuco compared to other northeastern states, particularly in the year 2019. **Keywords:** thyroid disorder; iodine deficiency; epidemiology.

DIABETES MELLITUS

2402

DIFFERENTIAL BODY COMPOSITION METRICS IN WOMEN WITH TYPE 2 DIABETES: A COMPARATIVE STUDY USING BIOELECTRICAL IMPEDANCE ANALYSIS (BIA)

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Introduction: Aging is a risk factor for type 2 diabetes (T2DM) and frailty. It is associated with changes in body composition, including an increase in fat mass, central fat distribution, and a decrease in fat-free mass and skeletal muscle, all of which are risk factors for T2DM. In recent times, bioelectrical impedance analysis (BIA) has been shown to be a secure way of assessing body composition. **Objective:** This study aims to evaluate differences in body composition in women with type 2 diabetes and non-diabetic. **Methods:** Two hundred and fifty participants were selected, including 125 women with type 2 diabetes and 125 non-diabetic women. All participants completed a data questionnaire, performed a physical assessment, and underwent BIA. The participants were selected from the endocrinology outpatient clinic of Agamenon Magalhães Hospital in Recife, Brazil. The data was analyzed using GraphPad Prism 8.1. The Shapiro-Wilk test was used to assess data distribution, and the Student's t-test was used to compare means. The significance level adopted was $p \leq 0.05$. **Results:** The statistical analysis revealed that the group of women with T2DM (GDM) had significantly higher values compared to the group of women non-diabetic (GNDM) for several variables. Specifically, body weight was greater in the GDM (73.8 ± 17.6 kg *vs.* GNDM: 70.4 ± 13.0 kg, $p = 0.00$), abdominal circumference was larger (GDM: 102.2 ± 12.8 cm *vs.* GNDM: 95.5 ± 11.6 cm, $p = 0.00$), body fat percentage was higher (GDM: 29.3 ± 7.6% *vs.* GNDM: 26.7 ± 7.1%, $p = 0.01$), and kilograms of body fat were increased (GDM: 22.8 ± 11.3 kg *vs.* GNDM: 19.4 ± 8.1 kg, $p = 0.00$). **Conclusion:** Women with type 2 diabetes showed an increase in body weight, abdominal circumference, fat percentage and kilograms of body fat when compared to the group of non-diabetic women. These data are related to an increased risk of obesity, cardiovascular disease and metabolic syndrome. **Keywords:** body composition; bioelectrical impedance analysis; type 2 diabetes.

METABOLISMO ÓSSEO E MINERAL

2403

OBESITY MITIGATES BONE LOSS IN TUMOR INDUCED OSTEOMALACIA: EXPERIENCE OF A SINGLE TERTIARY CENTER

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Tumor-induced osteomalacia (TIO) is a rare paraneoplastic syndrome first described in 1947, resulting from secretion of fibroblast growth factor-23 (FGF-23) by a mesenchymal tumor. FGF-23, produced by osteoblasts and osteocytes, inhibits renal tubular reabsorption of phosphorus and activation of 25-OH vitamin D. TIO is characterized by hypophosphatemia, low or inappropriately normal 1,25-OH vitamin D and elevated or inappropriately normal FGF-23 levels. Patients present with bone pain, muscle weakness and pathologic fractures. Despite its severe clinical presentation and impact on quality of life, patients suffer for long periods before correct diagnosis, many presenting with multiple fractures and height loss. Locating the causative tumor is challenging, as these small tumors can be found in bones or soft tissues anywhere in the body. This study aims to evaluate the cases of patients diagnosed with TIO in a tertiary endocrinology center. The goal is to characterize the clinical and biochemical profiles of these patients at diagnosis, and compare them to data available in literature. We reviewed the cases of six patients diagnosed with TIO at our institution from 1999 to 2023, and this case series describes their characteristics at the time of diagnosis. Clinical, laboratory and radiological data were obtained through retrospective chart review. All patients had severe hypophosphatemia (median of 1.3 mg/dL, range: 0.9-1.8 mg/dL), elevated FGF-23 (1.6 to 13.7 times the upper limit of normal, median 5.9 times), musculoskeletal pain and history of fractures. The diagnosis of TIO was made after a median of 3.25 (range: 1.5-6) years of symptoms, illustrating the prolonged time to its recognition. They exhibited elevated alkaline phosphatase levels and, except for one, secondary hyperparathyroidism (median PTH 94.55 pg/mL). All had at least two fractures. Only one patient had normal bone mass. Despite this, he exhibited significant bone mass gain after cure (22% gain in lumbar spine). The two individuals diagnosed with obesity were the only ones without densitometric osteoporosis. Tumor localization was successful in 4 individuals (66%), demonstrating the challenge of locating these tumors. The present study suggests that obesity mitigates bone loss in TIO, but does not protect from fracture. Clinical awareness and tumor localization still remain as a challenge for clinicians and surgeons, respectively to abbreviate time of diagnosis and therapy. **Keywords:** tumor-induced osteomalacia; FGF-23; obesity.

DISLIPIDEMIA E ATEROSCLEROSE

2405

CANCER INCIDENCE IN PATIENTS WITH LMNA-ASSOCIATED FAMILIAL PARTIAL TYPE 2 LIPODYSTROPHY

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Introduction: Lipodystrophy is a group of disorders characterized by selective or generalized atrophy of adipose tissue and predisposition to insulin resistance and its complications. Familial partial lipodystrophy, Dunnigan type (FPLD2) is the most frequent form of familial partial lipodystrophy (FPLD) with a known mutation. This disease has autosomal dominant inheritance and occurs due to heterozygous mutations in the *LMNA* gene, chromosomes 1q21-22, which encodes the nuclear intermediate filaments A and C-type lamins. In recent years, studies have shown a correlation between type B laminopathies (*LMNB*) with the development of aggressive and metastatic cancer, probably due to changes in the cell's nuclear morphology. **Objective:** To evaluate the incidence, site and age of diagnosis of malignant neoplasms in patients with FPLD2. **Materials and methods:** The medical records of 18 patients with FPLD2 were reviewed, looking for previous or current diagnosis of cancer. **Results:** All patients have confirmed *LMNA* mutation. Of 15 female patients, four patients have a previous or current history of cancer, all of them gynecological (2 breasts, one endometrial, and one cervix cancer), age of diagnosis between 32 and 50 years, average age of 41 (SD ± 7.7) years old. One patient had breast cancer and lymphoma. Among patients affected with malignancy, the variants p.R482W in two patients and p.R482Q in one patient were detected. The patient affected with lymphoma after breast cancer had p.R482W variant in association with an LPL gene mutation. All patients have diabetes, hypertriglyceridemia, fatty liver disease in association with fibrosis, and one patient have coronary artery disease. **Conclusion:** Although the association between FPLD and a higher incidence of cancer is not described in the literature, we noticed the recurrence of cancer cases, with emphasis on breast cancer. In our sample, we were able to observe an earlier age at diagnosis compared to the general population with breast, endometrial, and cervix cancer, where the average incidence of diagnosis is, respectively, at 50, 60, and 40 to 50 years old. Patients with FPLD share some characteristics that may be associated with an increased risk of developing cancer, such as insulin resistance, alterations in sex steroid hormones and chronic low-grade inflammation. However, more studies are necessary to investigate the possible influence of the *LMNA* mutation on the process of carcinogenesis. **Keywords:** lipodystrophy; cancer; LMNA-associated familial partial lipodystrophy.

DISLIPIDEMIA E ATEROSCLEROSE

2406

FAMILIAL HYPERCHOLESTEROLEMIA – HETEROZYGOUS MUTATIONS WITH PHENOTYPIC MANIFESTATION OF HOMOZYGOSITY: A CASE REPORT

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Case presentation: J.M.A., female, 12 years old, underwent investigation due to diffuse xanthomas, revealing a lipid profile with TC 504 mg/dL, HDL-c 43 mg/dL, LDL-c 504 mg/dL, TG 66 mg/dL. Non-consanguineous parents, both without previous comorbidities. Mother, 44 years old, with TC 250 mg/dL, HDL-c 53 mg/dL, LDL-c 181.4 mg/dL, TG 78 mg/dL, and VLDL-c 15 mg/dL. Father, 42 years old, with TC 314 mg/dL, HDL-c 49 mg/dL, LDL-c 244 mg/dL, TG 108 mg/dL, and VLDL-c 24 mg/dL. Statin therapy was initiated but not tolerated due to allergic reaction, replaced with ezetimibe with no change in lipid profile. Genetic testing was conducted for the parents and the patient, revealing a pathogenic variant (NM_000527.5.313+1G>A) in heterozygosity (49.12%) in the LDLR gene, the same identified in the maternal test, and a likely pathogenic variant [NM_000527.5.1690A>C: p.(Asn564His)], also in heterozygosity (40.54%), the same identified in the paternal test. Judicial approval for lomitapide is pending. **Discussion:** Familial hypercholesterolemia (FH) is an inherited disorder characterized by elevated LDL-c, xanthomas, and high risk of early coronary artery disease (CAD), associated with mutations in the LDLR gene, apolipoprotein B (ApoB), PCSK9, and polygenic effects. The homozygous form (HoFH) carries a higher risk of CAD in the second decade of life, with prevalence ranging from 1/200,000 to 1/1,000,000. Over 1,100 functional mutations have been described, exhibiting diverse patterns such as true homozygosity (matching mutations on both alleles), compound heterozygosity (incompatible mutations on the same allele), or double heterozygosity (incompatible mutations on different alleles). The severity of mutations results in wide phenotypic variability; notably, the paternally described likely pathogenic mutation led to a more atherogenic lipid profile (LDL > 200 mg/dL) compared to the maternal mutation. Treatment involves diet, exercise, statins, and PCSK9 inhibitors if there is residual LDL receptor activity. Lomitapide and lipoprotein apheresis are therapeutic options for refractory cases. **Final comments:** HoFH is a challenging disease necessitating urgent treatment, often with difficulties in access and requiring genetic counseling. This case highlights a patient with compound heterozygous mutation and a phenotypic presentation resembling homozygosity. **Keywords:** familial hypercholesterolemia; homozygous form; heterozygous mutations.

DISLIPIDEMIA E ATEROSCLEROSE

2407

EPIDEMIOLOGICAL PROFILE AND HOSPITAL MORBIMORTALITY DUE TO ATHEROSCLEROSIS IN BRAZIL FROM 2020-2024

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Introduction: Atherosclerosis is a multifactorial disease that results in the formation of plaques of fat, calcium and other elements in the arterial walls. Several risk factors contribute to the development of atherosclerotic lesions, such as age, male gender, smoking and obesity. This pathology has a considerable prevalence in Brazil and can present itself in a variety of ways, ranging from milder cases, treated on an outpatient basis, to more serious cases, which require hospitalization and can lead to death. Objectives: To describe the epidemiological profile and hospital morbimortality due to atherosclerosis in Brazil during the period 2020-2024. Methods: This is a descriptive, ecological, time-series study based on the collection of data from the Hospital Information System of the Unified Health System, related to hospital morbidity due to Atherosclerosis (ICD-10 I70), from January 2020 to May 2024, in Brazil. Variables analyzed: number of hospitalizations; total value; average value per hospitalization; average length of stay; mortality rate; geographic region; gender; color/race and age group. **Results:** 117,370 hospitalizations for atherosclerosis were recorded, with a total cost of R$ 301,619,267.24. The Southeast region accounted for 48.36% of hospitalizations, corresponding to 44.60% of total spending. The average cost per hospitalization was R$2,569.82, with an average length of stay of 6.9 days. The Midwest region had the highest mortality rate, at 4.31. Males accounted for the majority of hospitalizations, with 56.41% of the total. The distribution of hospitalizations by color was more prevalent among the brown and white races, with 44.80% and 34.22%, respectively. The 60 to 69 age group accounted for 33.39% of hospitalizations, followed by the 70 to 79 age group, with 28.85%. The year 2023 stood out with the highest number of hospitalizations, totaling 24.88%. **Conclusion:** This study reveals a significant number of hospitalizations and costs, especially in the Southeast. On the other hand, the Midwest had the highest mortality rate. The most affected were men, those aged between 60 and 69 and those of brown race. Atherosclerosis therefore remains a condition of high prevalence and morbidity in Brazil, requiring continuous efforts to promote healthy habits, control risk factors and improve public health policies in order to reduce its incidence and impact. **Keywords:** atherosclerosis; epidemiology; morbimortality.

OBESIDADE
2408

EFFECTIVENESS OF SUBLINGUAL MECOBALAMIN IN THE TREATMENT OF VITAMIN B12 DEFICIENCY AFTER BARIATRIC SURGERY

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Insufficient dietary intake or the presence of conditions that interfere with the absorption of vitamin B12 can cause a deficiency of this micronutrient. Patients undergoing bariatric surgery are at risk for vitamin B12 deficiency, both due to intestinal malabsorption and gastric changes. The intramuscular route remains preferred in the treatment of these patients, however the sublingual route appears as an alternative. **Objective:** To compare the correction of serum vitamin B12 levels after intramuscular or sublingual replacement in patients undergoing bariatric surgery with vitamin B12 deficiency. **Methods:** Assessment of serum vitamin B12 levels in patients with a history of bariatric surgery after intramuscular (5000 mcg per week for 4 weeks) or sublingual (1,000 mcg per day for 6 weeks) replacement for the treatment of vitamin b12 deficiency. **Results:** 30 consecutive patients were evaluated (age: 43.5 ± 11.5 years; 80% women), with a history of bariatric surgery (6 patients with gastric sleeve and 24 with bypass) and vitamin B12 deficiency (average 162 ± 65 pg/mL), divided into two groups of 15 persons for sublingual or intramuscular replacement. After 6 weeks, all patients reached vitamin b12 > 350 pg/mL, with slightly higher levels in the intramuscular subgroup, but without statistical significance (437 ± 212 *vs.* 459 ± 184 pg/mL, p = 0.07). **Conclusions:** Vitamin B12 replacement via the sublingual route was as effective as the intramuscular route in patients with a deficiency of this nutrient and a history of previous bariatric surgery. Considering the patient's comfort, the sublingual route can be offered as a preferred option for this profile. **Keywords:** vitamin b12; bariatric surgery; sublingual.

OBESIDADE
2410

EVALUATION OF EATING BEHAVIOR IN RESPONSE TO STRESS AMONG MEDICAL RESIDENTS WORKING IN A TERTIARY HOSPITAL IN RECIFE-PE

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Introduction: Eating behavior can be influenced in different ways and to different degrees in individuals exposed to stress, which can be explained by the brain reward system. The population of medical interns configures a group with high levels of stress and may be more susceptible to changes in their eating habits, with three main standards: cognitive restriction (CR), uncontrolled eating (UE) and emotional eating (EE). **Objectives:** To evaluate the relationship between different types of eating behavior and stress in interns working in a tertiary Hospital in Recife-PE, in the year of 2022. **Methods:** This is a cross-sectional observational descriptive/analytical study. Data were collected from 69 medical interns from different programs of this service, referring to sociodemographic variables, in addition to questionnaires to assess self-perceived stress (PSS-14) and identification of eating behaviors (TFEQ-21). **Results:** The mean age was 29.5 years, with a predominance of females (58%). While 33.3% used psychotropic drugs, 52.2% received psychotherapeutic follow-up during the internship. The average of the perceived stress scale was 27.7 points, with higher scores among females, among those without children, in the psychotropic and psychotherapy group during internship. There were higher scores in the UE subgroup for those without children and for the psychotherapy group; for CR, the highest score was in the Endocrinology program. In the EE subgroup, higher scores were for the psychotherapeutic and psychotherapy group. When considering the relationships between perceived stress and eating behaviors, significant negative and weak results were obtained for age and uncontrolled eating, and positive and moderate results for emotional eating. **Conclusion:** In this study, higher levels of stress were found among females, among interns who use or have used psychotropic medications and who attends to psychotherapy, in addition to significantly statistical associations between the stress scale and the types of eating behavior in these same interns groups. Furthermore, there was a stronger relation between stress and emotional eating variant, corroborating the findings in the specialized medical literature. **Keywords:** eating behavior; stress; medical interns.

OBESIDADE

2411

BODY MASS INDEX PROFILE IN POSTMENOPAUSAL WOMEN DIAGNOSED WITH BREAST CANCER: A CROSS-SECTIONAL STUDY

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Introduction: Breast cancer is globally considered the fifth most lethal type of malignancy, with high incidence rates, as evidenced by 2.3 million new cases in 2020. Its etiopathogenesis is multifactorial, with notable emphasis on modifiable factors such as obesity. **Objective:** To evaluate BMI in postmenopausal women with breast cancer treated at a mastology reference service in Pernambuco. **Materials and methods:** This is a cross-sectional epidemiological study including postmenopausal women diagnosed with breast cancer. Exclusion criteria were chronic use of glucocorticoids, prior history of bariatric surgery, and histological diagnosis of breast cancer confirmed more than 6 months before the interview. A questionnaire was administered to collect sociodemographic data and lifestyle information. Anthropometric measurements including height, weight, and BMI were recorded. **Results:** Fifty women were evaluated, among whom 27 (54%) were of mixed race, 27 (54%) were married, 39 (78%) resided in urban areas, and 45 (90%) were homemakers. Ages ranged from 45 to 85 years, with a mean of 60.18 years. Mean years of schooling were 7.38, and average household income was 1.7 minimum wages. Regarding lifestyle habits, 36 (72%) women were sedentary, with an average daily consumption of fruits and vegetables of 1.96 servings. Eighty-six percent (43) reported no regular alcohol consumption, while 28% (14) had a history of smoking. Twelve women (24%) had a history of breast cancer among siblings. Mean ages at menarche and menopause were 12.9 and 47.38 years, respectively. Sixty percent (30) of individuals had up to 2 children, with an average age at first pregnancy of 21.39 years; 58% (29) breastfed for more than 6 months. Mean weight was 72.75 kilograms (kg), ranging from 37.8 to 107 kg. Mean BMI was 29.65 kg/m^2, with 1 (2%) classified as underweight, 9 (18%) at ideal weight, 18 (36%) overweight, 15 (30%) with obesity grade I, 5 (10%) with obesity grade II, and 2 (4%) with obesity grade III. Histologically, 41 (82%) had invasive ductal carcinoma. **Conclusion:** Therefore, it was observed that the profile of postmenopausal women diagnosed with breast cancer is of patients with a BMI above the ideal, with most of them being either overweight or obese grade I. **Keywords:** obesity; breast neoplasms; postmenopause.

NEUROENDOCRINOLOGIA

2412

A RARE CLINICAL MANIFESTATION IN MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 (MEN 1): PARATHYROID CARCINOMA AND GONADOTROPINOMA

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Case report: A 42-year-old male patient was evaluated after his brother was diagnosed with multiple endocrine neoplasia type 1 (MEN1). He reported chronic epigastralgia, nausea and vomiting, frequent diarrhea, and asthenia. The physical exam was unremarkable except for the collagenomas present in the upper trunk. Endoscopy revealed gastric polyposis and a nodule later diagnosed as an epithelioid gastric neoplasia suggestive of a grade I neuroendocrine tumor (NET). A total gastrectomy was performed in another service. The gastric NET had uncertain malignant potential, was multifocal with a polypoid and sessile pattern, and had peritumoral angiolymphatic invasion (grade II). Sellar MRI revealed a pituitary macroadenoma invading the cavernous sinus. The pituitary function was normal except for high gonadotropin levels (FSH = 15.2, reference: 0.7-11 mUI/mL; LH = 18.8, 0.8-7.6 mUI/mL) and a serum total testosterone = 1,331 (262-1,593 ng/dL) suggestive of a gonadotropinoma (Gdp). Primary hyperparathyroidism (PHPT) was diagnosed with pre-surgical levels of 1,304 pg/mL. A cervical ultrasound revealed a solid nodule in the left superior parathyroid with calcifications and irregular contours. Left unilateral parathyroidectomy and left thymectomy were performed. After surgery, PTH levels progressively increased (PTH = 2,045 pg/mL, 25-OH vitD = 22.9 ng/mL, total calcium = 11.7 mmol/L, ionized calcium = 1.28 mg/dL, phosphorus = 3.0 mg/dL) suggesting the presence of a malignant tumor. Histopathological diagnosis confirmed the diagnosis of parathyroid carcinoma. **Discussion:** The occurrence of parathyroid carcinoma and atypical parathyroid neoplasms as the causes of PHPT in MEN1 is a rare possibility, with an estimated prevalence of less than 1% among MEN1 patients. Gdps are rare tumors, most of which are clinically silent, producing and secreting biologically inactive hormones. Still, in exceptional cases, they cause clinical syndromes due to the hypersecretion of intact gonadotropins. The clinical spectrum of endocrine dysfunction includes ovarian hyperstimulation syndrome, testicular enlargement, and isosexual precocious puberty. **Final comments:** The rare possibility of a single parathyroid gland disease should be considered in patients with MEN-1 since it modifies the management of the disease. **Keywords:** MEN1; gonadotropinoma; parathyroid carcinoma.

DIABETES MELLITUS

2413

INSULIN RESISTANT DIABETES MELLITUS IN A PEDIATRIC PATIENT: CASE REPORT

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Case presentation: Female patient, was born by normal birth, at term, weighing 2,500 g and showing mild cyanosis. At 3 months, she was diagnosed with heart failure secondary to dilated cardiomyopathy. At the age of 10, she presented with darkening of the skin in the cervical and periorbital region, excessive sleepiness, aphasia and reduced visual and hearing acuity. On physical examination, BMI: 26.78 kg/m^2; Z score +2.13; 98.34 percentile. Laboratory tests: TTOG 75 g; blood glucose 0': 98 mg/dL and 120': 215 mg/dL; ACTH: 36 pg/mL; basal cortisol 8 h: 10.7 mg/dL and 16 h: 7.1 mg/dL; insulin: 803.9 µU/mL; free T4: 1.19 mg/dL; TSH: 9.091 µU/mL; anti-TPO < 10 IU/mL; anti-GAD: 3.71 U/mL; anti-insulin: 3.8 U/mL; C-peptide: 13.47 pg/mL; pro-insulin: 15.80; HbA1c: 5.1%; urea: 41 mg/dL and creatinine: 1.1 mg/dL. At the age of 15, she progressed to chronic kidney disease and, at the age of 18, she has not yet had a menarche. She takes furosemide 40 mg/day, anlodipine 10 mg/day and metformin XR 1000 mg/day. **Discussion:** In childhood, the main etiology of diabetes mellitus (DM) is type 1, which can be sub-classified as type 1A, immune-mediated, or 1B, idiopathic. In both cases, serum C-peptide is reduced. However, in this case, the diagnosis of DM is associated with marked insulinresistance, given the elevation of C-peptide and insulin. Furthermore, she presents negative antibodies, having been treated with drugs that sensitize the action of insulin to control the disease. In these cases, it is essential to consider genetic defects in insulin action, as can occur in Leprechaunism, Rabsonn-Mendenhall syndrome and type an insulin resistance syndrome. In addition, there may be other alterations, such as: increased phosphorylation of serine/threonine in the insulin substrate and receptor; increased tyrosine kinase phosphatase, especially PTB-1B; defects in the expression of GLUT-425; decreased action of the P13K and Akt kinases. Final considerations: From birth to the progression to chronic kidney disease, the patient faced several clinical challenges. This case illustrates the complexity of diagnosing and managing insulinresistant DM in a pediatric patient. It therefore emphasizes the importance of considering differential diagnoses related to mutations in the insulin receptor gene and post-insulin receptors in cases of insulinresistance in children, especially when the hypothesis of type 1 DM is ruled out. **Keywords:** diabetes mellitus; insulin resistance; pediatrics.

ENDOCRINOLOGIA BÁSICA

2414

EPIDEMIOLOGICAL ANALYSIS OF UNDERNUTRITION HOSPITALIZATIONS IN BRAZIL FROM 2021 TO 2024

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Introduction: Nutritional disorders significantly impact public health, with varying prevalence across different regions and age groups. Undernutrition, a complex condition influenced by socioeconomic and educational factors, can contribute to endocrine and metabolic issues, such as inadequate growth and diabetes. If not adequately addressed, undernutrition can lead to severe health complications requiring hospitalizations. In Brazil, the prevalence of this condition has been a cause for concern, necessitating a detailed analysis to formulate effective public health policies. **Objectives:** This study aims to analyze the distribution and outcomes of hospitalizations due to undernutrition in Brazil. **Methods:** This is a retrospective epidemiological study using data obtained from the Ministry of Health through DATASUS, via the Morbidity Hospital System of SUS (SIH/SUS), regarding individuals hospitalized due to undernutrition between January 2021 and May 2024 in Brazil. The analyzed variables were: geographic distribution, gender disparities, age-related patterns (G1: <1-19 years, G2: 20-49 years, G3: 50-80+ years), associated mortality rates and hospitalization costs. **Results:** The Southeast region reported n = 36.328 (41.95%) internations due to undernutrition, Northeast n = 23.610 (27.72%), South n = 14.912 (17.22%), North n = 6.039 (6.97%), and Central-West n = 5.694 (6.57%). In terms of gender, males n = 4 8.087 (55.38%) were more affected than females n = 38.496 (44.46%). Age group distribution showed a predominance in G3 (50-80+ years) with 62.36% of cases, followed by G1 (22.90%) and G2 (14.73%). The total healthcare cost attributed was BRL 89,487,705.63. There were 11,622 reported deaths, with a mortality distribution of 3.32% in G1, 8.51% in G2, and 88.15% in G3. **Conclusion:** The Southeast region reported the highest number of hospitalizations, with more than 40% of all cases in the country, while the Central-West region showed the lowest, with only 6.57%. Males were more affected than females, with a difference of over 9,000 cases. Regarding age groups, more than 50% of cases occurred among the elderly population, followed by the pediatric population (22,90%).The G3 group also presented the highest mortality rate, with almost 90% of all deaths. The cost of the hospitalizations was substantial. These findings emphasize the importance of regional and demographic considerations in developing effective public health strategies to combat nutritional disorders in Brazil. **Keywords:** undernutrition; epidemiology; hospitalization.

NEUROENDOCRINOLOGIA

2417

METASTATIC PHEOCHROMOCYTOMA: CASE REPORT

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Case presentation: A 51-year-old man with a history of pheochromocytoma (PHEO) diagnosed in a pathological examination of a surgical specimen in 2018 resulting from a left adrenalectomy and caudal pancreatectomy. He did not undergo previous preparation because the diagnosis had not been suspected preoperatively, and during the intraoperative period he presented an adrenergic crisis evolving with instability and requiring intensive care. In the postoperative follow-up, he underwent nuclear magnetic resonance imaging that showed the presence of a retroperitoneal mass with left renal involvement, and underwent partial nephrectomy in 2021. The diagnosis was again PHEO. In 2022, a mass was evidenced in the mediastinal topography that after resection was confirmed to be a paraganglioma. In 2024, he underwent a new MRI of the chest and abdomen that still showed a lesion in the posterior mediastinum and adrenal pocket. He is currently awaiting surgical resection of the lesions. **Discussion:** Pheochromocytoma is a rare catecholamine-producing neuroendocrine tumor that arises from the chromaffin cells of the adrenal medulla. When located in ganglia of the autonomic nervous system, it is called paraganglioma. Despite having a classic triad and suggestive imaging characteristics, oligosymptomatic conditions make its suspicion a challenge. Patients with a previous diagnosis require preparation before intervention with alpha-blockers and beta-blockers to reduce the risk of complications. Some cases only generate suspicion during surgical manipulation, causing life-threatening hemodynamic instability, with this presentation having a mortality rate of approximately 30%. The surgical procedure results in a cure in most cases, however, 10% of cases are malignant with reports of metastases up to 53 years after the initial resection. Histologically and biochemically, we are unable to differentiate malignant from benign forms, generating unpredictable follow-up. In the case reported, the patient was only diagnosed with PHEO after histopathological results, and the surgery performed without prior preparation led to significant complications. In addition, early metastases were detected during follow-up, characterizing the PHEO as malignant. There is currently no curative treatment for this presentation. **Final comments:** Surgical removal is the treatment of choice for primary lesions or recurrence of PHEO, but adequate preparation before the intervention is essential. **Keywords:** pheochromocytoma; malignant; preoperative.

DIABETES MELLITUS

2418

PHASE ANGLE AS A PREDICTOR OF HEALTH IN WOMEN WITH TYPE 2 DIABETES

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Introduction: Bioelectrical impedance analysis (BIA) is widely used as a simple and non-invasive method for measuring body composition. However, the Phase Angle (PhA), which is directly calculated from BIA measurements, is considered to prognostic marker in various clinical scenarios, reflecting oxidative stress, integrity, functionality, health and cellular damage, and has attracted attention as an easily measurable physical health indicator for various populations. **Objectives:** To describe the PhA in women with type 2 diabetes and non-diabetic. **Methods:** Two hundred and fifty participants were selected, including 125 women with type 2 diabetes and 125 non-diabetic women. All participants completed a data questionnaire, performed a physical assessment, and underwent BIA. The participants were selected from the endocrinology outpatient clinic of Agamenon Magalhães Hospital in Recife, Brazil. The data was analyzed using GraphPad Prism 8.1. The Shapiro-Wilk test was used to assess data distribution, and the Student's t-test was used to compare means. The significance level adopted was $p \leq 0.05$. **Results:** The group of Women with Diabetes (WD) had a lower phase angle value compared to the group of Women Without Diabetes (WnD) (WD: $8.77^{o} \pm 3.42^{o}$ *vs.* WnD: $9.70^{o} \pm 4.11^{o}$ $p = 0.04$). **Conclusion:** A lower PhA found in type 2 diabetic women suggests the presence of cell damage, potential oxidative stress and others factors often associated with decreased health in women with type 2 diabetes. **Keywords:** diabetes mellitus; electric impedance; women.

TIREOIDE

2419

EVALUATION OF THE ASSOCIATION BETWEEN THYROID DYSFUNCTION AND CARDIOVASCULAR AND METABOLIC RISK IN A POPULATION OF YOUNG ADULTS RESIDING IN THE COVERAGE AREA OF THE FAMILY HEALTH STRATEGY IN THE CENTER OF RIO DE JANEIRO – LAPARC STUDY

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Introduction: Thyroid dysfunctions are prevalent in our population and are often late or underdiagnosed. Both clinical hypothyroidism and hyperthyroidism are associated with increased cardiovascular risk (CVR) and metabolic risk. **Objective:** To evaluate the prevalence of thyroid dysfunctions in a population of young adults residing in the coverage area of the Family Health Strategy (FHS) in the center of Rio de Janeiro and its association with CVR and metabolic profiles. **Method:** This cross-sectional population study included adults aged 20 to 65 years registered in the FHS in Lapa, a neighborhood in downtown Rio de Janeiro, Brazil. Sociodemographic characteristics, anthropometric data, and classical CVR factors were obtained. We assessed Thyroid profile by measuring serum TSH and Free T4 levels, and thyroid autoimmunity by measuring serum anti-TPO. Metabolic profile was assessed by measuring serum glucose, glycated hemoglobin, insulin, insulin resistance index (HOMA-IR), total cholesterol, LDL, HDL, triglycerides, creatinine, and us-CRP. Blood pressure (BP) was measured in the office using a digital oscillometric device and by Home Blood Pressure Monitoring (HBPM). **Results:** A total of 110 individuals were evaluated, 19 (17.3%) had thyroid dysfunction, with 11 (57.9%) being females, and the average age was 46.0 ± 8.9 years. This group demonstrated a worse metabolic profile, with a higher prevalence of diabetes (15.8%) and obesity (42.1%), presenting an average body fat percentage of 50.2 ± 16. Serum triglyceride levels were higher in the group with thyroid dysfunction, at 144 ± 67, although the prevalence of dyslipidemia (52.6%) was comparable to the group without thyroid dysfunction (52.7%). Regarding CVR, there is a high prevalence of hypertension (47.4%), although the mean systolic and diastolic BP values obtained by HBPM were similar between the groups, being 124 ± 13 and 90 ± 9, respectively, for the group with thyroid dysfunction and 120 ± 15 and 19 ± 10 for the group without thyroid dysfunction. **Conclusion:** In this study, thyroid dysfunction is associated with a worse metabolic profile and other conditions such as obesity, hypertension, and diabetes. However, there was no direct relationship between thyroid function and blood pressure levels, showcasing that we need to include more subjects to better understand the relationship between Thyroid dysfunction and CVR. **Keywords:** thyroid dysfunction; cardiovascular risk; metabolic profile.

NEUROENDOCRINOLOGIA

2420

SARCOPENIA, SARCOPENIC OBESITY AND PHYSICAL PERFORMANCE IN PATIENTS WITH ACROMEGALY

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Introduction: Acromegaly is a disease characterized by excessive growth hormone (GH) and insulin growth-factor 1 (IGF-1). These hormones are associated with increased muscle mass. However, there seems to be muscle impairment and worse physical performance in patients with acromegaly. We describe and analyze lean mass compartments, sarcopenia, sarcopenic obesity and physical performance in patients with acromegaly. **Methods:** This was a cross-sectional study involving 27 patients with acromegaly followed up in an outpatient clinic. Bioimpedance (BIA) and whole-body densitometry (DXA) were used for body composition analysis. A digital dynamometer was used for the handgrip strength test (HGS). The SARC-F questionnaire was used as a screening tool for sarcopenia. The stand and walk test (TUG), gait speed and short physical performance battery (SPPB) were used as physical performance tests. Categorical variables were described as frequencies and quantitative variables as mean and standard deviation, or median and interquartile ranges. Quantitative and binary categorical variables were compared using student's t-test. Quantitative variables were compared using pairwise comparison of means or spearman's rank correlation. **Results:** Parameters of lean mass from BIA and DXA showed an important linear correlation in patients with acromegaly [r = 0,8004 for skeletal muscle mass *vs.* Baumgartner index (BMG), p < 0,01; and r = 0,8052 for free fat mass index (FFMI) *vs.* BMG, p < 0,01]. 22% of the patients had sarcopenia suggested by SARCF (score ≥ 4) and 22% of the patients had a low FFMI by BIA, but SARCF ≥ 4 and low FFMI did not have statistical significance (p = 0.59). When considering BMG or FNIH index from DXA, none of the patients were classified as sarcopenic. More than half of the patients were classified as obese by body mass index (≥30 kg/m^2) and 33,33% were classified as obese using fat mass index (FMI), obtained by BIA. When considering low FFMI and high FMI, none of the patients had sarcopenic obesity. As for physical performance, low HGS showed an important association with low SPPB score (p < 0.05). 18,52% of the patients had low HGS by sex, and 37% had low walking speed (≤0,8 m/s). Since most patients (77,78%) had normal IGF-1, disease control was not used as a dependent variable. **Conclusion:** Strong linear correlation was found between BIA and DXA to analyze lean mass in patients with acromegaly. HGS test showed an important association with SPPB scores. **Keywords:** acromegaly; body composition; sarcopenia.

OBESIDADE

2421

MYOSTEATOSIS, HANDGRIP STRENGTH, AND RELATIVE SKELETAL MUSCLE INDEX IN CONGENITAL GENERALIZED LIPODYSTROPHY

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Introduction: Congenital generalized lipodystrophy (CGL) is a rare autosomal recessive disorder characterized by the near-total loss of adipose tissue and prominent musculature from birth or early childhood. Due to the inability to store triglycerides in adipose tissue, ectopic deposits in organs such as the liver and muscles occur, resulting in severe insulin resistance and serious metabolic complications. The infiltration of fat into skeletal muscle, known as myosteatosis, has been associated with metabolic disorders in conditions like obesity. However, there is no data on the relationship between myosteatosis and sarcopenia in patients with CGL. **Objective:** To investigate the occurrence of sarcopenia in patients with CGL and compare their handgrip strength (HGS) and relative skeletal muscle index (RSMI) with healthy individuals. **Methods:** A cross-sectional study was conducted at a reference center for lipodystrophies in Brazil. The study included all adults with a clinical and genetic diagnosis of CGL followed at this center who agreed to participate. RSMI was assessed by dual-energy X-ray absorptiometry (DEXA), and weight, height, and dynamometry were measured. The diagnosis of sarcopenia used cut-off points for HGS of < 27 kg for men and < 16 kg for women, and cut-off points for RSMI of < 7 kg/m^2 for men and < 5.5 kg/m^2 for women. A comparison group was selected in a proportion of 2 healthy individuals for each patient with CGL, matched by age, BMI, and sex. **Results:** Eight adults were evaluated, with a mean age of 31.1 ± 8.8 years, of whom 62.5% (5) were female. Only one patient had a pathogenic variant in the BSCL2 gene, and the others had mutations in the AGPAT2 gene. No sarcopenia was identified in patients with CGL. However, one male patient with a BSCL2 mutation showed decreased HGS. The mean BMI was 23.3 ± 0.8 kg/m^2. The mean RSMI and HGS of individuals with CGL were 8.3 ± 0.7 kg/m^2 and 32.4 ± 11.4 kg, respectively. In the comparison group, the mean RSMI was 7.1 ± 1.1 kg/m^2, and the mean HGS was 30.8 ± 10.4 kg, with a difference between the groups only in RSMI values (p = 0.01). **Conclusion:** Patients with CGL did not present sarcopenia; however, they demonstrated a higher RSMI compared to healthy individuals. This finding suggests that these patients possibly have greater muscle mass and not just more prominent musculature due to the deficiency of adipose tissue. Additionally, it indicates the preservation of muscle functionality despite ectopic fat storage. **Keywords:** lipodystrophy, congenital generalized; muscle strength; muscle, skeletal.

OBESIDADE

2422

EFFICACY OF DUAL OR TRIPLE (GLP-1/GIP/GLUCAGON) RECEPTOR AGONISTS IN TREATING NON-ALCOHOLIC FATTY LIVER DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

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Introduction: The escalating global prevalence of non-alcoholic fatty liver disease (NAFLD) prompted this systematic review and meta-analysis to evaluate the efficacy of GLP-1/GIP/glucagon receptor agonists in treating this condition. **Objective:** To evaluate the efficacy of GLP-1/GIP/glucagon receptor agonists in the treatment of NAFLD. **Methods:** A systematic review and meta-analysis of randomized clinical trials (RCTs) were conducted by searching PubMed, EMBASE, and Cochrane Library databases. The review followed PRISMA guidelines. Outcomes were measured as the mean difference (MD) in the reduction of liver fat content, Pro-C3 levels (a fibrogenesis marker), and Fibrosis-4 score, presented with 95% confidence intervals (CI). The I^2 index assessed heterogeneity between the studies. **Results:** Four randomized, double-blind, placebo-controlled clinical trials (involving 655 patients) assessed the efficacy of tirzepatide, survodutide, retatrutide, and cotadutide in treating NAFLD diagnosed through liver biopsy or imaging techniques. The results showed a statistically significant reduction in liver fat content (MD: -43.68%; 95% CI: -62.79 to -24.56; P < 0.01; I^2 = 99%) and Pro-C3 levels (MD: -25.92%; 95% CI: -49.27 to -2.57; P = 0.03; I^2 = 99%). Although there was a decrease in the Fibrosis-4 score (MD: -5.15%; 95% CI: -16.58 to 6.28; P = 0.38; I^2 = 98%), it was not statistically significant. **Conclusion:** GLP-1/GIP/glucagon receptor agonists significantly reduce liver fat content and Pro-C3 levels in NAFLD patients. However, their effect on the Fibrosis-4 score was not statistically significant. These findings suggest that these agonists may be promising for NAFLD treatment, though further research is needed to confirm their efficacy across different patient groups. **Keywords:** non-alcoholic fatty liver disease; dual receptor agonists; meta-analysis.

TIREOIDE

2423

COVID-19 X GRAVES' OPHTHALMOPATHY: ORBITAL MYOSITIS AS A DIFFERENTIAL DIAGNOSIS OF OCULAR DISEASE

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Case presentation: N.C.O.R., female, 57 years old, diagnosed in 1990 with Graves' disease. At the time, for treatment of the ophthalmopathy, she underwent corticosteroid pulse therapy and radiotherapy, with improvement in ocular complaints, still persisting mild proptosis. Comorbidities: systemic arterial hypertension and glaucoma. In April 2024, she attended the Endocrinology outpatient clinic complaining of diplopia, spontaneous ocular pain, pain on eye mobilization and conjunctival hyperemia (CAS 3), a few days after infection with SARS-CoV-2, documented by a rapid test. She had four doses of the COVID-19 vaccine, the last one more than a year ago. She was referred to Ophthalmology to rule out exacerbation of the glaucoma and a TSH receptor antibody (TRAB) was requested, since the hypothesis of a recurrence of Graves' ophthalmopathy after viral infection was raised. Intraocular pressure was normal, TRAB was negative and the patient was euthyroid. She returned for re-evaluation one month later, with spontaneous improvement in ocular symptoms (CAS 1), without the need for therapeutic intervention. **Discussion:** Few reports in literature show an association between SARS-CoV-2 infection and recurrence of Graves' ophthalmopathy. However, there are studies linking COVID-19 and the development of thyroid autoimmunity, with various mechanisms proposed, such as viral immune hyperstimulation and molecular mimicry between the virus and human antigens. The virus enters human cells via the angiotensin-converting enzyme (ACE2), expressed in the thyroid and ocular tissue. Graves' ophthalmopathy has been reported after COVID-19 vaccination; in these cases, the eye lesion usually appears within the first month after immunization. The differential diagnosis in this case, with diplopia and negative TRAB, would be orbital myositis, which has already been reported after SARS-CoV-2 infection, and can have a self-limited course, as occurred in our patient. **Final comments:** There are few reports in the literature directly associating SARS-CoV-2 infection and reactivation of Graves' ophthalmopathy, but pathophysiological substrates have been described by which SARS-CoV-2 infection can cause autoimmunity. Therefore, if a patient with Graves' disease complains of ocular symptoms after SARS-CoV-2 infection, a thorough investigation should be carried out with TRAB and imaging of the orbit to assess active ophthalmopathy and review differential diagnoses, such as orbital myositis. **Keywords:** COVID-19; Grave's ophtalmopathy; orbital myositis.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2424

ASSESSMENT OF BODY COMPOSITION AND METABOLIC PROFILE OF A COHORT OF ELDERLY AND MIDDLE-AGED TRANS PATIENTS

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Introduction: Much has been questioned about the influence of sexual hormones on body composition, metabolic profile and cardiovascular risk with aging, when we enter the trans population these questions are even greater. **Objective:** Establish parameters of body composition and metabolic profile of elderly patients, and middle-aged people monitored at a reference center. Materials and methods: A retrospective study consisting of 67 patients, 18 transgender men (TH) and 49 transgender women (TM), between January 2010 and July 2024. Regarding the metabolic profile, data on body weight, BMI, fasting glucose, glycosylated hemoglobin, lipid profile, systemic blood pressure, treatment time, and Framingham score were analyzed. Statistical analysis was performed using the Shapiro-Wilk test. **Results:** In the cohort analyzed, the mean age in the TH was 56.1 ± 6 years, compared to 56.9 ± 6.2 years in the MB, with white ethnicity being the predominant one. In the HT, we observed that the analyzed parameters of body composition did not show statistical significance in relation to cisgender men. Regarding the beginning of follow-up, there was no significant change in weight, lipid profile, blood glucose, glycosylated hemoglobin or hematocrit, even after comparison between subgroups with less than 15 years of cross-hormone therapy and more than 15, and between subgroups of low or intermediate cardiovascular risk versus high or very high risk. No worsening of the Framingham score was found as a result of hormone therapy. On the other hand, in WM, we found a higher lean mass than that found in cisgender women in the same age group (p: 0.036). From baseline to onset, there was no significant change in weight, lipid profile, blood glucose, glycosylated hemoglobin, or prolactin, even after comparison between subgroups with less than 20 years of crossover hormone therapy and more than 20 years, and between subgroups of low or intermediate versus high or very high cardiovascular risk. There was no change in the parameters studied when compared to the groups submitted to gonadectomy or not. **Conclusion:** Therefore, in this study we can verify that lifetime cross-hormone therapy did not negatively influence body composition, metabolic profile, and cardiovascular risk in a cohort of men and trans women over 50 years of age. Our data demonstrate that long-term cross-hormone therapy is safe from a cardiovascular point of view. **Keywords:** metabolic profile; middle-aged trans patients; elderly trans patients.

ENDOCRINOLOGIA PEDIÁTRICA

2425

EVALUATION OF THE EFFECT OF 2.5% DIHYDROTESTOSTERONE GEL ON PENILE GROWTH IN BOYS WITH SMALL PENISES

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Introduction: The size of the human penis varies between 12.9-13.9 cm, and there are many questions about the "normal" size, and/or ideal standard. According to data in the literature, a penis can be considered small when it is below the 10th percentile (p10) for the Brazilian reference for children and adolescents. **Objective:** To study the effect of dihydrotestosterone on penile growth in boys with penises below mean for age, correlating with anthropometric factors and metabolic profile. **Materials and methods:** Retrospective study consisting of 14 male patients with 46 XY karyotype between September 2019 and July 2024, who were previously examined before starting treatment with 5 grams of dihydrotestosterone gel 2.5% daily, and evaluated the following parameters – weight, height, body mass index (BMI), chronological and bone age, penis and testicle size, anthropometric data at birth, gonadotrophic (FSH, LH, and total testosterone) and somatotropic (Igf-1, and Igfpb-3) hormones, fasting blood glucose, and lipid profile. Statistical analysis was performed using the Shapiro-Wilk test. **Results:** In the cohort analyzed, the mean chronological age was 119.385/128.154 months, however, for bone age we observed a mean variation of 116.308/129.538 months, with the predominant white ethnicity. Regarding anthropometric data at birth, the majority of the sample was diagnosed as small for gestational age (p: 0.02). The mean initial penile size was estimated at 5.42 x 1.8 cm (according to the Brazilian reference, 84.62% of the patients are below p10, however, when we use data from the international reference, we obtain an average of -1.7 SD. The initial mean testicular volume was 5.42 mL (left) and 5.61 mL (right). After 6 months of daily use of dihydrotestosterone we observed an average penile growth of 2.1 cm (p: 0.02), and an average testicular volume of 9 mL in both. We did not observe a statistically significant difference in metabolic parameters – fasting glucose, lipidogram, and glycosylated hemoglobin with the use of dihydrotestosterone. The values of total testosterone, Igf-1, and Ifpb-3 increased when compared with the beginning, with statistical significance. **Conclusion:** Consequently, the use of dihydrotestosterone in penile growth in adolescent children in this study did not show any negative influence on metabolic parameters, providing an improvement in penile scores. **Keywords:** 2;5% dihydrotestosterone gel; penile growth; boys.

NEUROENDOCRINOLOGIA

2426

CASE REPORT: PITUITARY MACROADENOMA CAUSING CYCLIC CUSHING'S DISEASE – DIAGNOSTIC AND THERAPEUTIC CHALLENGES

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Presentation: Male, 21 years old, previously healthy. In 2019, developed left amaurosis. After 1 year, he experienced rapid weight gain, centripetal obesity, violaceous striae, buffalo hump, polyuria, polydipsia, and polyphagia and was hospitalized due to psychomotor agitation and severe hyperglycemia, underwent insulin therapy, and was discharged with diagnosis of diabetes mellitus (DM) with no need for insulin therapy. In January 2021, a cranial CT scan revealed a pituitary tumor measuring 4.8 x 3.1 x 4.8 cm. He was admitted for surgical intervention, which was not performed due to tumor reduction seen in a preoperative control CT scan, with subsequent remission of DM. Magnetic resonance imaging (MRI) of the sella turcica in June confirmed the reduction, measuring 2.7 x 3.6 x 3.1 cm, with chiasmatic compression, cavernous sinus invasion, and internal carotid artery compression on the right. Realized a 1 mg dexamethasone suppression test with cortisol > 1.8 mcg/dL, midnight salivary cortisol (SC) in two samples: 43.26 ng/dL and 74.9 ng/dL, and a serum ACTH level of 88.4 pg/mL, confirming Cushing's disease (CD). Analysis of the pituitary axis revealed hypopituitarism, and levothyroxine was started. One year later, he was referred for surgery, performed in January 2023, by which time he had developed right temporal hemianopia. After three months, a urinary free cortisol of 195.2 mcg/24 h (<20 mcg/24 h), SC at 11 PM of 67.7 ng/dL (<50 ng/dL), basal cortisol of 5.95 mcg/dL (<2.0 mcg/dL), along with a residual lesion of 3.7 x 3.6 x 2.4 cm in the MRI, evolving within a year to 2.9 x 3.2 x 2.2 cm, with significant clinical improvement. **Discussion:** CD secondary to macroadenoma can occur in 10%-15% of cases. The cyclic laboratory form is rare, described by alternating periods of hypercortisolism and eucortisolism. The literature cites a prevalence of 67% for cyclic CD and pituitary adenoma. This patient presents a classic phenotype of CD with DM in spontaneous remission still in the preoperative period. After surgery, he continues to lack laboratory remission criteria for CD and persists with residual macroadenoma. The fluctuating presentation and biochemical discrepancies can make the diagnosis challenging. **Final comments:** This report highlights the complexity in diagnosing CD, especially in its cyclic presentation, the infrequent association of the disease with pituitary macroadenoma, and the difficulty patients face in accessing specialized evaluation and management. **Keywords:** pituitary macroadenoma; cyclical Cushing's disease; hypopituitarism.

OBESIDADE

2427

THE KEY ROLE OF DUAL ENERGY X-RAY ABSORCIOMETRY (DEXA) FOR THE ASSESSMENT OF BODY COMPOSITION IN THE DIAGNOSIS OF FAMILIAL PARTIAL LIPODYSTROPHY

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Case report: 43-year-old patient with change in the distribution of body fat since the age of 30, with a marked accumulation of abdominal adiposity and reduction in the lower limbs, in addition to early metabolic disorders - hypertriglyceridemia, hepatic steatosis, diabetes mellitus at the age of 35. The genetic study (panel targeted sequencing) including the genes ADRA2A, AKT2, CAV1, CIDEC, LIPE, LMNA, LMNB2, PLIN1, POLD1, PPARG, PSMA3, PSMB4, PSMB8, PSMB9, TBC1D4, ZMPSTE24c) was negative for pathogenic variants associated with lipodystrophy. In the physical assessment, accumulation of cervical fat, hump, double chin sign, acanthosis nigricans in the cervical region, and an 8 mm skin fold on the thigh were observed. In the body composition examination by DEXA, the patient had a Fat Mass Ratio (FMR) index (trunk/lower limbs fat percentage ratio) of 1.53 and a ratio between the fat mass of the legs/total fat mass of 20.1%, therefore demonstrating changes in the distribution of body fat, associated with early manifestations of metabolic syndrome. **Discussion:** Familial partial lipodystrophy (FPL) is a rare disease characterized by a marked reduction in adipose tissue in the lower limbs or in the trunk and lower limbs, with variable accumulation in the upper region of the body. The diagnosis is eminently clinical, being suspected in the presence of manifestations of metabolic syndrome in early stages of life (dyslipidemia, diabetes, insulin resistance and liver disease). Although the thigh skinfold measurement (<10 and 22 mm respectively in men and women) is recommended as the main parameter in anthropometry, given its simplicity and accuracy, it is observed in clinical practice that some patients with metabolic severity do not meet this criterion. Thus, the present study aims to report clinical characteristics and metabolic severity of a case of lipodystrophy followed up at a reference center for lipodystrophies in Brazil. **Final comments:** This report illustrates a case of atypical lipodystrophy, whose phenotype is suspicious on clinical examination, where the thigh skinfold measurements were not appropriate for diagnosis. This situation has been observed in Lipodystrophies Reference Centers in Brazil, which suggests the need to expand the use of DEXA in evaluation, especially while broader genetic studies, such as whole exome sequencing are not available. **Keywords:** familial partial lipodystrophy; dual energy X-ray absorciometry (DEXA); body composition.

METABOLISMO ÓSSEO E MINERAL

2428

OSTEOPOROSIS AND FRACTURE RISK ASSESSMENT: INFORMATION TO IMPROVE PREVENTION

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Introduction: Osteoporosis is a specific metabolic disease of bone tissue caused by the progressive loss of bone mass, making bones fragile, with a greater risk of fractures due to bone injuries to the tissue microarchitecture. Preventive diagnosis is made by performing bone densitometry. Fracture risk stratification by applying the FRAX® tool optimizes screening and initiation of treatment. **Objective:** to provide recognition of the diagnosis of osteoporosis and the prior implementation of preventive measures in patients hospitalized for fragility fractures. Furthermore, the FRAX® tool was retrospectively applied to quantify cases that are environmentally contaminated and benefited from its use. **Materials and methods:** An observational, cross-sectional, descriptive study was carried out, using the FRAX® score and a questionnaire to evaluate 40 patients, diagnosed with fragility fractures, admitted to the trauma-orthopedics sector of a tertiary hospital in Recife-PE. **Results:** According to the analysis of data collected from the population, the average age was 67.85 years, of which 70.0% (28) were women. Among the patients evaluated, only 12.5% (5) reported having already undergone bone densitometry, while 87.5% (35) reported never having performed the exam, nor even heard about it. Only 5% (2) of patients had previous treatment for osteoporosis. Regarding the FRAX® score, the 10-year fracture risk assessment showed that 30% (12) of patients are at high risk, 47.5% (19) are at medium risk and 22.5% (9) are at low risk. of fracture in 10 years. **Conclusion:** It is necessary to implement the application of FRAX® in routine consultations, so that, when necessary, the treatment of osteoporosis is started earlier and earlier. FRAX® proves to be a very useful tool for the population that uses the Unified Health System, given that Brazil still has a large deficit in machinery and specialists in performing bone densitometry. **Keywords:** osteoporosis; fracture; FRAX.

DIABETES MELLITUS

2429

PREVALENCE AND EPIDEMIOLOGICAL PROFILE OF PEOPLE WITH DIABETES MELLITUS AND TUBERCULOSIS IN BRAZIL FROM 2018 TO 2023

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According to the United States Center for Disease Control and Prevention (CDC), 1 in 4 people with tuberculosis (TB) also have diabetes mellitus (DM) in 2024. In fact, hyperglycemia and reduced immunity in a diabetic patient favor the development of Koch's bacillus and facilitate the progression to the active phase of the disease. Therefore, it is extremely important that health professionals have accurate knowledge about both conditions for better health promotion. This study aims to analyze the epidemiology of TB-DM patients in Brazil from 2018 to 2023. A retrospective data collection was carried out via the Notifiable Diseases Information System (SINAN/SUS) on TB-DM patients in the presented interval and compared factors such as year of diagnosis, cases by region, entry, age group, sex, condition, form of TB, drug use and closure. During this period, there were 582,377 TB diagnoses, of which 49,152 (8.4%) occurred with DM. Of this sample, there were an average of 8,193 diagnoses per year and a maximum in 2023 (9,333). The Southeast Region was the most affected by TB-DM, with 19,242 (39%) cases and prevalence in SP (9,380). The Northeast Region was the second most affected, with 15,197 (31%) cases and predominantly in BA (3,475). The North, South and Central-West regions followed, with respective cases of 7,142 (15%), 5,227 (11%) and 2,348 (5%). Furthermore, 40,898 (83%) cases were new, 3,179 (6.5%) were relapses and 2,829 (5.8%) were readmissions after abandonment. Moreover, the age group of 40-59 years was dominant, with 23,524 (48%) cases of TB-DM, followed by 20-39, with 6,489 (13%), and 60-64, with 6,360 (13%). Males also dominated, with 30,521 (62%), compared to 18,629 (38%) for women. It is worth mentioning that 912 (2%) were homeless people, 735 (1.4%) were health professionals and 43,797 (89%) were suffering from the pulmonary form of the disease. It is also noteworthy that 7,517 (15%) reported alcoholism, 10,367 (21%) reported smoking, and 3,222 (6.5%) reported illicit drug use. Besides, 29,406 (60%) were cured, 3,209 (6.5%) died from TB and 3,753 (8%) abandoned treatment. Therefore, it is concluded that, despite cure rates being above half of cases, the TB-DM condition deserves special attention in Brazil, especially in the Southeast and Northeast regions, in males and in the age groups highlighted above. This way, health and treatment effectiveness can be promoted effectively for the population. **Keywords:** diabetes mellitus; tuberculosis; epidemiological.

ADRENAL E HIPERTENSÃO

2430

ADRENAL INSUFFICIENCY SECONDARY TO THE USE OF PEMBROLIZUMAB: CASE REPORT

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Case report: A 39-year-old female without other comorbidities, presented with breast cancer diagnosed on routine examination. After mastectomy and radiotherapy, immunotherapy with pembrolizumab was prescribed. Six months after starting the medication, the patient began to experience nausea and fatigue, with difficulty carrying out daily activities. Laboratory tests were requested, which showed basal cortisol 1.3 mcg/dL (NR: 6.0 to 18.4 mcg/dL) and ACTH < 5 (NR: 7.0 to 63 pg/mL). Magnetic resonance imaging of the sella turcica showed an increase in the dimensions of the pituitary gland, without compression of the adjacent structures. A diagnosis of adrenal insufficiency secondary to hypophysitis, caused by the use of pembrolizumab, was made. Pembrolizumab therapy was suspended, and hormone replacement was started with hydrocortisone at a dose of 50 mg every 8 hours for 2 days and, subsequently, prednisone at a dose of 5 mg/day. The patient was discharged in good clinical condition, with improvement in symptoms. **Discussion:** Immunotherapy consists of the use of antibodies against checkpoints that block the antitumor activity of the immune system, such as cytotoxic T lymphocyte antigen 4 (anti-CTLA-4) and antibodies against programmed cell death protein 1 (anti-PD -1), such as pembrolizumab. Adrenal insufficiency has been reported as a side effect of the use of anti-CTLA-4 and anti-PD-1 (ipilimumab, nivolumab and pembrolizumab), but is rare, being reported in less than 1% of cases studied. Despite its low incidence, it is the most serious endocrine dysfunction observed in treatment with immune inhibitors and, therefore, requires immediate treatment when diagnosed. **Final comments:** Treatment with immunotherapy has shown to be very effective and promising in oncology therapy, but it can cause toxicity to the endocrine system. Some endocrinopathies associated with immunotherapy can be fatal if not promptly recognized and treated. Therefore, it is essential that the patient is informed about the possible adverse effects related to immunotherapy. **Keywords:** adrenal insufficiency; pembrolizumab; hipophysitis.

DISLIPIDEMIA E ATEROSCLEROSE

2431

A UNIQUE CASE OF BERARDINELLI-SEIP SYNDROME: NAVIGATING DUAL GENETIC MUTATIONS AND COMPLEX METABOLIC MANAGEMENT

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Case presentation: A 31-year-old female patient is followed in the endocrinology outpatient clinic at IMIP with a history of chronic and recurrent pancreatitis (last episode in 2008), diabetes mellitus (DM), and hypertriglyceridemia. When she first began follow-up, she had significantly elevated cholesterol levels: total cholesterol (TC) at 433 mg/dL and triglycerides (TG) at 2333 mg/dL, with an LDL of 73 mg/dL and HDL of 32 mg/dL, based on tests from 2017. By 2023, her DM was difficult to control, requiring more than 2.75 IU/kg/day of insulin per day along with 2g of metformin. Despite having a normal BMI, her physical examination showed an enlarged nasal and frontal region, muscle hypertrophy in the upper and lower limbs, and enlargement of her hands and feet with thick, dry skin. During the 2023 consultation, she was taking simvastatin 40 mg and fenofibrate 200 mg daily, coupled with significant lifestyle changes including regular exercise and a modified diet. This led to a substantial reduction in TG and TC levels, though her glycemic control remained challenging. At her last visit, her TG was 89 mg/dL, HDL was 40 mg/dL, and TC was 109 mg/dL. Genetic testing for lipodystrophies revealed mutations in the AGPAT2 and CIDEC genes. **Discussion:** Berardinelli-Seip syndrome (congenital generalized lipodystrophy) is an autosomal recessive genetic disorder often linked to the AGPAT2 or BSCL2 genes. It is marked by dysfunctional adipocytes, resulting in abnormal fat accumulation due to the near-total absence of subcutaneous adipose tissue. The patient a muscular hypertrophy appearance due to lipid deposition, along with acromegaloid facies, DM, and dyslipidemia. Drugs like metformin, pioglitazone, statins, and fibrates are commonly used to address metabolic complications. However, pioglitazone was not an option for this patient due to financial constraints. The mutation in the CIDEC gene corresponds to congenital partial lipodystrophy type 5, which typically has similar metabolic changes but better preservation of adipose tissue in the cervical, visceral, and axillary regions. Metreleptin (leptin analogue) can be used to treat specially the DM and hypertriglyceridemia. **Final comments:** This case is notable for the presence of two rare genetic mutations in the same patient. However, the clinical manifestations of generalized lipodystrophy predominated, leading to similar manageable clinical outcomes despite the additional mutation. **Keywords:** congenital generalized lipodystrophy; rare diseases; genetic mutations.

ENDOCRINOLOGIA PEDIÁTRICA

2432

FAMILIAL PARTIAL LIPODYSTROPHY TYPE 2: CAN IT BE IDENTIFIED BEFORE PUBERTY?

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Case presentation: Case 1: Female, 5.8 years old, prepubescent, with no evident alteration in body fat distribution. Anthropometric parameters: weight 18.7 kg, height 110 cm (SDS -0.82), BMI 15.5 kg/m² (SDS +0.13). Dual-energy X-ray absorptiometry (DXA) showed 37.7% fat in the lower limbs (LL) and a Fat Mass Ratio (FMR) of 0.5. **Case 2:** Male, 8-year-old, prepubescent, weight 28.4 kg, height 127 cm (SDS -0.17), and BMI 17.6 kg/m² (SDS +1.06), with no metabolic alterations. DXA showed 37.3% fat in the lower limbs (LL) and a Fat Mass Ratio (FMR) of 0.8. **Case 3:** Female, 12.9-year-old, Tanner stage B5H5 (menarche at ten years). His anthropometry is 47.9 kg, 154.5 cm (SDS -0.23) and BMI of 20.1 kg/m² (SDS +0.49). She presented a decrease in fat and prominent muscles in LL. No metabolic changes. DXA showed 23.8% fat on LL e FMR of 1.4. **Case 4:** Female, 13.7-year-old, Tanner stage B5H5 (menarche at eleven years). Her anthropometry is 72 kg, 155.5 cm (SDS -0.54), and 29.8 kg/m² (SDS +2.43) BMI. She has acanthosis nigricans, a lack of fat with prominent muscles in LL, and fat accumulation in the face, trunk, and neck. Her insulin is 58.3 mU/L, blood glucose 71 mg/dL, A1c 5.8%, total cholesterol 178 mg/dL, LDL-c 108 mg/dL, HDL-c 26.3 mg/dL, triglycerides 217 mg/dL, and hepatic steatosis. DXA showed 22.9% fat in LL and an FMR of 1.3. All patients had the diagnosis of familial partial lipodystrophy type 2 (FPLD2) with the same pathogenic LMNA p.Arg582Cys variant, identified through familial genetic screening of index cases (adult relatives) followed in a specialized outpatient clinic. **Discussion:** FPLD2 is a rare autosomal dominant disease caused by mutations in the LMNA gene. It is known that the disease only presents after, with progressive fat loss in the trunk arms and legs, and fat accumulation in the face, neck, abdominal, and genital regions, after puberty. Affected individuals develop severe metabolic complications. **Final Considerations:** This report brings attention to the possibility that FPL is already manifested in the pediatric population with FPL2. These findings suggest the importance of early screening for FPL specially in children of affected families. **Keywords:** lipodystrophy, familial partial; pediatrics; phenotype.

DIABETES MELLITUS

2433

PROFILE OF DIABETIC PATIENTS TREATED AT A UNIVERSITY HOSPITAL IN CAJAZEIRAS-PB: A CROSS-SECTIONAL STUDY

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Introduction: Diabetes mellitus (DM) is a metabolic syndrome of multifactorial origin, resulting from the absence of insulin and/or the inability of this hormone to adequately exert its systemic effects, characterizing permanent hyperglycemia and causing metabolic imbalances. **Objective:** To characterize and describe the socioeconomic, clinical and treatment profile of diabetic patients treated at a university hospital. **Methods:** This study included data from hospitalized patients diagnosed with diabetes mellitus who were followed at the Júlio Bandeira University Hospital (HUJB) in the city of Cajazeiras/PB, from May 2017 to May 2022. Approved by the Human Research Ethics Committee CEP/HUAC/UFCG (CAAE 65280922.5.0000.5182). A total of 46 patients were analyzed, with data collection on socio-demographic profile, clinical status, and hospitalization details. **Results:** Regarding the socio-demographic profile, there is a predominance of male diabetic patients of the brown race (56.67%), in the age group of 11-20 years (30%) and single (56.67%). Regarding females, there is also a predominance of brown skin (62.5%) in the age group of 11-20 years (43.75%) and single women (81.25%). Regarding the main complications, DM1 patients presented as the main complication diabetic ketoacidosis (50%) followed by the triad of diabetic foot, nephropathy and amputation (8.33%). In patients with DM2, ketoacidosis, the triad of diabetic foot, nephropathy and amputation, in addition to other unreported complications presented the same prevalence (33.33%). When referring to treatment, the most used insulin is NPH (68.97%) and the most used oral hypoglycemic agents were empagliflozin, glibenclamide and metformin. Finally, most patients did not have any comorbidity (36.96%), but when there was some associated comorbidity, Overweight (15.22%) and Hypertension (13.04%) stood out. **Conclusion:** It was concluded that most patients were of mixed race, single and aged 11-20 years, presenting as main complications ketoacidosis and the triad of diabetic foot, nephropathy and amputation, so that most had no comorbidities. The most commonly used insulin was NPH, and there was equivalence between the hypoglycemic agents used. **Keywords:** diabetes mellitus; diabetes complications; diabetes treatments.

ENDOCRINOLOGIA PEDIÁTRICA

2434

ARGININE VASOPRESSIN DEFICIENCY IN INFANTS: A 20-YEAR SINGLE CENTER STUDY

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Introduction: The management and follow-up of paediatric patients with arginine vasopressin deficiency (AVP-D) is challenging, particularly in infants (0-2 years). Few studies have examined the particularities of AVP-D in this age group. **Objectives:** To describe clinical, laboratory, and demographic characteristics of AVP-D in infants at diagnosis and to describe the follow-up during the first years of life. To ascertain clinical, laboratory, and demographic characteristics that are associated with the occurrence of hyponatremia. **Materials and methods:** This 20-year retrospective cohort study evaluated the diagnosis and clinical evolution of all infants with AVP-D followed up in a referral university hospital. **Results:** 65 infants (53,8% boys) were diagnosed with AVP-D. Most of them had comorbidities (83,1%) and were taking medication (92,2%). There was no need for the water deprivation test (WTD), and all diagnoses were confirmed by basal reduced urinary osmolality (Uosm) and elevated plasma osmolality (Posm) – median Uosm 164,4 mOsm/kg and median Posm 324,7 mOsm/kg. In 86,1% of them, hypernatremia occurred, and the mean natremia at diagnosis was 153,2 mmol/L. Central nervous system (CNS) malformations were the most frequent cause of AVP-D (55,4%). Anterior hypopituitarism occurred in 78% of patients; in these, adrenocorticotropic hormone was the most common (78,1%). Desmopressin (DDAVP) was started in 87,7% and maintained in 67,7% of patients; 10,8% were treated with fluid replacement alone. After the introduction of DDAVP, hyponatremia occurred in 63,3%, mainly in the youngest (neonates - 87,5%). The presence of comorbidity ($p < 0,01$), the age at the diagnosis ($p < 0,01$), and CNS malformations ($p < 0,01$) were associated with hyponatremia. The mortality rate was high (74,2%), generally related to the underlying disease; 36,9% had brain death, and 60% died up to 2 years of age. **Conclusions:** All infants with AVP-D presented elevated basal Posm and reduced Uosm, not requiring WDT for the diagnosis. Most of them presented CNS abnormalities. Before treatment, hypernatremia was frequent, and the majority needed DDAVP. Under DDAVP therapy, hyponatremia was common, especially during the neonatal period and in infants with other comorbidities and CNS malformations, suggesting that DDAVP prescription and monitoring should be cautious in these groups. Mortality was high in these patients and was generally associated with the underlying disease. **Keywords:** arginine vasopressin deficiency; infants; hyponatremia.

DIABETES MELLITUS

2435

USE OF GLP-1 RECEPTOR ANALOG AS EFFECTIVE TREATMENT IN HIRATA'S DISEASE: A CASE REPORT

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Case presentation: A 63-year-old patient, diagnosed with Hirata's disease in 2019, characterized by hyperinsulinemic hypoglycemia with anti-insulin autoantibodies (IAA). In the literature, the treatment of choice is immunosuppression with corticosteroids. However, due to the patient's grade 2 obesity and advanced age, the initial treatment chosen was dietary reduction of carbohydrate-rich foods (CHO), which proved efficient in the first months of adherence. In 2019, a GLP-1 analog was initiated to potentiate the reduction of insulin resistance and thus decrease the action of anti-insulin autoantibodies. About 8 months after starting therapy with Liraglutide associated with dietary changes, there was a loss of 20kg and a reduction in hypoglycemic symptoms, with an improvement in quality of life. After 4 years, the patient stopped the treatment on her own, resulting in weight regain and recurrence of hypoglycemia. She then started treatment with oral semaglutide, which has shown good acceptance, weight loss, and decreased hypoglycemia. **Discussion:** Autoimmune hyperinsulinemia syndrome (AIS) or Hirata's disease is a rare hypoglycemic disorder with elevated levels of IAA. For diagnosis, it is essential to confirm Whipple's triad, characterized by hypoglycemia, high insulin levels, and IAA associated with a high/normal C-peptide value, indicating endogenous hyperinsulinemia. These tests confirmed the patient's diagnosis, and MRI ruled out insulinoma. The treatment consists of small, frequent meals with low CHO content. For severe refractory autoimmune hypoglycemia, high-dose corticosteroids can be used to reduce blood glucose and IAA levels. However, this was not considered for the patient due to her advanced age and obesity. Thus, GLP-1 agonist was chosen, which works by activating endogenous receptors, increasing satiety, decreasing appetite, and leading to glucose-dependent insulin secretion. By reducing insulin release, it is expected to decrease the production of IAA. **Final considerations:** GLP-1 therapy and a low CHO diet in AIS reduced postprandial glucose spikes and pancreatic insulin stimulation, decreasing hypoglycemic episodes. It is important to emphasize that weight loss played a significant role in reducing insulin resistance and insulin levels. The discontinuation of the medication led to the regression of benefits, highlighting the therapeutic potential of this treatment. **Keywords:** GLP1 analog; Hirata's disease; anti-insulin autoantibodies.

NEUROENDOCRINOLOGIA

2437

ENDOSCOPIC TRANSSPHENOIDAL SURGERY FOR THE TREATMENT OF SELLAR TUMORS: 8 MONTHS OF EXPERIENCE AT A PITUITARY REFERENCE CENTER IN THE STATE OF AMAZONAS

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Introduction: Prevalence data for clinically relevant sellar tumors (ST) are crucial for assessing the disease's impact on the healthcare system, yet such data are scarce in the State of Amazonas (AM). In 2023, a pituitary surgery reference center was established at a tertiary hospital in the State, offering endoscopic transsphenoidal surgery (ETS) by a multidisciplinary team. This development has enabled the assessment of ST prevalence in the region. **Objective:** To describe the epidemiological profile of a defined population with clinically relevant ST undergoing ETS since the establishment of the pituitary surgery multidisciplinary team in AM in November 2023. **Materials and methods:** Descriptive observational study based on the review of electronic medical records of 8 patients who underwent ETS from November 2023 to July 2024 at a tertiary hospital in AM. **Results:** Of the 8 patients evaluated, half were female. The average age was 57.3 years, with most (75%) from the state capital. Clinically non-functioning adenomas (CNFAs) accounted for 5 cases (62.5%), followed by 2 cases (25%) of growth hormone-producing adenomas and 1 case (12.5%) described as Rathke's cleft cyst. Preoperatively, 75% had visual loss of varying degrees; on hormonal evaluation, 4 patients (50%) had hypopituitarism involving the gonadotropic axis (2), thyrotropic axis (1), corticotropic axis (2), and somatotropic axis (1). Associations were found between TSH deficiencies with ACTH and FSH with GH. All patients received intraoperative glucocorticoids (serum cortisol at 8 a.m. < 16 mcg/dL). The median length of stay was 7 days. No immediate postoperative complications were recorded, such as vasopressin deficiency, inappropriate ADH secretion, or adrenal crisis. There was one death due to severe intracranial hypertension; a 61-year-old male patient with a prior transcranial approach and aggressive CNFA. **Conclusion:** Consistent with the literature, CNFA was the most common diagnosis, and the gonadotropic and corticotropic axes were primarily affected preoperatively. Visual loss at diagnosis was the main surgical indication. Endoscopic transsphenoidal surgery, supported by a multidisciplinary approach, represents a significant advancement in care for the Amazonian population, minimizing surgical trauma, complications, and morbidity. **Keywords:** sellar tumors; endoscopic transsphenoidal surgery; multidisciplinary team.

OBESIDADE

2438

ACUTE EFFECT OF HIGH-INTENSITY AEROBIC TRAINING ON COMPONENTS OF THE KYNURENINE PATHWAY AND GLUCOSE UPTAKE PATHWAY IN OBESE MICE

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Introduction: Obesity is associated with an inflammatory state and insulin resistance (IR). Various tissues activate the kynurenine pathway (KP), which is responsible for metabolic processes including NAD+ production. The KP is mediated by a protein called indoleamine-2,3-dioxygenase (IDO), which is activated by pro-inflammatory cytokines. These cytokines play a role in IR by reducing glucose uptake. Physical exercise is capable of acting on aspects of glucose metabolism, molecularly modulating the glucose uptake pathway. **Objectives:** To analyze the response of high-intensity aerobic training on components of the kynurenine pathway and glucose uptake pathway in obese mice. **Methods:** Twenty mice were divided into four groups: Normal Weight Sedentary Group (NWSG), Normal Weight High-Intensity Aerobic Group (NWAIG), Obese Sedentary Group (OSG), and Obese High-Intensity Aerobic Group (OAIG). Obesity was induced through an eight-week high-fat diet. The High-Intensity Aerobic Training Protocol (HIATP) consisted of three sessions, each lasting 7 minutes, with 14 intervals of 20 seconds at 9% body weight overload, interspersed with 10 seconds of rest. The animals were anesthetized, and muscle tissue was extracted for western blot analysis of IDO and phosphorylated AKT (p-AKT) proteins. Statistical significance was set at $p \leq 0.05$. The study was approved by the local Ethics Committee (CEUA) under protocol number 08/2020. **Results:** For the analysis of IDO expression, the obese animal groups showed significantly higher values compared to the normal weight groups (OSG 38,154.8 ± 2,319.5 *vs.* NWSG 24,028 ± 2,252, p = 0.00; OAIG 31,413.6 ± 1,432.8 *vs.* NWAIG 15,189.5 ± 323.5, p = 0.00). OAIG had lower IDO expression than OSG (31,413.6 ± 1,432.8 *vs.* 38,154.8 ± 2,319.5, p = 0.00). p-AKT was more stimulated in the exercised groups (NWAIG 12,622.8 ± 424.9 *vs.* NWSG 9,857.0 ± 557.2, p = 0.00; OAIG 15,110.3 ± 258.2 *vs.* OSG 11,229.0 ± 103.8, p = 0.00). Additionally, OAIG exhibited higher p-AKT than NWAIG (OAIG 15,110.3 ± 258.2 *vs.* NWAIG 12,622.8 ± 424.9, p = 0.00). IDO showed a lower expression pattern with higher p-AKT values. **Conclusion:** The novel findings demonstrate that HIATP was able to reduce IDO expression in obese mice. Furthermore, the results suggest that glucose uptake mechanisms influence IDO expression in exercised obese mice. **Keywords:** obesity; exercise; kynurenine.

NEUROENDOCRINOLOGIA

2440

INTERNAL CAROTID ARTERY ANEURYSM SIMULATING A PITUITARY ADENOMA

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We report the case of a 68-year-old female patient, previously hypertensive, complaining of intense, sudden, holocranial headache, associated with increased blood pressure levels, eyelid ptosis, strabismus and visual blurriness. On physical examination, she presented incomplete paresis of the III cranial nerve and paresis of the VI pair, right-side lateral nystagmus and bitemporal hemianopsia. She presented panhypopituitarism with TSH 0.160 uIU/mL (VR 0,4- 5,8), T4l 0.64 ng/dL (VR 0.7-1.80), cortisol 0.9 ug/dL, IGF-I 41 ng/mL (40.2-225) and increased prolactin: 85.9 ng/mL (4.79-23.3 ng/mL). Magnetic resonance imaging showed a sellar lesion with suprasellar extension, compressing the optic chiasm, measuring 3.0 x 3.1 x 2.9 cm with heterogeneous signal, hyposignal on T2 in addition to flow void and central swirling. She underwent transsphenoidal surgery because of the hypothesis of pituitary apoplexy, which partially reversed cranial nerve deficits. However, during surgery, only hematic fibrinous material with characteristics of a thrombus was identified. She then underwent embolization and placement of an Internal Carotid Artery aneurysm (ICA) flow diversion. Post operatively, she maintained hypopituitarism. Confrontation perimetry showed bitemporal hemianopsia. Selar aneurysms constitute 1%-2% of intracranial aneurysms. From these, 14.2% are internal carotid lesions, constituting a rare cause of sellar lesions. Due to compression of the pituitary gland, it represents 0,17% of hypoptuitarism cases. Among the main differential diagnoses are degenerated adenomas and pituitary apoplexy. Although rare, an aneurysm in the sellar region should be considered especially in MRI lesions that demonstrate an absence of flow signal (flow void) – or a heterogeneous signal in areas with slow and turbulent flow, considering the diagnostic difficulties of thrombosed aneurysms. **Keywords:** internal carotid aneurysm; pituitary adenoma; panhypopituitarism.

ENDOCRINOLOGIA PEDIÁTRICA

2441

PRECOCIOUS PUBERTY AND VARIANTS IN CHILDREN WITH CONGENITAL ZIKA SYNDROME: PRELIMINARY RESULTS

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Introduction: Congenital Zika syndrome (CZS) comprises well-documented neurological, ophthalmological, and skeletal findings. However, endocrine manifestations are lesser-known in this population. **Objective:** Investigate the presence of precocious puberty and variants in children with CZS. Methods: A prospective pilot study with children with CZS was conducted in Recife, Pernambuco. Children (girls under 8 years old and boys under 9 years old) with confirmed serological diagnosis of CZS that are assisted at a reference rehabilitation center were recruited for the study. Children with other associated syndromes or incomplete medical records were excluded. Children were initially submitted to a clinical assessment to detect signs of pubertal development by a pediatric endocrinologist using the Tanner classification. Children with signs of puberty were referred to a pediatric endocrinology reference service, and were submitted to laboratory exams and X-ray for bone age study. **Results:** The study included 36 children, with a mean age of 7.1 ± 0.4 years (range, 6 - 8 years), and 33/36 (91.7%) were female. At the initial assessment, 32/36 (88.9%) presented clinical signs of pubertal development, of which 24/32 (75%) had clinical signs of precocious puberty (telarche in girls or increased testicular volume > 4 mL and/or increased penile size in boys) and 8/32 (25%) had isolated pubarche. Menarche was detected in 2/32 (6.3%) girls. The clinical, laboratory, and x-ray evaluations revealed that 13/32 (40.6%) children met the diagnostic criteria for central precocious puberty, 12/32 (37.5%) isolated premature telarche and 7/32 (21.9%) isolated premature pubarche. Twenty-four (66.7%) children returned for a second clinical and laboratory assessment between 4 and 6 months after their first visit. Of these, 11/24 (45.8%) had already been diagnosed with central precocious puberty at the first assessment and 3/11 (27.3%) of them developed faster progressive puberty. Thirteen (54.2%) children, who were not yet in puberty at the first assessment, developed early or precocious central puberty. **Conclusion:** Children with CZS have a high prevalence of central precocious puberty and variants, as well as faster pubertal progression. Prompt detection and treatment are necessary for better progress in these children. **Keywords:** congenital Zika syndrome; central precocious puberty; early puberty.

METABOLISMO ÓSSEO E MINERAL

2444

ATYPICAL PARATHYROID ADENOMA: A RARE CAUSE OF HYPERPARATHYROIDISM

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Case presentation: A.M.L., female, 58 years old, admitted for investigation of asthenia, weight loss, constipation and depressive symptoms, which started 2 years before hospitalization. Admission tests showed albumin-corrected calcium of 12 mg/dL, parathyroid hormone (PTH) of 81 (reference value: 12-88), 24-hour urine calcium of 265 mg/day and 25-OH-vitamin D of 19.6. Faced with the diagnosis of primary hyperparathyroidism, complementary tests were performed and showed osteoporosis and nephrolithiasis, and surgical treatment was indicated. To locate the lesion, a thyroid ultrasound was carried out, which showed a 3 cm nodule in the posteromedial region of the right lobe with the appearance of a parathyroid adenoma, confirmed by parathyroid scintigraphy with SESTAMIBI. She underwent right inferior parathyroidectomy, with no post-operative complications. Macroscopy showed a brown, encapsulated nodular formation measuring 2 x 1 x 0.9 cm and pathology identified an atypical parathyroid adenoma (APA), with no foci of vascular invasion on immunohistochemistry (IHC). She was discharged on the fifth post-operative day, with improved calcemia, and was referred for outpatient follow-up. **Discussion:** APA is a rare cause of primary hyperparathyroidism, representing around 1.2% of cases. This lesion is an intermediate form of parathyroid neoplasm and can be difficult to differentiate from parathyroid carcinoma (PC). It can manifest clinically with high calcium and PTH levels, such as those seen in PC, and histologically it can show some of the characteristics of PC, such as adherence to contiguous structures, fibrosis bands and mitotic activity. However, it shows no signs of local invasion or metastasis and does not meet the WHO criteria for malignancy. In relation to IHC, some studies suggest that the loss of parafibromin, common in PC, when also present in APA, may determine a greater risk of recurrence. **Final comments:** APA is a diagnostic challenge due to the clinical and histopathological characteristics that can overlap with those of PC. However, unlike PC, it does not present local invasion or metastases. There are no specific recommendations regarding the follow-up of affected patients. In general, the course of APA tends to be benign. However, some authors suggest that patients with loss of parafibromin in the IHC should be monitored more carefully, due to the higher risk of recurrence. **Keywords:** hyperparathyroidism; atypical parathyroid adenoma; parafibromin.

DIABETES MELLITUS
2445

QUANTITATIVE ANALYSIS OF DIABETES MELLITUS HOSPITALIZATIONS BETWEEN 2022 AND 2024 IN THE NORTHEAST

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Introduction: Diabetes mellitus is a metabolic syndrome of multiple origins, resulting from a lack of insulin and/or the inability of insulin to properly exert its effects. Insulin is produced by the pancreas and is responsible for maintaining glucose metabolism. A lack of this hormone causes a deficit in glucose metabolization and, consequently, diabetes. It is characterized by permanently high blood sugar levels (hyperglycemia). **Objectives:** To determine the epidemiological profile of hospitalization of patients with diabetes mellitus in the northeastern population, stratified by federative unit, sex and age group. Methods: This is a descriptive cross-sectional study. It used secondary data from the SUS Hospital Morbidity System, available at DATASUS between April 2022 and April 2024. The variables analyzed were: absolute number of hospitalizations in the region and in each of the states, the sex and age group of the patients. **Results:** The total number of hospitalizations due to diabetes mellitus in the northeast was 89032 people. Stratified by state, 2.5% in Alagoas, 25.7% in Bahia, 12.4% in Ceará, 23.7% in Maranhão, 7.9% in Paraíba, 12.8% in Pernambuco, 6.3% in Piauí, 5.5% in Rio Grande do Norte and 2.6% in Sergipe. In relation to gender, 49.6% of cases affect men and 50.4% women. In terms of age group, 0.01% were under 1 year old, 0.08% were between 1 and 4 years old, 1.3% were between 5 and 9 years old, 2.3% were between 10 and 14 years old, 1.8% were between 15 and 19 years old, 3.6% were between 20 and 29 years old; 5.3% were between 30 and 39 years old, 10.9% were between 40 and 49 years old, 18.5% were between 50 and 59 years old, 23.7% were between 60 and 69 years old, 19.7% were between 70 and 79 years old, 11.4% were between 80 and 89 years old. **Conclusion:** It can be seen that the state of Bahia recorded the highest number of hospitalizations in the Northeast, next to the state of Maranhão, which comes next, with a percentage difference of just 2%. Considering that the population of Bahia is 2.08 times larger, there are more hospitalizations per inhabitant in the state of Maranhão. In terms of gender, there is no difference in hospital admissions. In addition, by age group, the largest number of people hospitalized are those aged between 60 and 69. **Keywords:** diabetes mellitus; Northeast; epidemiology.

DIABETES MELLITUS
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DIABETIC KETOACIDOSIS INDUCED BY ATYPICAL ANTIPSYCHOTIC: CASE REPORT

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Case description: Trans woman, 36 years old, hypertensive, with central obesity, anxiety/depressive disorder, panic syndrome and type 2 diabetes mellitus, diagnosed six months ago, using metformin 1 g/day. She was admitted to the intensive care unit with diabetic ketoacidosis (Ph: 7.1; BIC: 5.1; capillary blood glucose: 450 mg/dL). She started presenting nausea, vomiting, polyuria and polydipsia two weeks before hospital admission. After resolution of acidosis, she was transferred to the medical clinic in good clinical condition for glycemic adjustment. On this occasion, the possibility of adult type 1 diabetes mellitus or diabetes associated with atypical antipsychotics was raised, seen in the patient on chronic use of risperidone. Anti-GAD65 antibody tested with negative results. Considering the patient's phenotype, weight gain during the use of the aforementioned drug, a diagnosis of type 2 diabetes with a predisposition to ketoacidosis or Flatbush Diabetes was elucidated. In discussion with the psychiatry team, the medication was changed to levomepromazine, resulting in a significant reduction in the previously used insulin dose, 24 hours after suspension. Early outpatient follow-up demonstrated episodes of hypoglycemia, making it possible to withdraw insulin and maintain metformin. **Discussion:** Atypical antipsychotics, such as risperidone, are implicated in significant metabolic changes, being related to an increase in the incidence of diabetes, obesity and worsening glycemic control in patients with the disease already diagnosed. Through the increase in insulin resistance and increased glucagon action in the liver, there is an important predisposition to hyperglycemia and ketoacidosis. In this scenario, the transition to other pharmacological classes is recommended. **Final comments:** Patients using antipsychotic medications are at greater risk of developing obesity, type 2 diabetes mellitus and its complications, such as diabetic ketoacidosis. Given the lack of knowledge about the relationship between this complication and pharmacological class, and the widespread use of atypical antipsychotics in clinical practice, it is concluded about the relevance of the topic for the scientific community. **Keywords:** diabetic ketoacidosis; flatbush diabetes; atypical antipsychotic.

METABOLISMO ÓSSEO E MINERAL

2447

PICNODYSOSTOSIS IN AN ADOLESCENT: CASE REPORT, RADIOLOGICAL DIAGNOSIS, AND THERAPEUTIC CHALLENGES IN CLINICAL PRACTICE

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Case presentation: Female, 17 years old, from São Lourenço da Mata, a city in northeastern Brazil, with no known comorbidities. Presented with 4 fractures in the right tibia (the first occurring at 6 years old) and 2 in the left tibia, most following low-impact incidents, the last occurring after merely slipping without any noticeable impact, only immobilizations were performed in all situations. A surgical intervention for right tibia pseudoarthrosis was considered, but postponed as it did not affect functionality. Her maternal grandmother has a similar phenotype, without any other relatives affected. On physical examination, the patient presented with short stature, low weight, blue sclerae, a high-arched palate with dental malformations, and bilateral malar prominence, measuring 138 cm and weighing 34 kg in the evaluation in December 2023. A whole-body densitometry showed increased bone mineral density (BMD) of the total body with 1.270 g/cm² and a Z-score of +2.3, and in the spine with BMD of 1.395 g/cm² and a Z-score of +3.2. X-Rays showed Wormian bones, osteosclerosis, and a small mandible with an obtuse mandibular angle. No acro-osteolysis of distal phalanges or clavicular dysplasia, which can be characteristic of the disease, was observed. **Discussion:** Pycnodysostosis is a rare genetic disorder characterized by dense and fragile bones. It is caused by mutations in the CTSK gene, which encodes the enzyme cathepsin K, essential for bone resorption. Patients with pycnodysostosis present with short stature, increased bone density (osteopetrosis), bone fragility with a tendency to fracture (due to low bone flexibility, this finding being the most deleterious of the disease), skull bone deformities (with delayed fontanel closure and Wormian bones), and dental abnormalities, among other skeletal anomalies. There is no medicinal treatment for the disease to date, only surgical corrections of emerging problems. Attention should be paid to the presence of sleep apnea, with polysomnography performed every 2 years. **Final comments:** The challenging management of this patient is highlighted because there is no therapeutic option for reversing the condition. In our case, the patient arrived late in age, making growth hormone use no longer possible to adequately reach the target height. This condition differs from others causes of fractures in the infant for the osteosclerosis (excluding osteogenesis) finding and cranial deformities with delayed fontanel closure. **Keywords:** picnodysostosis; multiple fractures; rare diseases.

TIREOIDE

2448

ASSOCIATION OF TOXIC DIFFUSE GOITER WITH LOW OUTPUT HEART FAILURE: A CASE REPORT

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Introduction: Toxic diffuse goiter (DTG) is an autoimmune disease that leads to increased production of thyroid hormones, capable of causing various systemic manifestations. Its association with heart failure (HF) is not rare, especially high-output HF. When untreated, some patients may progress to dilated cardiomyopathy and low ejection fraction (EF). This study aims to discuss a case of DTG associated with atrial fibrillation and low-output heart failure. **Case presentation:** K.R.T.D.S., 49 years old, presented with sweating, weight loss, exophthalmos, and increased cervical volume in 2018, was diagnosed with hyperthyroidism, and started on thiamazole. During a clinical evaluation in 2020, she reported irregular medication use, palpitations, tachycardia, exertional dyspnea, and jugular vein distention. An electrocardiogram revealed atrial fibrillation with a high ventricular response, leading to hospitalization for clinical compensation. An echocardiogram showed enlarged cardiac chambers, moderate global systolic dysfunction of the left ventricle due to diffuse hypokinesia, EF of 44%, and PASP of 45 mmHg. She was discharged after stabilization and continued outpatient follow-up, but with difficult-to-control hyperthyroidism due to poor medication adherence and persistent cardiac alterations. She is currently on thiamazole and heart failure medications, with plans for definitive treatment. **Discussion:** The pathophysiology of hyperthyroidism involves high metabolic demand, and cardiovascular alterations are expected. Increased metabolism can lead to left ventricular hypertrophy due to excessive cardiac workload. This alteration is more common, but chronic changes due to compensatory adaptation are not unexpected, such as low-output HF. The pathophysiology of this association is not yet elucidated, but prolonged exposure to high thyroid hormone levels is believed to cause structural and functional changes in the muscle, with scar tissue formation. After clinical compensation of the underlying disease, improvement in contractile functions and restoration of cardiac dynamics are expected. **Final comments:** Hyperthyroidism is a disease with various systemic manifestations, and its control is necessary for better management of adjacent comorbidities. Cardiovascular alterations are expected, but the restoration of physiological functions is possible after clinical compensation and resolution of the condition. **Keywords:** goiter; hyperthyroidism; cardiovascular.

ENDOCRINOLOGIA DO EXERCÍCIO

2449

ELECTROCARDIOGRAPHIC ALTERATIONS IN ATHLETES TAKING ANABOLIC-ANDROGENIC STEROIDS (AAS): A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Anabolic-androgenic steroids (AAS) are synthetic testosterone products widely used by athletes to increase muscle mass. However, prolonged use of AAS is linked to cardiovascular disorders. **Objective:** This systematic review and meta-analysis aims to evaluate the impact of AAS on ECG characteristics to identify cardiovascular risks in athletes. **Materials and methods:** We systematically searched Embase, Cochrane, and PubMed for studies comparing AAS users with non-users, examining ECG alterations such as QT interval, QT dispersion (QTd), corrected QT interval (QTc), and QRS duration. We pooled mean differences with 95% confidence intervals (CI) using a random-effects model. We used Review Manager for statistical analysis and followed the PRISMA guidelines for systematic review and meta-analysis. **Results:** From 3,387 articles screened, 8 studies were selected, including 221 AAS-using athletes. QTd was increased in the AAS group (MD = 10.40 [No unit], 95% CI = 3.12-17.68, $p < 0.05$, $I^2 = 82\%$), suggesting heterogeneous ventricular repolarization. There was no statistical difference between groups in QT interval length (MD = 11.12 [ms], 95% CI = - 89.38-111.62, p = 0.83, $I^2 = 99\%$), QTc length (MD = 10.32 [No unit], 95% CI = -27.50-48.14, p = 0.59, $I^2 = 99\%$), or QRS duration (MD = 1.27 [ms], 95% CI = -1.17-3.71, p = 0.31, $I^2 = 0\%$). **Conclusion:** Our results highlight the association between AAS use in athletes and increased risks of arrhythmia and heart failure. These findings support further research on the long-term cardiovascular effects of AAS. **Keywords:** anabolic-androgenic steroids; electrocardiogram alterations; athletes.

MISCELÂNEA

2450

USE OF CONTINUOUS GLUCOSE MONITORING (IS-CGM) DURING THE PRE AND POSTOPERATIVE PERIOD IN A PATIENT WITH INSULINOMA: A CASE REPORT

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Case report: R.S.S., a 35-year-old male with no previous health issues, experienced an episode of lipothymia, psychomotor agitation, and seizures in 2021, necessitating emergency care, where severe hypoglycemia was identified. He subsequently developed episodes of disorientation, tremors, night sweats, and morning malaise, which improved upon eating. During the investigation, fasting for 6 hours revealed plasma glucose levels of 18 mg/dL, insulin at 23.9 µU/mL, and C-peptide at 5.25 ng/mL, confirming a diagnosis of hyperinsulinemic hypoglycemia. Abdominal magnetic resonance imaging showed a nodular image with diffusion restriction, high signal intensity on T2-weighted sequences, and hypervascular behavior measuring 1.3 cm in the body of the pancreas, consistent with an insulinoma. A distal pancreatectomy was performed, and the patient was monitored with a continuous glucose sensor (is-CGM, FreeStyle Libre-Abbott) in addition to capillary glucose before and after surgery. Preoperatively, both methods detected hypoglycemia at various times of the day, worsening in the early morning. In comparing measurements, the is-CGM showed lower glucose values but with differences of less than 15 mg/dL in most cases. Intraoperatively, the is-CGM failed, impairing data analysis. Postoperatively, initial normalization of blood glucose was observed, with a tendency towards hyperglycemia in the first 6 hours. After 48 hours, partial improvement was noted, with glucose levels between 140 mg/dL and 180 mg/dL, normalizing by 7 days postoperatively. **Discussion:** The potential benefit and usefulness of continuous glucose monitoring in patients with insulinoma seem to be related to the greater predictability of the glycemic curve provided by the sensor, indicating the patient's glycemic tendencies and predicting more severe periods of hypoglycemia. Despite the is-CGM's tendency to underestimate glycemic values in the context of hypoglycemia, we observed adequate concordance with this method. **Final comments:** The use of is-CGM in this patient was helpful in glycemic evaluation, especially during extended fasting periods. The values obtained were consistent with capillary glucose measurements, demonstrating promising results for its in-hospital use in insulinoma management. **Keywords:** insulinoma; hypoglycemia; continuous glucose monitoring.

MISCELÂNEA

2453

ASSESSMENT OF SKIN LESIONS IN PATIENTS WITH BERARDINELLI-SEIP SYNDROME

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Introduction: The Berardinelli-Seip syndrome (BSS) is a rare autosomal recessive disorder that impacts the development of adipose tissue, leading to several disruptions in lipid and carbohydrate metabolism. Insulin resistance is common among the patients, often resulting on diabetes, dyslipidemia and hepatic steatosis. Additionally, dermatological issues such as acrochordons and acanthosis nigricans may arise. **Objective:** Given the rarity of BSS, limited research exists on how metabolic abnormalities influence skin conditions in affected individuals. This study aims to investigate the skin lesions associated with BSS. **Patients (materials) and methods:** This observational, cross-sectional study included 19 BSS patients who were followed up at an endocrinology outpatient clinic and evaluated by a dermatologist. **Results:** The median age of the participants was 15.6 years (range: 2.1-39.8 years), with 47.4% being female; 15.8% patients had type 1 BSS (AGPAT2), and 84.2% had type 2 BSS (BSCL2). Five patients (26.3%) were receiving metreleptin. On average, each patient had 4.2 ± 2.6 skin lesions. The most common skin lesion was acanthosis nigricans, present in 84.2% of patients, followed by acrochordons (42.1%), acne (26.3%), alopecia (21.1%), and ochre dermatitis and onychocryptosis (15.8% each). Laboratory data revealed that 58.8% of patients had HbA1c levels < 7%, 41.2% had fasting glucose levels >130 mg/dL, and 52.9% had triglyceride levels >150 mg/dL. **Conclusions:** BSS patients show significant changes linked to increased insulin resistance, such as the high prevalence of acanthosis nigricans and acrochordons. Acne and alopecia may also be related to insulin resistance and resultant hyperandrogenism. In conjunction with laboratory and phenotypic findings, these skin manifestations can be crucial for diagnosing BSS. **Keywords:** Berardinelli-Seip syndrome; lipodystrophy; skin lesions.

NEUROENDOCRINOLOGIA

2454

NEUROENDOCRINE DISORDERS ASSOCIATED TO COVID-19

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Introduction: SARS-CoV-2 may affect the hypothalamic-pituitary axis directly or through an immune-mediated mechanism and various clinical pictures due to a deficiency of anterior pituitary hormones may occur. **Objective:** To describe a case series of neuroendocrine disorders identified after the COVID-19 infection. **Methods:** Descriptive case series study. **Results:** The authors report the development of neuroendocrine disorders in 10 patients (6 females and 4 males) previously affected by COVID-19 (30 to 180 days before). Their age ranged from 35 to 82 years. These disorders included central diabetes insipidus (n = 2), pan-hypopituitarism (n = 4), isolated ACTH deficiency (n = 2) and secondary male hypogonadism (n = 2). There was no case of hyperprolactinemia. Magnetic resonance imaging (MRI) of the hypothalamic-pituitary region using sagittal and coronal T1 and T2-weighted images (T1WI and T2WI) with gadolinium enhancement was performed in 8 patients. It was normal in 4 patients. In 3 patients there was a partially empty sella. Pituitary stalk thickening was found in 1 patient. SARS-CoV 2-induced hypophysitis could explain the disorders presented by the patients. **Discussion:** Most of the hypothalamic-pituitary-target hormone changes seen in patients with COVID-19 were characterized by physiologic responses to acute disease. In the existing literature, there are 4 cases of auto-immune hypophysitis due to SARS-CoV-2 infection. Further prospective studies are needed to clarify the role of autoimmunity in neuroendocrine disorders in the acute and chronic phases of COVID-19. **Keywords:** neuroendocrine; COVID-19; autoimmune.

OBESIDADE

2456

IMPACT OF BARIATRIC SURGERY ON OBESITY: A SYSTEMATIC REVIEW

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Introduction: Bariatric surgery is an effective intervention for the treatment of severe obesity, resulting in significant weight loss and improvements in metabolic parameters such as glycemic control, lipid profile and blood pressure. As well as reducing body mass index (BMI), it can lead to remission of associated comorbidities such as type 2 diabetes and hypertension. **Objective:** To assess the impact of bariatric surgery on reducing body weight and improving health indicators in obese patients. **Methods:** A systematic review was carried out according to the PRISMA 2020 guideline. The question was: "What is the impact of bariatric surgery on obesity?" The descriptors "Obesity", "Bariatric Surgery" and "Impact" were used in Portuguese, English and Spanish, combined with Boolean operators OR and AND. The search was carried out on the PubMed, BVS and Periódicos Capes databases. Free articles were included, in Portuguese, English or Spanish, published in the last 10 years, with solid methodology. Reviews, case reports, animal studies and inconsistent methodologies were excluded. **Results:** The search resulted in 900 articles. After applying the eligibility criteria, 290 studies were selected, with 18 being duplicated and removed. The review identified 25 relevant articles. The studies indicated that bariatric surgery, including procedures such as gastric bypass and vertical gastrectomy, results in significant weight loss and improved metabolic parameters, such as glycemic control and lipid profile. The reduction of obesity-associated comorbidities, such as type 2 diabetes and hypertension, has been widely documented. **Conclusion:** Bariatric surgery has a significant impact on weight reduction and the improvement of health indicators in obese patients. This procedure should be considered for individuals with severe obesity who do not respond to other interventions. **Conflicts of interest:** There are no conflicts of interest. **Keywords:** obesity; bariatric surgery; impact.

DIABETES MELLITUS

2457

TRANSFORMATIVE EFFECTS OF SEMAGLUTIDE ON GLYCEMIC CONTROL, WEIGHT, AND RENAL FUNCTION IN A RENAL TRANSPLANT PATIENT: A CASE REPORT

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Case presentation: Male, 46 years old, with hypertension, coronary artery disease, diabetes mellitus (DM), renal transplant in 2018, under follow-up for glycemic and weight control. At the initial consultation, he weighed 124 kg and had a hemoglobin A1c (HbA1c) of 11.8%, a urinary albumin-to-creatinine ratio (ACR) of 63 mg/g, and a glomerular filtration rate (GFR) of 40 mL/min/1.73 m². He was already on maximum doses of metformin and using 30 IU/day of NPH insulin, with poorly controlled blood pressure despite optimized antihypertensive therapy. Prescription adjustments were made, replacing NPH insulin with glargine and initiating semaglutide with a progressive dose increase up to 1 mg. He achieved an 8% weight loss in 6 months, a reduction in HbA1c to 6.6%, improved lipid profile, and renal function, with a new ACR of 16 mg/g and a new GFR of 63 mL/min/1.73 m². **Discussion:** The beneficial role of semaglutide in diabetic patients regarding glycemic control, weight loss, and, more recently, improvement in renal outcomes is well-established. However, experience with its use in transplant patients is limited. Although not specifically studied in this group, it is believed that semaglutide may reduce renal inflammatory cascades, leading to improved renal function. Mahzari *et al.* studied semaglutide in a retrospective analysis of 39 patients over 18 months, demonstrating renal safety (no worsening) and a decrease in weight and HbA1c by approximately 1%, including patients with post-transplant DM and those with pre-existing DM2. **Final comments:** The significance of this report lies in the limited literature on the use of semaglutide in renal transplant patients and could contribute to existing reports by demonstrating its safety in this population. We also highlight the patient's excellent response to the proposed therapy, including an improvement in GFR after starting the medication and a significant decrease in HbA1c, which is considerably greater than described in the literature. **Keywords:** semaglutide; renal transplant; glomerular filtration rate.

DIVERSIDADE, EQUIDADE E INCLUSÃO

2458

EVALUATION OF TRANSPHOBIA AND TRANSNEGATIVITY AMONG MEDICAL RESIDENTS IN A TERTIARY HOSPITAL

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Introduction: Brazilian society was built on and still rests on the pillars of patriarchy, machismo, cisheteronormativity, and binarism. Deviating from rigid gender norms results in gender identity and affective-sexual orientation being subjects of prejudice and discrimination. Brazil has led the world ranking in the murder of trans people for over 10 years. In healthcare, gender identity was categorized as a disease until 2019. Despite existing laws, healthcare professionals perpetuate prejudices and contribute to violence against transgender individuals, making access to adequate care difficult. **Objective:** Evaluation of transphobia and feelings of transnegativity among medical residents. **Materials and methods:** This observational, cross-sectional, and descriptive study was conducted from November 2020 to September 2021 in a tertiary hospital. The first phase evaluated epidemiological data of the participants; the second phase assessed 9 psychometric items. Responses ranging from 1 to 3 on the scale were considered "positive responses," indicating transphobia and feelings of transnegativity. Descriptive analyses presented proportions and an epidemiological assessment of the participants. **Results:** A total of 62 responses were obtained, with a predominance of cisgender heterosexual female participants aged between 21 and 30 years, representing 53% of the sample. Most participants identified as cisgender (60) and heterosexual (51). The presence of transphobia and feelings of transnegativity was present in all evaluated items. There was a significant prevalence of transphobic attitudes among heterosexual participants (17%) compared to non-heterosexual participants (0.4%). The prevalence of positive responses was higher among women (cisgender and transgender) (44%) than among men (cisgender and transgender) (18%). **Conclusion:** The analysis of the responses reveals that transphobia and feelings of transnegativity are still present among doctors, regardless of sex and sexual orientation. It is crucial to identify these behaviors to develop effective combat actions. Recognizing structural violence and the vulnerability of the transgender population is essential for providing adequate healthcare. Despite the majority demonstrating respect for gender identities, there is an urgent need for more research on transphobia among healthcare professionals. To create an inclusive healthcare system, promoting justice, empathy, and knowledge is fundamental. **Keywords:** transphobia; gender identity; tertiary care centers.

OBESIDADE

2459

ASSOCIATION BETWEEN MODERATE-INTENSITY AEROBIC TRAINING AND COMPONENTS OF THE KYNURENINE PATHWAY AND PRO-INFLAMMATORY CYTOKINE MARKERS IN OBESE MICE

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Introduction: Obesity presents a state of chronic inflammation that induces the release of pro-inflammatory cytokines, negatively impacting various metabolic processes. Adipose tissue and muscle tissue can activate the kynurenine pathway (KP), which mediates metabolic processes such as NAD+ production. Indoleamine-2,3-dioxygenase (IDO), activated by pro-inflammatory cytokines, plays a role in controlling the KP. Aerobic training has numerous benefits that can modulate the release of both pro-inflammatory and anti-inflammatory cytokines. **Objectives:** To associate the acute effect of moderate-intensity aerobic training with components of the kynurenine pathway and pro-inflammatory cytokine markers in obese mice. **Methods:** Twenty mice comprised four groups: Normal Weight Sedentary Group (NWSG), Normal Weight Moderate Aerobic Group (NWMAG), Obese Sedentary Group (OSG), and Obese Moderate Aerobic Group (OMAG). Obesity was induced through an eight-week high-fat diet. The Moderate-Intensity Aerobic Training Protocol (MIATP) consisted of three sessions, totaling 2 hours, with 4 stimuli of 30 minutes each, interspersed with 5-minute rest intervals. The animals were anesthetized, muscle tissue was extracted, and IDO and Tumor Necrosis Factor Alpha (TNF-α) proteins were analyzed using the Western blot technique. Statistical analysis included ANOVA with Bonferroni post-hoc, Pearson correlation, and simple linear regression, adopting a significance level of $p \leq 0.05$. The research was approved by the local Ethics Committee on Animal Use under protocol number 08/2020. **Results:** The IDO in the OSG and OMAG groups showed a significant difference compared to the NWSG and NWMAG groups (OSG: 25,415.4 ± 1,164.2 *vs.* NWSG: 16,018.6 ± 536.4, $p = 0.00$; OMAG: 19,663.4 ± 628.2 *vs.* NWMAG: 9,424.5 ± 108.0, $p = 0.00$). OMAG exhibited lower IDO expression compared to OSG (OMAG: 19,663.4 ± 628.2 *vs.* OSG: 25,415.4 ± 1,164.2, $p = 0.00$). TNF-α also had lower expression in the exercised groups (NWMAG: 8,011.2 ± 135.4 *vs.* NWSG: 15,660.8 ± 1,153.6, $p = 0.00$; OMAG: 6,850.6 ± 86.9 *vs.* OSG: 21,502.9 ± 1,666.2, $p = 0.00$). When compared, OMAG and NWMAG did not show significant differences. The TNF-α and IDO data demonstrated a moderate correlation ($r = 0.63$, $p = 0.02$) and an association power of $r^2 = 0.40$. **Conclusion:** The results indicate that MIATP improved the expression of IDO and TNF-α in exercised obese mice. A positive and directly proportional correlation between TNF-α and IDO in obese mice was identified. **Keywords:** obesity; exercise; cytokines.

METABOLISMO ÓSSEO E MINERAL

2460

ASSESSMENT OF BONE MINERAL DENSITY IN PATIENTS WITH BERARDINELLI-SEIP SYNDROME OVER AN 11-YEAR INTERVAL

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Introduction: Berardinelli-Seip syndrome (BSS) is an autosomal recessive disorder marked by a lack of adipose tissue, leading to symptoms such as insulin resistance, steatotic liver disease, amenorrhea, and acromegaloid features. A decade ago, we published bone mineral density (BMD) data in a cohort of BSS patients, finding that they generally had normal or even elevated BMD. **Objective:** This study aims to assess how BMD has changed over the past ten years in this same cohort of patients. **Patients (materials) and methods:** This is an observational longitudinal study that evaluates bone densitometry results from BSS patients in 2013 and again in 2024. **Results:** We analyzed data from nine patients (5 women, 55.6%) with BSS (4 with AGPAT2 mutations and 5 with BSCL2 mutations), who were aged 22.7 ± 7.3 years in 2024, including two patients on metreleptin treatment. Over the follow-up period of approximately 10.8 years, we observed an increase in the prevalence of diabetes (88.9% to 100%), hypertension (33.7% to 66.7%), and steatosis (88.9% to 100%). Dyslipidemia rates remained stable at 77.8%. Bone densitometry of the lumbar spine and total body was conducted for all patients at both time points. Lumbar BMD remained stable (1,26 ± 0,33 *vs.* 1,35 ± 0,32 g/cm², p = 0.205), while total body BMD decreased slightly (1.26 ± 0,2 *vs.* 1.15 ± 0,21 g/cm², p = 0.006). For patients under 20, where only lumbar spine and total body BMD measurements are recommended, only 55.6% had their femoral BMD assessed ten years ago. In these patients, BMD of the total femur and femoral neck remained stable (p > 0.05). **Conclusions:** In this cohort of young BSS patients, BMD in the lumbar spine and femur remained stable, though there was a slight reduction in total body BMD. Continued monitoring is needed to determine whether these changes are persistent or clinically significant. **Keywords:** Berardinelli-Seip syndrome; lipodystrophy; bone mineral density.

TIREOIDE

2461

PRIMARY INVASIVE FOLLICULAR CARCINOMA OF ECTOPIC THYROID TISSUE AT THE BASE OF THE SKULL COEXISTING WITH ECTOPIC THYROID GOITER: A CASE REPORT

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Case presentation: Female, 56 years old, with a history of diabetes, hypertension, and a large non-toxic goiter. She presented with complaints of jaw claudication due to pain, restriction of oral cavity opening, otalgia, reduced auditory acuity, and right-sided hemilaryngeal paresthesia for one year. MRI revealed an expansive lesion at the base of the skull centered in the right masticatory space, between the lateral and medial pterygoid muscles (pterygopalatine fossa), with involvement of the mandibular branch of the trigeminal nerve, invasion of the ipsilateral middle fossa and sphenoid sinus with destruction of the lateral wall (4.4 x 4.1 x 3.1 cm). Intracranial extension measured 1.7 x 0.9 cm. Total thyroidectomy was performed for the goiter, and malignancy was ruled out after histological evaluation. Partial resection of the cranial lesion was achieved due to technical limitations. Biopsy with immunohistochemistry revealed well-differentiated thyroid follicular tissue, but due to the aggressive behavior, a primary invasive follicular thyroid carcinoma from ectopic thyroid tissue (ETT) was considered. **Discussion:** ETT refers to the presence of thyroid tissue in locations other than the anterior neck region. The most common location is lingual, in 90% of cases, but other regions between the neck and skull, as well as in uncommon sites such as the eye iris, pituitary gland, and distant locations such as the heart and pancreas, have been reported. The prevalence is 1 in 100,000 to 300,000 individuals. It is asymptomatic in most cases and may eventually grow, leading to compressive symptoms, with approximately 30% having hypothyroidism. Radionuclide thyroid imaging is useful for identifying ectopic tissue. Primary malignant transformation is rare (<1%), and most cases are of the follicular type. The treatment is surgical in cases of compression or malignancy. In the reported case, complete surgical resection was not feasible due to the risk of damage to adjacent critical structures, and adjunctive therapy with radioactive iodine will be evaluated. **Comments:** We report a case of a primary invasive follicular carcinoma of ectopic thyroid tissue at the base of the skull. The presence of ectopic thyroid tissue should be considered in the differential diagnosis of cervical and cranial masses. In the reported patient, the ETT is in an inoperable area, and radioactive iodine and kinase inhibitors will be considered if malignancy is confirmed. **Keywords:** ectopic thyroid; carcinoma; thyroid.

ENDOCRINOLOGIA PEDIÁTRICA

2463

EFFICACY OF TEDUGLUTIDE IN PEDIATRIC PATIENTS WITH SHORT BOWEL SYNDROME: A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Introduction: Short bowel syndrome (SBS) is a malabsorptive condition, caused by a loss of the functional intestinal length. Its progression leads to short bowel syndrome with intestinal failure (SBS-IF), which demands parenteral support (PS) to maintain nutrition. Long-term PS can lead to complications and cause notable disease burden in children. Teduglutide is an analog of GLP-2, which might potentialize intestinal adaptation (increasing intestinal growth and improving intestinal function), minimizing reliance on PS and its complications. This meta-analysis evaluates the efficacy of teduglutide in pediatric patients with SBS. **Objective:** Evaluate the efficacy of Teduglutide in reducing PS dependency in children with SBS associated with intestinal failure. **Methods:** A systematic literature review was performed by searching PubMed, Embase, and Cochrane Library for randomized controlled trials (RCTs) with pediatric patients using Teduglutide for SBS-IF. We searched for trials published up to 13 July 2024. The primary outcome of the study was PS volume change and secondary outcomes were patients who achieved PS volume reduction of ≥ 20%, weight change, and height change. The risk of bias was evaluated using the RoB-2 tool (Cochrane), while the statistical analysis was conducted utilizing RevMan 5.4.1 software. The results are expressed as mean differences with CI 95% and p-value. **Results:** The meta-analysis of the data extracted from three clinical trials, involving a total of 172 participants, showed that the use of Teduglutide for the treatment of SBS-IF in children resulted in statistical significance for reduction in PS volume change (-20.20, 95% CI -26.35 to -14.04, p < 0.00001). Treatment with teduglutide did not contribute to significant patient weight change (-0.13, 95% CI, -0.41 to 0.16, p = 0.38). It also showed statistical significance for an increased number of patients who achieved a PS volume reduction of ≥ 20% (11.79, 95% CI 2.04 to 68.24, p = 0.006]) and for a greater height increase (0.27, 95% CI 0.08, to 0.46, p = 0.005). **Conclusion:** This meta-analysis suggests that therapy with Teduglutide promotes PS volume reduction in patients with SBS-IF, representing an improved intestinal adaptation. In this regard, these results are expected to reduce the risks associated with long-term PS, but further studies are needed to establish that. **Keywords:** teduglutide; intestinal failure; parenteral nutrition.

TIREOIDE

2465

PERIODIC HYPOKALEMIC PARALYSIS SECONDARY TO GRAVES' DISEASE

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Case: A 30-year-old man with no known comorbidities presented with tetraparesis persisting for 7 months, primarily affecting lower-limb, occurring mostly at night, without any paresthesia. He attended to an emergency room (ER) due to a complete all-limb strength loss. At the ER, severe ↓K+ (1.7 mEq/L) was detected and treated with intravenous K, being subsequently discharged. Symptoms recurred, prompting another visit to ER. Severe hypokalemia (K+ = 1.8 mEq/L) was again noted. A week later, he experienced another all-limb weakness, but with less hypokalemia (K+ = 2.9 mEq/L). The patient was referred for a neurology evaluation, presenting with the following physical exam: i) grade 5 strength (chart intermittency), ii) slowed eyelid closure, iii) left exophthalmos, iv) painless, v) mobile and enlarged thyroid, and vii) extremity shaking. Complementary exams: suppression of thyroid-stimulating hormone (TSH < 0,001), both elevated free thyroxine (T4L = 5,6) and anti-TSH receptor antibody (TRAB = 4,62). Thyroid ultrasound displayed diffuse volume alteration. All findings suggested a thyrotoxic periodic hypokalemic paralysis diagnosis, in which Methimazole 40 mg/day and Propranolol 80mg/day were prescribed. Symptoms recurrence (limb-paresthesia manner) happened three times, following physical activities, but no weakness. Following treatments, the patient showed hyperthyroidism symptoms improvement, with no new paralysis episodes, in addition to no medication side effects. During outpatient care, he presented with good tolerance to gradual dose decrease until the minimum required dosage, with TRAB negativity. **Discussion:** Periodic hypokalemic paralysis is a rare condition in primary or secondary form in patients with thyrotoxicosis. Characterized by acute, symmetric, and proximal lower-limb weaknesses, it potentially progresses to all limbs, and the respiratory muscles, culminating with hypokalemia. The mechanisms involved in this latter are not fully understood. Growing theories propose an increased Na+/K+ ATPase activity and mutations in potassium-codifying gene channels in skeletal muscles. Situations promoting adrenergic system activation (*e.g.*, strenuous physical activity and high carbohydrates intake) stimulate dysfunctional Na+/K+ ATPase activity, causing the related-condition symptoms. **Final comments:** Understanding diagnosis, treatment, and prevention of future hypokalemic paralysis episodes is crucial for mitigating this potentially serious complication. **Keywords:** Graves' disease; thyrotoxicosis; hypokalemia.

DIABETES MELLITUS

2467

VITAMIN D LEVELS AND CARDIOVASCULAR AUTONOMIC NEUROPATHY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AND DIABETIC KIDNEY DISEASE

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Introduction: Cardiovascular autonomic neuropathy (CAN) is one of the microvascular complications of type 2 diabetes mellitus (T2DM) and contributes to increased morbidity and mortality in these patients. Additionally, CAN is often associated with diabetic kidney disease (DKD), as both complications are reflections of prolonged disease duration and poor glycemic control in T2DM. Low serum levels of vitamin D (VD) have been associated with CAN in patients with type 1 diabetes mellitus (T1DM). However, this possible association has not been studied in patients with T2DM and DKD with severely elevated albuminuria. **Objective:** Evaluate the association between vitamin D levels and cardiovascular autonomic neuropathy in patients with T2DM and DKD with severely elevated albuminuria. **Materials and methods:** A cross-sectional study was conducted with 51 patients with T2DM, DKD, and severely elevated albuminuria (>300 mg/g), from 2023 to 2024. **Results:** Our results demonstrated an association between vitamin D deficiency and the prevalence and severity of CAN in patients with T2DM and DKD. Serum VD levels were lower in patients diagnosed with CAN compared to those without the complication (27.8 ± 8.3 *vs.* 32 ± 6.3; $p < 0.05$). Frequency domain parameters and reflex tests were particularly altered in patients with VD levels < 20 ng/mL (VLF = 65.5 (50-77) *vs.* 278 (89-670); $p < 0.01$) and Valsalva = 1.1 (1.1-1.2) *vs.* 1.2 (1.2-1.3); $p < 0.05$). Additionally, our regression model showed that a 1 ng/dL reduction in VD levels increased the chance of these patients having CAN by 22.8% ($p < 0.01$; r-square = 0.242; adjusted r-square = 0.359). **Conclusion:** To our knowledge, this is the first study demonstrating an association between vitamin D levels and CAN in patients with T2DM and DKD with severely elevated albuminuria. **Keywords:** vitamin D; cardiovascular autonomic neuropathy; diabetic kidney disease.

TIREOIDE

2468

ASSESSMENT OF THE AMOUNT OF IODINE PRESENT IN THE MAIN MULTIVITAMINS CURRENTLY AVAILABLE AND THEIR SUPPLEMENTATION IN PREGNANT BRAZILIAN WOMEN

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Introduction: Iodine is a key micronutrient used by the thyroid gland to produce thyroid hormones. The WHO recommends a daily intake of approximately 250 µg of iodine for pregnant and lactating women, compared with 150 µg for women outside this period. Iodine deficiency (ID) can cause intellectual disability, growth retardation, neonatal hypothyroidism and an increased risk of miscarriage. In turn, excessive iodine intake (IE) is associated with a higher prevalence of subclinical hypothyroidism, isolated hypothyroxinemia and autoimmunity. Brazil is a country considered sufficient in iodine after iodization measures of table salt and, currently, there is no indication for routine iodine supplementation for pregnant women. **Objective:** The objective of this study was to evaluate the quantity of multivitamin supplements with iodine in their composition, as well as to quantify its concentration in these supplements marketed in Brazil. **Methods:** This study was carried out from June 15 to 23, 2024, on an internet search engine for multivitamin supplements indicated for pregnant women available on the Brazilian market. **Results:** A total of 39 types of multivitamin supplements for pregnant women were found, of which 34 had iodine in their composition (87.17%) and 5 did not (12.8%). An average of 183.45 µg was obtained, with a variation between 100 µg and 290 µg. Of those with iodine, 8 had an amount lower than 150 µg (23.52%), 22 had between 150 µg and 250 µg (64.70%) and 4 had an amount higher than 250 µg (11.7%). **Conclusion:** Although Brazil is a country with iodine adequacy and there is still no national evidence indicating routine supplementation in pregnant women, most multivitamin supplements currently available in Brazil not only contain iodine in their recommendations, but also have high amounts per daily dose. **Keywords:** iodine; thyroid; pregnant.

OBESIDADE

2469

ANALYSIS OF THE PERCENTAGE OF WEIGHT LOSS IN PATIENTS ON SIBUTRAMINE MONOTHERAPY AT HOSPITAL DAS CLÍNICAS - PE: A RETROSPECTIVE OBSERVATIONAL STUDY

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Introduction: Obesity is a chronic condition with a multifactorial etiology that requires a challenging treatment to achieve therapeutic success, defined as a 5% to 10% reduction in initial weight combined with the maintenance of the lost weight. This condition is associated with complications such as type 2 diabetes mellitus, dyslipidemia, and systemic arterial hypertension, highlighting the need for effective therapies against obesity. In this context, sibutramine is an anorectic drug with satiating capacity and is currently one of the few anti-obesity drugs approved in Brazil. Thus, it is necessary to analyze the efficacy and benefits of this medication in monotherapy. **Objective:** To analyze the variation in the percentage of weight loss with the isolated use of sibutramine after 6 months of treatment at the Obesity Clinic of HC-UFPE between 2021 and 2023. **Material and methods:** This is a descriptive retrospective study whose data were collected from digital medical records. Initial weight, weight, and percentage of weight loss after 6 months were collected from an initial sample of 102 patients. Patients were classified according to weight loss percentage ranges: those who lost less than 5%, between 5% and 10%, between 10% and 15%, or more than 15%. Exclusion criteria included patients who lacked any necessary variables for the study or who used another drug with the same purpose in combination. The final sample size was 19 patients. **Results:** Patients were classified according to weight loss percentage ranges. Eight patients (42.1%) lost less than 5% of their initial weight. Three patients (15.8%) experienced weight loss between 5% and 10%, while eight patients (42.1%) showed weight loss between 10% and 15%. No patient lost more than 15% of their initial weight. These results demonstrate that 57.9% of patients had a weight loss greater than 5% after 6 months of treatment with sibutramine. **Conclusion:** The treatment response was heterogeneous, highlighting the importance of individualized and continuous patient monitoring to maximize the benefits of treatment and adjust therapeutic approaches as needed, in conjunction with lifestyle modifications. The variation in results also suggests the need for further studies to identify the factors influencing the efficacy of sibutramine and promoting therapeutic success. **Keywords:** pharmacotherapy; serotonin and norepinephrine reuptake inhibitors; obesity.

DISLIPIDEMIA E ATEROSCLEROSE

2470

NON-ALCOHOLIC FATTY LIVER DISEASE IN A PATIENT WITH FAMILIAL PARTIAL LIPODYSTROPHY: A CASE REPORT

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Case presentation: A 63-year-old female patient with a BMI of 25.5 kg/m², diagnosed with poorly controlled type 2 diabetes mellitus (DM), arterial hypertension (AH), and dyslipidemia, is being followed up in the outpatient clinic. She presents with apparent muscle hypertrophy in her limbs and scant subcutaneous tissue. A genetic test revealed a mutation in the LMNA gene (A>G variation at codon 466 in heterozygosity), leading to a diagnosis of familial partial lipodystrophy type 2 (Dunnigan). Further investigation indicated a risk of fibrosis (FIB-4: 1.8). Ultrasonographic evaluation showed advanced fibrosis and steatohepatitis, findings consistent with metabolic dysfunction-associated steatotic liver disease (MASLD). The patient is on insulin (2.36 IU/kg/day), metformin, pioglitazone, dapagliflozin, antihypertensives and a statin. Her average HbA1C over the past 12 months is 10.6%, with AST/ALT levels at 38/41, GGT at 263 U/L, TG at 283 mg/dL, and LDL at 29 mg/dL. **Discussion:** Lipodystrophy is rare and most commonly has a genetic etiology, such as familial forms, presenting heterogeneously and can be either acquired or congenital. It is characterized by a generalized or partial deficiency of adipose tissue. Both forms are risk factors for insulin resistance (IR) and its complications, including DM, hypertriglyceridemia, acanthosis nigricans, polycystic ovary syndrome, and, more rarely, hepatic steatosis. The diagnosis of FPL in women is more sensitive due to apparent muscle hypertrophy. The presented patient exhibits a typical phenotype of FPL type 2 and came to the clinic with complications such as IR, AH, and hypertriglyceridemia. Hepatic involvement investigation revealed advanced fibrosis (ARFI F3 by Metavir) and steatohepatitis, progressing to cirrhosis a year later (ARFI F4 by Metavir), fulfilling the criteria for MASLD. MASLD can further complicate with cirrhosis and even hepatocellular carcinoma. Significant obstacles to metabolic control include blood glucose and triglyceride levels. **Final comments:** FPL is a rare disorder requiring early diagnosis to prevent metabolic complications. The severity of the condition depends on the extent of subcutaneous tissue involvement and management. The patient showed significant metabolic dysfunction, cardiovascular issues, and MASLD, but disease progression was controlled with appropriate intervention. Lastly, considering its hereditary nature, evaluating other family members for involvement is warranted. **Keywords:** lipodystrophy; steatosis; cirrhosis.

DISLIPIDEMIA E ATEROSCLEROSE

2471

IMPACT OF ANABOLIC-ANDROGENIC STEROIDS ON SUBCLINICAL ATHEROSCLEROSIS IN ATHLETES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: The use of anabolic-androgenic steroids (AAS) by athletes for performance enhancement is widely recognized and raises concerns about potential cardiovascular effects. Objectives: This systematic review and meta-analysis aim to assess the effect of AAS on subclinical atherosclerosis in athletes. **Materials and methods:** We searched PubMed, Cochrane, and Embase. We pooled mean differences (MD) with 95% confidence intervals (CI) using a random-effects model. Heterogeneity was assessed using I^2 statistics. We used Review Manager for statistical analysis. Outcomes of interest were body fat percentage, coronary stenosis, and brachial artery diameter (FMD). This systematic review and meta-analysis was performed and reported in accordance with the Cochrane Collaboration Handbook for Systematic Review of Interventions and the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) Statement guidelines. **Results:** We screened 24 studies including 1,350 participants. Most patients were young people between 19 and 25 years old and all of whom were male, including 48% of AAS users. AAS users had a lower body fat percentage (MD (%) -1.33%; 95% CI -2.60, 0.06%; p = 0.11) but a higher prevalence of coronary artery stenosis (RR (%) 0.74; 95% CI 0.14, 3.87%; p = 0.97; I^2 = 0%). Additionally, AAS was associated with endothelial dysfunction measured by FMD (MD (%) -2.21%; 95% CI -4.95, 0.53%; p = 0.11). **Conclusion:** Although AAS was associated with a lower body fat percentage, AAS-users had higher rates of subclinical atherosclerosis. **Keywords:** coronary artery disease; anabolic-androgenic-steroid; subclinical atherosclerosis.

TIREOIDE

2472

BENEFITS AND HARMS OF SCREENING THYROID CANCER IN ASYMPTOMATIC AND LOW RISK PATIENTS

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Introduction: A nodule is one of the most frequent thyroid problems, which can be recognized through low-cost techniques such as ultrasonography. Other techniques can be used to rule out thyroid cancer, which has a rising incidence depending on factors such as gender, age, and others. It should be noted that ultrasonographic findings suggestive of a higher risk of malignancy are not reliable for diagnosis when considered in isolation and often do not correlate with histopathological data. Furthermore, this can lead to overdiagnosis and unnecessary interventions. **Objective:** To identify the outcomes of diagnostic methods in screening for thyroid cancer in patients with thyroid nodules. **Materials and method:** This systematic review, based on the PRISMA methodology, utilized data from LILACS and PubMed databases. The inclusion criteria comprised clinical trials and meta-analyses that address the implications of screening for thyroid cancer in patients with thyroid nodules; studies conducted from 2021 to 2024 in English. Initially, 12 studies were found. Repeated articles, those not relevant to the topic, paid, and incomplete articles were excluded, resulting in 9 articles being removed. Thus, 3 studies were selected for review and analysis. The search strategy used descriptors provided by "DeCS": Thyroid cancer, Early Diagnosis, Mechanism of detection; Ultrasonography. Relevant studies suitable to the objective of this review were then selected. **Results:** The selected studies correlate the use of advanced medical tools with the clarification of some patient signs and symptoms. In this context, an increase in diagnoses of thyroid cancer was identified. Incidental diagnosis revealed a patient profile with tumor size < 10 mm, age > 45 years, and detection most commonly through ultrasound, leading to a significant increase in overdiagnosis. **Conclusion:** The increased incidence of thyroid cancer is directly related to the widespread use of ultrasonography in clinical practice. Screening for cancer with ultrasonography is beneficial for high-risk patients or those with specific indications. However, the efficacy of screening in reducing mortality is controversial. Ultrasonography may detect nodules that are benign or clinically insignificant, leading to unnecessary treatments. Therefore, further studies are needed to evaluate the necessity of screening in this population. **Keywords:** thyroid nodule; early diagnosis; mechanism of detection.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2473

OVARIAN HYPERTHECOSIS AS THE FINAL DIAGNOSIS OF HYPERANDROGENISM WITH MULTIPLE COMPLICATIONS POST-MENOPAUSE: CASE REPORT

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Case presentation: A 60-year-old female, with menopause 10 years ago, reported a progressive increase in hair on her arms, back, face, buttocks, and groin, as well as the appearance of hair in atypical locations such as the face and back over the past year (Ferriman-Gallwey score 17). She also experienced alopecia on the scalp and eyebrows, hyporexia, and fatigue. She denied changes in voice, acne or clitoromegaly. Depressive symptoms began due to her appearance, leading to significant social isolation. She had metabolic syndrome (obesity, hypertension, diabetes mellitus and dyslipidemia) with reports of concomitant glycemic and blood pressure dysregulation at the onset of hirsutism. Laboratory tests showed total testosterone levels of 78.5 ng/dL and 89 ng/dL after 2 months, and free testosterone was 14 ng/dL. Androstenedione, 17OH-progesterone, and DHEA were all within normal ranges. Imaging studies (CT and MRI) showed adrenal glands of normal size without adenomas. A transvaginal ultrasound (TVUS) revealed a right ovary measuring 6.6 cm^3 and a left ovary measuring 9.2 cm^3. So, spironolactone was initiated as antiandrogenic therapy, and the treatment of metabolic syndrome was adjusted. Ovarian hyperthecosis became the primary diagnostic hypothesis, leading to bilateral anexectomy and subsequent histopathological examination, which confirmed bilateral ovarian stromal hyperplasia with no malignancy. The patient showed stable symptoms, improved metabolic control, and gradual improvement in self-esteem and depressive mood disorder. **Discussion:** Ovarian hyperthecosis accounts for 1% of postmenopausal cases of hyperandrogenism and insulin resistance. It is characterized by the presence of nests of luteinized theca cells in the ovarian stroma, resulting in excessive testosterone production. This condition is associated with increased risk of type 2 diabetes, cardiovascular diseases, hyperplasia, and even endometrial carcinoma. Mental health should always be addressed. Ovarian histopathology is the gold standard for diagnosis, with treatment preferably involving bilateral oophorectomy. **Final comments:** Ovarian hyperthecosis should be considered in the differential diagnosis of severe hyperandrogenism in postmenopausal women, despite its rarity, to ensure appropriate and targeted therapy. Metabolic and mental health complications should also be adequately managed to reduce adverse cardiovascular outcomes and to promote greater well-being and quality of life. **Keywords:** hyperandrogenism; ovary; theca cells.

DIABETES MELLITUS

2474

GENERALIZED ACQUIRED LIPODYSTROPHY AND TYPE 1 DIABETES MELLITUS: A RARE ASSOCIATION OF AUTOIMMUNITY

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Case presentation: A 28-year-old male patient was diagnosed with diabetes mellitus (DM) 10 years ago, presenting with polyuria, polydipsia, and weight loss (2 kg in 3 months), requiring full insulin therapy within the first 4 months of diagnosis. He also presents with hypertriglyceridemia (TG max: 387 mg/dL) and metabolic fatty liver disease. He reports the appearance of subcutaneous nodules in the axillary and abdominal regions and progressive loss of subcutaneous adipose tissue in the lower and upper limbs, followed by the abdomen and face since the age of 2. There is no consanguinity between his parents. On physical examination, his body mass index (BMI) is 17.3 kg/m^2, with acromegaloid facies, acanthosis nigricans in the cervical and axillary regions, and the presence of subcutaneous nodules in the hypogastric region, as well as generalized lipodystrophy. Anthropometry shows that the thigh, calf, and triceps skinfold thicknesses are 3, 3, and 4 mm, respectively. A whole-body dual-energy X-ray absorptiometry (DEXA) scan revealed that total body fat was very low: 7.6%. In the initial investigation of DM, the anti-glutamic acid decarboxylase antibody (anti-GAD) was positive, at 1050.3 IU/mL (<10), C-peptide was 1.95 ng/mL (1.1 to 4.4), insulin was 64.08 µU/mL (2.5 to 25), and leptin was 1.11 ng/mL (2.0-5.0). Additionally, C3 and C4 complement levels were low, at 63 mg/dL (90-170) and 8 mg/dL (12-36), respectively. Five years after the DM diagnosis, a new C-peptide measurement was 0.07 ng/mL. Genetic study (targeted sequencing panel) was negative for pathogenic variants associated with lipodystrophy. These findings supported the hypothesis of double diabetes, characterized by the coexistence of type 1 DM (T1DM) and acquired generalized lipodystrophy (AGL). **Discussion:** AGL presents with fat loss starting in childhood, of variable extent, associated with hepatic steatosis, which can progress to fibrosis, in addition to DM and hypertriglyceridemia. About 25% of cases are related to autoimmune diseases, but T1DM is very rarely reported in association with AGL. The combination of AGL and T1DM can lead to a differentiated phenotype with very difficult-to-control diabetes and faster progression to complications of both conditions. **Final comments:** Early recognition of this rare association allows for the implementation of appropriate treatment and the development of strategies for detecting comorbidities and chronic complications. **Keywords:** generalized acquired lipodystrophy; type 1 diabetes mellitus; autoimmunity.

NEUROENDOCRINOLOGIA

2475

SEVERE HYPERPARATHYROIDISM IN A PATIENT WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1: A CASE REPORT

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Case presentation: A 50-year-old woman was referred for orthopedic admission to investigate bone pain and deformities. Past medical history included nephrolithiasis and a sister with Multiple Endocrine Neoplasia type 1 (MEN1). Lumbar spine CT revealed multiple osteolytic lesions in vertebral bodies and pelvic bones. Bone scintigraphy showed diffuse tracer uptake suggestive of metabolic origin. Chest CT during admission revealed bilateral rib fractures and mixed bone lesions. Laboratory tests showed corrected serum calcium of 15 mg/dL, phosphorus of 2.3 mg/dL, parathyroid hormone (PTH) of 5148 pg/mL, alkaline phosphatase (ALP) of 1,930 U/L, and 25-OH-D of 11 ng/mL. Due to acute hypercalcemia crisis, she was treated with ZOLEDRONIC ACID. Performed scintigraphy with SESTAMIBI, which showed polyglandular uptake, associated to biopsy of retrotracheal thoracic lesion that revealed ectopic parathyroid. Despite two cervical surgeries, hyperparathyroidism remained uncontrolled, and she continues on CINACALCET for calcium and PTH level management. Pain and deformities improved. Given other endocrine gland tumors (parathyroid and pancreas), she was diagnosed with MEN1. **Discussion:** MEN1 is an autosomal dominant disease predisposing to tumors in parathyroid, pituitary, and pancreatic islet cells, and increases susceptibility to other malignancies. Diagnosis requires at least two classic tumors or one tumor with family history or genetic identification. Often, primary hyperparathyroidism is initial with most patients asymptomatic or minimally symptomatic, with hypercalcemia detected through routine biochemical screening. In this case, severe hyperparathyroidism with multiple bone complications was evident. Despite clinical and laboratory indications of parathyroid carcinoma, the patient's hyperparathyroidism was caused by multiple gland hyperplasia typical of MEN1. Recurrent post-surgical hyperparathyroidism is also typical in MEN1, necessitating treatment with CINACALCET in this case. **Conclusion:** This case report highlights severe hyperparathyroidism in the context of MEN1. Early diagnosis can minimize bone-related complications associated with the condition.
Keywords: neoplasm; hyperparathyroidism; hypercalcemia.

ADRENAL E HIPERTENSÃO

2476

PROFILE OF ADRENAL CANCER PATIENTS IN NORTHEAST BRAZIL: A 10-YEAR RETROSPECTIVE ANALYSIS

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Introduction: Malignant neoplasms of the adrenal gland are relatively straightforward diagnoses of diverse origin, often strongly linked to genetic factors such as TP53, which account for about 80% of cases. These tumors typically lack hormone hypersecretion characteristics and are frequently incidentally detected as adrenal incidentalomas on routine imaging scans. Consequently, early diagnosis is often missed, resulting in unfavorable outcomes in over 50% of cases. **Objective:** This retrospective study aims to identify the profile of patients with malignant adrenal neoplasms through a 10-year data analysis, enhance screening efforts, understand the population profile, and prevent adverse clinical outcomes. **Materials and methods:** We analyzed retrospective data from the Cancer Information System (SISCAN) available on the TabNet/DATASUS platform. Data collection utilized the R software with the "microdatasus" package (R. F. SALDANHA, 2019), including variables such as gender, age, and place of residence. Subsequent data analyses were conducted using Excel for improved data organization. **Results:** Using the R software, we collected data on 719,122 cases of malignant neoplasms, selecting 651 cases specifically diagnosed as C74 – malignant neoplasm of the adrenal gland over 10 years. There was a slight increase in cases over the last 5 years, averaging 67 cases per year. The analysis revealed a bimodal incidence peak among children and adolescents up to 19 years old (56% of cases), notably 43% occurring in children up to 5 years old and in adults over 50 years old, with no significant difference between genders. Treatment initiation occurred on average within 0-10 days after diagnosis. **Conclusion:** This study highlighted typical characteristics of oncologic diseases, such as age-related risk factors and genetic predisposition prevalent in younger populations. Despite the low incidence in absolute numbers, the high mortality justifies the need for effective population screening. Thus, the patient profile comprises predominantly young individuals, particularly children up to 5 years old and adults over 50 years old.
Keywords: malignant neoplasms of adrenal gland; retrospective analysis; population profile.

OBESIDADE

2477

TRIPLE–HORMONE-RECEPTOR AGONIST RETATRUTIDE FOR ANTHROPOMETRIC PARAMETERS: A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Introduction: Retatrutide, a new triple agonist, is currently being studied for its potential in weight control. **Objective:** We aimed to conduct a systematic review with meta-analysis to assess the efficacy of retatrutide for weight reduction in patients with overweight or obesity. **Methods:** A systematic research was performed on PubMed, Embase, Cochrane Library, from inception up to July, 2024, to identify randomized controlled trials (RCTs) that assessed the efficacy of retatrutide compared to a placebo in adults with overweight or obesity. The mean difference (MD) was calculated for continuous outcomes. The risk of bias was evaluated using the RoB-2 tool (Cochrane), while the statistical analysis was conducted utilizing RevMan 5.4.1 software. **Results:** In this meta-analysis, 3 RCTs were included, involving a total of 691 participants. Compared to the placebo group, retatrutide at doses of 2-4, 2-8, 4, 4-8 and for all doses demonstrated statistical significance for percentage change in weight loss. The mean difference (MD) in the percentage change in body weight (BW) was: –9.07% (95% CI –11.39, –6.76; p < 0.00001), –16.93% (95% CI –19.21, –14.65; p < 0.00001), –11.70% (95% CI –14.04, –9.35; p < 0.00001), –17.98% (95% CI –20.38, –15.59; p < 0.00001) and –13.53% (95% CI –14.68, –12.38; p < 0.00001), respectively. In terms of percentage decreasing in waist circumference, retatrutide also showed statistical significance at doses of 2-4, 2-8, 4, 4-8 and for all doses compared to the control group. The mean difference (MD) in the waist circumference (WC) was: –8.52% (95% CI –11.18, –5.85; p < 0.00001), –14.10% (95% CI –16.73, –11.47; p < 0.00001), –8.40% (95% CI –11.22, –5.58; p < 0.00001),–13.52% (95% CI –15.98, –11.05; p < 0.00001) and –9.44% (95% CI –11.01, –7.86; p < 0.00001), respectively. In comparison with placebo, retatrutide demonstrated statistical significance at doses of 2-4, 2-8, 4, 4-8 and for all doses in the body mass index (BMI). The mean difference (MD) in the body mass index (BMI) was: –3.17% (95% CI –4.01, –2.33; p < 0.00001), –6.20% (95% CI –7.05, -5.35; p < 0.00001), –4.31% (95% CI –5.18, –3.45; p < 0.00001), –6.66% (95% CI –7.54, –5.78; p < 0.00001), and –3.02% (95% CI –3.73, –2.31; p < 0.00001), respectively. **Conclusion:** Retatrutide has a significant potential as a weight loss drug in patients with overweight and obesity since it demonstrated statistical significance for reductions in weight, waist circumference, and body mass index. **Keywords:** retatrutide; obesity; anthropometry.

DIABETES MELLITUS

2478

TYPE 3C DIABETES MELLITUS DUE TO TYPE 1 AUTOIMMUNE PANCREATITIS, RELATED TO IMMUNOGLOBULIN G SUBCLASS 4: CASE REPORT

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Case presentation: Female patient, 29 years old, sought medical care with difficult-to-control diabetes mellitus (DM), using 42 IU of insulin daily, associated with Metformin. Tests revealed fasting blood glucose levels of up to 538 mg/dL and glycated hemoglobin of 12.4%, in addition to asthenia and significant weight loss. There was also pain in the left hypochondrium, associated with jaundice, fecal acholia and choluria, added to high values of glutamic-oxaloacetic transaminase 141 U/L, glutamic pyruvic transaminase 269 U/ L, gamma glutamil transferase 955 U/L and alkaline phosphatase 2,961 U/L. After performing a computed tomography of the upper abdomen, a pancreas with increased dimensions, ill-defined limits, with calcifications and collections was observed, suggestive of chronic pancreatopathy; requiring biopsy for diagnostic clarification. The biopsy revealed absence of neoplastic cells and an increase in Immunoglobulin G subclass 4 (IgG4), classifying it as lymphoplasmacytic sclerosing pancreatitis type 1 (LPSP1), an autoimmune disease related to IgG4. To control the autoimmune condition, daily use of Prednisone was instituted. The patient progressed with worsening glycemic control, using up to 178 IU of insulin during follow-up, without showing laboratory improvement. **Discussion:** DM refers to a group of diseases with different etiologies that lead to hyperglycemia. A type that is still little known is type 3C DM, a disease secondary to conditions that affect pancreatic function, which has no relationship with type 2 DM or the autoimmune pathophysiology of type 1 DM. In relation to LPSP1, it is a fibroinflammatory disease that generates an increase in immunoglobulin G and dense lymphoplasmacytic infiltrate, and may respond well to the use of corticosteroids. In this case, the pancreatic and biliary picture, associated with difficult-to-control DM and the absence of indicators that would lead to the impression of DM 1 or 2, corroborated with the strengthening of the diagnostic hypothesis of pancreatic insufficiency leading to type 3C DM. **Final comments:** Type 3C DM cases are true challenges, as they are related to several diseases that lead to pancreatic insufficiency. Therefore, it is worth highlighting the role of corticosteroids in the clinical control of the pancreatic fibroinflammatory process, in addition to the importance of early diagnosis, treatment and management of this pathology in order to minimize its permanent systemic damage. **Keywords:** diabetes mellitus; IgG4; pancreatitis.

DISLIPIDEMIA E ATEROSCLEROSE

2480

CYSTIC FIBROSIS PRESENTING WITH SEVERE HYPERTRIGLYCERIDEMIA IN AN ADULT: THE IMPORTANCE OF GENETIC DIAGNOSIS

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Case presentation: A 54-year-old man was referred to the dyslipidemia outpatient clinic of a hospital in Recife due to severe hypertriglyceridemia (HTG). In his laboratory tests, an increase in triglycerides (>2,000 mg/dL) was highlighted, without pancreatitis. In the investigation of HTG, a genetic test was conducted with a panel of genes for HTG and pancreatitis, which revealed the presence of the pathogenic variants c.1647T>G (p.Ser549Arg) and c.1210-11T>G (5T allele) in the gene CFTR. This finding suggests compound heterozygosity for Cystic Fibrosis (CF), an autosomal recessive condition. Based on this diagnosis, an investigation into the classic characteristics of CF began. Sweat and lung function tests are being conducted. **Discussion:** CF is a multisystem disorder caused by variants in the CFTR gene, which controls transmembrane conductance. It is characterized by persistent lung infections, pancreatic insufficiency and elevated chloride in sweat. It has been included in the public health biological neonatal screening ("Teste do Pezinho") since 2012, with diagnosis in the first year of life for most cases. Many patients have mild or atypical manifestations, requiring clinical surveillance. Symptoms in adult life, without the childhood symptoms of CF, are often related to gastrointestinal changes, diabetes mellitus and infertility, in addition to distinct genetic variants with preserved pancreatic function, making initial diagnosis difficult. Suspicion of CF in adults with severe HTG and atypical gastrointestinal symptoms is crucial. Detailed investigation, including pancreatic function tests and sweat chloride analysis, is important to confirm the diagnosis and guide effective therapy. The existence of medication with a favorable recommendation by CONITEC, such as the triple therapy elexacaftor/tezacaftor/ivacaftor, can bring benefits, such as improving lung function and nutritional status, and leads to the need for greater scope for diagnosis. **Final comments:** This case illustrates the diagnostic challenges of CF in adults. Early identification in patients with severe HTG highlights the need for meticulous investigation and comprehensive diagnostics. Genetic complexity emphasizes the importance of holistic diagnostic approaches, including specialized genetic testing. Continued surveillance and clinical education are crucial for adults with variable symptoms. **Keywords:** cystic fibrosis; hypertriglyceridemia; diagnosis.

MISCELÂNEA

2481

INSULINOMA AND ADRENAL PARAGANGLIOMA IN MULTIPLE ENDOCRINE NEOPLASIA – AN ATYPICAL CASE REPORT

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Insulinomas may be part of the multiple endocrine neoplasia type 1 (MEN1) phenotype. In the syndrome, it is classically associated with parathyroid adenomas and pituitary tumors. Adrenal tumors are rarely reported. Here, we report the case of a 53-year-old white patient, with high blood pressure for 33 years, a history of nephrolithiasis and recurrent symptoms suggestive of hypoglycemia for 26 years, which began during breastfeeding. In the last year, one episode of severe hypoglycemia was recorded in emergency care (25 mg/dL). Diagnostic investigation revealed fasting blood glucose of 43 mg/dL, glycated hemoglobin of 4% and serum insulin of 16.8 uUI/mL (RR < 13.1 uUI/mL) and C peptide greater than 20 ng/mL. Abdominal CT scan revealed a heterogeneous hypervascular pancreatic nodule measuring 4.5 x 2.9 cm, with a cystic component and peripheral calcifications, suggestive of insulinoma, which was confirmed on post-surgical histopathology. Additionally, a heterogeneous hypervascular left adrenal nodule measuring 1.2 cm, with 155 HU in the arterial phase, was detected. A secondary metastatic lesion or adrenal paraganglioma was considered. The latter hypothesis was confirmed on histopathology despite slightly elevated plasma normetanephrines and metanephrines (1.2 nmol/L, RR <0.9 nmol/L and < 0.2 nmol/L, RR < 0.5 nmol/L). Furthermore, hyperparathyroidism was diagnosed (PTH = 208 pg/mL, RR 12-88 pg/mL; Ca = 10.8 mmol/L, RR 8.7-10.3 mmol/L; 25OH vitamin D = 18.6 ng/mL). Parathyroid scintigraphy with sestamibi suggested an adenoma in the lower left lobe of the thyroid, while thyroid ultrasound showed no nodules. The patient refused genetic testing. **Discussion and final considerations:** The most common finding in MEN1 is parathyroid adenoma. Insulinomas are rare compared to other pancreatic and peri-ampullary neuroendocrine tumors, affecting an average of 1 to 3 cases per million per year. Five-year survival rates can vary between 97%-100% for indolent types and 24%-66.8% for aggressive types. This case is compatible with MEN1, despite the lack of genetic testing. The coexistence of adrenal paraganglioma is present in less than 1% of cases reported in the literature, whereas insulinomas have a prevalence of 5%-10% in this context. Therefore, it is important to investigate associated syndromes and consider these findings in the surgical decision-making process for patients with MEN, as well as in family genetic screening. **Keywords:** insulinoma; adrenal paraganglioma; multiple endocrine neoplasia.

OBESIDADE
2486

THERAPEUTIC APPROACH TO OBESITY: A COMPARATIVE EVALUATION OF SIBUTRAMINE-TOPIRAMATE COMBINATION AND SIBUTRAMINE MONOTHERAPY

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Introduction: The treatment of obesity, a chronic public health condition with significant implications for morbidity and mortality, represents a constant challenge in medicine. The search for effective and safe therapies drives the development of new pharmacological approaches. In this context, the combination of sibutramine and topiramate emerges as an alternative for managing obesity. **Objectives:** To evaluate the efficacy of this combination compared to sibutramine monotherapy in promoting weight loss in obese patients. **Methods:** This investigation, conducted at the Obesity Clinic of the University Hospital of the Federal University of Pernambuco between January 2021 and December 2023, adopted a retrospective analysis methodology. The study included 42 obese patients who started treatment with sibutramine, divided into two groups: Group 1 (n = 23): Patients who used the combination of sibutramine and topiramate. Group 2 (n = 19): Patients who used sibutramine alone. The main variable of interest was weight loss after 24 weeks of treatment. The initial weight of the patients was compared with their weight after the intervention period. **Results:** In Group 1, 17.4% (n = 4) of patients showed a weight loss greater than 10% of their initial weight, 43.5% (n = 10) lost between 5% and 10%, 21.7% (n = 5) lost less than 5%, and 17.4% (n = 4) showed an average weight gain of 0.7%. In Group 2, 31.6% (n = 6) of patients lost more than 10% of their initial weight, 15.8% (n = 3) lost between 5% and 10%, 31.6% (n = 6) lost less than 5%, 1 patient maintained their weight, and 1 patient gained weight. **Conclusion:** The combination of sibutramine and topiramate is a valid option for the treatment of obesity, demonstrating efficacy in promoting weight loss in obese patients. The choice between this combination and sibutramine monotherapy should be individualized, considering the patient's response to treatment, patient characteristics, and potential adverse effects. Larger randomized controlled clinical trials are needed to confirm these results and provide a more robust assessment of the efficacy and safety of this combination in the treatment of obesity. **Keywords:** topiramate; sibutramine; treatment.

TIREOIDE
2487

EPIDEMIOLOGICAL PROFILE OF THYROID CANCER IN A MUNICIPALITY IN NORTHEAST BRAZIL: DATA ANALYSIS FROM 2018 TO 2022

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Introduction: Thyroid cancer is the most common endocrine neoplasm globally. Despite its low lethality, its incidence has increased recently. About 90% of thyroid carcinomas are "well-differentiated" (papillary and follicular types), which generally have a good prognosis but are prone to recurrence. Ultrasound findings can identify nodules with a higher risk of malignancy using the ACR TI-RADS classification, leading to Fine Needle Aspiration Biopsy (FNAB) and Bethesda system classification for treatment. **Objective:** To outline the epidemiological profile of patients with malignant thyroid neoplasia in a municipality in Northeast Brazil from 2018 to 2022. **Materials and methods:** Data were collected from a hospital using a structured questionnaire and medical records of patients who underwent total or partial thyroidectomy for suspected or confirmed thyroid cancer between 2018 and 2022. This included demographic data, personal and family history, and results from ultrasound and cytological examinations. Data were analyzed using Microsoft Excel 2019 and statistical tests in SPSS 25.0. **Results:** A total of 128 medical records were analyzed. Three were excluded due to lack of anatomopathological results, two due to synchronous tumors, and 23 because they did not fit the specified period. Most patients who underwent thyroidectomy (93%) were female, with a female-to-male ratio of 13:1. The predominant age range was 56-65 years (33%), followed by 45-55 years (23%). This aligns with literature showing higher prevalence in females due to greater healthcare use, hormonal factors, and higher thyroid disease occurrence in women, with an average diagnosis age of 45-60 years. About 78% of patients were from the municipality, with the fewest surgeries in 2021 (11 patients), likely due to the COVID-19 pandemic. Papillary carcinoma was the most common histological type (71%), followed by follicular carcinoma (19%), raising questions about possible risk factors for follicular carcinoma, as studies in the Northeast suggest a different relationship with iodine deficiency. **Conclusion:** The findings are consistent with thyroid cancer epidemiology, showing a predominance of females and differentiated carcinoma. Further research is needed to understand the impact of the COVID-19 pandemic on diagnosis and the incidence of follicular carcinoma, and to explore potential risk factors in other Northeast locations. **Keywords:** thyroid cancer; thyroid neoplasms; thyroid cancer, papillary.

NEUROENDOCRINOLOGIA

2488

TYPE IV POLYGLANDULAR SYNDROME: HYPOCORTISOLISM, CENTRAL HYPOTHYROIDISM, LADA TYPE DIABETES AND VITILIGO, A CASE REPORT

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Male patient, 52 years old, aged 32. Insulin-dependent diabetes and central hypothyroidism, presented frequent hypoglycemia, in addition to fatigue and hair loss. Diagnosis of vitiligo at age 8. In the investigation of central hypothyroidism, basal cortisol was 10.8 mcg/dL, without other pituitary changes, an insulin tolerance test (ITT) was performed with a maximum peak of 13.3 mcg/dL, confirming adrenal insufficiency. The patient denied any history of trauma, radiotherapy, surgery or medication use. Prednisone 5 mg/day was started, as well as treatment of central hypothyroidism with levothyroxine. Skull MRI showed a 0.3 cm pituitary microadenoma and MRI of the sella turcica performed subsequently showed no changes. During the investigation of the case, the hypothesis of lymphocytic hypophysitis was raised, considering that lymphocytic hypophysitis is the most common form of hypophysitis; the cause is generally unknown, and initially characterized by lymphocytic infiltration and pituitary enlargement; This stage is followed by the destruction of pituitary cells, the preferential hypofunction of ACTH and TSH secreting cells has been described in many articles, leading to adrenal insufficiency and hypothyroidism. In the case of the patient in this case, he had exactly the same preferential deficiencies as lymphocytic hypophysitis, associated with two other autoimmune diseases, vitiligo and LADA type DM1, characterizing a type IV polyglandular syndrome. Autoimmune polyglandular syndromes are a rare group of polyendocrine conditions that include multiple glandular deficiencies associated with other autoimmune diseases. They can be divided into four subgroups based on the organs affected. PAS I or early-onset PAS develops as a result of mutation of the autoimmune regulatory gene (AIRE) and is characterized by the presence of Addison 's disease (AD), mucocutaneous candidiasis and hypoparathyroidism. PAS II is defined by the presence of AD and autoimmune thyroid disease (AITD) and/or type 1 diabetes mellitus (T1DM). In PAS III, AITD can occur concomitantly with any autoimmune disease, but not with AD. Patients who cannot be included in the three previous subgroups are classified as PAS IV. Be aware of an association of autoimmune diseases, even the rarest ones, and carry out the necessary screenings for an early diagnosis. **Keywords:** association of autoimmune diseases; polyglandular syndrome; polyglandular syndrome type IV.

ENDOCRINOLOGIA BÁSICA

2489

ADIPOSITY AND BIOCHEMICAL PARAMETERS IN INHERITED LIPODYSTROPHIES

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Lipodystrophies are a disease of white adipose tissue (WAT) dysfunction. The inherited lipodystrophies can be classified as generalized and partial, with the extent of adipose tissue loss being associated with the severity of the metabolic complications. Brown adipose tissue (BAT) has a different embryonic origin from WAT and the presence of BAT on lipodystrophies is unknown. The study aimed to compare adiposity and biochemical parameters between individuals with congenital generalized lipodystrophy (CGLD), partial familial lipodystrophy (FPLD), obesity (OB) and eutrophy (EU). A total of 167 individuals were evaluated: 17 with CGLD, 14 with FPLD, 78 with OB and 58 with EU. Glycemia, glycated hemoglobin (A1c), insulin, lipid profile, triglycerides (TG), AST and ALT were determined. Measurements of weight, body mass index (BMI), waist circumference (WC), hip circumference (HC), neck circumference (NC), and waist-to-hip ratio (WHR) were performed. Body composition was assessed by Dual -energy X-ray absorptiometry (DXA) and data presented as % of total fat (%TF), android gynoid ratio (A/G) and visceral fat (VF). The BAT was assessed through infrared thermography during a 2 hour cold exposure in a acclimatized room with controlled temperature set at 18°C. Thermographic images were taken in the supraclavicular (BAT location) and pectoral regions (control). Data were presented in area under the curve of relative temperature (AUCtr), supraclavicular temperature subtracted by pectoral temperature. CGLD and FPLD had lower values for weight, BMI, HC and WC and higher values for NC and WHR compared to OB and EU, respectively. BMI and WC were higher in FPLD compared to EU and CGLD. HP was lower in CGLD compared to FPLD and EU ($p < 0.01$ for all). CGLD had lower values for %TF, A/G and visceral fat compared to the other groups and FPLD presented lower visceral fat and %TF compared to EU and OB, respectively ($p < 0.01$ for all). CGLD and FPLD presented lower BAT activity, measured by AUCtr, compared to OB and EU ($p < 0.001$). CGLD and FPLD showed higher values for TG and ALT and lower value for HDL compared to OB. Glycemia, A1c, insulin, TG and ALT were higher and HDL was lower in CGLD and FPLD compared to EU. CGLD had higher A1c compared to FPLD and OB. Glycemia was higher in CGLD compared to OB. LPF showed higher AST compared to OB and EU ($p < 0.01$ for all). BAT and WAT dysfunctionality contribute to the dysmetabolic state of lipodystrophies. Fapesp: 2020/12112-1. **Keywords:** lipodystrophies; brown adipose tissue; white adipose tissue.

ADRENAL E HIPERTENSÃO

2490

SEVERE HYDROELECTROLYTIC DISORDERS IN PRIMARY ADRENAL INSUFFICIENCY: CASE REPORT

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Case presentation: A 48-year-old woman, a farmer, recently diagnosed with hypothyroidism, was referred to the University Hospital from the UPA, where she had been hospitalized for 5 days with pain in her lower limbs, associated with asthenia, vomiting, weight loss, mental confusion, and transient loss of consciousness. On physical examination, she had generalized hyperpigmentation, most evident in the lines of her hands, lingual frenulum, lips, and limbs. Laboratory tests revealed hyponatremia (Na+: 122 mEq/L), severe hyperkalemia (K+: 8.7 mEq/L), and metabolic acidosis (pH: 7.32, HCO3-: 10.2 mEq/L, PCO2 = 20). The electrocardiogram showed no hyperkalemia alterations. The patient reported multiple hospitalizations in the last year with the same clinical presentation. Adrenal insufficiency was then suspected and hydration with 0.9% saline and hydrocortisone 100 mg every 8 hours was started. After clinical stabilization, basal cortisol was measured with a result of 0.9 mcg/dL and ACTH: 1,250 pg/mL. The hydroelectrolytic disturbances were overcome with treatment of adrenal insufficiency. **Discussion:** Electrolytic disturbances in primary adrenal insufficiency are due to decreased secretion of cortisol and aldosterone. An important function of aldosterone is to increase urinary potassium secretion. As a result, hypoaldosteronism may be associated with hyperkalemia, which occurs in 40% of patients and is often associated with mild hyperchloremic acidosis. Another important function of aldosterone is to increase sodium reabsorption, which leads to hyponatremia in the context of adrenal insufficiency. The aforementioned condition, however, showed even more significant hydroelectrolytic alterations than are usually observed, having evolved with severe hyperkalemia and significant metabolic acidosis. Therefore, the clinical condition reported is highly serious and has a high morbidity and mortality rate. **Final comments:** Although less commonly described, significant hydroelectrolytic disorders (HEDs) may be present in adrenal crisis cases, and since they are life-threatening conditions, they must be promptly identified and treated. Treatment of adrenal crisis usually reverses HEDs. Another important aspect of this case refers to the challenging diagnosis of adrenal crisis in emergency centers, since it is a condition that is easily confused with other more common diseases, which highlights the importance of paying attention to this condition as early as possible. **Keywords:** adrenal; insufficiency; hydroelectrolytic.

TIREOIDE

2492

FOLLICULAR THYROID CARCINOMA: INITIAL PRESENTATION WITH SPINAL COMPRESSION SYNDROME

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Case presentation: A 44-year-old woman presented with pain and weakness in her right lower limb 3 years ago, which progressed to falls, urinary retention, and lower limb plegia due to spinal compression syndrome. A thoracic spinal tumor was identified, and she underwent resection in 2021. The histopathological examination revealed thyroid tissue without atypia. Thyroid ultrasound showed a solid, hypoechoic nodule in the isthmus and left lobe, measuring 2.4 x 1.0 x 1.4 cm, with peripheral linear calcifications, classified as TI-RADS 5. Fine needle aspiration revealed follicular neoplasia (Bethesda 4). A bones scintigraphy demonstrated lytic bone lesions, indicative of secondary involvement, in the dorsal spine, iliac bones, and acetabulum. A biopsy of a lesion in the hip resulted in a diagnosis of metastatic thyroid carcinoma. The neck CT scan showed a heterogeneous, oval-shaped mass, 3.0 x 1.6 cm, in transition with the superior mediastinum and contiguous with the thyroid isthmus, near the right brachiocephalic trunk. The head and neck surgical team contraindicated thyroidectomy due to its proximity to vital structures. She underwent 6 sessions of thyroid and pelvic radiotherapy in 2022 and two rounds of radioiodine therapy in 2023, initially 50 mCi for thyroid tissue ablation and subsequently 200 mCi for metastases. Clinically, she showed improvement in lower limb sensitivity and better pain control. **Discussion:** Metastatic thyroid disease indicates advanced aggressive disease with poor prognosis, with a 50% reduction in survival rates. Lung and bone metastases are more common. Bone metastases are associated with worse prognosis and are more commonly linked to follicular carcinoma, presenting as lytic lesions and manifested by pain, pathological fractures, or spinal compression, especially when the neoplasm is diagnosed concurrently with secondary involvement. Treatments for bone metastases include radioactive iodine, surgical resection, radiotherapy, arterial embolization, systemic bisphosphonates, chemotherapy, or percutaneous image-guided therapies. **Final comments:** This work aims to report cases where standard treatment with thyroidectomy is not feasible and to high light less classical manifestations of differentiated thyroid carcinoma, particularly follicular type, due to its Association with metastases and poorer survival outcomes. **Keywords:** thyroid; metastasis; spinal compression syndrome.

DIABETES MELLITUS

2493

ROLE OF DIABETES MELLITUS IN THE PRESENTATION AND CLINICAL OUTCOMES OF PEOPLE WITH ARTERIAL HYPERTENSION AND CHRONIC KIDNEY DISEASE AFFECTED BY CHIKUNGUNYA

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Introduction: Chikungunya is an arbovirus that can present with different manifestations depending on the risk factors of each patient. Individuals with conditions such as diabetes mellitus (DM), chronic kidney disease (CKD), and hypertension (AH) tend to have a higher risk of experiencing severe clinical symptoms when affected by Chikungunya. **Objective:** To analyze the influence of DM on the clinical picture and outcomes of patients with CKD and AH affected by Chikungunya in Brazil in 2021, 2022, and 2023. **Methods:** Cohort study related to notifications of Chikungunya cases in Brazil in 2021, 2022 and 2023 taken from SINAN. Cases with CKD and AH were selected and divided into two groups for further analysis:(I) with DM,(II) without DM. Data compilation and analysis were done in Microsoft Excel® and Jamovi®; P < 0.05 was considered statistically significant. **Results:** In 2021, 2022, and 2023, there were 827 confirmed notifications of Chikungunya among patients with CKD and AH, with a predominance of females (60.22%) and an average age of 52.77 years. Among these patients, 526 (63.6%) had diabetes and an average age of 48.31 years, while the group unaffected by diabetes had a higher average age (57.27). Symptoms such as conjunctivitis (RR: 3.30; 95% CI 2.10-5.19; p < 0.001), leukopenia (RR: 211; 95% CI 146-305; p < 0.001), retroorbital pain (RR: 186; 95% CI 1.47-2.36; p < 0001), arthritis (RR: 1.28; 95% CI 1.09-1.51; p = 0002), rash (RR: 1.23; 95% CI 1.00-1.51; p = 0.041) and headache (RR: 1.16; 95% CI 1.05-1.27; p = 0.001), were more frequent in the DM group. Regarding fever (RR: 0.99; 95% CI 0.94-1.06; p = 0961), myalgia (RR: 1.01; 95% CI 0.94-1.08; p = 0.735), vomiting (RR: 1.16; 95% CI 0.95-1.42; p = 0.139), nausea (RR: 1.06; 95% CI 0.917-123; p = 0.409), back pain (RR: 1.07; 95% CI 0.94-1.23; p = 0.278), and arthralgia (RR: 1.09; 95% CI 0.98-1.19; p = 0.075), there was no significant difference. The tourniquet test yielded positive results more frequently in patients with DM (RR: 4.69; 95% CI 2.62-8.39; p < 0.001).Among the 827 reported cases, there were 70 with unrecorded outcomes. When compared to the remaining cases, there was no significant difference in hospitalizations (RR: 1.02; 95% CI 0.953-1.08; p = 0.609) and cure rates (RR: 1.01; 95% CI 0.98-1.03; p = 0.669). **Conclusion:** Patients with CKD, AH, and DM affected by this disease, despite having a similar outcome, have proven to be more symptomatic. Assistance to patients with these comorbidities should be reinforced when dealing with Chikungunya. **Keywords:** Chikungunya fever; diabetes mellitus; hypertension.

DISLIPIDEMIA E ATEROSCLEROSE

2497

CLINICAL, LABORATORIAL AND CASCADE SCREENING DIAGNOSIS CHARACTERIZATION OF ADULT INDIVIDUALS WITH FAMILIAL CHYLOMICRONEMIA SYNDROME (FCS)

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Introduction: Familial chylomicronemia syndrome (FCS) is a rare genetic disease. Biallelic mutations in the gene encoding lipoprotein lipase (LPL) or in one of its cofactors cause an increase in chylomicrons in the circulation and a consequent marked elevation in serum triglyceride (TG) levels, with an increased risk of pancreatitis. **Objectives:** Describe the clinical and laboratory characteristics of a series of patients diagnosed with FCS, genetically confirmed. **Methods:** Cross-sectional study conducted in a reference outpatient clinic in a tertiary hospital in Fortaleza, Ceará, Brazil. Patients over 18 years old were included, with a positive genetic diagnosis for SQF made through new sequencing generation to investigate genetic variants potentially related to hypertriglyceridemia and pancreatitis. Clinical history and laboratory data were collected. **Results:** Among fourteen adult patients, eight (57.1%) were female, with a median age of 44 years old (20-64). Eleven (78.5%) of the 14 patients presented homozygous mutation or compound heterozygosity in the LPL gene, two had an APOA5 mutation and one presented a mutation in GPIHBP1, both cofactors of LPL. Among these patients, eight (57.1%) had a history of consanguinity and 13 (92.8%) reported a family history of hypertriglyceridemia. Three (21.4%) patients were diagnosed through cascade screening. Seven (50%) patients reported recurrent abdominal pain and two (14.3%) had xanthomas. The median body mass index (BMI) was 22.5 kg/m² (17.6-30.9). Nine (64.3%) patients were classified as eutrophic. The median of the maximum value of serum TG level was 2,553 (1,394-15,000) mg/dL and seven (50%) patients reported a history of pancreatitis, with the first episode on average at 22.5 years (15-28). One of the cases had more than 10 episodes of pancreatitis throughout his life. **Conclusion:** This series demonstrated that the majority of patients were female, eutrophic, the most prevalent symptoms were recurrent abdominal pain and pancreatitis at an early age. Given the high proportion of genetically positive patients with a family history of hypertriglyceridemia, the need for cascade screening is reinforced, given the possible underdiagnosis of the syndrome. Furthermore, greater knowledge about clinical and laboratorial characteristics of patients with FCS allows intervention with early nutritional guidance and the possibility of reducing the incidence of pancreatitis, a serious and potentially fatal complication. **Keywords:** familial chylomicronemia syndrome (FCS); pancreatitis; genetic diagnosis.

DISLIPIDEMIA E ATEROSCLEROSE

2498

TRIPLE–HORMONE-RECEPTOR AGONIST RETATRUTIDE IN LIPID AND METABOLIC PROFILES: A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Introduction: Retatrutide, a new triple glucagon receptor, glucagon-like peptide-1 (GLP1) receptor, and glucagon-like peptide-1 (GLP-1) receptor agonist, is currently being studied for its potential in lipid metabolism. **Objective:** We aimed to conduct a systematic review and meta-analysis to assess the efficacy of retatrutide for lipid and metabolic profiles in patients with overweight or obesity. **Methods:** A systematic research was performed on Embase, PubMed and Cochrane Library, from inception up to July, 2024, to identify randomized controlled trials (RCTs) that assessed the impact in lipid and metabolic profiles of retatrutide compared to a placebo in adults with overweight or obesity. The mean difference (MD) was calculated for continuous outcomes. The risk of bias was evaluated using the RoB-2 tool (Cochrane), while the statistical analysis was conducted utilizing RevMan 5.4.1 software. **Results:** This meta-analysis includes data extracted from three RCTs, involving 691 participants. Compared to the placebo group, treatment with retatrutride showed a statistically significant reduction in the aggregated results of all doses for AST (–14.01; 95% CI –21.34, –6.68; p = 0.0002) and ALT (–16.11; 95% CI –28.73, –3.49; p = 0.01). Treatment with retatrutide did not contribute to significant effects in HDL (–2.21%; 95% CI –5.63, 1.20; p = 0.20) or free fatty acids (2.11; 95% CI –11.65, 15.86; p = 0.76). Despite this, it demonstrated statistical significance for reduction in other components of the lipid profile, including Total Cholesterol (–12.95%; 95% CI –15.85, –10.05; p < 0.00001), Triglycerides (–27.81; 95% CI –34.80, –20.82; p < 0.00001), VLDL (–25.34%; 95% CI –33.41, –17.26; p < 0.00001) and LDL (–12.67%; 95% CI –16.90, –8.43; p < 0.00001). **Conclusion:** In overweight and obese patients, retatutride demonstrated a significant reduction in lipid profile and liver enzymes. These results might suggest an improvement in the adverse cardiometabolic and liver outcomes associated with obesity, such as atherosclerosis and MASH, but further investigation is needed. **Keywords:** retatrutide; dyslipidemias; MASH.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2508

PROFILE OF HOSPITALIZATIONS FOR UTERINE LEIOMYOMAS IN A UNIVERSITY HOSPITAL: A CROSS-SECTIONAL STUDY

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Introduction: Uterine leiomyomatosis (LU) involves the development of multiple benign tumors in the myometrium due to the unregulated growth of smooth muscle cells. **Objective:** To establish the sociodemographic and clinical profile of patients admitted for LU at *Hospital Universitário Júlio Bandeira* (HUJB). **Methods:** Patients over 18 years old, diagnosed with LU, and admitted to HUJB from January 2019 to August 2023 were selected. The study was approved by the Human Research Ethics Committee CEP/CFP/UFCG, under registration number CAAE 6.153.069. Differences between groups were evaluated using Mann-Whitney, Pearson, and Kruskal-Wallis tests, with p < 0.05 considered significant. **Results:** A total of 251 medical records from 190 patients were reviewed. The mean age was 42.8 (SD = 6.41) years. Of these, 155 (81.5%) were in the reproductive age group, 33 (17.3%) were in the climacteric phase, and 2 (1.2%) did not report their age group. Regarding race, 112 (58.9%) patients identified as mixed-race, 71 (37.4%) as white, and 5 (2.6%) as black. Marital status varied: 99 (52.1%) married, 60 (31.6%) single, 7 (3.7%) widowed, 14 (7.4%) divorced, and 10 (5.3%) in stable unions. Multiparity was common (n = 157; 82.6%), while 30 (15.8%) patients had no children. A significant portion (n = 125; 65.8%) did not use any contraceptive method, while 48 (25.3%) used combined oral contraceptives. Chronic cervicitis was the most frequently concomitant condition (n = 49; 31.6%), followed by adenomyosis (n = 46). Intramural leiomyoma was the most prevalent type, occurring in 128 (67.3%) patients. Surgical treatment was predominant, accounting for 94.2% (n = 179) of interventions, with total abdominal hysterectomy being the most common procedure (n = 140; 73.7%). NSAIDs were prescribed to 52 patients (27.4%), and tranexamic acid to 43 patients (22.6%). Notably, 80 patients (42.1%) did not receive any pharmacological treatment. In 51 (26.8%) women, surgery was performed before attempting less invasive options. **Conclusion:** LU was more prevalent among reproductive-aged and multiparous women. Intramural leiomyomas were the most common. Total abdominal hysterectomy was the primary intervention despite the availability of less invasive options. These findings highlight the need to evaluate and potentially revise treatment protocols to incorporate less invasive approaches, ensuring optimal patient care. **Keywords:** uterine leiomyomatosis; miomatose uterina; women's health.

OBESIDADE

2509

EPIDEMIOLOGICAL PROFILE OF HOSPITALIZATIONS FOR OBESITY ASSOCIATED WITH THYROID DISORDERS RELATED TO IODINE DEFICIENCY IN NORTHEASTERN BRAZIL BETWEEN 2019 AND 2023

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Introduction: Obesity is a multifactorial condition associated with various comorbidities, including thyroid disorders. In Brazil, especially in the Northeast region, these problems are exacerbated by specific socioeconomic and cultural factors. Iodine deficiency, which is essential for the synthesis of thyroid hormones, contributes significantly to the prevalence of thyroid dysfunctions, which can influence the development and progression of obesity. The combination of obesity and thyroid disorders represents a double challenge for the health system. **Objective:** To analyze the epidemiological profile of hospitalizations for obesity associated with thyroid disorders related to iodine deficiency in the Northeast between 2019 and 2023. **Methods:** This is a retrospective, descriptive and quantitative cross-sectional study based on secondary data available in the Hospital Information System of the Unified Health System (SIH/SUS). The variables observed were unit of the federation, year and character of care, regime, age group, sex, color/race and deaths. **Results:** During the period studied, 4,992 hospitalizations due to obesity associated with thyroid disorders related to iodine deficiency were recorded in the Northeast region. Of these, 4,146 (83.06%) occurred as elective care, although in all cases the hospitalization regime was ignored. The years with the highest incidence were 2019, with 1,237 cases (24.78%); 2022, with 1,168 cases (23.40%); 2023, with 1,230 cases (24.64%). The state most affected was Pernambuco, with 1,937 cases (38.81%). The brown population was the most affected, with 3,102 cases (62.15%). Females accounted for 4,275 cases (85.65%). The age groups most affected were 30 to 39 years old, with 1,707 cases (34.21%) and 40 to 49 years old, with 1,585 cases (31.76%). After analyzing the reported cases, it was found that 12 (0.24%) resulted in death. **Conclusion:** It can be seen that the female population, aged between 30 and 39 and of brown race, was the most affected, with a predominance of hospitalizations in the federal unit of Pernambuco. Understanding the epidemiological profile is essential for the implementation of effective public health strategies for the treatment and prevention of both diseases, since the observation of the data obtained revealed the complexity and impact of hospitalizations for obesity associated with thyroid disorders related to iodine deficiency in the Northeast. **Keywords:** obesity; thyroid disorders related to iodine deficiency; epidemiology.

DIABETES MELLITUS

2510

METABOLIC OUTCOMES OF SODIUM-GLUCOSE COTRANSPORTER-2 INHIBITOR THERAPY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AND CHRONIC KIDNEY DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Sodium-glucose cotransporter-2 inhibitors (SGLT2i) have emerged as a pivotal therapeutic class for managing type 2 diabetes mellitus (T2D) and chronic kidney disease (CKD), revealing promising glucose control and kidney outcomes. However, their impacts on metabolic and kidney function outcomes in patients with T2D and CKD remain unexplored. **Objectives:** To assess metabolic and kidney outcomes in patients with T2D and CKD treated with SGLT2i. **Methods:** We systematically searched PubMed, Embase, and Cochrane Central for randomized controlled trials (RCTs) comparing SGLT2i *versus* placebo in patients with T2D and CKD. Our endpoints of interest were variation in glycohemoglobin (HbA1c), body weight, and estimated glomerular filtration rate (eGFR) from baseline. Subgroup analyses were performed based on drug type. Statistical analysis utilized Review Manager version 5.1.7. This study adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. **Results:** We included 12,484 patients from nine RCTs. The average age was 68.9 years, with 52.4% male patients. Baseline values included an HbA1c of 8.1%, BMI of 31.8 kg/m², and GFR of 43.5 mL/min/1.73 m². SGLT2i group showed a greater reduction in percentual HbA1c (MD -0.31%; 95% CI -0.39 to -0.14; p = 0.00001) and body weight (MD -1.27 kg; 95% CI -1.63 to -0.92; p = 0.00001) when compared with placebo. Subgroup analysis revealed that sotagliflozin, a dual SGLT inhibitor, induced a significantly greater reduction in HbA1c levels ($p_{interaction}$ = 0.02) in patients compared with reductions observed with SGLT2i alone. Moreover, there was no significant difference between SGLT2i and placebo in terms of change in eGFR (MD 1.05 mL/min/1.73 m²; 95% CI -0.87 to 2.97; p = 0.28; I^2 = 86%). **Conclusions:** In this meta-analysis, SGLT2i in patients with T2D and CKD led to both decreased HbA1c and body weight, with no significant impact on eGFR, underscoring their potential for improving metabolic endpoints in this group. **Keywords:** diabetes mellitus, type 2; chronic kidney disease; sodium-glucose transporter 2 inhibitors.

TIREOIDE

2511

TEMPORAL EVOLUTION OF MORTALITY FROM MALIGNANT THYROID NEOPLASIA IN BRAZIL: ANALYSIS FROM 2013 TO 2022

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Introduction: Malignant thyroid neoplasia (MTN) significantly impacts global morbidity and mortality. In Brazil, it is crucial to evaluate the temporal evolution of mortality from MTN to identify trends and guide effective prevention and control strategies. **Objective.** This study aims to analyze the temporal evolution of mortality from MTN in Brazil between 2013 and 2022, examining variations over the years and characterizing the demographic profiles related to deaths. **Materials and methods:** A retrospective observational study was conducted using the most recent epidemiological data available in Brazil from 2013 to 2022. Death records for MTN were obtained from the Mortality Information System (SIM) of the SUS Information Technology Department (DATASUS). The analyzed variables included the number of deaths, gender, age group, and year of death. **Results:** During the analyzed period, 8,076 deaths from malignant thyroid neoplasia were recorded in Brazil. There was a 13% increase in the number of deaths over this period. Females were more affected, with a mortality rate twice that of males. The 70-79 age group was the most affected, accounting for 27% of all deaths. Regionally, the Southeast had the highest number of deaths (3,226), followed by the Northeast with 2,442 deaths. **Conclusion:** Analysis of mortality from malignant thyroid neoplasia in Brazil from 2013 to 2022 shows an increase in deaths, particularly among women and the elderly. The higher concentration of deaths in the Southeast and Northeast regions highlights the need for region-specific prevention and control strategies. This data is crucial for developing targeted public health policies aimed at reducing mortality and improving patients' quality of life. Early diagnosis programs, access to advanced treatments, and awareness campaigns could be key to reversing the observed trend and improving clinical outcomes related to MTN in Brazil. **Keywords:** thyroid cancer; thyroid neoplasms; thyroid gland.

DIABETES MELLITUS

2512

IMMUNE CHECKPOINT INHIBITOR-INDUCED DIABETES MELLITUS – CASE SERIES

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Case presentation: Case 1: 59-year-old male diagnosed with metastatic clear cell renal carcinoma, undergoing treatment with nivolumab and ipilimumab. Follow-up exams (after 2 months of treatment) showed fasting glucose 428 mg/dL and HbA1c 5.8%, with undetectable C-peptide levels. Case 2: 72-year-old male diagnosed with hepatocarcinoma, undergoing treatment with atezolizumab. He sought emergency care (after 11 months of treatment) due to polyuria, polydipsia, and weight loss, with random glucose 458 mg/dL and HbA1c 9.4%. C-peptide was 0.87 ng/mL, decreasing to 0.1 ng/mL 3 months after diagnosis. Anti-GAD autoantibodies were negative. Case 3: 68-year-old female diagnosed with metastatic cholangiocarcinoma, undergoinig treatment with durvalumab. She sought medical care for polyuria, polydipsia, and weight loss (after 3 months of treatment) with random glucose 628 mg/dL and HbA1c 7.8%. C-peptide was 1.71 ng/mL, decreasing to 0.18 ng/mL 2 weeks after diagnosis. Anti-GAD autoantibodies were positive. Case 4: 41-year-old female diagnosed with invasive ductal carcinoma, undergoing treatment with pembrolizumab. She sought emergency care (after 1 month of treatment) for polyuria, polydipsia, and drowsiness. Moderate diabetic ketoacidosis (DKA) was identified and managed with intravenous insulin therapy. All patients started basal-bolus insulin therapy, which was permanently maintained during outpatient follow-up. **Discussion:** We present 4 cases with distinct presentations of type 1 diabetes mellitus (T1DM) associated with the use of different checkpoint inhibitors. This immunotherapy-induced endocrinopathy is the one with the lowest incidence (0.2 to 1.4%), with variable clinical presentation at diagnosis. In 3 of these cases, screening and prompt diagnosis prevented the development of DKA. A systematic review published by the American Diabetes Association in 2023 proposes diagnostic criteria as the presence of new onset hyperglycemia (blood glucose > 200 and/or HbA1c > 6.5%) associated with insulin deficiency (presence of DKA and/or C-peptide < 0.2 ng/mL), in individuals exposed to immunotherapy. If these criteria are not met at presentation, it should be reevaluated in 1 month. **Final comments:** Despite the low incidence of immunotherapy-induced T1DM, this complication is concerning due to the high incidence of diabetic ketoacidosis at presentation and the persistent insulin deficiency throughout life, posing potential risks for short- and long-term complications of diabetes. **Keywords:** diabetes mellitus; immune checkpoint inhibitor; type 1 diabetes.

TIREOIDE

2514

EARLY DEDIFFERENTIATION OF PAPILLARY THYROID CARCINOMA: CASE REPORT

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Case presentation: A 73-year-old woman was diagnosed with papillary carcinoma with metastases to the cervical chains in 2017. She undergoes total thyroidectomy with neck disclosure. The anatomopathological examination shows a classic papillary carcinoma, 3.5 cm in dimensions, with fibroconnective and muscle tissue infiltration, and lymphatic and perineural infiltrations. While waiting for iodine therapy, she had a cervical recurrence. She undergoes a new neck discussion and some biopsy blocks showing epithelioid malignant neoplasia compatible with dedifferentiation of papillaty carcinoma. Immunohistochemistry was compatible with anaplastic thyroid carcinoma. At the time, multiple nonspecific pulmonary nodules were detected. The patient was referred for follow-up with the clinical oncology service, undergoing radiotherapy and chemotherapy. In 2024, she developed with pain in the anterior cervical region and dysphagia. Cervical tomography showed globous lymphonomedy at level IIB on the left, measuring 1.2 x 1 cm. Cytology was compatible with papillary thyroid carcinoma. She is waiting for a new surgical procedure. **Discussion:** Anaplastic thyroid cancer can develop from differentiated tumors as a result of one or more dedifferentiation events. approximately 20% of patients with anaplastic carcinoma have a history of previous differentiated tumors, and 20% to 30% have coexisting differentiated tumors. In the case reported, the patient presents two histological types of thyroid carcinoma simultaneously, with dedifferentiation of the papilliferous in the first years of diagnosis. The prognosis is reserved, but some characteristics may suggest a less unfavorable evolution: disease confined to the thyroid or with only local and regional metastases, tumor size, unilaterality, younger age at diagnosis, female sex and absence of dyspnea as a presenting symptom. **Final comments:** Dedifferentiation of anaplastic carcinoma may occur at the time of diagnosis of the initial neoplasia or during tumor recurrence. It is necessary to follow up these patients in specialized centers to perform early diagnosis and appropriate treatment, thus improving patient survival. **Keywords:** thyroid cancer; papillary; anaplastic cancer.

DIABETES MELLITUS

2517

PROFILE OF HOSPITALIZATIONS FOR DIABETES MELLITUS IN BRAZIL: A TIME SERIES STUDY

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Introduction: Diabetes mellitus (DM) is a chronic disease characterized by persistent hyperglycemia due to defects in insulin secretion or action, leading to metabolic and vascular complications. Its increasing prevalence and serious complications, such as cardiovascular diseases and neuropathy, make proper management essential. Although it is a treatable disease, diabetes mellitus remains a significant concern due to its growing global prevalence and the various severe complications associated with it, such as cardiovascular diseases, neuropathy, and nephropathy. **Objectives:** To evaluate changes in the hospitalization profiles of patients with DM in Brazil from 2013 to December 2023. **Material and methods:** This descriptive study analyzes the time series of hospitalization rates of patients with diabetes mellitus within the SUS (Unified Health System). Information about the patients and the nature of the care was extracted from the SUS Hospital Information System, along with the necessary data to calculate hospitalization rates. The average annual percentage variation (AAPV) of these rates was estimated through a generalized linear regression using the Prais-Winsten method. **Results:** During the analyzed period, a total of 1,477,103 hospitalizations of patients with diabetes mellitus were recorded in Brazil, with 753,859 (49.8%) being female. Overall, the hospitalization rate showed a stationary trend (0.66%; $p = 0.028$). Specifically among men, a slight upward trend was observed (1.45%; $p < 0.001$), in contrast to women, who showed a decreasing trend. Regarding age groups, there was an increase in hospitalizations for patients under 20 years old (4.00%; $p = 0.012$), while the age groups between 20 and 50 years (1.23%; $p = 0.088$) and over 50 years (1.00%; $p = 0.011$) showed stationary and decreasing trends, respectively. In terms of the type of care, elective hospitalizations showed an upward trend (1.24%; $p = 0.022$), while emergency hospitalizations showed a decreasing trend (0.38%; $p = 0.016$). **Conclusion:** The data indicate a stationary trend in hospitalizations for diabetes mellitus in Brazil over the analyzed period, both globally and across different demographic groups. This outcome may suggest that disease control strategies have been effective in maintaining the stability of hospitalizations. **Keywords:** hospitalizations; epidemiology; time series studies.

NEUROENDOCRINOLOGIA

2527

HYPERPROLACTINEMIA INDUCED BY LISDEXAMFETAMINE – CASE REPORT

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Case presentation: A 36-year-old female patient sought endocrinological care referred by her gynecologist. She had difficulty getting pregnant six months after copper IUD removal, with menstrual irregularity. Laboratory test revealed a prolactin level of 52 ng/mL (VR < 26 ng/mL). She denied galactorrhea and other symptoms. Her medical history included overweight and suspected attention deficit hyperactivity disorder, and she was on continuous treatment with lisdexamfetamine 50 mg daily. Physical examination showed no galactorrhea. Other test results included estradiol 5.9 ng/dL, LH 4.5 IU/L, FSH 3.6 IU/L, TSH 1.04 mIU/L, and undetectable beta hCG. After discussion with a psychiatrist, a decision was made to taper off and posterior discontinue the medication. The patient returned three months later reporting shortened menstrual cycles following discontinuation of lisdexamfetamine. She also reported no impairment in her daily activities. Prolactin levels had decreased to 21.6 ng/mL. **Discussion:** The most common cause of hyperprolactinemia is drug-induced. It is more prevalent in females. Medications commonly associated include antipsychotics, neuroleptic medications, antidepressants, and histamine-2 receptor antagonists. The mechanism typically involves dopamine suppression. In drug-induced cases, prolactin levels usually range between 25-100 ng/mL. Hyperprolactinemia can be asymptomatic or symptomatic, causing oligomenorrhea/amenorrhea, galactorrhea, and symptoms of hypoestrogenism. Galactorrhea may occur in up to 80% of women but is rare in men. Treatment involves discontinuing the drug or reducing the dosage, with prolactin levels typically normalizing within 2-3 weeks after oral drug withdrawal. We found no association between lisdexamfetamine and hyperprolactinemia in our literature review. Lisdexamfetamine acts by reducing dopamine and norepinephrine reuptake, thereby increasing their availability, which is opposite to the mechanism of drugs commonly linked to hyperprolactinemia. In cases associated with amphetamines, hyperprolactinemia occurs during drug withdrawal, due to the reduction of dopamine. **Final comments:** Knowing that drugs that decrease dopamine can cause hyperprolactinemia by removing its inhibitory effect on prolactin, in the case of lisdexamfetamine, which increases dopamine levels, the opposite effect would be expected. However, in this case, an unexpected effect of hyperprolactinemia induced by lisdexamfetamine was observed. **Keywords:** lisdexamfetamine; hyperprolactinemia; prolactin.

DIABETES MELLITUS

2529

EFFICACY OF HYBRID CLOSED LOOP THERAPY IN PREGNANT WOMEN WITH TYPE 1 DIABETES: AN UPDATED META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Hybrid closed loop (HCL) systems, which integrate a predictive algorithm with continuous glucose monitoring (CGM) and an insulin pump, have shown promise in improving glycemic control in patients with T1DM. However, its effectiveness and safety in pregnant women with type 1 diabetes mellitus (T1DM) remain uncertain. **Objective:** To perform an updated synthesis of our prior meta-analysis comparing HCL systems with standard care (SC) in improving glycemic control in pregnant women with T1DM. **Materials and methods:** We conducted a systematic search of PubMed, Scopus, Cochrane Central, and ClinicalTrials.gov for randomized controlled trials (RCTs) comparing HCL to SC in pregnant women with T1DM. Outcomes included time in range (TIR) (63-140), nocturnal TIR, time in hypoglycemia (<63) and hyperglycemia (>140). Mean differences (MD) with 95% confidence intervals (CI) were used to pooled outcomes. Statistical analysis was performed with RevMan 5.4.1. **Results:** We included six RCTs with a total of 331 pregnant women, of whom 163 (49,2%) received HCL. The updated analysis corroborated our previous findings, showing a significant increase in nocturnal TIR (MD 11.26%; 95% CI 7.85-14.67; $p < 0.01$; $I^2 = 14\%$). Moreover, time spent in hypoglycemia was significantly reduced in the intervention group (MD -1.00%; 95% CI -1,89, -0,10; $p = 0.03$; $I^2 = 74\%$). No significant differences were observed in TIR between groups (MD 4.10%; 95% CI –3.93 to 12.13; $p = 0.32$; $I^2 = 93\%$). **Conclusion:** The findings of this updated meta-analysis suggest HCL systems can significantly improve nocturnal glycemic control and decrease time spent in hypoglycemia in pregnant women with T1DM, with no difference in overall TIR. **Keywords:** type 1 diabetes; pregnancy; hybrid closed-loop system.

DIABETES MELLITUS

2530

SUBCUTANEOUS MEALTIME ULTRA-RAPID INSULIN LISPRO (URLI) *VERSUS* INSULIN LISPRO IN TYPE 1 AND TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW AND UPDATED META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Subcutaneous ultra-rapid insulin lispro (URLi) improves glycemic control in patients with type 1 (T1DM) and type 2 diabetes mellitus (T2DM) by acting in a faster fashion than conventional insulin lispro. Nonetheless, the impact of URLi on safety, glycated hemoglobin level, and postprandial glucose control remains uncertain. **Objectives:** To evaluate glycemic control outcomes in patients with T1DM or T2DM treated with mealtime URLi compared with conventional insulin lispro. **Methods:** We systematically searched PubMed, Web of Science, and Cochrane Central for randomized controlled trials (RCTs) comparing mealtime URLi with insulin lispro in patients with T1DM or T2DM. Our outcomes of interest were variation in glycated hemoglobin (HbA1c), change in 1-hour postprandial glucose (1-h PPG), and incidence of serious adverse events. We stratified the efficacy outcomes according to diabetes type (T1DM or T2DM). Statistical analysis was performed using Review Manager 5.1.7. This study adhered to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. **Results:** We included eight randomized controlled trials comprising 4,063 patients. Follow-up ranged from 16 to 26 weeks. Patients treated with URLi had significantly lower levels of 1-h PPG relative to conventional lispro (MD -0.93 mmol/L; 95% CI -1.43 to -0.42; p = 0.01), with even lower levels for patients with T1DM ($p_{interaction} < 0.001$). There was no significant difference between groups in terms of HbA1c levels (MD 0.02%; 95% CI -0.03 to 0.07; p = 0.49), with a significant interaction between subgroups ($p_{interaction} < 0.001$). Moreover, the incidence of severe adverse events was not significantly different between groups (OR 0.99; 95% CI 0.76 to 1.29; p = 0.93). **Conclusion:** In this meta-analysis of randomized trials, URLi was superior to conventional insulin lispro for improving postprandial glucose control in patients with T1DM and T2DM, with no significant difference in terms of HbA1c levels and incidence of serious adverse events. **Keywords:** diabetes mellitus; insulin lispro; blood glucose.

NEUROENDOCRINOLOGIA

2532

GLP-1 RECEPTOR AGONISTS FOR PARKINSON'S DISEASE: AN UPDATED META-ANALYSIS

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Introduction: Current treatments for Parkinson's disease (PD) have no equivocal evidence of disease modifying effects, focusing on symptom reduction via dopaminergic replacement therapy. Glucagon-like peptide-1 (GLP-1) receptor agonists, used for the treatment of type 2 diabetes, are believed to act in the neuroinflammatory environment reducing microglia activation in PD. Clinical trials testing GLP-1 agonists have shown potential disease-modifying effects in PD. **Objective:** Evaluate the efficacy of GLP-1 receptor agonists for PD. **Methods:** A systematic research was performed on PubMed, Embase, Cochrane Library, to identify randomized controlled trials (RCTs) with patients taking GLP-1 agonists (liraglutide, lixisenatide, exenatide and NLY01) for Parkinson's disease. We searched for trials published up to July, 2024. The risk of bias was evaluated using the RoB-2 tool (Cochrane), while the statistical analysis was done using RevMan 5.4.1 software. **Results:** The GLP-1 receptor agonists had a beneficial effect, compared to placebo, in the change from baseline scores of the MDS-UPDRS part III (scale measuring motor disability) over 36 to 56 weeks. In the off-medication state, there was a 1.22-point between-group difference in motor score favoring the GLP-1 receptor agonists treatment (95% IC -2,46,0,22; P = 0,05). Scores in the on-medication state group improved by -2,52 points compared to the placebo group (95% IC -4,02, -1,01; P = 0,001). A greater difference was found for the overall MDS-UPDRS global score change (-3.43; 95% IC -6.48, -0.48; P = 0,02). An advantage in the Mattis dementia rating scale-2 (Mattis DRS-2) was seen in patients treated with GLP-1 receptor agonists, with a mean difference of 1.32 points (95% IC 0,16, 2,52; P = 0,03), suggesting an improved cognitive performance compared to placebo. There were no differences in nonmotor symptoms compared to placebo measured by the NMSS scale (-0,19; 95% IC -3,44, 3,05; P = 0,91) or in scores for depression (MADRS; -1,04; 95% IC -2,57, 0,48; P = 0,18) or subjective ratings of quality of life (PDQ-39 summary index; -0,91; 95% IC -2,22, 0,39; P = 0,17). **Conclusion:** GLP-1 receptor agonists were associated with modest improvement and prevention of deterioration in PD motor features and cognitive performance, as evidenced by MDS-UPDRS part III and Mattis DRS-2 changes, compared with placebo. These data support GLP-1 receptor agonists as a potential disease-modifying drug in PD, given the prevention of deterioration. **Keywords:** GLP-1; Parkinson disease; neuroprotection.

MISCELÂNEA

2533

THE DIAGNOSTIC CHALLENGE OF HYPOGLYCEMIA IN A PATIENT WITHOUT DIABETES: CASE REPORT OF NESIDIOBLASTOSIS

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Case presentation: Female, 44 years old, with no previous comorbidities and no use of medication, developed asthenia for 3 months, resulting in a sudden episode of disorientation, tachycardia and sweating. In emergency care, hypoglycemia of 33 was evident. The condition improved after correction with glucose. During the investigation, tests were carried out that demonstrated an increase in C-peptide and insulin levels associated with negative anti-insulin antibodies, reinforcing the diagnosis of hypoglycemia due to hyperinsulinemia. To clarify the case, a CT scan of the abdomen was performed with contrast without findings of insulinoma. In parallel, the patient presented recurrent episodes of hypoglycemia, even with glucose support and use of verapamil. Due to sensitivity and specificity, endoscopic ultrasound and pancreatic catheterization were performed, both of which were inconclusive for locating a possible insulinoma. Faced with treatment-refractory hypoglycemia, the decision was made to perform corpus-caudal pancreatectomy. After the procedure, the patient's hypoglycemia improved. Subsequently, the result of nesidioblastosis was confirmed with histopathology. **Discussion:** The investigation of hypoglycemia in a patient without diabetes must be confirmed with the Whiple triad, characterized by hypoglycemia lower than 54 with symptoms and improvement after glycemic replacement. When there is an increase in c-peptide and insulin, it suggests a diagnosis of insulinoma. The big challenge is the location of the tumor, as was noticeable in the case mentioned. Among the main exams, endoscopic ultrasound has the highest sensitivity of around 90%. Pancreatic catheterization can also help define the location of the tumor with calcium stimulation. Even with all these measures, in certain cases there is a need to perform surgery to define the intraoperative location. **Conclusion:** Nesidioblastosis represents a rare cause of hypoglycemia, important in the differential diagnosis. Regarding epidemiology, there are reports on patients after bariatric surgery. By definition, it occurs due to the proliferation of endocrine cells originating from the pancreatic ductal epithelium, resulting in an increase in insulin production.
Keywords: nesidioblastosis; hypoglycemia in non-diabetics; insulinoma.

DIABETES MELLITUS

2534

CLINICAL CHARACTERISTICS, GLYCEMIC CONTROL & QUALITY OF LIFE OF PATIENTS USING ANDROID ARTIFICIAL PANCREAS SYSTEM IN BRAZIL

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Introduction: Automated insulin delivery systems, such as the Android Artificial Pancreas System (AAPS), may reduce the burden of type 1 diabetes (T1D) at a lower cost than commercially available insulin automated systems. However, AAPS have not been approved by regulatory agencies in Brazil, and their efficacy, safety and impact on quality of life (QOL) remain unclear. **Objective:** To compare clinical characteristics, QOL and glycemic control in Brazilian individuals with T1D using AAPS versus non-automated treatments. Methods: T1D individuals were recruited via social media, and data were collected remotely through an AirTable form, covering profile, glucose control, diabetic ketoacidosis (DKA) frequency and a QOL questionnaire (DQOL-Brazil). Statistical analysis was performed using SPSS 21.0, with Mann-Whitney and Chi-square tests used to compare groups (significance level: <0.05). **Results:** The study included 371 subjects with a mean age of 29.4 ± 11.4 years and a disease duration of 12.6 ± 10.1 years. They were divided into two groups: 62 with AAPS (Group A) and 309 without automation (Group B). Group A had a higher proportion of patients and caregivers with higher education (82.3% vs. 55.6%; $p < 0.01$), lower A1c levels (6.5 ± 0.7% vs. 7.4 ± 2.1%; $p < 0.001$), more individuals with A1c < 7% (75.8% vs. 49.2%; $p < 0.001$), and fewer severe hypoglycemic events per year ($p = 0.006$) than Group B. Weekly mean reported hypoglycemia rates were similar between groups (3.5 ± 2.2 in Group A vs. 3.3 ± 1.9 in Group B; $p = 0.73$). When comparing QOL, Group A had better results in all domains of the questionnaire: satisfaction (28 ± 11.5 vs. 41 ± 9.8; $p < 0.0001$), impact (35 ± 9.3 vs. 46 ± 12.9; $p < 0.0001$), social/vocational concern (10 ± 5.8 vs. 15 ± 7.8; $p < 0.0001$), and T1D-related concern (8 ± 3.1 vs. 10 ± 3.8; $p < 0.0001$). Among AAPS users, mean time in range (TIR), time in hypoglycemia, level 2 hypoglycemia, time above range, and glucose variability were 77.9% ± 12.9, 4.4% ± 3.7, 1.7% ± 2.4, 17.5% ± 13.4, and 35.0 ± 7.0, respectively. DKA data, available for 59 individuals, showed no difference between groups ($p = 0.37$). **Conclusion:** Subjects with T1D using AAPS showed better glycemic control and QOL, with fewer severe hypoglycemic events compared to those using non-automated treatments. AAPS use was associated with adequate TIR and clinically acceptable hypoglycemia rates, suggesting it may be a viable, cost-effective option for automated insulin delivery.
Keywords: artificial pancreas; automated insulin delivery systems; type 1 diabetes.

MISCELÂNEA

2539

HOSPITAL MORBIDITY IN SUS DUE TO MALIGNANT PANCREATIC NEOPLASM IN BRAZILIAN TERRITORY: A CROSS-SECTIONAL STUDY OF THE LAST 5 YEARS

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Introduction: Pancreatic cancer is a highly lethal malignancy with a poor prognosis even after complete resection surgery, the only potentially curative treatment. However, due to the late presentation of the disease, only a small portion of patients are candidates for pancreatectomy. The most common type is pancreatic ductal adenocarcinoma, which clinically manifests with symptoms such as pain, jaundice, and weight loss. **Objective:** This study aims to analyze the profile of hospitalizations and deaths due to malignant pancreatic neoplasm in Brazil over the last 5 years. **Methods:** A cross-sectional study was conducted using data available in the SUS Hospital Information System (SIH/SUS) via DATASUS. Hospital morbidity data by hospitalization location for malignant pancreatic neoplasm from May 2019 to May 2024 were analyzed. **Results:** During the analyzed period, there were 78,841 hospitalizations, with the highest numbers in the southeast, south, and northeast regions (45.80%, 26.83%, and 17.44%, respectively). A predominance of 48.37% was observed in the white population and 35.95% in the mixed-race population. The age group of 50 to 79 years represented 78.57% of the cases, with 33.2% between 60 and 69 years, and a lower prevalence up to 14 years old. The prevalence was similar between genders, with 0.49% for females and 0.50% for males. Regarding the nature of the care, 68.05% were emergency cases. The total amount spent during the period exceeded 175 million *reais*, with a significant increase observed in 2023, totaling almost 36 million *reais*. There were 16,426 deaths recorded, with the northern region responsible for the highest mortality rate at 25.57%, above the national average of 20.83% in the last five years. **Conclusion:** In the context of endocrine diseases, malignant pancreatic neoplasm represents a growing public health challenge, especially due to the aging population. The high lethality and limitations in curative treatments underscore the urgent need to improve early diagnosis and clinical management. The data indicate a significant predominance of emergency hospitalizations, highlighting the crucial importance of effective preventive measures in primary care. Investing in educational campaigns and ensuring universal access to diagnostic tests, such as imaging studies necessary to confirm and assess the extent of the disease, are essential steps to reduce the impact and improve health outcomes for patients. **Keywords:** pancreas; pancreatic neoplasms; hospitalization.

DIABETES MELLITUS

2542

IMPACT OF DIABETES ON THE CLINICAL EVOLUTION AND OUTCOMES OF PATIENTS WITH DENGUE FEVER AND SYSTEMIC ARTERIAL HYPERTENSION

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Introduction: Dengue is an arbovirus transmitted by the *A. aegypti* mosquito and is responsible for causing various clinical manifestations. Patients with comorbidities such as diabetes mellitus (DM) and systemic arterial hypertension (SAH) have altered inflammatory responses, which can increase the risk of developing more complex clinical conditions and outcomes. **Objective:** Analyse the association between DM and signs and symptoms of dengue in SAH patients in a large-scale population-based cohort study. **Materials and methods:** Retrospective cohort study to investigate the risk of developing symptoms in individuals exposed to diabetes over time. Confirmed cases of dengue in SAH patients from 2022 and 2023 were selected from the SINAN database. All variables were compared and analyzed using Pearson's exact test and p value being significant when < 0,05. Statistical analyses were conducted using GraphPad Prism. **Results:** Between 2022 and 2023, 153,960 notifications of confirmed cases of dengue fever in SAH patients were recorded, and women (61,38%) were more affected. Clinical signs such as conjunctivitis (RR:1.204; 95% CI 1.53-1.258; p < 0.0001), arthritis (RR:1.128; 95% CI 1.102-1.155; p < 0.0001), leukopenia (RR:1.125; 95% CI 1.083-1.68; p < 0.0001), vomiting (RR: 1.081; 95% CI 1.062-1.100; p < 0.0001), back pain (RR: 1.035; 95% CI 1.022-1.048; p < 0.0001) and arthralgia (RR: 1.027; 95% CI 1.009-1.045; p 0.0037) were more present in the DM group. Myalgia (RR: 0.9829; 95% CI 0.9781-0.9877; p < 0.0001), nausea (RR: 0.9825; 95% CI 0.9713-0.9937; p 0.0023), fever (RR: 0.9771; 95% CI 0.9719-0.9823; p < 0.0001), headache (RR: 0.9670; 95% CI 0.9614-0.9726; p < 0.0001), retro orbital pain (RR: 0.9641; 95% CI 0.9495-0.9789; p < 0.0001), rash (RR: 0.9603; 95% CI 0.9328-0.9886; p 0.0062), petechiae (RR: 0.3090; 95% CI 0.3001-0.3181; p < 0.0001) were more present in the group without DM. There was no significant difference in the outcome of cure or death (RR: 0.9986; 95% CI 0.9975-0.9995; p 0.0034). **Conclusion:** Patients diagnosed with SAH and DM were more susceptible to developing some clinical manifestations of dengue. However, the cure and mortality rates observed in this group were similar to those observed among individuals without DM. These findings highlight the complexity of the interactions between chronic conditions (SAH, DM) and acute infections (dengue fever), underscoring the need for an ongoing surveillance to optimize the clinical management of these patients in diverse contexts. **Keywords:** diabetes; dengue fever; systemic arterial hypertension.

DIABETES MELLITUS

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MITOCHONDRIAL DIABETES WITH PROGRESSIVE MULTISYSTEM INVOLVEMENT: A CASE REPORT OF KEARNS-SAYRE SYNDROME

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Case presentation: A 16-year-old male presented with hyperglycemia, polyuria, polydipsia, and weight loss, leading to a diagnosis of insulin-dependent diabetes mellitus. At the age of 18, he developed pronounced myasthenia and fatigue. A muscle biopsy revealed ragged-red fibers, indicative of mitochondrial myopathy. Two years later, he exhibited bilateral eyelid ptosis and external ophthalmoplegia. Fluorescein angiography showed diffuse arteriolar narrowing with epithelial rarefaction, consistent with pigmentary retinopathy, supporting a diagnosis of Kearns-Sayre syndrome. At age 47, he experienced presyncopal symptoms. Electrocardiographic findings confirmed complete atrioventricular block, requiring pacemaker implantation. Currently, at 49 years old, he is affected by myopathy, with myasthenic facies and impaired ambulation, in addition to reduced hearing acuity. His diabetes is managed with insulin analogue therapy (0.59 IU/kg/day), with a most recent glycated hemoglobin of 7.4%. **Discussion:** Kearns-Sayre syndrome (KSS) is a mitochondrial disease that presents clinical manifestations before the age of 20. It is characterized by a triad of external ophthalmoplegia, pigmentary retinopathy, and cardiac conduction system involvement. Other manifestations include cerebellar ataxia, short stature, deafness, dementia, and endocrine disorders. KSS is generally sporadic, not associated with a familial syndrome, with a prevalence of 1-3 per 100,000. Endocrine dysfunction occurs in 35-67% of cases and includes diabetes mellitus, short stature, growth hormonal insufficiency, hypogonadotropic hypogonadism, adrenal insufficiency and hypoparathyroidism. To date, there is no cure for KSS. Management focuses on multidisciplinary care and close monitoring to address the various complications associated with this condition. **Final comments:** Early diagnosis is crucial for implementing preventive measures, such as routine cardiological monitoring and early pacemaker implantation. Vigilance for signs of adrenal insufficiency is essential. Therefore, endocrinologists should be aware of these clinical features when evaluating patients with diabetes associated with multisystemic symptoms. **Keywords:** Kearns-Sayre; mitochondrial diabetes; diabetes.

TIREOIDE

2546

LOW INCIDENCE AND HIGH RISK? A TERRITORIAL ANALYSIS OF THYROID STORM IN BRAZIL

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Introduction: Thyroid crisis (TC) is a condition that represents the extreme of thyrotoxicosis: it is the set of clinical repercussions associated with the sudden hyperfunction of thyroid hormones T3 and T4, and is potentially lethal. Typically, it manifests with dysfunction of multiple organs and systems, and is precipitated by some event, especially non-adherence to treatment or surgical trauma. Also known as “thyroid storm”, the condition is described as being clinically serious, but with a low incidence in the emergency department. American studies estimate that for every 100,000 hospitalizations, 5 are due to thyrotoxicosis, reaching a mortality rate of up to 30% according to past research, but 3.6% according to the most recent ones. National literature on the subject is scarce. **Objective:** The present study aims to identify the impact of the incidence of CT in the emergency department at a national level, as well as to describe its outcome. **Materials and methods:** This is a descriptive and retrospective epidemiological study, whose data come from the TABNET system, through DATASUS. The number of hospitalizations due to thyrotoxicosis in the Federal District and in all Brazilian states were analyzed, considering the period from January 2014 to December 2023, and divided according to the evolution. Based on this search, the data were compared with their equivalents of hospitalizations for any reason in the mentioned period. Consultation with the Research Ethics Committee was not necessary because these are secondary data. **Results:** During the analyzed period, the 5 regions totaled 6.520 hospitalizations due to CT. Of the total, 119 individuals died due to thyrotoxicosis on the death certificate. The national mortality rate was 1.83%, while the North and Central-West regions stood out with 4,38% and 4,36%, respectively. The average length of hospital stay was 6.7 days. In relation to the general context, there were 117.058.302 hospitalizations for any cause, of which 5.495.368 resulted in death (4.69%). An average length of hospital stay of 5.4 days was found. Hospitalizations due to thyrotoxicosis corresponded to 0,0055% of the total. **Conclusions:** It can be seen that the proportion of hospitalizations established was also realized in the national scenario, being, in fact, a rare condition. The estimated mortality rate was exceeded by two regions, however, analyzing the entire Brazilian territory, this rate was 50% lower than that described previously. **Keywords:** thyroid crisis; emergency service; mortality.

DISLIPIDEMIA E ATEROSCLEROSE

2548

EVALUATING THE NECESSITY OF ROUTINE TRANSAMINASE MONITORING IN PATIENTS ON ATORVASTATIN OR ROSUVASTATIN: A SYSTEMATIC REVIEW

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Introduction: Statins, or hydroxy-methylglutaryl (HMG) CoA reductase inhibitors, are the first-line treatment for hypercholesterolemia, a highly prevalent disease and one of the main risk factors for atherosclerotic cardiovascular disease (ASCVD). One of their potential side effects is the increase in transaminases, a feared complication due to the possible risk of hepatitis. In Brazil, the Clinical Protocol of Therapeutic Guidelines (PCDT) for atorvastatin advises serum transaminase measurement at the beginning of treatment and after 6 months in all cases. Some states, like Pernambuco and São Paulo, maintain this reassessment indefinitely. However, this measure incurs costs to the healthcare system and has questionable evidence. **Objective:** To conduct a systematic review to evaluate the frequency of atorvastatin or rosuvastatin in increasing alanine aminotransferase (ALT) to at least three times the upper limit of normality. **Materials and methods:** A systematic search was performed in the PubMed database using the descriptors "hydroxy-methylglutaryl-CoA reductase inhibitors," "safety," "placebo," and their synonyms. The protocol followed PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. Placebo-controlled randomized clinical trials that evaluated the use of statins in adults, published in the last 25 years, were included. Studies that did not report the evaluation of transaminases or used statins in combination with another lipid-lowering drug, or used statins other than atorvastatin or rosuvastatin were excluded. **Results:** Of the 225 initially screened, six trials met the inclusion and exclusion criteria and were included in the analysis. A total of 19,397 people received rosuvastatin 10 or 20 mg or atorvastatin 10 or 40 mg, while 20,314 received placebo. The outcome was found in 327 (1.6%) people in the statin group and 304 (1.5%) in the placebo group, with no statistically significant difference between the groups ($p = 0.46$). **Conclusion:** The use of rosuvastatin or atorvastatin did not increase the incidence of ALT elevation. It should be considered, however, that most studies previously excluded people with liver injury. This review may suggest, therefore, dispensing with frequent transaminase reassessment in people using rosuvastatin or atorvastatin. **Keywords:** hydroxymethylglutaryl-CoA reductase inhibitors; alanine transaminase; liver function tests.

ENDOCRINOLOGIA PEDIÁTRICA

2549

17OHP LEVELS TO DIAGNOSE NON-CLASSIC CONGENITAL ADRENAL HYPERPLASIA DUE TO 21-HYDROXYLASE DEFICIENCY (NC-CAH) IN CHILDREN WITH PRECOCIOUS PUBARCHE

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Introduction: Basal 17OHP levels indicating an ACTH-stimulation test and post-ACTH 17OHP cutoff levels for diagnosing NC-CAH vary among different guidelines. **Objective:** To establish the performance of basal and post-ACTH 17OHP concentrations for NC-CAH diagnosis in children with precocious pubarche (PP). **Methods:** Clinical, biochemical, and molecular analysis were conducted on 205 PP patients who underwent ACTH stimulation tests between 1997 and 2021. 17OHP and other androgens were measured by RIA. The *CYP21A2* genotype was confirmed by allele-specific PCR or direct sequencing and was adopted as the gold standard to diagnose or exclude NC-CAH among children with PP. ROC curves were generated for basal and post-ACTH 17OHP, and sensitivity (S), specificity (E), and likelihood ratio (LR) were calculated to determine their performance in diagnosing NC-CAH. **Results:** Of the 205 PP patients, 67 underwent *CYP21A2* analysis, identifying 32 NC-CAH patients and 33 controls. Both groups showed similarities in clinical presentation. The median levels of basal 17OHP, androstenedione, and DHEAS were significantly higher in the NC-CAH group compared to the control group, while post-ACTH cortisol was lower. There was no difference in testosterone and basal cortisol levels between the groups. The evaluation of basal 17OHP showed an area under the curve (AUC) of 0.96 (95% CI, 0.92; 0.99), and post-ACTH 17OHP showed an AUC of 1.0 (95% CI), revealing excellent diagnostic performance. A post-ACTH 17OHP level of 1,104 ng/dL showed the best diagnostic accuracy (S: 100%, E: 100%). Using this post-ACTH 17OHP level as the cutoff for diagnosing NC-CAH, a new analysis was performed with the basal 17OHP, considering all individuals with PP (205). The AUC was 0.98 (95% CI, 0.95; 0.99), and the basal 17OHP level with the best diagnostic accuracy was 170 ng/dL (S: 94%, E: 91%, LR+: 9.9). All patients with PP and basal 17OHP levels greater than 410 ng/dL had the diagnosis of NC-CAH confirmed. **Conclusion:** Basal and post-ACTH 17OHP levels presented excellent diagnostic performance for NC-CAH diagnosis among children with PP. Basal 17OHP of 170 ng/dL and a post-ACTH level of 1,104 ng/dL represent the best cutoff values to, respectively, indicate the ACTH-stimulation test and confirm the diagnosis of NC-CAH. In our cohort, a patient with precocious pubarche and 17OHP level greater than 410 ng/dL would have the diagnosis of NC-CAH confirmed without requiring the ACTH-stimulation test. **Keywords:** non-classic congenital adrenal hyperplasia; precocious pubarche; 17-hydroxyprogesterone.

OBESIDADE

2551

VARIATIONS IN BLOOD PRESSURE AND HEART RATE DURING THE USE OF SIBUTRAMINE: ARE WE SAFE AFTER ALL?

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Introduction: Obesity has become a global public health problem, associated with various chronic diseases such as type 2 diabetes mellitus, systemic arterial hypertension, and cardiovascular diseases. Among the pharmacological agents available, sibutramine stands out for its accessibility. Previous data indicate a higher risk of cardiovascular events in at-risk populations, making it necessary to monitor blood pressure in patients, among other adverse events. Objectives: To assess the occurrence of high blood pressure in patients at the Obesity Outpatient Clinic of the Hospital das Clínicas of the Federal University of Pernambuco (HC-UFPE) taking sibutramine between 2020 and 2023. **Material and methods:** This is a retrospective descriptive study, in which the information collected on the patients comes from the medical records of the Obesity Outpatient Clinic at HC-UFPE. **Results:** Considering the data available in the medical records, 154 patients were included, of whom 124 (80.5%) were women, with a mean age of 43.7 years. The average BMI was 38.2 kg/m^2. In the sample studied, 50 individuals (32.4%) had a previous diagnosis of hypertension. During follow-up, 42.2% (n = 65) of the individuals showed an increase in systolic blood pressure (SBP) and 55.2% (n = 85) an increase in heart rate compared to the start of treatment. On the other hand, only 22.7% (n = 35) of the patients reached a blood pressure (BP) above 140/90 mmHg (with 15 new cases of hypertension) and 5.2% (8) reported an episode of palpitation. Only 5 patients (3.2%) discontinued treatment because of these adverse events. Of the sample studied, among the 137 patients (89%) who had lost at least 5% of their body weight, only 8 (5.8%) remained with blood pressure levels above target when adjusting their antihypertensive medication. Conclusions: The data indicate a considerable frequency of blood pressure rises during treatment with sibutramine, but with few cases of uncontrolled blood pressure. The importance of regular BP monitoring during therapy is highlighted. However, weight loss is expected to improve comorbidities. Given the lack of affordable options for treating obesity, sibutramine appears to be a safe option, as long as contraindications and adequate monitoring are respected. **Keywords:** sibutramine; obesity; blood pressure.

TIREOIDE

2552

APPROACHES TO THE MANAGEMENT OF HASHIMOTO'S THYROIDITIS: A SYSTEMATIC REVIEW

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Introduction: Hashimoto's thyroiditis is a chronic autoimmune inflammation of the thyroid with lymphocytic infiltration. Findings include painless thyroid enlargement and symptoms of hypothyroidism. Diagnosis involves demonstrating high titers of thyroid peroxidase antibodies. Lifelong levothyroxine replacement is typically required for patients who develop hypothyroidism. Hashimoto's thyroiditis leads to hypothyroidism and requires an effective management approach to control symptoms and disease progression. **Objective:** To evaluate approaches to the management of Hashimoto's thyroiditis, including drug treatments and monitoring strategies. **Methods:** A systematic review was carried out in accordance with the PRISMA 2020 guideline. The question was: "What are the most effective approaches in the management of Hashimoto's thyroiditis?" The descriptors "Hashimoto's thyroiditis", "Treatment" and "Management" were used in Portuguese, English and Spanish, combined with Boolean operators OR and AND. The search was carried out on the PubMed, BVS and *Periódicos Capes* databases. Free articles were included, in Portuguese, English or Spanish, published in the last 10 years, with solid methodology. Reviews, case reports, animal studies and inconsistent methodologies were excluded. **Results:** The search resulted in 950 articles. After applying the eligibility criteria, 310 studies were selected, with 20 being duplicated and removed. The review identified 12 relevant articles. The studies showed that the main treatment for Hashimoto's thyroiditis is levothyroxine therapy to correct hypothyroidism. Regular monitoring of hormone levels and ongoing assessment of symptoms are essential for effective management of the condition. **Conclusion:** The management of Hashimoto's thyroiditis takes into account that hypothyroidism is transient, but most patients require lifelong thyroid hormone replacement, typically levothyroxine 75 to 150 mcg orally once a day and regular monitoring of hormone levels. A continuous, personalized approach is crucial to controlling symptoms and preventing complications. Conflicts of Interest: There are no conflicts of interest. **Keywords:** Hashimoto's thyroiditis; treatment; management.

MISCELÂNEA

2553

DIAGNOSIS OF POLYGLANDULAR SYNDROME TYPE IIIB FROM SEVERE ANEMIA: CASE REPORT

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Case report: Female patient, 58 years old, without previous comorbidities, admitted to hospital in Recife-PE with symptoms of asthenia, dizziness, weight loss (10 kg in 2 years) and lower limb pain for 1 year. On admission examination, anemia (hemoglobin 4.6) and altered thyroid hormones were observed, compatible with primary hypothyroidism (TSH 6.56, free T4 0.8, T3 0.6). Clinical stabilization and etiological investigation were performed, and low levels of vitamin B12 (50) were found. She was referred to the outpatient clinic for medical follow-up, when an upper digestive endoscopy was requested, which revealed atrophic gastritis and a positive anti-TPO result, resulting in a diagnosis of polyglandular syndrome type 3B. **Discussion:** Polyendocrine syndromes are conditions in which there is a genetic predisposition to the development of multiple autoimmune diseases (ADs).These syndromes are classified into four types: type I, which associates Addison's disease, chronic mucocutaneous candidiasis or idiopathic hypoparathyroidism; type II, which includes Addison's disease associated with autoimmune thyroid disease (AITD) and/or type 1 diabetes mellitus; type III, in the presence of AITD associated with other ADs; with the exception of the adrenal gland, and is further subdivided into three groups: A – association between AITD and T1DM; B – association between AITD and pernicious anemia; C – association between AITD and vitiligo and/or alopecia and/or other ADs. Type IV is an association of DAIS that do not meet the criteria for any of the previous types. Atrophic gastritis is a condition in which chronic inflammation occurs in the lining of the stomach, leading to the loss of acid-producing cells and, in advanced stages, to atrophy of the gastric glands. The most common cause is an autoimmune response against the parietal cells of the stomach, responsible for the production of hydrochloric acid and intrinsic factor, important for the absorption of vitamin B12. The association of such a disease with autoimmune thyroiditis should be approached as a polyendocrine syndrome, due to the coexistence of autoimmune pathologies and usually requires an integrated approach. **Final comments:** Polyglandular syndrome represents a clinical challenge because it is a complex condition, with the possibility of diverse symptomatic presentation and the need for joint management by several medical specialties, with syndromic diagnosis being important for adequate therapy. **Keywords:** polyglandular syndrome; autoimmune thyroid disease; pernicious anemia.

OBESIDADE

2555

WEIGHT LOSS AND SAFETY OF TIRZEPATIDE IN OBESE PATIENTS WITH AND WITHOUT DIABETES: A SYSTEMATIC REVIEW AND UPDATED META-ANALYSIS OF RANDOMIZED STUDIES

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Introduction: Obesity is a chronic disease that significantly increases the risk of developing various comorbidities and health complications, underscoring the importance of effective methods for reducing body weight. In this context, tirzepatide, a dual glucose-dependent insulinotropic peptide (GIP) and glucagon-like peptide-1 receptor agonist (GLP-1 RA), has been a target as a treatment for obesity. However, there is a lack of comprehensive knowledge about the long-term effects and safety profile of tirzepatide. **Objectives:** To analyze the efficacy and safety of tirzepatide in obese patients with or without diabetes. **Methods:** We systematically searched PubMed, EMBASE, and Cochrane databases for randomized controlled trials (RCTs) comparing the effectiveness and safety of tizerpatide at 5 mg and 10 or 15 mg *versus* placebo in obese patients with or without diabetes mellitus. Primary endpoint was (i) change in body weight (kg), while the secondary endpoint was (ii) incidence of patients with ≥ 1 treatment-emergent adverse event. Statistical analysis was carried out using RevMan 5.1.7. This meta-analysis was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. **Results:** Data from six randomized controlled trials (RCTs) involving 3,099 patients were analyzed. Patients treated with tirzepatide experienced a significantly greater reduction in body weight compared to those receiving a placebo (MD -12.16 kg; 95% CI -17.35 to -6.98; p = 0.02). Subgroup analysis indicated that tirzepatide at doses of 10 or 15 mg led to a more pronounced weight loss than the 5 mg dose ($p_{interaction}$ = 0.02). Additionally, tirzepatide was associated with a higher incidence of adverse events when compared to placebo (OR 1.51; 95% CI 1.23 to 1.85; p = 0.0001), with no significant difference between dosages ($p_{interaction}$ = 0.96). **Conclusion:** Tirzepatide showed great potential in reducing body weight, especially at doses of 10 or 15 mg. Furthermore, tirzepatide caused more adverse events than placebo, with no difference between dosages. These results highlight the potential of tirzepatide on weight loss, indicating the importance of further studies to confirm its effects. **Keywords:** tirzepatide; obesity; overweight.

TIREOIDE

2556

IMMUNE CHECKPOINT INHIBITOR-INDUCED THYROIDITIS – CASE SERIES

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Case presentations: Case 1: 59-year-old male, diagnosed with metastatic clear cell renal carcinoma, undergoing treatment with nivolumab and ipilimumab. After 3 months of treatment, follow-up tests showed free T4 (T4L) of 2.02 ng/dL and TSH < 0.02 mIU/L. Both TRAb and anti-TPO antibodies were negative. Case 2: 72-year-old male, diagnosed with hepatocellular carcinoma, undergoinig treatment with atezolizumab. After 2 months of treatment, follow-up tests showed T4L 3.7 ng/dL and TSH < 0.05 mIU/L. Both TRAb and anti-TPO antibodies were negative. Case 3: 41-year-old female, diagnosed with invasive ductal carcinoma, undergoing treatment with pembrolizumab. After 1 month of treatment, she sought medical care due to cervical pain, fatigue, and palpitations. Tests showed T4L 5.39 ng/dL and TSH 0.02 mIU/L. Both TRAb and anti-TPO antibodies were negative. Case 4: 47-year-old female, diagnosed with invasive ductal carcinoma, undergoing treatment with pembrolizumab. After 6 months of treatment, follow-up tests showed a progressive decline in TSH levels (nadir 0.08 mIU/L), with normal T4L (1.61 ng/dL), despite being asymptomatic. Both TRAb and anti-TPO antibodies were negative. All patients had normal thyroid function tests prior to starting treatment with checkpoint inhibitors (ICI). Following the initial presentation of thyrotoxicosis, all patients developed persistent hypothyroidism. **Discussion:** We present 4 cases of thyroid-related adverse events induced by ICIs. These adverse events include various presentations, such as hyperthyroidism, thyrotoxicosis, hypothyroidism, and "thyroid storm." The most common manifestation is hypothyroidism in the context of destructive thyroiditis, often being permanent. These thyroid dysfunctions can occur in 1% to 6% of patients undergoing ICI treatment, highlighting the need for testing thyroid function (TSH, T4L, and T3) before and during the treatment period. In the cases presented above, laboratory monitoring and diagnostic suspicion enabled early identification and appropriate treatment of these conditions. **Final comments:** Monitoring thyroid-related adverse events in patients under immunotherapy is crucial for preventing severe complications such as thyroid storm and ensuring proper treatment of conditions like hypo- and hyperthyroidism, improving patients' quality of life. **Keywords:** immune checkpoint inhibitor; thyroiditis; hypothyroidism.

DIABETES MELLITUS

2557

CORRELATIONS BETWEEN GLYCEMIC CONTROL AND THE OCCURRENCE OF COMPLICATIONS IN PATIENTS HOSPITALIZED WITH DIABETES MELLITUS IN A UNIVERSITY HOSPITAL: A CROSS-SECTIONAL STUDY

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Introduction: Diabetes mellitus (DM) is a pervasive chronic endocrine-metabolic disorder, globally recognized for its significant morbidity and mortality. Effective glycemic control is essential for mitigating the risk of acute and chronic complications, thereby enhancing patient prognosis and reducing healthcare burdens. **Objective:** This study aims to elucidate the correlation between glycemic control and the incidence of complications among patients with DM admitted to the *Hospital Universitário Júlio Bandeira* (HUJB). **Methods:** A retrospective cross-sectional study was conducted, including patients diagnosed with type 1 and type 2 DM admitted to HUJB from January 2018 to January 2023. The sample comprised 24 patients, including 5 individuals with multiple admissions, totaling 29 hospitalizations. The study was approved by the Human Research Ethics Committee CEP/CFP/UFCG (CAAE 68720123.7.0000.5575). Data were collected on socio-demographic variables, clinical profiles, and hospitalization details. Statistical analyses were performed to identify the prevalence of complications and assess their association with glycemic control. **Results:** Demographic analysis revealed a predominance of male patients (66.67%). The most represented age group was over 70 years (41.66%). Hypertension was the most prevalent comorbidity, affecting 48.14% of patients. Vascular complications were identified in 65.51% of cases, while diabetic nephropathy was present in 16.67%. Diabetic foot was the leading cause of hospitalization (65.51%). Upon admission, 68.42% of patients exhibited decompensated capillary blood glucose levels. Regular Human Insulin was the most frequently used insulin type, administered in 43.75% of cases, followed by NPH insulin at 39.58%. Glargine and Aspart were used in 10.41% and 6.25% of cases, respectively. Among oral hypoglycemic agents, Metformin was the most commonly prescribed, used in 33.34% of cases, followed by Empagliflozin (22.23%), Alogliptin (11.12%), Glimepiride (11.12%), Linagliptin (11.12%), and a combination of Sitagliptin Phosphate and Metformin (11.12%). Glycemic control improved in 31.03% of hospitalizations, underscoring the benefits of inpatient care for glycemic management. **Conclusion:** Therefore, hospitalizations at HUJB predominantly involved male patients over 70 years old, with hypertension, vascular complications, and diabetic nephropathy being common comorbidities, and diabetic foot was the primary cause of hospitalization. **Keywords:** diabetes mellitus; glycemic control; complications.

ADRENAL E HIPERTENSÃO

2559

BRAZILIAN SCENARIO OF LIVE BIRTHS WITH CONGENITAL ADRENAL MALFORMATIONS

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Introduction: The adrenal glands are responsible for synthesizing and secreting hormones that play vital physiological roles in regulating the body's metabolism and hydroelectrolyte homeostasis, such as steroids and catecholamines. In children, the most common cause of adrenal dysfunction is congenital adrenal hyperplasia, an autosomal recessive condition resulting from enzyme deficiencies in cortisol synthesis, and the most severe forms usually manifest during the neonatal period. **Objective:** This study aims to analyze occurrences of live births with congenital adrenal malformations in Brazil from 2014 to 2023. **Methods:** This is an ecological study based on information from the *Sistema de Informações sobre Nascidos Vivos* (SINASC) available on the *Plataforma Integrada de Vigilância em Saúde* (IVIS). Data were examined considering the following variables: year of notification, region, sex, ethnicity, prenatal consultations, gestational month when prenatal care began, pregnancy weeks, birth weight, mother's age group and maternal level of education. **Results:** Between January 2014 and December 2023, Brazil recorded 38 cases of live births with congenital malformations of the adrenal glands. The highest number was recorded in 2015 (8) and, during the period analyzed, the Southeast region was responsible for 60.52% of the cases (23). The most affected profile was male (21%) and white (50%), born weighing 2,500 grams or more (55.26%). About 57.89% (22) of the children were born at term, and 42.11% (16) were born prematurely. Regarding maternal aspects, most mothers attended seven or more prenatal care appointments (47.36%), with follow-up starting predominantly in the second month of pregnancy (28.94%). In addition, 63.15% (24) had been between 8 and 11 years of schooling and 42.1% (16) were between 30 and 34 years old. **Conclusion:** The higher number of cases of congenital adrenal malformations recorded in children of mothers with higher level of education may be associated with greater access to information about the need to perform the National Newborn Screening Program available in Brazil, test able to diagnose congenital adrenal hyperplasia. It is thought that there is a probable national underreporting due to the lack of knowledge among a large part of the population about the availability and importance of carrying out this test for early diagnosis and consequent timely treatment. **Keywords:** adrenal; congenital malformations; live births.

DIABETES MELLITUS

2560

FREQUENCY AND IMPACT OF ALCOHOL USE ON THE GLYCEMIC PROFILE OF INDIVIDUALS WITH TYPE 1 DIABETES MELLITUS: REAL-WORLD EVIDENCE

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Introduction: Type 1 diabetes mellitus (T1DM) is a chronic disease characterized by hyperglycemia, which can lead to chronic micro and macrovascular complications. Several factors can influence glycemic control: frequency of insulin administration, blood glucose monitoring, diet, physical activity and alcohol consumption. The literature is still controversial regarding the consequences of drinking alcohol on the glycemic profile of individuals with T1DM. The impact of alcohol on the liver and other peripheral tissues and its consequences on glycemic control are also divergent. The recent increase in the frequency of alcohol users among people with T1DM and its implications on glycemic control impose needs in the management of these patients. **Objectives:** a) establish the frequency of individuals with T1DM who use alcoholic beverages in Brazil, based on the Glic® database, b) compare glycemic control, doses and frequency of insulin use between drinkers and non-drinkers, c) evaluate the types of drinks consumed and, finally, d) the impact on blood glucose levels on days of alcohol consumption. **Methods:** This is a cross-sectional study carried out at the *Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo* in 2022, where data from patients with T1DM using the Glic® application were evaluated. The sample was chosen by convenience and for all results, a significance level of 5% was used. **Results:** Of the 960 individuals, the majority were female (56%), with a median of 34 years of age, BMI of 24.4 kg/m² and 15 years of disease diagnosis and mostly from the Southeast region of Brazil. The frequency of alcohol consumption by patients with T1DM in 2022 was 38.4%, with 98.7% low-risk drinkers and 1.3% high-risk drinkers. Binge behavior was observed in 18.7% of low-risk drinkers and 80% of high-risk drinkers. These drinking individuals had a higher age and body mass index and a longer time since diagnosis of the disease compared to non-drinkers, reported more capillary blood glucose levels and experienced a higher percentage of hypoglycemia, mainly level 2 hypoglycemia (2% x 0.9%). **Discussion:** The frequency of alcohol users in young Brazilians with T1DM is not low – 38.4% drinkers (low and high risk). These results are important, mainly due to the greater risk of hypoglycemia. Education and guidance on the consequences of drinking alcohol and measures to mitigate this effect are really important. **Keywords:** type 1 diabetes mellitus; alcohol consumption; glycemic control.

NEUROENDOCRINOLOGIA

2561

FUNCTIONING GONADOTROPH ADENOMA: CASE REPORT

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Case presentation: A 48-year-old male presented with progressive visual loss over 5 years, predominantly in the temporal fields. Following specialist evaluation, he underwent a pituitary MRI revealing a 6.1 x 6.4 x 4.1 cm lesion in the sellar region. Laboratory tests showed total testosterone of 941 ng/dL (normal up to 816), free testosterone of 958 ng/dL (normal up to 640), and FSH of 36 UI/L (normal up to 10). Prolactin levels were normal, while IGF-1 and cortisol were low, consistent with central hypothyroidism. Immunohistochemistry from the initial transcranial surgery diagnosed a non-secretory pituitary adenoma. Postoperatively, the patient reported improved vision but developed depressive symptoms and reduced libido. Due to significant residual lesion, he underwent two subsequent surgeries – transsphenoidal and another transcranial. The second immunohistochemistry revealed FSH positivity in 80% of neoplastic cells, and the third, in 15%, indicating a diagnosis of functioning gonadotroph adenoma. **Discussion:** Pituitary adenomas are benign tumors constituting 10%-15% of all brain tumors, commonly presenting with signs and symptoms of hormonal hypersecretion. Gonadotroph adenomas, the most frequent subtype among silent pituitary adenomas, are typically diagnosed due to compressive symptoms from growth or incidentally. They rarely exhibit hormone hypersecretion, which can lead to elevated serum gonadotropin levels and symptoms such as testicular hypertrophy, ovarian hyperstimulation, menstrual irregularities, and early puberty. Surgical treatment is indicated. **Final comments:** This case involves a giant gonadotropin-producing macroadenoma, a rarity with few cases reported in the literature. This diagnosis should be considered in the context of elevated testosterone with normal to high gonadotropins. The disparity in immunohistochemistry results likely reflects tumor heterogeneity. **Keywords:** gonadotroph; adenoma; tumor.

TIREOIDE

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THYROTOXIC HYPOKALEMIC PERIODIC PARALYSIS: CASE REPORT

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Patient, male, 29 years old, Caucasian, without previous comorbidities, admitted to a tertiary hospital in Pernambuco with strength deficit in the lower limbs and difficulty walking, a condition that began 24 hours before admission. He denied trauma. On physical examination, he presented quadriparesis with proximal weakness, mild hypotonia in the lower limbs and bicipital, tricipital and styloradial reflexes, bilaterally reduced patellar and achilleus, in addition to tachycardia. Imaging exams (head and spine CT), CSF test and electroneuromyography showed no changes. Through laboratory tests, infectious causes were ruled out, but the patient developed severe hypokalemia (K 2.8 mEq/L). Given the tachycardia and myopathy under investigation with normal ENMG, hyperthyroidism was considered, which was evidenced by the tests performed: suppressed TSH (< 0.01 µIU/mL), increased free T4 (6.7 ng/dL), in addition to positive TRAB (21 U/L). USG of the thyroid showed diffuse thyroidopathy, without nodules. These findings contributed to the diagnosis of Graves' disease, leading to Hypokalemic Thyrotoxic Periodic Paralysis (THPP). Therapy was started with methimazole 20 mg/day, oral propranolol and intravenous potassium replacement, with complete gradual remission of symptoms. THPP is a rare and potentially lethal complication of hyperthyroidism, characterized by muscle weakness and hypokalemia. It is more prevalent in young adults between the second and third decade of life, of Asian origin and males. In this pathology, the increased concentration of thyroid hormone promotes greater binding of the Sodium-Potassium-ATPase pumps in the membranes of skeletal cells, making them more susceptible to beta adrenergic and insulin stimuli, precipitating muscle paralysis. The differential diagnosis should include familial hypokalemic periodic paralysis, myasthenia gravis, Guillain-Barre, muscular dystrophy, and acute myelopathy. Untreated THPP can lead to severe hypokalemia, cardiovascular events and even death. Therefore, this case highlights the importance of investigating thyroid alterations as a differential diagnosis in cases of paresis. **Keywords:** paralysis; hyperthyroidism; hypokalemia.

DIABETES MELLITUS

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OVERVIEW OF HOSPITALIZATIONS FOR TREATMENT OF COMPLICATED DIABETIC FOOT IN THE STATE OF CEARÁ

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Introduction: Diabetic foot is one of the main chronic complications of untreated diabetes mellitus. Endothelial damage caused by the hyperglycemic state to the vasa nervorum, with consequent loss of peripheral sensitivity, associated with macrovascular damage to the extremities are responsible for the emergence of chronic ulcerated lesions that can become infected and lead to limb amputation. Due to the great association of this complication with lack of glycemic control, studying the prevalence of this comorbidity, as well as its outcomes and consequences, in a population can help health authorities monitor the quality of diabetes mellitus treatment in primary care. **Objective:** This work aims to expose and analyze the number and evolution of hospitalizations for the treatment of complicated diabetic foot in hospitals in the State of Ceará between the period from January 2014 to December 2023. **Methods:** The data exposed in this study were collected from the System of Hospital Information (SIH/SUS) of the Department of the Unified Health System (DATASUS). The following variables were included for data collection: year of hospitalization, health macro-region, nature of care, deaths and mortality rate. **Results:** In the period analyzed, 12.194 individuals were hospitalized for treatment of complicated diabetic foot in Ceará, so that the majority of these hospitalizations, 6,100, occurred in the macro-region of Fortaleza. From 2014 to 2023, the number of hospitalizations was respectively: 784, 852, 1,008, 1,117, 1,229, 1,333, 1,256, 1,376, 1,515 and 1,724, representing a growth of approximately 119% over 10 years. Of this total, 11,789 hospitalizations occurred urgently, while the remainder, 405, occurred electively. Furthermore, 395 patients died during hospitalization in this period, so that the macro-region of Fortaleza presented the highest mortality rate, corresponding to 4.23%, followed by the macro-region of Cariri (3.20%) and the macro-region of Sertão Central (2.64%). Of the patients admitted urgently, 3.33% died, while only 0.50% of patients admitted electively had this outcome. **Conclusion:** The increase in the number of hospitalizations for the treatment of complicated diabetic foot in Ceará reinforces the relevance of care in primary care, since carrying out a targeted physical examination and educating the diabetic patient regarding the necessary care are actions capable of reducing the incidence of diabetes morbidity in question. **Keywords:** diabetes mellitus; diabetic foot; morbidity.

DIABETES MELLITUS

2565

PANORAMA OF HOSPITALIZATION OF DIABETICS IN THE STATE OF CEARÁ: AN ECOLOGICAL STUDY

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Introduction: Patients with diabetes mellitus have a higher risk of developing complications during hospitalization, mainly due to their greater susceptibility to adverse conditions such as infections and thrombosis. **Objective:** This study aims to analyze occurrences of hospitalizations in individuals with diabetes mellitus in the state of Ceará from 2014 to 2023, comparing the results obtained with the total number of hospitalizations in this time interval. **Methods:** This is an ecological study based on information from the *Sistema de Informações Hospitalares* (SIH/SUS) of *Departamento do Sistema Único de Saúde* (Datasus). The selected data considered the following variables: year of care, macro-region, age, biological sex, deaths and mortality rate (per 100,000 inhabitants). **Results:** Between January 2014 and December 2023, the state of Ceará recorded 37,328 hospitalizations of individuals between 20 and 79 years of age with diabetes mellitus. The highest number of cases was recorded in 2022 (4,188). The most affected age group was individuals between 60 and 69 years old, representing 29.81% (11,129) of the total. Regarding biological sex, men showed a predominance of cases (19,912) compared to women (17,416). The Fortaleza macro-region accounted for most of the registered cases (15,717). The highest prevalence of deaths occurred in 2015 (168), which also had the highest mortality rate in the period studied (3.86%). The average hospital stay increased considerably for diabetic patients (7.29 days) compared to the total population hospitalized in the period studied (5.65 days). **Conclusion:** The verification that the average hospital stay for diabetics is higher than the average for the total number of hospitalizations shows that the disease has a significant influence on achieving the expected clinical response to the therapies used in hospital, so that the recovery time for diabetics tends to be longer. In addition, this data has a probable association with the most prevalent complications in this group in relation to the general population, which prolong the length of hospital stay. **Keywords:** hospitalization; diabetics; complications.

METABOLISMO ÓSSEO E MINERAL

2566

BONE MICROARCHITECTURE ALTERATIONS OBSERVED WITH HIGH-RESOLUTION PERIPHERAL QUANTITATIVE COMPUTED TOMOGRAPHY (HR-PQCT) IN A BRAZILIAN POPULATION SAMPLE WITH LOW BONE MASS

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Introduction: HR-pQCT is a powerful imaging method that measures bone microarchitecture (BMa). The analysis is limited to the radius (R) and distal tibia (T), allowing for the evaluation of volumetric bone density (Tt.vBMD), cortical and trabecular thickness (Ct.Th; Tb.Th), trabecular number and separation (Tb.N, Tb.Sp), cortical porosity (Ct.Po), and bone strength. **Objective:** To verify changes in BMa in individuals with low bone mass. **Methods:** 122 individuals (76 women, 42-75 years; 46 men, 50-79 years) were recruited from a community-based study to establish reference curves for BMa parameters using the new generation of HR-pQCT (Xtreme CT II, Scanco, CH). From these, we selected 38 women (58 ± 9 years) and 23 men (62 ± 7 years) diagnosed with osteopenia or osteoporosis by DXA (Hologic, QDR 4500). The diagnosed individuals (OG) were separated by age and sex, female (OGF) and male group (OGM). In order to investigate differences in bone microarchitecture, we composed a group of healthy individuals (CG), matched by the same characteristics, 38 women (56 ± 10 years) and 23 men (62 ± 7 years), included in the respective control groups, female (CGF), and male group (CGM). For statistical analyses, the mean values of the parameters were compared between the groups, and the results were considered significant at $p < 0.05$. **Results:** Compared to the CG, both OG showed lower Tt.vBMD in R and T (fem, R: -20%, T: -17%; male, R: -11%, T: -17%). Structural parameter impairments were observed in OG but differed between R and T and sexes: Ct.Th (fem, R: -17%, T: -14%; male T: -15%), Tb.N (fem, R: -13%, T: -16%; male, R: -9%) and Tb.Sp (fem, R: +14%, T: +19%; male, R: +10%). However, only in OGM was the Tb.Th lower observed (R: -6%, T: -5%), and in OGF, higher Ct.Po was observed (T: +48%). BMa changes negatively impacted bone strength in both sexes in OG (fem, R: -29%, T: -22%; masc, R: -30%, T: -34%). **Conclusion:** DXA is the gold standard method for diagnosing osteoporosis; however, it does not evaluate specific bone parameters. In this analysis of the Brazilian population, HR-pQCT proved to be effective in detailing bone changes related to osteoporosis. It was observed that the deterioration of bone compartments after the age of 40 varies according to gender, region, and the parameters assessed, predominantly cortical thickness, volumetric bone density, and bone strength. **Keywords:** bone loss; bone microarchitecture; HR-pQCT.

DIABETES MELLITUS

2567

ANALYSIS OF HOSPITAL COSTS FOR HOSPITALIZATIONS FOR SYSTEMIC ARTERIAL HYPERTENSION AND DIABETES MELLITUS IN BRAZIL AND THE NORTHEAST: 2018 TO MARCH 2024

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Introduction: Chronic diseases such as systemic arterial hypertension (SAH) and diabetes mellitus (DM) are responsible for a significant proportion of hospital admissions in Brazil, generating high costs for the health system. **Objective:** This study aims to analyze the hospital costs associated with these conditions in Brazil and the Northeast region from 2018 to March 2024, identifying temporal trends and comparing regional and national data. **Methods:** This ecological, quantitative and descriptive study uses data from the Hospital Morbidity Information System (SIH/SUS) of the Department of Informatics of the Unified Health System (DATASUS). The variables analyzed include total costs, average costs per hospitalization and time trends in spending. The research evaluates temporal trends and compares the figures between Brazil and the Northeast, highlighting the economic impact of these pathologies on the health system. **Results:** The data indicate an increase in hospital spending related to hospitalizations for SAH and DM, both in the Northeast and in Brazil, over the period studied. In Brazil, the total value of hospitalizations per year increased by 33.44% from 2018 to 2023, from R$ 121,549,386.01 to R$ 162,196,921.72. In 2024, the monthly average for the first three months is R$ 13,987,309.92, while in 2023 this average was R$ 13,516,410.14, indicating a possible general increase in values at the end of the year, following the trend observed from 2018 to 2023. In the Northeast, the overall increase was 25.61% from 2018 to 2023, from R$ 35,141,093.78 to R$ 44,141,091.35. However, the monthly analysis for 2024 in the Northeast shows an expense of R$ 3,669,503.79, while in 2023 the monthly figure was R$ 3,678,424.28, revealing a slight reduction in monthly spending in 2024, which may indicate a decrease in the total amount at the end of the year. The average amount per hospitalization also increased: in Brazil, from R$ 642.25 in 2018 to R$ 915.01 in 2023, and in the first months of 2024, to R$ 969.72. In the Northeast, the average went from R$ 543.91 in 2018 to R$ 775.62 in 2023 and reached R$ 821.90 in 2024. **Conclusion:** In the period and area analyzed, there is a significant economic impact resulting from hospitalizations for SAH and DM, with a progressive increase in the average cost. The trends indicate the need for effective health policies to mitigate these costs and improve the management of these chronic conditions. **Keywords:** diabetes mellitus; hypertension; hospital costs.

TIREOIDE

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PROFILE OF HOSPITALIZATIONS FOR THYROTOXICOSIS IN BRAZIL: A TIME SERIES STUDY

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Introduction: Thyrotoxicosis is a clinical condition characterized by an excess of thyroid hormones in circulation, resulting in a hypermetabolic state that affects multiple body systems. Despite being a treatable condition, thyrotoxicosis remains a significant concern due to its variety of clinical manifestations and potential severe complications, such as atrial fibrillation and thyroid storm. Recent studies have focused on improving diagnostic and therapeutic methods for managing thyrotoxicosis, highlighting the importance of appropriate treatment to minimize risks and improve patients' quality of life. Objectives: To evaluate changes in the hospitalization profiles of patients with thyrotoxicosis in Brazil from 2013 to December 2023. **Material and methods:** This is a descriptive study involving the analysis of time series of hospitalization rates of patients with thyrotoxicosis within the SUS (Unified Health System). Information related to the patients and the nature of the care was collected from the SUS Hospital Information System, along with the data for calculating the hospitalization rate. The average annual percentage variation (AAPV) of hospitalization rates was estimated through a generalized linear regression using the Prais-Winsten method. **Results:** During the selected period, a total of 7,032 hospitalizations of patients with thyrotoxicosis were recorded in Brazil, of which 5,621 (79.9%) were female. Overall, the hospitalization rate showed an increasing trend of 4.20% ($p = 0.028$), reflected among both female (4.40%; $p = 0.031$) and male patients (5.38%; $p = 0.019$). There was an increasing trend across all age groups: under 20 years (1.65%; $p = 0.38$), between 20 and 50 years (3.70%; $p = 0.038$), and over 50 years (5.74%; $p = 0.042$). Regarding the nature of the care, elective hospitalizations showed an increasing trend (3.42%; $p = 0.271$), as did emergency hospitalizations (4.05%; $p = 0.016$). **Conclusion:** The data indicate an increase in hospitalizations for thyrotoxicosis in Brazil over the analyzed period, both globally and across different demographic groups. These data may reflect a higher incidence of thyrotoxicosis or improvements in diagnostics, as well as potential gaps in the prevention and outpatient management of the disease, suggesting a growing need for medical attention and prevention for this morbidity. **Keywords:** thyrotoxicosis; descriptive epid; hospitalizations.

OBESIDADE

2569

EFFICACY AND SAFETY OF LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS (LRYGB) *VERSUS* LAPAROSCOPIC SLEEVE GASTRECTOMY (LSG) FOR WEIGHT LOSS IN SEVERE OBESE PATIENTS: AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED STUDIES

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Introduction: Obesity is a chronic, multifactorial disease and a global public health issue, defined by excess body fat and a BMI ≥ 30 kg/m². Surgical interventions like laparoscopic sleeve gastrectomy (LSG) and laparoscopic Roux-en-Y gastric bypass (LRYGB) are effective treatments. However, there is a significant lack of knowledge about the differences in efficacy and safety between these techniques. **Objectives:** To analyze the efficacy and safety of LRYGB compared to LSG in obese patients. **Methods:** We systematically searched PubMed, EMBASE, and Cochrane Central databases for randomized controlled trials (RCTs) comparing LRYGB with LSG in obese patients with BMI ≥ 35 kg/m². Primary endpoints were (i) excess weight loss, (ii) resolution/improvement of hypertension and (iii) resolution/improvement of T2DM from baseline, while the secondary endpoint was (iv) incidence of postoperative complications. Statistical analysis was carried out using Review Manager 5.1.7. This meta-analysis was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. **Results:** We included 2.956 patients from seven RCTs. Obese patients who underwent LRYGB presented a significant higher weight loss (MD -1.34; CI 95% -1.62 to -1.05; $p < 0.00001$) when compared with LSG. There was no significant difference regarding the resolution/improvement of hypertension (OR 0.70; CI 95% 0.46 to 1.06; $p = 0.09$) and diabetes mellitus (OR 0.95; CI 95% 0.24 to 1.69; $p = 0.87$) between the two techniques. Moreover, the LRYGB group had a higher incidence of postoperative complications (OR 0.64; CI 95% 0.48 to 0.84; $p = 0.002$). **Conclusions:** In obese individuals, the LRYGB method was linked to greater weight loss and a higher rate of postoperative complications. However, no statistically significant differences were observed in the resolution or improvement of hypertension and diabetes between LRYGB and LSG. These findings underscore the potential of LRYGB in obesity management but also highlight the need to weigh its benefits against the risk of complications. **Keywords:** bariatric surgery; weight loss; obesity.

ENDOCRINOLOGIA PEDIÁTRICA

2570

EPIDEMIOLOGICAL PROFILE OF PEDIATRIC PATIENTS HOSPITALIZED FOR DIABETES MELLITUS IN BRAZIL BETWEEN 2019 AND 2023

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Diabetes mellitus (DM) is a chronic metabolic disease of varied etiology, with risk factors at the social, behavioral, environmental and genetic levels. In children and adolescents, an increase in the prevalence of DM has been observed mainly along with obesity, associated with a sedentary lifestyle and unhealthy eating habits. The objective is to analyze hospital admissions and costs, average length of stay and mortality rate of pediatric patients with DM in Brazil between 2019 and 2023. This is an observational study that evaluates the morbidity and mortality profile in pediatric patients with DM from January 2019 to December 2023 in the Brazilian regions. The data were obtained using the Hospital Admissions System (SIH/SUS). The variables "Region", "Total Value", "Sex", "Color/Race", "Deaths", "Average Length of Stay" and age groups up to 19 years were selected. Between 2019 and 2023, 49,599 hospitalizations were recorded in Brazil, with the highest percentage observed in the age group from 10 to 14 years (36.41%) and more prevalent among females (57%). The regions with the highest number of hospitalizations were the Southeast (21,536), Northeast (12,769), followed by the South (8,232). Most hospitalizations were emergency, representing 94% of the total. Regarding the color/race variable, the hospitalization of mixed-race people stood out, accounting for 21,889 young people. Regarding the average length of stay, the value was 5.8 days, with the highest average among children under 1 year old, with an average of 7.8 days of hospitalization. Hospitalizations totaled a cost of R$ 51,221,191.61 for the public coffers, with a greater predominance of expenses among females. Regarding deaths, the total was 290, with a higher prevalence in the population aged 15 to 19 years (53%). In agreement with the pattern of hospitalizations, the Southeast region was the most prevalent with a total of 109 deaths, followed by the Northeast region (99). Finally, there was no significant variation in deaths in the last 5 years, with a peak (67 deaths) in 2021, a standard deviation of 21.35 and an average of 48.3 deaths per year. Therefore, these data are useful for adopting preventive measures, mainly through health care in basic units, encouraging the adoption of lifestyle changes and adherence to pharmacological treatment, in order to reduce the number of hospitalizations, hospital costs and, mainly, the mortality rate associated with DM among pediatric patients. **Keywords:** diabetes mellitus; pediatrics; epidemiology.

METABOLISMO ÓSSEO E MINERAL

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HYPERCALCEMIA RELATED TO THE USE OF PMMA FOR AESTHETIC PURPOSES: CASE REPORTS

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Case 1: A 59-year-old woman was referred to the endocrinology service due to the finding of hypercalcemia (corrected calcium 12.3 mg/dL) during an emergency visit for flu-like symptoms. She had a history of aesthetic buttock augmentation with polymethylmethacrylate (PMMA) in 2019. Additional tests showed 1,25-OHD at 53 ng/mL; PTH at 12 pg/mL; 25-OHD at 28 ng/mL; and serum creatinine at 1.5 mg/dL (eGFR CKD-EPI 40 mL/min/1.73 m^2). PET-FDG imaging revealed diffuse increased metabolism in the bilateral gluteal region, consistent with an active inflammatory process. She started oral prednisone, followed by denosumab, without achieving control of the hypercalcemia. Oral ketoconazole 200 mg twice daily was then initiated, resulting in normalization of calcium levels. **Case 2:** A 53-year-old woman presented to the emergency department with acute pyelonephritis in 2021. She had a history of PMMA injections in the buttocks on two occasions in 2018. Additional tests showed hypercalcemia (corrected calcium for albumin 13 mg/dL), PTH at 13 pg/mL; 25-OHD at 30 ng/mL; 1,25-OHD at 47 ng/mL; and serum creatinine at 1.13 mg/dL (eGFR CKD-EPI 56). PET-FDG imaging showed multiple areas of hypermetabolic tissue thickening in the subcutaneous regions of the gluteal and perineal areas, consistent with granulomas, and diffuse/infiltrative hypermetabolism in the bilateral gluteal regions. She was treated with prednisone and four doses of zoledronic acid, achieving temporary control of hypercalcemia. An attempt with denosumab after a recurrence of hypercalcemia was unsuccessful. An intralesional injection of triamcinolone was also performed, without adequate control of calcium levels. Ketoconazole 200 mg twice daily was then started, leading to normalization of calcium levels. **Discussion:** PMMA is a non-biodegradable injectable filler that stimulates a local inflammatory reaction, followed by the deposition of granulation tissue. It is approved only for minor procedures in nasolabial folds. Foreign body granulomas associated with aesthetic injections can occur in up to 2.5% of cases and may trigger hypercalcemia due to a foreign body granulomatous reaction, secondary to extrarenal production of calcitriol. **Final comments:** Hypercalcemia caused by cosmetic injections can be severe and manifest years after the procedure. This possibility should be considered in middle-aged women presenting with non-malignant hypercalcemia not mediated by PTH. Renal insufficiency is the most common complication. **Keywords:** hypercalcemia; polymethylmethacrylate; granulomas.

DISLIPIDEMIA E ATEROSCLEROSE

2572

SEVERE PANCREATITIS DUE TO SEVERE AND REFRACTORY HYPERTRIGLYCERIDEMIA FOLLOWING CRYOLIPOLYSIS FOR BODY CONTOUR MODIFICATION: CASE REPORT

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Patient: A 52-year-old woman with current overweight and no previous or family history of dyslipidemia (DLP) (Total Cholesterol 235, HDL 50, Triglycerides 142 mg/dL) underwent 10 weekly sessions of lipolytic substance injections in the abdominal fat followed by a cryolipolysis (Cryo) session for the purpose of body contour modification. After 23 days, she developed abdominal pain followed by acute pancreatitis due to severe hypertriglyceridemia (triglycerides [TG] = 1,320 mg/dL). Despite dietary and pharmacological treatment, TG levels intriguingly increased to 1,880 and 3,329 mg/dL in 15 and 30 days, respectively. Centrifuged blood showed a creamy supernatant, consistent with chylomicrons (CM), and lipoprotein electrophoresis revealed an accumulation of pre-beta (71%) or VLDL. Plasmapheresis was indicated due to the risk of recurrent pancreatitis; however, recurrences of hyperTG > 1,000 mg/dL every 48 hours necessitated repeated procedures at the same frequency. **Discussion:** Non-surgical strategies for reducing localized adipose tissue and modifying body contour are popular. Cryo reduces localized fat by inducing adipocyte death. The free fatty acids (FFA) released by destruction are phagocytized by macrophages and removed from circulation. There are no usual restrictions for Cryo in individuals with DLP or recommendations for lipid evaluation before or after the procedure. The patient developed secondary pancreatitis due to severe hyperTG days after cryolipolysis. In the absence of other causes for pancreatitis, the emergence of new refractory hyperTG reinforces the cause-and-effect relationship. Adipocyte destruction by Cryo resulted in massive FFA release, promoting overproduction of VLDL and hyperTG. Inhibition of lipoprotein lipase (LPL) by excess FFA further exacerbated the accumulation of TG-rich particles (VLDL and CM) by restricting lipolysis, intensifying hyperTG. The refractoriness to treatment and the need for successive plasmapheresis can be justified by the prolonged effect of Cryo on adipocyte death and apoptosis. The absence of previous hyperTG in the patient, combined with the difficulty in metabolizing CM and VLDL, leads to the hypothesis of a heterozygous genetic deficiency of LPL. **Conclusion:** We report the first case, in our review, of severe pancreatitis due to refractory hyperTG following cryolipolysis. This likely involves a patient with a genetic disorder in LPL that predisposes to TG accumulation due to massive adipocyte destruction. **Keywords:** hypertriglyceridemia; plasmaferesis; cryolipolysis.

TIREOIDE

2574

PROFILE AND REGIONAL DISTRIBUTION OF PATIENTS HOSPITALIZED FOR THYROTOXICOSIS IN BRAZIL FROM 2014 TO 2023

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Introduction: Thyrotoxicosis is caused by increased serum levels of thyroid hormones, causing symptoms such as insomnia, agitation, tachycardia, and sweating, as well as changes in vital signs and atrial fibrillation. The main cause of primary thyrotoxicosis is Graves' disease, while pituitary adenoma is the main cause of secondary thyrotoxicosis. Thyrotoxic crisis, marked by organ dysfunction, is a serious cause of hospitalization for patients with this pathology and can be precipitated by factors such as surgeries, infections, and inadequate treatment of thyrotoxicosis. **Objective:** This study aims to expose the number of hospitalizations and the profile of patients admitted to health units due to thyrotoxicosis in Brazil from January 2014 to December 2023. **Methods:** The data presented were collected from the Hospital Information System (SIH/SUS) of the Department of the Unified Health System (DATASUS). The following variables were included for data collection: sex, age group, race/color, year of hospitalization, region, type of care, deaths, and mortality rate. **Results:** During the period analyzed, 6,520 hospitalizations for thyrotoxicosis were recorded, so that, from 2014 to 2023, the number of hospitalizations per year was, respectively: 518, 606, 559, 666, 657, 725, 491, 677, 787, and 834. Of these, 3,567 were urgent, while 2,953 were elective. The distribution of hospitalizations by region was as follows: 4,045 in the Southeast, 1,079 in the Northeast, 759 in the South, 389 in the Midwest, and 248 in the North. Regarding gender, most hospitalized patients were women, representing approximately 78.09% (5,092) of the records. Furthermore, the races/colors brown, white, black, yellow and indigenous corresponded to respectively 2,159, 1,901, 525, 140 and 9 hospitalizations, so that this information was not recorded in 1,789 cases. When analyzing the age group, adults aged 20 to 59 years were responsible for 5,024 hospitalizations, individuals aged 0 to 19 years for 461 hospitalizations and people over 60 years for 1,035 hospitalizations. Of the individuals hospitalized for thyrotoxicosis during this period, 119 evolved to death, so that, of these, 112 had been admitted as emergencies and 94 were women. **Conclusion:** The study reveals the predominance of hospitalizations due to thyrotoxicosis in women and young adults, with a higher incidence in the Southeast. Thus, the importance of adequate diagnosis and treatment to reduce complications is highlighted. **Keywords:** thyrotoxicosis; hospitalizations; patient profile.

DISLIPIDEMIA E ATEROSCLEROSE

2576

THE IMPACT OF ANABOLIC-ANDROGENIC STEROIDS ON LIPID PROFILES IN ATHLETES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Athletes widely use anabolic-androgenic steroids (ASS) to enhance performance and increase muscle mass. However, their effects on lipid profiles remain inconclusive in clinical studies. **Objective:** To evaluate the impact of AAS on the lipids profile. **Materials and methods:** We systematically searched Embase, Cochrane, and PubMed for studies comparing AAS users with non-users. Outcomes of interest were total cholesterol, LDL cholesterol (LDL), HDL cholesterol (HDL), HDL2C cholesterol (HDL2C), HDL3C cholesterol (HDL3C), APOB, APOA, and triglycerides. We pooled mean differences with 95% confidence intervals (CI) using a random-effects model. We used Review Manager for statistical analysis and followed the PRISMA guidelines for systematic review and metaanalysis. **Results:** We screened 3,387 articles and included 20 studies and (1,150 athletes). AAS was associated with elevated AAS use. APOB levels were elevated (MD = 0.5 [mmol/L], 95% CI = 0.3 to 0.7, $p < 0.01$), LDL (MD = 0.8 [mg/dL], 95% CI = 0.6 to 1.0, $p < 0.01$), total cholesterol (MD = 0.6 [mg/dL], 95% CI = 0.4 to 0.8, $p < 0.01$) and triglycerides levels (MD = 0.4 [mg/dL], 95% CI = 0.2 to 0.6, $p < 0.05$). Moreover, AAS was associated APOA-I (MD = -0.5 [mmol/L], 95% CI = -0.7 to -0.3, $p < 0.01$ HDL2C (MD = -0.6, 95% CI = -0.8 to -0.4, $p < 0.01$), HDL3C (MD = -0.4 [mg/dL], 95% CI = -0.6 to -0.2, $p < 0.01$), and overall HDLC (MD = -1.0 [mg/dL], 95% CI = -1.2 to -0.8, $p < 0.01$). **Conclusion:** This meta-analysis suggests that AAS is associated with a more atherogenic lipid profile, increasing cardiovascular risk in athletes. **Keywords:** anabolic-androgenic steroids (AAS); athletes; lipid profiles.

METABOLISMO ÓSSEO E MINERAL

2578

VITAMIN D INTOXICATION: CASE REPORT

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Case report: A 57-year-old female patient, with hypothyroidism (on regular use of levothyroxine 75 µg/day), without other previously diagnosed comorbidities, presented with worsening of the renal function, muscle weakness, lack of appetite and weight lost for the past 2 months. The biochemical test results were creatinine 1.62 mg/dL, calcium 10.8 mg/dL, ionized calcium 1.58 mmol/L, parathyroid hormone (PTH) 15.3 pg/mL and 25(OH)D 438.2 ng/dL. Considering the patient took vitamin D for some years before admission, at 2,000 IU per day, the laboratory diagnosis was probably influenced by possible vitamin D intoxication. The patient took a compounded cholecalciferol supplement and overdose of the capsules was suspected. Then, vitamin D supplementation was suspended and renal function, as well as serum calcium and vitamin D levels were monitored. The laboratory results dropped, and vitamin D levels decreased slowly as expected, because of its elimination profile. Six months after stopping vitamin D, laboratory tests showed creatinine 1.08 mg/dL, calcium 9.7 mg/dL and 25(OH)D 68.2 ng/mL. **Discussion:** Currently, vitamin D supplementation has been carried out more frequently, as, in addition to increasing the absorption of calcium in the body, it reduces the risk of diseases such as rickets and osteoporosis. Recent studies have shown that its deficiency can be associated with an increased risk of cardiovascular disease, certain types of cancer, inflammatory and autoimmune diseases. Hypervitaminosis D is a rarely reported condition. In general, it is only noticed when hypercalcemia is not resolved. The use of vitamin D has increased in recent years because of its benefits, but as a result, intoxication cases have occurred more frequently. This report describes a patient who presented worsening of renal function and hypercalcemia. After investigation, vitamin D intoxication was confirmed, and it was due to an error in compounding. **Final comments:** Vitamin D supplementation, especially when carried out using compounded medications, must be monitored adequately due to the potential risk of intoxication. **Keywords:** cholecalciferol; hypervitaminosis D; hypercalcemia.

MISCELÂNEA

2580

AUTOIMMUNE POLYGLANDULAR SYNDROME AND ITS CLINICAL IMPACTS: A CASE REPORT

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Case report: A 31-year-old woman with autoimmune polyglandular syndrome type 2 (APS-2) for 16 years was admitted at age 8 for diabetic ketoacidosis (DKA) and diagnosed with Hashimoto's hypothyroidism and autoimmune hepatitis. Uncontrolled T1DM progressed with pancreatitis, nephropathy, retinopathy, DKA, and infections. She had hypogonadal development and short stature. Tests showed: blood glucose 633 mg/dL, HbA1c 15.6%, AST 851 U/L, ALT 913 U/L, glycosuria, ketonuria, ultrasound showing hepatosplenomegaly, TSH 10 µU/mL, T4 6.2 µg/dL, and elevated antimicrosomal and antithyroglobulin antibodies. She was on Lantus, Regular insulin, Puran, prednisone, azathioprine, and enalapril. **Discussion:** Autoimmune polyglandular syndrome type 2 (APS-2) is a rare condition characterized by the coexistence of two or more endocrine disorders, including primary adrenal insufficiency (Addison's disease), autoimmune thyroid disease, and type 1 diabetes mellitus (T1DM). It is marked by lymphocytic infiltration, inflammation, and damage to organs, often starting with T1DM and associated with other autoimmune diseases. With a prevalence of 15 to 45 cases per million people, predominantly women aged 20 to 40 years, it is associated with high morbidity and low life expectancy. The interaction of genetic, environmental, and immunological factors with HLA-DR3 and HLA-DR4 antigens plays a role in the genetic predisposition to APS-2. Non-endocrine diseases such as autoimmune gastritis, celiac disease, inflammatory bowel disease, autoimmune hepatitis, and primary biliary cirrhosis may also be present. APS-2 may present with mucosal and cutaneous hyperpigmentation, hypoglycemia, and orthostatic hypotension (adrenal insufficiency), polyuria, and polydipsia with hyperglycemia (T1DM). Due to complications from T1DM and hypothyroidism, she exhibited bradycardia, slow tendon reflexes, pubertal delay, and short stature. It requires hormonal replacement for adrenal insufficiency and hypothyroidism, immunosuppression for autoimmune hepatitis, and insulin for T1DM. Azathioprine was administered for autoimmune hepatitis, and corticosteroids for hormonal replacement in adrenal insufficiency. **Final comments:** The patient has APS-2, initiated by T1DM, presenting a challenging management scenario. Comprehensive medical care is essential to manage complications, control endocrine conditions, and improve quality of life. **Keywords:** diabetes mellitus, type 1; Hashimoto disease; Addison disease.

TIREOIDE

2581

EUTHYROID OPHTHALMOPATHY AND ITS ASSOCIATION WITH VOGT-KOYANAGI-HARADA SYNDROME

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Case presentation: A 42-year-old female patient from Recife-PE was referred to endocrinology in 2019 with a diagnosis of Graves' disease and exophthalmos. After radioiodine therapy, she developed hypothyroidism and started levothyroxine 50 mg/day, with normalization of thyroid function. Months after treatment, the exophthalmos worsened. The patient has a family history of Vogt-Koyanagi-Harada syndrome (VKH) (mother with uveitis). Currently, she continues to use levothyroxine with normal thyroid function, but still has proptosis. **Discussion:** VKH is a rare, multisystem autoimmune disease that is more common in Asians, Latin Americans, and women, and is associated with other autoimmune diseases such as Graves' disease. As an autoimmune disease, it attacks melanocytes, affecting the eyes, inner ear, meninges, skin, and hair, predominantly in women, and usually around the age of 40. It is associated with viral infections and autoimmune diseases, such as Graves', lupus, and Hashimoto's thyroiditis. Genetic predisposition increases the risk. It manifests in four phases: prodromal (fever, headache, nausea), uveitic (bilateral uveitis, ocular pain, photophobia, blurred vision), chronic (poliosis, vitiligo), and recurrent (granulomatous panuveitis, glaucoma, cataract). Diagnosis is clinical, based on bilateral ocular involvement and the absence of ocular trauma or other causes. MRI can show inflammation in the meninges and brain. In this patient's case, persistent exophthalmos may be a complication of Graves' ophthalmopathy that is unresponsive to treatment, possibly requiring surgical intervention. Although there is a family history of VKH, the absence of bilateral granulomatous uveitis and other diagnostic criteria necessitates investigation to determine if the exophthalmos is an isolated symptom or a complication of VKH, suggesting a scenario of overlapping autoimmune diseases, such as polyglandular syndrome. **Final comments:** VKH is a rare and complex disease that requires a high index of suspicion for early diagnosis and appropriate treatment. Although the patient's persistent exophthalmos suggests Graves' ophthalmopathy, the possibility of VKH cannot be ruled out. Continuous follow-up with an ophthalmologist and endocrinologist is essential to monitor progress and ensure the best possible treatment. **Keywords:** Vogt-Koyanagi-Harada syndrome (VKH); persistent exophthalmos; Graves' disease.

DIABETES MELLITUS

2582

ASSOCIATION BETWEEN DIABETES AND HYPERGLYCEMIA WITH DEFICIT LEVELS IN PATIENTS UNDERGOING INTRAVENOUS THROMBOLYSIS FOR ISCHEMIC STROKE

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Introduction: Diabetes mellitus is a well-established risk factor for the occurrence of stroke. Thrombolytic therapy is one of the ideal treatments for ischemic stroke (IS). However, few studies provide detailed insights into the relationship between diabetes and the severity level of stroke deficits, as well as its interference with the response to thrombolysis. **Objectives:** To evaluate the association between diabetes mellitus and hyperglycemia with the level of deficit in patients who underwent thrombolysis as treatment for IS in a specialized unit. **Methods:** This is an observational, cross-sectional study conducted in a specialized stroke unit involving patients aged ≥ 18 years admitted for thrombolytic therapy after diagnosis of IS. Data collection occurred during 2022 and 2023. The significance level was set at 5%, and Fisher's Exact Test was used. **Results:** A total of 238 patients were studied, with a mean age of 64.4 ± 13.6 years (range 28 to 94), and 50.8% were women. Of the total, 80% had hypertension, 37.4% had diabetes mellitus, 5.4% had hypercholesterolemia, 18.5% had atrial fibrillation, 13.4% had a history of stroke, and 7.1% had a previous acute myocardial infarction. The mean National Institutes of Health Stroke Scale (NIHSS) score at admission was 13.2 ± 5.3, and post-thrombolysis it was 8.7 ± 7.3. Regarding the NIHSS score at admission, 37.1% of diabetic patients were classified as severe, while 43.2% of non-diabetic patients were severe (p = 0.460). Among patients with hemoglucotest (HGT) ≥ 180, 46.9% were classified as severe, whereas 38.8% of those with HGT < 180 were severe (p = 0.585). Concerning the NIHSS score post-thrombolysis, 34.8% of diabetic patients were classified as severe, while 24.8% of non-diabetic patients were severe (p = 0.275). Among patients with HGT ≥ 180, 38.8% were classified as severe, compared to 23.4% of those with HGT < 180 (p = 0.074). As for the NIHSS score reduction post-thrombolysis, 68.5% of diabetic patients experienced a decrease, while 77.6% of non-diabetic patients did (p = 0.157). Among patients with HGT ≥ 180, 63.3% experienced a decrease, while 78.2% of those with HGT < 180 did (p = 0.041). **Conclusions:** There was a statistically significant association between HGT < 180 at admission and a decrease in NIHSS after thrombolysis, and a marginally significant association between diabetes presence and NIHSS decrease. **Keywords:** cerebrovascular disease; thrombolytic therapy; glycemic control.

OBESIDADE

2583

THE IMPACT OF WEIGHT LOSS IN THE FIRST MONTH OF SIBUTRAMINE MONOTHERAPY COMPARED TO WEIGHT LOSS IN THE SIXTH MONTH OF TREATMENT AT THE UNIVERSITY HOSPITAL OF UFPE: A LONGITUDINAL OBSERVATIONAL STUDY

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Introduction: Sibutramine is a widely prescribed anorectic drug for the treatment of obesity in Brazil, effective when combined with lifestyle changes. However, the dynamics of weight loss and its influence on therapeutic success remain an area to be studied. Therefore, evaluating this phenomenon is crucial to determine the real impact of this drug as a treatment option. **Objective:** To analyze the effect of weight loss in the first month on weight loss at six months of continuous treatment with sibutramine monotherapy in patients from the Obesity Clinic at HC-UFPE between 2021 and 2023. **Materials and methods:** This is a longitudinal observational study. Data were obtained from the digital records of 102 patients on continuous sibutramine use, with weight values recorded at the start, first, and sixth months of treatment. From this, the percentage of weight lost in the first month was calculated, associating it with the start and sixth month of treatment to determine the relationship between first-month weight loss and its impact on weight loss at the end of treatment. Patients who lacked necessary study variables or who combined sibutramine with another similar drug were excluded. The final sample included 8 individuals. **Results:** The data showed that, of the total patients analyzed, 4 lost up to 5% of their initial weight in one month (with values ranging from 2.04% to 5%), while 2 achieved a weight loss between 5% and 10% (with values of 6.54% and 7.76%). Furthermore, 1 patient showed no weight change, and another experienced a 0.47% weight gain in one month. After six months, 3 showed a weight loss of up to 5% (values ranging from 0.3% to 4.9%) relative to their initial weight, while 4 showed a weight loss between 10% and 15% (values from 10% to 14.5%), and 1 maintained the same weight. Of the 4 patients who lost at least 10% of their weight in six months, 3 had lost at least 5% in the first month, while the 4 who lost between 0% and 5% in the sixth month had lost less than 5% in the first month. **Conclusion:** Despite the small sample size, it was observed that patients who lost more weight in the first month of treatment also tended to lose more weight by the end of the study. The data suggest a positive direct relationship between weight loss in the first and sixth months. It is relevant to evaluate how lifestyle habits influence weight loss throughout the treatment in future studies. **Keywords:** obesity management; sibutramine; pharmacotherapy.

TIREOIDE

2585

CASE REPORT: STROKE IN A YOUNG PERSON WITH HYPOTHYROIDISM ASSOCIATED WITH MOYAMOYA DISEASE

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Case presentation: An 18-year-old black male was admitted to the emergency department with left-sided hemiparesis and hypertension (HTN). A cranial CT scan revealed an ischemic area in the right frontal region, suggesting an ischemic stroke. Initial investigation ruled out cardioembolic etiology and hematological disorders. Lipid profile was within normal limits. There was no history of recent infection. Carotid and vertebral ultrasound with Doppler showed distal stenosis in the right internal carotid artery (ICA). Considering the possibility of vasculitis, contrast studies of thoracic and abdominal vessels were performed, revealing no abnormalities. Serological and inflammatory markers for systemic vasculitis were normal. Cerebral angiography revealed distal stenosis of the ICA and segments of the bilateral anterior and middle cerebral arteries, associated with bilateral carotid territory opacification through leptomeningeal anastomoses – a Moyamoya pattern. In the investigation of secondary HTN, hypothyroidism associated with high titers of anti-thyroid peroxidase antibodies (Anti-TPO) was diagnosed, and treatment for hypothyroidism was initiated. **Discussion:** Stroke is the second leading cause of death worldwide, but it is estimated that only 15% occur in adults under 50 years old. Arteriopathy represents a significant portion of stroke causes in young people. Moyamoya disease (MMD) is a non-inflammatory arteriopathy of the central nervous system characterized by progressive stenosis of the internal carotid, middle, and anterior cerebral arteries, forming a collateral vascular network. Cerebral angiography is the gold standard for diagnosis. MMD has a higher prevalence in the Asian population and is related to autoimmune diseases, including thyroiditis, especially hyperthyroidism due to Graves' disease. Studies show that stroke is more common in patients with Hashimoto's disease, and Anti-TPO has been linked to MMD and ischemic stroke. Reports of the association of MMD with Hashimoto's disease and hypothyroidism are rare, highlighting the relevance of this description. **Final comments:** Given the severe consequences of stroke in young people and its strong association with autoimmune thyroid diseases, screening for thyroid disorders becomes pertinent in this population. Thus, early diagnosis and scientific knowledge are crucial to identifying at-risk patients and adopting better management strategies. **Keywords:** Moyamoya disease; hypothyroidism; stroke.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2586

PURE GONADAL DYSGENESIS CAUSED BY (X;21) TRANSLOCATION MIMICKING TURNER SYNDROME IN A WOMAN WITH PRIMARY AMENORRHEA: A CASE REPORT

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Case presentation: A 24-year-old female patient attended to the ambulatory care presenting a complaint of primary amenorrhea for the past 10 years and absence of thelarche. She reported regular sexual activity without discomfort and preserved cognition. The patient was eutrophic, phenotypically normal, with female external genitalia, pubic hair at Tanner stage P5, and no pubertal breast development, remaining at Tanner stage M1. Further investigation revealed hypergonadotropic hypogonadism, normal levels of 17-hydroxyprogesterone, and prolactin. Imaging exams showed a hypoplastic uterus, normal vagina, and absence of adnexa. Pituitary MRI with contrast showed no abnormalities. Karyotyping indicated a 46,XX genotype with a translocation between the long arm of the X chromosome and the short arm of chromosome 21. Consequently, a diagnosis of Pure Gonadal Dysgenesis (PGD) was considered, and estrogen replacement therapy was initiated, resulting in satisfactory breast development, currently at Tanner stage M4. **Discussion:** PGD is a rare cause of gonadal dysfunction resulting from genetic alterations in phenotypically female individuals with a 46,XX or 46,XY karyotype. PGD 46,XX is characterized by primary amenorrhea, underdeveloped female internal genital organs due to lack of hormonal stimulation, infertility, and incomplete or absent puberty. Unlike Turner syndrome (TS), PGD does not exhibit a specific pattern of chromosomal loss. X chromosome translocations are an important but uncommon cause of PGD. Such genetic alterations can lead to the "inactivation" of the pathological X chromosome, mimicking a 45,X0 Turner karyotype but without the classic stigmata of the syndrome, such as short stature, webbed neck, and cardiac malformations. There are few studies in the medical literature on translocations as a cause of PGD, however none specifically address the (X;21) translocation. **Final comments:** This case involves a female patient with primary amenorrhea and delayed breast development without dysmorphic features or growth retardation due to a translocation between chromosomes X and 21. No descriptions of this specific translocation were found in the literature. PGD is a complex condition, necessitating a multidisciplinary approach for optimal management through early diagnosis and initiation of hormonal therapy. **Keywords:** genetic translocation; gonadal dysgenesis; amenorrhea.

ADRENAL E HIPERTENSÃO

2587

PROFILE OF DEATHS ATTRIBUTED TO HYPERTENSIVE KIDNEY DISEASE WITH RENAL INSUFFICIENCY IN BRAZIL: AN ECOLOGICAL STUDY

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Systemic arterial hypertension affects around 30% of Brazilians, and is responsible for a large proportion of deaths from chronic non-communicable diseases. In addition, kidney damage caused by persistently high blood pressure stands out, which can lead to chronic kidney disease and death. Thus, monitoring the number of deaths related to hypertensive causes makes it possible to evaluate the effectiveness of blood pressure control with the strategies currently adopted by health agencies. The present work aims to expose the number of deaths and the profile of patients who achieved this outcome due to hypertensive kidney disease with renal failure in the period from January 2019 to December 2023. The data presented were collected from the Information System on Mortality (SIM/SUS) of the Department of Epidemiological Analysis and Surveillance of Noncommunicable Diseases. The following variables were included for analysis: sex, age group, race/color, year of death and region. **Results:** When analyzing the data, 23,198 deaths attributed to hypertensive kidney disease with renal failure were recorded, so that from 2019 to 2023 the following were recorded respectively: 4,414, 4,737, 4,824, 4,705 and 4,518 deaths. The Southeast region had the highest number of records in the period, with 10,682 deaths, followed by the Northeast (5,472), South (3,440), Central-West (1,815) and North region (1,789). According to gender, the number of female deaths was 10,805, while men were responsible for 12,393 (53.4%) records. When evaluating the age group, the most affected group was individuals aged 60 or over, totaling 18,585 deaths, while the group aged 20 to 59 had 7,442 deaths and the group aged 0 to 19 had 38 deaths. When crossing the variables sex and age, it was noted that, from 0 to 79 years old, the largest portion of deaths were male (56.44%), however, after 80 years of age, the majority of deaths were women, with 51.86% of cases. In relation to the race/color variable, the largest portion of deaths were of white individuals (10,457), followed by mixed race (8,910), black (3,090), yellow (157) and indigenous (53). The race/color variable was not reported or was ignored in 531 records. **Conclusion:** The data collected are compatible with the prevalence profile of essential hypertension in the country and with the chronic nature of damage to target organs caused by the hypertensive state, reinforcing the need for blood pressure control at a basic level to avoid this outcome. **Keywords:** arterial hypertension; hypertensive kidney disease; renal failure.

DIABETES MELLITUS

2588

EPIDEMIOLOGICAL ANALYSIS OF HOSPITALIZATIONS OF CHILDREN UNDER 19 YEARS OLD DUE TO DIABETES MELLITUS BETWEEN 2017 AND 2023 IN BRAZIL

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Introduction: Diabetes mellitus (DM) is a chronic metabolic disorder that promotes hyperglycemia. This is a multifactorial condition that causes physiological changes in various body systems. In childhood, type 1 diabetes, characterized by autoimmune destruction of pancreatic islet beta cells, is more common, while type 2 diabetes, related to insulin resistance, has been associated with obesity in children. In Brazil, DM has led to an increasing number of hospitalizations of children and adolescents, making it necessary to describe the epidemiological characteristics of these hospitalizations. **Objective:** To analyze the epidemiological profile of hospitalizations of individuals under 19 years old due to DM between 2017 and 2023 in Brazil. **Methods:** We employed a descriptive, observational, and retrospective study based on the Health Information System (TABNET) database provided by the Department of Informatics of the Unified Health System (DATASUS). Data from 2017 to 2023 were collected, and variables sex, age, race, and place of hospitalization were organized into spreadsheets using Microsoft Office Excel™. **Results:** During the analyzed period, 66,803 hospitalizations related to DM complications were recorded, and the majority of patients were female (56.97%). The highest prevalence was observed in the age group of 10 to 14 years (36.67%). In terms of race/ethnicity, the mixed-race population (42.02%) had the highest number of hospitalizations, followed by white individuals (32.61%) and black individuals (2.87%), with a significant proportion of individuals (20.80%) not having any ethnic-racial record. Regarding the place of hospitalization, the Southeast region had the highest number of hospitalizations (43.88%), with São Paulo state accounting for more than half of the cases in the region (53.52%). **Conclusion:** The analysis shows that the majority of hospitalizations are among females, with a high representation of mixed-race individuals and those aged 10 to 14 years. Additionally, the Southeast region had the highest number of cases. Therefore, it is essential to mobilize health strategies and preventive measures that consider relevant epidemiological patterns for the proper management of DM in childhood. **Keywords:** epidemiological; diabetes mellitus; hospitalized children.

ENDOCRINOLOGIA PEDIÁTRICA

2590

MAURIAC SYNDROME: A RARE FORM OF TYPE 1 DIABETES MELLITUS AND THE IMPORTANCE OF EARLY DIAGNOSIS – A CASE REPORT

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Case presentation: 18-year-old female patient with type 1 diabetes mellitus (DM1) and chronic kidney disease on hemodialysis since the age of 10, splenomegaly and developmental delay and Mauriac syndrome. She was referred from the dialysis clinic to the emergency room, as she was unable to complete it, with her discomfort worsening during the procedure and HGT of 600 mg/dL, in addition to the clinic being favorable to metabolic ketoacidosis. He had fever, asthenia, diffuse abdominal pain, and a bloodstream infection with a probable infectious focus, Permcath. Infectious endocarditis was ruled out using ECOTT, and treatment continued with antibiotic therapy. **Discussion:** Mauriac syndrome (MS) is a rare form of DM1, characterized by hepatomegaly, delayed growth and sexual maturation, poorly controlled diabetes and cushingoid features. It predominates in adolescents, but also occurs in adults and pre-pubertal children. Its etiology is not fully understood, but it is associated with insulin resistance, changes in the levels of growth hormones (such as IGF-1) and hypercortisolism. MetS causes metabolic changes that lead to developmental delay and other clinical manifestations, such as diabetic ketoacidosis. Glycogenic hepatopathy, characterized by hepatomegaly and liver enzymatic abnormalities, is common and results from chronic hyperglycemia and the use of insulin in high doses, accumulating glycogen in the liver. Even after insulin normalization, glycogen production may persist, indicating a complex pathophysiology. Although rare, MetS may be associated with CKD, possibly due to inadequate glycemic control and metabolic changes. **Final comments:** Early identification and appropriate management of Mauriac syndrome are essential to prevent complications and improve clinical outcomes in patients with DM1. This includes strict glycemic control, monitoring of liver and kidney complications, and multidisciplinary monitoring. In the patient's case, poor diabetes control resulted in kidney failure and the need for dialysis, highlighting the importance of early diagnosis to avoid a poor prognosis. **Keywords:** receptor, IGF type 1; diabetic ketoacidosis; diabetes mellitus, type 1.

DIABETES MELLITUS

2591

FACTORS ASSOCIATED WITH THE LENGTH OF HOSPITALIZATION OF CHILDREN AND ADOLESCENTS WITH DIABETES IN A UNIVERSITY HOSPITAL: A CROSS-SECTIONAL STUDY

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Introduction: Diabetes mellitus is a chronic condition prevalent in children and adolescents, frequently associated with hospital admissions. However, the specific determinants of length of stay in this population have not yet been completely elucidated. **Objectives:** To identify the factors associated with the length of hospitalization among children and adolescents with diabetes at Júlio Bandeira University Hospital (HUJB). **Methods:** This study was a review of medical records of patients aged between 1 and 18 years who were diagnosed with diabetes and admitted to the Júlio Bandeira University Hospital (HUJB) from January 2018 to March 2023 were selected. The research was approved by the Human Research Ethics Committee CEP/CFP/UFCG, Cajazeiras, PB, Brazil, under registration number CAAE 68554223.5.0000.5575, and improvements to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. Differences between groups were evaluated using the Mann-Whitney, Pearson, and Kruskal-Wallis tests, considering a significance level of $p < 0.05$. All analyses were performed using R software. **Results:** This study included a sample of 30 patients, 50% of whom were male. The average age of the patients was 5.3 (3.3) years old, and 11 (37%) patients were from rural areas. 28 patients were admitted with diabetes ketoacidosis, as the first decompensation of type 1 diabetes mellitus. 18 patients presented with leukocytosis. 21 were admitted with hyperglycemia and 2 with hypoglycemia. The average length of hospital stay was 5 (0-15) days. The length of hospitalization was significantly correlated with leukogram levels ($p = 0.01$) and not significantly correlated with HGT ($p = 0.07$), HbA1c ($p = 0.07$), and pH ($p = 0.29$). **Conclusion:** At HUJB, the duration of hospitalization for children and adolescents with type 1 diabetes mellitus is significantly associated with leukocytosis. There is an established relationship between diabetes decompensations, diabetic ketoacidosis, and infections in children. While correlations with pH levels were not significant, the severity of acidosis does impact the length of stay. To improve hospitalization outcomes, early diagnosis and better outpatient disease management are essential. **Keywords:** diabetes mellitus; glycemic control; hospitalization.

TIREOIDE
2593

FOLLICULAR THYROID CARCINOMA DIAGNOSED AFTER EPILEPTIC SEIZURES: A CASE REPORT

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A 61-year-old woman with no prior medical history has been monitoring a nodule in the left thyroid lobe since 2017. She underwent three fine-needle aspiration biopsies (FNAB), which yielded inconclusive and benign results. Despite this, an ultrasound (US) showed an increase in size from 2.0 x 1.2 x 0.9 cm to 3.2 x 2.2 x 1.9 cm over two years. She lost follow-up during the pandemic and returned in 2022 with complaints of dysphagia and a new US revealing a size of 4.7 x 3.7 x 4.7 cm. A fourth FNAB was performed, again yielding benign results (Bethesda II classification). Two months later, she began experiencing falls. Her family noticed a bulge in the parietal region, initially thought to be related to trauma from the falls. However, the bulge continued to grow. A cranial CT scan revealed a 6 cm osteolytic lesion in the left parietal bone, and the falls were then associated with secondary epileptic seizures. She underwent tumor excision, with pathology and immunohistochemistry (AP/IHQ) findings consistent with follicular thyroid carcinoma (FTC). She subsequently underwent a thyroidectomy, which confirmed the same diagnosis. Staging revealed pulmonary and multiple bone lesions. Serum thyroglobulin (Tg) levels were above the method limit (>25,000 ng/dL). Surgical teams assessed her and deemed resection non-beneficial. She underwent ablation with 250 mCi radioiodine therapy (RAI), which showed good uptake in the post-dose whole-body scan (PCI). She is now in outpatient follow-up, with a Tg level of 388 ng/dL six months post-RAI, in good general condition, on valproate, phenytoin, levothyroxine, and pamidronate every three months. **Discussion:** FTC is a rare cancer with an excellent prognosis in most patients. This patient had been under observation for a nodule that was not diagnosed as FTC on FNAB. In this histological subtype, differentiation from a follicular adenoma is not possible on cytology. Despite this, there was progressive growth, and the diagnosis was only made on metastatic lesions. Even with extensive disease, there was a good response to RAI, suggesting that even in more advanced tumors, good survival can be achieved while maintaining performance status. **Final comments:** The diagnosis of FTC can be challenging, and genetic testing is not yet widely available. Nodules with repeatedly benign FNAB results but continued growth may require lobectomy for diagnosis. Nonetheless, the prognosis for FTC, even in some advanced diseases, tends to be favorable. **Keywords:** carcinoma, follicular; thyroid neoplasms; radioiodine therapy.

TIREOIDE
2594

THE PROFILE OF NORTHEASTERN BRAZILIAN PATIENTS WITH THYROTOXICOSIS AND THE NUMBER OF THYROID HEALTH MONITORING PROCEDURES

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Introduction: Hyperthyroidism is a prevalent endocrine disorder characterized by excessive production of the thyroid hormone thyroxine (T4), which can lead to thyrotoxicosis if left untreated. Thyrotoxicosis represents a critical manifestation of hyperthyroidism, often necessitating urgent medical intervention to prevent severe complications such as thyroid storms. Despite the generally favorable prognosis of hyperthyroidism with appropriate management, some patients still experience adverse outcomes, including thyrotoxic crises. **Objective:** Understanding the demographic and healthcare utilization patterns of patients who develop thyrotoxicosis is crucial for optimizing clinical practices and health policies aimed at improving outcomes for current and future hyperthyroidism patients. This study aims to elucidate the demographic profile of hyperthyroidism patients who experience thyrotoxicosis in the northeastern region of Brazil, as well as assess the current landscape of laboratory testing for disease monitoring. **Subjects and methods:** We analyzed morbidity data, including deaths and hospitalizations, demographic characteristics (gender, age, ethnicity), outpatient production, and laboratory tests from the TABNET/DATASUS system for the period 2014-2024, using the "Microdatasus" package in R software (R. F. Saldanha, 2019). **Results:** Out of a total of 715,954 hospitalizations for endocrine and metabolic system diseases, 1,147 cases of hyperthyroidism with thyrotoxicosis were identified. Most cases occurred in women (78%) with an average age of 42.2 years and of mixed race. The mortality rate was 23 deaths per 1000 inhabitants, rising to 51.3 per 1000 inhabitants among individuals of yellow ethnicity. Over the 10-year period, only 54,958 screening and diagnostic tests for hyperthyroidism (thyroxine-binding globulin measurement, thyroid-stimulating hormone measurement, thyroglobulin measurement, thyroxine measurement, and free thyroxine measurement) were conducted. **Conclusion:** The typical profile of patients with thyrotoxicosis in northeastern Brazil is female, of mixed race, with an average age of 42 years. A higher mortality rate was observed among the yellow ethnic population. Furthermore, a low frequency of screening and diagnostic tests for hyperthyroidism was noted, potentially compromising the management of patients and contributing to a poor prognosis such as a thyroid crisis. **Keywords:** hyperthyroidism; thyrotoxicosis; Brazil.

ENDOCRINOLOGIA PEDIÁTRICA

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LINEAR GROWTH AVALIATION IN CHILDREN WITH THE DIAGNOSIS OF TYPE 1 DIABETES MELLITUS

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Introduction: The type 1 diabetes mellitus (T1DM) is characterized by the destruction of the ß-cells resulting in loss of endogenous insulin production. It is one of the most common presentations of youth-onset diabetes. The treatment needs multi-disciplinary approach and is based on intensive insulin therapy. The chronic hyperglycemia and severe insulin deficiency are known to be associated with impaired linear growth. The dysregulation of the GH-IGF-1 axis in T1DM is characterized by decreases in circulating IGF-1, GHR and GHBP, along with increases in GH and IGFBP-1. **Objective:** This study evaluated the influence of glycemic control in the linear growth of T1DM patients treated at an endocrinology referral universitary hospital in Amazon and compared the growth of these patients with the World Health Organization's (WHO) reference. **Methods:** For that, a retrospective cohort study was made using data from medical records in the period between 5 and 19 years old from 78 patients (40 females/38 males) following the criteria of age at the diagnosis ≤ 15 years old (females) and ≤ 17 years old (males). **Results:** They were at diagnosis 8,6 ± 4,3 years old, the duration of the disease was 15,4 ± 10,4 years, glycated hemoglobin (HbA1C) 10,5 ± 2,2%. Among them, 58 patients (28 females/ 28 males) were achieved the final height (FH). The female's FH was 156,2 cm (Z score - 1,11SDS) and the male's FH was 166cm (Z score -1,45SDS). Only 19% were above the WHO's media. But 26% had short stature and 9% were at Z ≤ -3SDS. HbA1C ≥ 9,5% was related with worse FH. Each 1% of elevation in HbA1C was associated with a reduction of 2,23 cm on FH, and 26% of FH variability were influenced by HbA1C level. The ones with HbA1C ≥ 9% had significant stature loss compared to TH. **Conclusion:** The T1DM patients evaluated were shorter than the media of WHO's charts, however the majority did not have short stature. HbA1C levels were negatively associated with stature loss compared to TH and final height. There was no correlation between FH and weight, insulin total dose, gender and diabetes duration. **Keywords:** type 1 diabetes mellitus; linear growth; glycated hemoglobin.

DIABETES MELLITUS

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DIABETES ASSOCIATED WITH RARE GENETIC HYPERTRIGLYCERIDEMIA SYNDROMES: A BRAZILIAN CASE SERIES

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Introduction: Familial chylomicronemia syndrome (FCS) is a primary hypertriglyceridemia that can occur from childhood to adulthood. Clinically, it is characterized by triglyceride levels > 1,000 mg/dL due to inactivating mutations in lipoprotein lipase (LPL) genes or proteins essential for its function, and is associated with pancreatitis, lipemia retinalis, and eruptive xanthomas. **Materials and methods:** In this case series, 6 patients with severe hypertriglyceridemia consistent with familial chylomicronemia syndrome and refractory to conventional drug treatment, were selected. These patients had confirmed mutations and diabetes, and were followed from 2021 to 2024. Outcomes evaluated included pancreatitis, cardiovascular diseases, as well as glycated hemoglobin levels, triglyceride levels, and glomerular filtration rate (GFR). Data were analyzed using SPSS, with relative risk and T-test to assess impact. For continuous variables, mean difference analysis was used. **Results:** Six patients were evaluated, with a mean age of 43.5 years and a mean disease duration of 12.5 years. The mean total cholesterol level was 379 mg/dL, with a mean triglyceride level of 4,475 mg/dL, and notably low HDL levels of 20 mg/dL. All patients used insulin, with a mean HbA1c of 8%, above the national target of < 7%. All patients had at least one episode of pancreatitis; 83.3% used statins and omega-3 supplements. All patients used maximum-dose fibrates. Only 17% of patients had no major cardiovascular events, and one patient died during the 3-year follow-up. Stratifying patients by triglyceride levels revealed no significant difference between triglyceride levels > 1,000 mg/dL and HbA1c control ($p = 0.100$) or HDL levels ($p = 0.570$). However, a significant increase in HbA1c > 7.5 difficulty and the number of previous pancreatitis episodes was observed ($p = 0.009$). Of these patients, 4 had mutations in the LPL gene, 1 in ABCA1, and 1 in SPINK-1. **Conclusion:** FCS is a syndrome that is difficult to diagnose and requires early management to reduce morbidity and mortality, which appears to be associated with diabetes as a potential secondary effect. There appears to be an increased risk not only for pancreatitis but also for diabetes and cardiovascular diseases. The main bias of this study is the small sample size, limiting the generalization of results to the population with familial chylomicronemia syndrome (FCS) and resulting in unstable estimates and low precision in statistical analyses. **Keywords:** familial chylomicronemia syndrome (FCS); type 2 diabetes; cardiovascular risk.

DIABETES MELLITUS

2598

MAURIAC´S SYNDROME: A CASE REPORT

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Case: Male patient, 18 years old, diagnosed with type 1 diabetes mellitus at the age of 7. Admitted in May 2024 with diabetic ketoacidosis (DKA) due to poor therapeutic adherence, with a glycated hemoglobin of 14%. During hospitalization, he was found to have short stature (<3rd percentile) with a delayed bone age of 15 years on hand and wrist radiographs, along with incomplete development of secondary sexual characteristics (Tanner G4P2). Laboratory tests revealed hypogonadotropic hypogonadism (total testosterone 0.46 ng/mL, LH 3.64 mIU/mL, FSH 2.47 mIU/mL). Additionally, an abdominal ultrasound prompted by initial abdominal pain showed hepatomegaly with the right lobe measuring 17.2 cm and the left lobe 11.2 cm, with preserved echogenicity, as well as kidneys showing diffuse increased echogenicity, and slight liver injury with AST 56 U/L and ALT 97 U/L without impaired liver function. Considering the hypogonadotropic hypogonadism, structural causes were investigated with contrast-enhanced pituitary MRI showing no abnormalities and prolactin level of 5.69 ng/mL. During hospitalization, insulin glargine and a rapid-acting analog were initiated for diabetes control. With the hypothesis of functional hypogonadism due to diabetes instability, a repeat testosterone level was requested and found to be 1.45 ng/mL after improved glycemic control during hospitalization. The patient was discharged for outpatient follow-up, with instructions on glycemic control and ophthalmologic monitoring. **Discussion:** In light of the above findings, the hypothesis of Mauriac syndrome was raised, a condition triggered in patients with poorly controlled type 1 diabetes, characterized by hepatic glycogen deposition leading to increased lipolysis and ketosis. It is common to observe reduced growth velocity and short stature in these patients, with preserved neuropsychological development, pubertal blockade with hypogonadotropic hypogonadism, hepatomegaly without hepatopathy signs, mild elevation of transaminases up to 3 times the upper limit of normal, and bilateral parenchymal nephropathy on ultrasound, consistent with microangiopathic complications, all compatible with the syndrome. **Comments:** Although rare, it is crucial to consider Mauriac syndrome early in the diagnostic process to initiate intensive and timely treatment, thereby preventing long-term complications of diabetes. **Keywords:** Mauriac syndrome; hypogonadotropic hypogonadism; diabetic ketoacidosis.

OBESIDADE

2599

IS THERE A RELATIONSHIP OF FIBROSIS-4 INDEX (FIB-4) WITH WEIGHT AND INSULIN RESISTANCE IN SUBJECTS WITHOUT TYPE 2 DIABETES AND WITH NORMAL TRANSAMINASES?

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Introduction: Metabolic dysfunction-associated steatotic liver disease (MASLD) is a common hepatic disease. Fibrosis-4 Index (FIB-4) is a scoring system that estimates the risk of hepatic fibrosis in MASLD, based on age, aspartate aminotransferase (AST), alanine aminotransferase (ALT) and platelets (PLT). MASLD is associated with high risk of insulin resistance (IR), and type 2 diabetes (DM2), and subjects with overweight or obesity are more likely to have both. The objective of this study was to evaluate how FIB-4 would behave in subjects without DM2 and with normal ALT and AST, and whether there was a correlation between FIB-4 with homeostasis model assessment of insulin resistance index (HOMA-IR) and body mass index (BMI). **Methods:** Authors studied the correlation of HOMA-IR and BMI with FIB-4 using the database of a clinical laboratory. Patients were aged 20-65 years, who measured fasting glucose and insulin in the same visit, and transaminases and platelets within up to one year before or later. Were excluded hospitalized subjects, those using medications to treat DM2, dyslipidemia, blood glucose over 200 mg/dL, and AST and/or ALT above the reference range. HOMA-IR index was calculated using the equation: glucose (mg/dL) x insulin (mcIU/mL) / 405 and FIB-4 using the equation: age (years) × TGO (U/L) / [(platelets (µL) ÷1000) x √TGP (U/L))]. Shapiro Wilk test was performed to assess whether the analytes had normal distribution. To evaluate the correlation with HOMA-IR, Spearman's non-parametric correlation test was used. **Results:** After applying the exclusion criteria and subtracting outliers 270,135 records were selected, 75% female, with 39,9 ± 10.1 years. As the parameters did not present Gaussian distribution, the results are shown in median and 25th and 75th percentiles: AST = 18.9 (16-22); ALT = 17.2 (13-23.3); PLT = 266000 (229000- 308000); glucose = 89.3 (84.2-95); insulin = 8.17 (5.52-12.8); HOMA-IR = 1.81 (1.19-2.75); IMC = 26.53 (23.80-29.91); FIB-4 = 0.65 (0.5-0.86). A weak negative correlation between HOMA-IR and BMI with FIB-4 was found. (HOMA-IR: $r = -0.2$, $p < 0.001$; BMI:R = -0.1, $P < 0.01$). **Conclusions:** This study showed that in a population with normal ALT and AST, and without DM2, FIB-4 was compatible with low risk of fibrosis, even in cases with high HOMA-IR or BMI. The negative correlation was surprising and perhaps indicates that FIB-4 may not be a good predictor of liver fibrosis for this population profile. **Keywords:** FIB-4; HOMA-IR; BMI.

ENDOCRINOLOGIA PEDIÁTRICA

2600

PATIENT WITH MUTATIONS IN THE FGFR3 AND ACAN GENES UNDERGOING HORMONAL TREATMENT: A CASE REPORT

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Case presentation: Female, 6 years old. Fetal morphological ultrasound showed structural anomalies, with long bone lengths not compatible with GA. She was born at term and height of 46 cm (Z-score = -2). A genetic study was performed that showed mutation in the ACAN genes, a variant absent in the database and probably non-pathogenic, and fibroblast growth factor receptor 3 gene (FGFR3), confirming the diagnosis of hypochondroplasia (HCH). Using GH analogue for 4 years, she presents growth between Z scores -2 and -1, the lower limit of height appropriate for age. Wrist radiography identifies bone age (BA) more advanced than chronological age. **Discussion:** Hypochondroplasia is a bone and cartilage disorder, with growth retardation and disharmonious short stature. It manifests as disproportionately short limbs, macrocephaly, and joint laxity. Diagnosis is based on clinical and radiographic presentations, and is confirmed by a mutation in the FGFR3 gene. In addition, the ACAN gene expresses a proteoglycan component of the extracellular matrix in the cartilage of the epiphyseal plate, which prevents early epiphyseal fusion. Therefore, it is justified that some mutations interfere with growth, despite the wide variety of existing phenotypes. The literature recognizes the ineffectiveness of GH in achondroplasia (ACH), but its use in HCH brings positive results. In this case, the treatment showed good efficacy. According to the family channel calculation, the prediction is that adult height will be between scores 0 and 1. However, an advanced BA is a risk of premature epiphyseal closure. Therefore, due the risk, longitudinal follow-up is necessary to define, in fact, the risk-benefit of the medication due to the relationship between growth and metabolism and the possibility of adverse effects. **Final comments:** Some conditions are part of the differential diagnosis of short stature, among them, osteochondroplasia. Present in up to 0.05% of the world population, they do not always have clinical manifestations. The most common and the main cause of dwarfism is ACH, followed by HCH, which have a strong genetic involvement, see mutations in the FGFR3. Clinically, these are patients with disproportionate short stature and accentuated lumbar lordosis. This report presents the case of a 6-year-old patient diagnosed with HCH and a little-known mutation who has been monitored since birth and showed height gain with the use of GH analogue. **Keywords:** short stature; growth; growth hormone.

DIABETES MELLITUS

2601

THE CORRELATION BETWEEN DIABETES MELLITUS, SYSTEMIC ARTERIAL HYPERTENSION AND ACUTE MYOCARDIAL INFARCTION: AN EPIDEMIOLOGICAL PROFILE OF THE PARAÍBA POPULATION FROM 2018 TO 2023

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Diabetes mellitus (DM) is a metabolic syndrome resulting from a lack of insulin and/or the inability of insulin to adequately exert its effects. DM is one of the main risk factors for cardiovascular morbidity and mortality, including systemic arterial hypertension (SAH). Studies have confirmed the impacts of SAH, DM, overweight and positive family history as predisposing factors for the occurrence of acute myocardial infarction (AMI). To evaluate the epidemiological profile of the number of hospitalizations and total deaths of hypertensive and diabetic individuals with acute myocardial infarction in Paraíba (PB) during the period from 2018 to 2023. A descriptive, retrospective and quantitative study was carried out based on data provided by the Notifiable Diseases Information System (SINAN), of the SUS Information Technology Department (DATASUS). The information was stored and tabulated in Microsoft Office Excel™ regarding cases of hypertension, DM and AMI in Paraíba. The variables analyzed were: year of processing, age group, sex, color or race, number of deaths, average length of stay and total value. Among the 30,882 cases found in the period evaluated, it is worth noting that the most affected age group is 60 to 69 years old, equivalent to 22.68% of the affected population. Hospitalizations totaled a cost of R$ 49,093,788.59 for the public coffers, with emergency care being the majority, equivalent to 95.95% of the total. The years 2023, 2022 and 2018 were the most incident, with 6,472, 5,374 and 5,359 cases, respectively. Furthermore, it was identified that mixed race (60.80%) and female patients (53.2%) are the most affected epidemiological variables. The average length of stay of hospitalized patients was 7.2 days, with men being those who remained hospitalized for the longest number of days on average (7.4). Regarding mortality, it was noted that 2,400 cases resulted in death, with a predominance of females (50.16%) and those aged 80 or over. Therefore, it is extremely important to assess the epidemiological profile of the population of Paraíba to establish a correlation between hypertension, DM and AMI. This proves that the most affected population is the elderly, females, aged between 60 and 69 years, while deaths were more prevalent among those aged over 80 years. Based on these data, actions aimed at the prevention, diagnosis and treatment of hypertension and DM can be directed, in order to avoid progression to AMI. **Keywords:** diabetes mellitus; systemic arterial hypertension; epidemiology.

OBESIDADE

2603

OBESITY TREATMENT FOR A BARIATRIC PATIENT WITH BUPROPION AND NALTREXONE: A CASE REPORT

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Case description: 38-year-old man, single, social worker, with medical history of obesity since his childhood and bariatric surgery (gastric bypass) in January 2020, with emotional eating (specially sugary and high-fat food). He was not undergoing any therapy when he presented to endocrinology consultation for obesity treatment in October 2023. His maximum weight was 156 kg with a 54,6 kg/m² body mass index (BMI), with a history of 27% of body weight loss throughout 3 years as a result of lifestyle modifications and Orlistat therapy. Associated with the issue of obesity, there was an anxiety disorder concomitant with the frustration from the result of his bariatric surgery. At physical examination, his anthropometric measurements were weight: 114 kg; height: 1,68 m; BMI: 40,3 kg/m². The therapy chosen involved Naltrexone 8 mg + Bupropion 90 mg; multivitamin; referrals to nutritionist and psychologist; and to undergo weight-lifting training 5 times a week. At the follow up consultation in April 2024, the anthropometric measurements were weight: 88,9 kg (a reduction of 25,1 kg, that is to say, 22% of his body weight); BMI: 31,5 kg/m²; and a healthier dietary pattern. **Discussion:** Obesity increases the risk of multiple diseases and there is significant association between emotional and psychological factors and its etiology. Emotional eating is mostly influenced by behaviors and emotions, and can be a mechanism to decrease negative emotions. That's why the anamnesis of emotional eating patients must investigate emotions that induce food cravings, such as stress, anxiety, necessity of comforting/rewarding, boredom or fatigue. The Naltrexone and Bupropion association mechanism of action is the POMC (pro-opiomelanocortin) neurons' synergic activation. Naltrexone is a μ-opioid receptors' antagonist and Bupropion is a melanocortin 4 (MC4R) receptors' agonist, resulting in appetite reduction and higher energetic consumption. Furthermore, Bupropion restores dopamine levels, acting as a mesolimbic reward system modulator. **Final comments:** Identifying the patient's dietary pattern correctly has allowed an effective intervention, through the psychotropic medications synergic action on the hypothalamus and mesolimbic reward system, treating the psycho-emotional factors of obesity directly. Accordingly, the dietary pattern modification and weight loss were a success. **Keywords:** obesity; obesity management; psychotropic drugs.

DIABETES MELLITUS

2604

DIABETES MELLITUS AND HYPERTENSION: COMPARATIVE ANALYSIS OF RISK FACTORS AND CLINICAL OUTCOMES IN PATIENTS ADMITTED TO A UNIVERSITY HOSPITAL

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Introduction: Diabetes mellitus and hypertension are interrelated and highly prevalent metabolic conditions. Diabetes is associated with insulin resistance, which can lead to arterial stiffness and increased blood pressure. Both conditions are important in the development of cardiovascular pathologies, causing damage to the vascular endothelium and promoting the formation of lipid plaques. **Objective:** To carry out a comparative analysis of the risk factors and clinical outcomes of patients treated at a university hospital. **Methods:** This cross-sectional, quantitative, and retrospective study analyzed medical records from 23 patients diagnosed with both hypertension and diabetes mellitus, who were admitted to Júlio Bandeira University Hospital (HUJB) between March 2018 and March 2023. The data collected included sociodemographic profiles, comorbidities, clinical outcomes, and pharmacologic treatment administered during hospitalization. The study received approval from the Human Research Ethics Committee (CEP/CFP/UFCG) in Cajazeiras, PB, Brazil, under registration number CAAE 68730423.0.0000.5575, and followed the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines. **Results:** Among the hospitalized patients, 73.91% were male, and 47.82% were over the age of 70. In terms of education, 56% of patients had some level of schooling, with 34.78% having not completed primary education. Of the patients who had previously undergone surgery (40%), 13% had experienced limb amputations. Alzheimer's disease, found in 17.39% of patients, was the most prevalent comorbidity, in addition to diabetes mellitus (DM) and systemic arterial hypertension (SAH). As for clinical outcomes, 26.08% of patients had diabetic foot and 21.73% had other vascular complications. During hospitalization, the therapeutic regimens were predominantly based on antibiotic therapy, with Ceftriaxone being the most commonly used drug, present in 52.17% of prescriptions. **Conclusion:** Among diabetic and hypertensive patients admitted to HUJB, the primary outcomes were diabetic foot and other vascular complications. Key risk factors included age and gender, which emerged as significant contributors. These findings emphasize the importance of implementing multidisciplinary management strategies for patients with both conditions to prevent eventual complications. **Keywords:** diabetes mellitus; hypertension; risk factors.

TIREOIDE

2605

THYROTOXICOSIS WITH INTRAHEPATIC CHOLESTASIS SECONDARY TO HYPERTHYROIDISM: A CASE REPORT

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Case report: W.F.S.G., a 32-year-old female, admitted to a tertiary hospital complaining of weight loss, jaundice, tremors, palpitations, excessive sweating, and insomnia for 3 months. Initially, she did not report previous thyroid disease. After investigation and laboratory tests, the diagnosis of hyperthyroidism was confirmed. Later, the patient reported previous use of methimazole for 6 months, which she discontinued on her own 6 months ago. Initial tests: total bilirubin 10.48 mg/dL (direct bilirubin 8.26 mg/dL and indirect bilirubin 2.22 g/dL); thrombocytopenia; gamma GT 335 u/L; alkaline phosphatase 1,151 u/L; TSH < 0.01 UI/mL and free T4 > 7 ng/dL (repeated and confirmed), normal transaminases and negative serology for viral hepatitis; Abdominal ultrasound and tomography showed no signs of chronic liver disease or dilation of intra or extrahepatic bile ducts. Physical examination: presence of goiter, tremor of extremities and sinus tachycardia with normal blood pressure. Methimazole 30 mg/day and propranolol 80 mg/day were started, with considerable improvement of symptoms and reduction of total bilirubin (10.48 -> 6.11), alkaline phosphatase (1.151 -> 295) and gamma GT (331 -> 202). Patient continues treatment in hospital. **Discussion:** Hyperthyroidism is characterized by increased synthesis and release of thyroid hormones by the thyroid gland. Thyrotoxicosis refers to the clinical syndrome resulting from excess circulating thyroid hormones, secondary to hyperthyroidism or not. There is a correlation between hormone levels and clinical presentation, with signs and symptoms secondary to adrenergic stimulation being more evident in young individuals with large goiters. Thyrotoxicosis can have clinical repercussions in practically all organ systems. The most frequent liver changes are related to the hepatotoxic effects of antithyroid drugs; however, some changes may be a direct consequence of thyrotoxicosis. Liver damage due to the hypercatabolic state generally follows a cholestatic pattern. **Final comments:** When identifying hyperthyroidism, it is important to request transaminases, canalicular enzymes and bilirubin. Likewise, screening of thyroid function should be included in the etiological investigation of liver changes with cholestasis. Timely treatment with antithyroid medication generally results in improvement of the condition. **Keywords:** thyrotoxicosis; hyperthyroidism; cholestasis.

ENDOCRINOLOGIA PEDIÁTRICA

2606

ASSOCIATION BETWEEN SCREEN USE AND THE PREVALENCE OF CHILDHOOD OBESITY: A SYSTEMATIC REVIEW

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Introduction: In the digital age, in particular, children and adolescents are affected due to their early and dependent exposure to technologies. Although innovations offer notable benefits, the harm to health caused by excessive use is undeniable, since it is associated with greater sedentary lifestyle, as well as an increased risk of obesity and cardiovascular problems. **Objective:** To analyze the relationship between screen time and obesity among children and adolescents. **Methods:** This is a systematic review following the PRISMA guidelines. The search was carried out in June 2024, in a double-blind manner, in Medline (via PubMed), SciELO, Cochrane and Embase. The search strategy included the descriptors “screen time”, “child” and “obesity”, combined by the Boolean operator “AND”. The interval for selection of studies was the last 10 years (2014-2023). Duplicate articles and the following types of studies were excluded: reviews, case reports, animal studies, editorials, clinical trials without published results, and publications unrelated to the research topic. At the end of the literature analysis, 13 articles were included. The methodological bias assessment was performed using the GRADE tool. **Results:** The included articles covered 10 countries, totaling 9,484 patients, including children, adolescents, and their guardians, analyzed regarding routine screen exposure. All were subjected to randomized and observational clinical trials. Screen time, in the studies, ranged from less than 1h to more than 3.5h. The main exposures reported were video games, television, and cell phones. 76% of the studies analyzed found metabolic disorders, such as obesity and overweight related to the time spent using electronic devices, in addition to sleep disorders (46.15%). Of these, 100% found a direct relationship between excessive screen time and sedentary lifestyle. 46.5% attest that the low level of education of those responsible suggests a relationship with greater exposure. **Conclusion:** Thus, there is an influence of screen time on children’s health, since most studies have proven the relationship with metabolic disorders, mainly obesity. It is worth highlighting the parents’ level of education as a factor for this exposure, as they are unaware of the harm. Therefore, it is important for health professionals to be more involved in combating obesity and in social education. Finally, more studies are needed relating screen use to physical, emotional and cognitive factors. **Keywords:** overweight; technology; pediatrics.

ENDOCRINOLOGIA BÁSICA

2608

MUTATION OF THE GPIHBP1 GENE IN FAMILIAL CHYLOMICRONEMIA SYNDROME: A CASE REPORT

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Case presentation: J.P.F.J., male, 37 years old, native and resident of Paraíba, construction worker. Diagnosed with hypertriglyceridemia in 2008 following pre-employment medical exams, asymptomatic at the time. He used compounded medications, achieving partial control of triglyceride (TG) levels. Without treatment from 2009 to 2023, TG levels exceeded 3,500 mg/dL, with episodes of severe epigastric pain and diagnoses of systemic arterial hypertension and prediabetes. He occasionally consumes alcohol. He has two siblings with hypertriglyceridemia; one had TG > 4,000 mg/dL and acute pancreatitis. In 2023, he resumed follow-up and underwent a genetic panel, which identified a pathogenic homozygous variant in the GPIHBP1 gene, associated with type 1D hyperlipoproteinemia. He was prescribed Ciprofibrate 200 mg, Rosuvastatin 20 mg/Ezetimibe 10 mg, and Glifage XR 2,000 mg. **Discussion:** The identified mutation leads to a drastic reduction in chylomicron clearance due to impaired anchoring of lipoprotein lipase to endothelial capillaries by the mutated GPIHBP1 protein. Thus, familial chylomicronemia syndrome (FCS) is a rare hereditary metabolic disorder, affecting approximately 1-2 per million individuals, characterized by chylomicron accumulation, hypertriglyceridemia above 1,500 mg/dL, and recurrent episodes of abdominal pain or pancreatitis. Laboratory tests show TG > 2,000 mg/dL, indicating very severe hypertriglyceridemia, doubling the risk of acute pancreatitis and complications such as chronic pancreatitis, pancreatic insufficiency, and type 2 diabetes mellitus. Treatment with lipid-lowering drugs like fibrates and omega-3 fatty acids shows limited efficacy, making a low-fat diet essential. However, adherence challenges and the inability to eliminate the risk of pancreatitis remain clinical obstacles. Alcohol consumption exacerbates the condition as it is metabolized into acetate and triglycerides. Volanesorsen, an apoC3 inhibitor, offers potential by reducing triglyceride levels and pancreatitis risk. **Final comments:** FCS is rare and has a genetic basis, defined primarily by very severe hypertriglyceridemia and abdominal pain with high risks of pancreatitis. The therapeutic approach includes a low-fat diet, physical activity, discouraging alcohol consumption, and using promising drugs to reduce triglyceride levels. **Keywords:** hypertriglyceridemia; familial chylomicronemia syndrome; GPIHBP1 gene.

METABOLISMO ÓSSEO E MINERAL

2609

EPIDEMIOLOGICAL ANALYSIS OF OSTEOGENESIS IMPERFECTA IN LIVE BIRTHS IN BRAZIL

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Introduction: Osteogenesis imperfecta is a hereditary condition that causes bone fragility and deformity due to a defect in the production of type I collagen. The most serious cases of this disease usually manifest early, in the neonatal period. The definitive diagnosis can be made through clinical criteria and complementary tests, such as bone densitometry, radiographs and biochemical markers of bone and collagen metabolism. **Objective:** This study aims to analyze occurrences of live births with osteogenesis imperfecta in Brazil from 2014 to 2023. **Methods:** This is an ecological study based on information from the *Sistema de Informações sobre Nascidos Vivos (SINASC)* available on the *Plataforma Integrada de Vigilância em Saúde (IVIS)*. Data were examined considering the following variables: year of notification, region, sex, ethnicity, prenatal consultations, gestational month when prenatal care began, pregnancy weeks, birth weight, mother's age group and maternal level of education. **Results:** Between January 2014 and December 2023, Brazil recorded 242 cases of live births with osteogenesis imperfecta. The highest number of cases was recorded in 2018 (39) and, during the analyzed period, the Southeast region accounted for 46.69% of cases (113). The most affected profile was female (51.24%) and brown (47.1%), with low birth weight (between 1,500 and 2,499 grams). It should be noted that 11.15% of the cases had very low birth weight (less than 1,500 grams). About 63.63% of the children were born at term and 35.53%, prematurely. Regarding maternal aspects, most mothers attended seven or more prenatal consultations (69%), with a predominant onset in the second month of pregnancy (48.34%). In addition, 60.33% had been between 8 and 11 years of schooling and 25.61% were between 30 and 34 years old. **Conclusion:** Low birth weight, the most prevalent pattern in the studied group, is one of the possible manifestations of osteogenesis imperfecta, especially in its most severe form. The highest number of cases of this disorder was recorded in children of mothers with a higher level of education, which may be associated with greater access to information and a consequent discernment to recognize pathological factors. It is thought that there is a probable national underreporting due to the lack of knowledge among a large part of the population about how to suspect and identify clinical signs of abnormalities, a scenario which hinders early diagnosis and timely treatment. **Keywords:** osteogenesis imperfecta; patient profile; live births.

DIABETES MELLITUS

2610

PARTIAL CLINICAL REMISSION IN PATIENTS WITH TYPE 1 DIABETES: IS IDAA1C CUTOFF CRITERIUM SUITABLE FOR THE BRAZILIAN POPULATION?

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Introduction: After T1D diagnosis and insulin initiation, type 1 diabetes (T1D) patients may experience partial clinical remission (CR). The current gold standard for CR is the IDAA1c (Insulin-Dose Adjusted A1c), calculated using the formula: HbA1c (%) + [4 × total daily insulin dose (units/kg/24 h)]. An IDAA1c ≤ 9 correlates strongly with residual β-cell function, estimated by stimulated C-peptide (CP) levels > 300 pmol/L in mixed-meal tests. The IDAA1c has been validated in diverse populations and is widely used to characterize CR in clinical studies, but the established C-peptide cutoff has not yet been evaluated in the multiethnic Brazilian population. **Objective:** This study aims to assess the correspondence between IDAA1c and stimulated CP in newly diagnosed Brazilian T1D patients. **Methods:** Retrospective observational study included patients from the T1D outpatient clinic at a University Hospital, diagnosed between 16 and 40 years old, within 18 months of diagnosis. Patients underwent C-peptide measurement at 0, 30, 60, 90, and 120 minutes after a liquid mixed meal, with the area under the C-peptide curve (AUC) calculated at 0, 1, 3, 6, and 12 months post-diagnosis. Medical charts were reviewed to assess clinical variables, and IDAA1c was calculated using HbA1c % + 4x insulin dose (units/kg/24h). **Results:** A total of 64 tests were performed in thirteen patients, as each patient underwent pancreatic function tests at T0, T1, T3, T6, and T12. Seven patients underwent intervention with ASC + vitamin D. One patient was lost to follow-up and did not complete the final test at T12. Nine patients (69.23%) were in CR at least at one of the assessment points. The optimal cut-point analysis of the correlation between IDAA1c and SPC > 300 pmol/L in this cohort was an IDAA1c of 9.15 (sensibility 72.7% and specificity 61.5%). **Conclusion:** The optimal cutoff value of IDAA1c obtained in this study is aligned with that suggested for Caucasians, which indicates that it seems reasonable to use this cutoff for the multiethnic Brazilian population. **Keywords:** partial clinical remission; type 1 diabetes; C peptide.

METABOLISMO ÓSSEO E MINERAL

2611

EFFICACY OF ROMOSOZUMAB TREATMENT IN A PATIENT WITH ATYPICAL FRACTURE RELATED TO DENOSUMAB: A CASE REPORT

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Case presentation: A 63-year-old patient diagnosed with osteoporosis at age 46 began treatment in 2007, prescribed by a gynecologist, with sodium alendronate (ALN) for 5 years, followed by risedronate for 3 years. However, she continued to experience bone loss and opted to start denosumab in 2015 for another 5 years. In 2017, the patient suffered a bilateral atypical femur fracture with a medullary implant but continued treatment with denosumab. In 2020, a new endocrinological follow-up decided to suspend denosumab due to the risks of new side effects associated with its prolonged use, starting ALN as sequential treatment. One year later, bone loss in the BMD (lumbar spine) and an increase in CTX from 0.04 (with denosumab) to 0.33 (with ALN) were observed. At the end of the annual ALN cycle in 2022, anabolic therapy with romosozumab was initiated, with bone mass gain observed after 6 months of use. One year later, the patient continued with a single dose of zoledronic acid (ZOL). In the 2024 exams, the patient maintained stable bone mass and remodeling, indicating a good response to ZOL, which remains suspended, entering a drug holiday period. **Discussion:** Osteoporosis is a bone metabolic disease that increases the risk of fractures. Bisphosphonates are the first line for inhibiting bone resorption, reducing fractures, and increasing BMD. Denosumab inhibits osteoclast formation, especially for women at high risk of fractures. Although effective, discontinuing denosumab quickly leads to bone loss and an increased risk of vertebral fractures. In the literature, after an atypical fracture event, teriparatide is preferred. However, romosozumab was chosen due to its high anabolic activity, which increases BMD and reduces bone fractures. In this case, the patient showed a significant increase in BMD in the lumbar spine after using romosozumab following prolonged treatment failure (13 years) with bisphosphonates and denosumab. Studies show that romosozumab is superior to teriparatide in bone mass gain. **Final comments:** This case shows atypical fracture as a recognized side effect in long-term antiresorptive therapy and the challenge in managing this condition with the use of denosumab due to the difficulty in its weaning and the risk of rebound fracture. The choice of romosozumab as anabolic therapy after the use of denosumab is still scarcely described in the literature, but it proved effective in this case with adequate sequential treatment for each situation. **Keywords:** atypical fracture; romosozumab; denosumab.

OBESIDADE

2613

EPIDEMIOLOGICAL PROFILE OF PEDIATRIC PATIENTS ADMITTED DUE TO OBESITY AND DIABETES MELLITUS IN BRAZIL BETWEEN 2019 AND 2023

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Diabetes mellitus (DM) is a chronic metabolic disease of varied etiology, with risk factors at the social, behavioral, environmental and genetic levels. In children and adolescents, an increase in the prevalence of DM has been observed mainly along with obesity, which is associated with insulin resistance. The objective of this study was to analyze hospital admissions and costs, average length of stay and mortality rate of pediatric patients due to obesity and DM in Brazil between 2019 and 2023. This is an observational study that evaluates the morbidity and mortality profile in pediatric patients due to obesity and DM from January 2019 to December 2023 in Brazilian regions. The data were obtained using the Hospital Admissions System (SIH/SUS). The variables "Region", "Total Value", "Sex", "Color/Race", "Deaths", "Average Length of Stay" and age groups up to 19 years were selected. Between 2019-2023, in Brazil, 49,911 hospitalizations were recorded, with the highest percentage observed in the age group from 10 to 14 years (36%) and more prevalent among females (57%). The regions with the highest number of hospitalizations were the Southeast (21,642), Northeast (12,786), followed by the South (8,411). Most hospitalizations were emergency, representing 94% of the total. Regarding the color/race variable, the hospitalization of mixed-race individuals stood out, accounting for 21,953 young people. Regarding the average length of stay, the value was 5.8, with the highest average among children under 1 year old, with an average of 7.7 days of hospitalization. Hospitalizations totaled a cost of R$ 52,907,009.51 for the public coffers, with a greater predominance of spending among females. Regarding deaths, the total was 291, with a higher prevalence in the population aged 15 to 19 (53%). Following the pattern of hospitalizations, the Southeast region was the most prevalent, with a total of 110 deaths, followed by the Northeast region (99). Finally, there was no significant variation in deaths in the last 5 years, with a peak (67 deaths) in 2021, a standard deviation of 8.61 and an average of 56 deaths per year. Therefore, these data are useful for adopting preventive measures, mainly through healthcare in basic units, encouraging the adoption of lifestyle changes and adherence to pharmacological treatment, in order to reduce the number of hospitalizations, hospital costs and, mainly, the mortality rate associated with childhood obesity and DM. **Keywords:** obesity; diabetes mellitus; pediatrics.

TIREOIDE

2614

SUBCLINICAL HYPOTHYROIDISM IN PREGNANCY AND THE RISK OF SPONTANEOUS ABORTION: AN OVERVIEW OF SYSTEMATIC REVIEWS

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Introduction: Recent studies suggest a positive association between subclinical hypothyroidism (SCH) – a common condition characterized by elevated serum levels of thyroid-stimulating hormone (TSH) and normal levels of free thyroxine (T4) – and an increased risk of spontaneous abortion. **Objectives:** In order to clearly understand this association, an overview of systematic reviews was conducted to address the PICO question: "In pregnant women, is subclinical hypothyroidism associated with an increased risk of spontaneous abortion?". **Patients (materials) and methods:** Overview of systematic reviews conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, with no time restriction, based on the selection of full-text articles from five databases (BVS, SciELO, MEDLINE/PubMed, Scopus, and Web of Science) in English, Portuguese, and Spanish. **Results:** Four systematic reviews were included in the final sample of this overview, three of which were conducted with meta-analysis. When associating untreated subclinical hypothyroidism (SCH) with the occurrence of spontaneous abortion, the meta-analysis of one review indicated a pooled relative risk of 1.90 (95% CI 1.59-2.27, P < 0.01). Furthermore, three studies from the same article compared SCH with thyroid autoimmunity (TAI) and isolated SCH regarding the risk of abortion, demonstrating an increased risk of this outcome when the subclinical condition is associated with TAI. Regarding the risk of spontaneous abortion in patients positive for anti-thyroid antibodies, another review indicated an odds ratio (OR) of 3.7 (95% CI 1.8-7.6). In contrast, the same article demonstrated no statistically significant difference when associating subclinical hypothyroidism with spontaneous abortion, presenting an odds ratio (OR) of 0.69 (95% CI 0.10-5.0). **Conclusion:** The analyzed reviews reaffirm the divergences regarding the association between subclinical hypothyroidism and the risk of spontaneous abortion, highlighting the lack of comparative studies with clear results. Furthermore, all reviews were evaluated using the AMSTAR tool and considered to be of low or critically low quality. Therefore, it is recommended that more robust studies be conducted, with clear definitions of variables, the implementation of a standardized screening program, and the exploration of additional therapeutic options. **Keywords:** subclinical hypothyroidism; spontaneous abortion; early pregnancy loss.

ADRENAL E HIPERTENSÃO

2617

SECONDARY ARTERIAL HYPERTENSION DUE TO PRIMARY MACRONODULAR ADRENAL HYPERPLASIA: AUTOPSY CASE REPORT

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Case presentation: 65-year-old man, hypertensive, smoker and chronic alcoholic, not taking corticosteroids, with a history of severe abdominal pain and shortness of breath beginning five days before his death. He was found lifeless in his home. The body was taken to a Death Verification Service. At autopsy, the brain and pituitary gland showed no macroscopic lesions. There was a large thrombus in the pulmonary artery trunk. The heart showed concentric hypertrophy of the left ventricle, an area of old infarction and a thrombus in the right ventricle. The lungs were increased in weight and volume, congested and edematous. The adrenals were bilaterally increased in volume and weight (AD: 16,9 g and AE: 30,12 g). Both had several cortical yellowish nodules, not encapsulated, ranging from 1 to 15 mm. Under microscopy, the nodules showed polygonal cells with vacuolated eosinophilic cytoplasm, without pigments. The pituitary gland was free of neoplasia and showed hyaline Crooke's alteration in the par distalis. The myocardium had overlapping findings of hypertrophic and ischemic heart disease. **Discussion:** Primary macronodular adrenal hyperplasia is a rare cause of ACTH-independent Cushing's syndrome that is difficult to diagnose and often occurs incidentally. The computed tomography scan of the abdomen can reveal a significant, asymmetrical enlargement of both adrenals. Laboratorially, the condition is characterized by high plasma and urinary cortisol levels and low ACTH values. It is characterized by bilateral enlargement of the adrenals, as well as the presence of multiple nodules, larger than 1 cm in diameter, usually yellowish in color. The proliferation of this tissue can often be associated with excessive production of cortisol, the main clinical manifestation being Cushing's syndrome. However, this syndrome may not be diagnosed and may be characterized by the appearance of hypertension. **Conclusion:** The patient died from embolism and acute pulmonary edema due to hypertensive heart disease caused by hypertension secondary to adrenal hyperplasia. Although the most common clinical manifestation of the disease is Cushing's syndrome, it may not present with the classic picture, making diagnosis difficult. Therefore, this pathology needs more studies to better understand it and develop strategies to alter its progression and improve clinical management. **Keywords:** secondary arterial hypertension; macronodular adrenal hyperplasia; autopsy.

NEUROENDOCRINOLOGIA

2618

EFFECTIVENESS OF MELATONIN SUPPLEMENTATION IN REGULATING THE SLEEP-WAKE CYCLE IN INDIVIDUALS WITH DELAYED SLEEP PHASE SYNDROME (DSPS)

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Introduction: Delayed sleep phase syndrome (DSPS) is a circadian disorder characterized by a chronic delay in sleep timings, leading to daytime sleepiness and difficulty waking up. This misalignment is associated with delayed melatonin production. Treatments include chronotherapy, morning light exposure, and nighttime melatonin administration. Though optimal dosing and timing remain debated, Melatonin has improved sleep patterns and patient quality of life. This study reviews melatonin's effectiveness in regulating the sleep-wake cycle in DSPS patients. **Objective:** To evaluate the effectiveness of melatonin supplementation in regulating the sleep-wake cycle in individuals with delayed sleep phase syndrome (DSPS). **Materials and methods:** This systematic review followed the PRISMA guidelines to evaluate melatonin supplementation effectiveness in DSPS individuals. Studies included patients diagnosed with DSPS, comparing melatonin supplementation with other treatments or placebo, and evaluating sleep-wake cycle regulation as the primary or secondary outcome. Databases searched included PubMed, Cochrane Library, and Embase, using the search strategy: "((Delayed sleep phase syndrome) AND (melatonin supplementation)) AND (circadian rhythms)". 84 articles from randomized clinical trials and observational studies were found, and 11 were selected for detailed analysis and critical reading. **Results:** The review indicated that melatonin plays a significant role in treating primary sleep disorders, including DSPS. One study involving 61 DSPS individuals treated with 5 mg of melatonin for six weeks showed a significant reduction in average sleep onset and wake times (from 03:09 to 22:00). After 12 to 18 months, 96.7% reported improved sleep without significant side effects. Melatonin advanced the endogenous melatonin onset (DLMO) and sleep onset, with more pronounced effects in children. Measurement methods, including polysomnography, actigraphy, and sleep diaries, supported these findings. Discrepancies with previous studies may be due to the timing of melatonin administration, suggesting optimal effectiveness when administered a few hours before DLMO. **Conclusion:** The reviewed studies indicate that melatonin supplementation effectively regulates the sleep-wake cycle in DSPS patients. Nighttime melatonin administration significantly improves sleep onset and termination time reduces, sleep latency, and enhances patient quality of life. **Keywords:** delayed sleep phase syndrome; melatonin; circadian rhythms.

DIABETES MELLITUS

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INFLUENCE OF THE SINGLE NUCLEOTIDE POLYMORPHISM (SNP) IN THE MBL2 GENE AND ITS RELATIONSHIP WITH THE HEALING PROCESS OF DIABETIC FOOT ULCERS

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Introduction: Diabetic foot ulcers are common complications of diabetes, associated with high rates of hospitalizations, infections and amputations. Management is challenging and can be hampered by gene polymorphisms, especially variations that alter the sequence of the gene related to immune system proteins, leading to deficient production. One example is the deficiency of mannose-binding lectin (MBL), which activates the complement system and is essential in opsonization. **Objective:** To evaluate the diplotype of serum MBL production and its influence on the healing of diabetic foot ulcers. **Patients and methods:** This is a case study to evaluate the healing process over 30 days of care, observing the clinical evolution and progression to the healing process. At the end of the study, the percentage of total healing and the composition of the predominant tissues in the lesion were assessed, in addition to collecting peripheral blood for polymorphism analysis. The two patients evaluated were diabetic, with diabetic foot ulcers lasting less than 2 years. Finally, the single nucleotide polymorphism in the promoter region and in exon 1 of the MBL gene was evaluated and the variants were detected using the probes rs_11003125; rs_7096206; rs_5030737; rs_1800450 and rs_1800451. Five SNPs were evaluated in *MBL2*, three in the structural region, corresponding to variants D (rs_5030737 probe); B (rs_1800450) and C (rs_1800451 probe); and two in the promoter region equivalent to variants -550 (rs_11003125 probe) and -221 (rs_7096206 probe). **Results:** Patient 1 did not achieve complete healing, but showed a 15% reduction in the area of the lesion, with granulation tissue formation and reduced exudate, as well as a deficient serum MBL production diplotype (LXA/LXO). Patient 2 had the HXA/HXA diplotype (intermediate/high producer of serum MBL), which may have implied a higher healing rate, achieving complete healing of the ulcer. **Conclusion:** The intermediate/high MBL producer profile is related to MBL's better biological function, suggesting that healing may be influenced by the protein's production status. **Keywords:** diabetes mellitus; diabetic foot; polymorphism, genetic.

DISLIPIDEMIA E ATEROSCLEROSE

2620

FAMILIAL PARTIAL LIPODYSTROPHY: COMPARE OF METABOLIC PROFILE IN LMNA AND NON-LMNA VARIANTS

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Introduction: Familial partial lipodystrophy (FPLD) is a genetic condition characterized by partial deficiency of subcutaneous adipose tissue and associated metabolic alterations. Classification of subtypes and genotype-phenotype relationships is controversial and incomplete. Advances in genetic testing have identified new mutations in patients presenting with clinical manifestations of lipodystrophy, necessitating further studies on the pathophysiology of these adipose deficiencies and their metabolic implications. **Objective:** To describe clinical and laboratory profile of patients with FPLD2 compared to a group meeting clinical criteria for FPLD, with or without mutations related to lipodystrophy. **Methods:** Medical records review of patients clinically diagnosed with FPLD who underwent prior genetic testing. Descriptive and statistical analysis using chi-square and Mann-Whitney tests were performed to compare LMNA and Non-LMNA groups. **Results:** Forty-six patients (42 female, 4 male), aged 20-71 years, were evaluated. The LMNA group comprised 28 patients; the Non-LMNA group (18 patients) included variants related to lipodystrophy (MNF2, PPARG, POLD1), variants unrelated (SPINK1, BSCL2 heterozygous, 5 LPL heterozygous) and 6 patients without identified genetic mutations. Among the 28 LMNA patients, 78.5% had hypertriglyceridemia; 60.7% diabetes mellitus (DM); 67.8% systemic arterial hypertension (SAH); 75% hepatic steatosis (HS); 3.57% acute pancreatitis (AP). In the Non-LMNA group, 100% had Hypertriglyceridemia; 83.3% DM; 72.2% SAH; 88.8% HS; 27.7% AP. Statistically significant differences were found in the incidence of hypertriglyceridemia (p 0.035) and pancreatitis (p 0.017). The last HbA1c values and peak triglyceride levels showed statistically significant differences between the groups (p 0.022 and < 0.001, respectively). In the LMNA group, the median peak triglyceride level was 273 mg/dL and the median HbA1c was 6.6%, while in the Non-LMNA group, these were 1,759 mg/dL and 8.1%, respectively. **Conclusion:** Non-LMNA group exhibited higher incidence of hypertriglyceridemia and pancreatitis, as well as elevated triglyceride and HbA1c levels. Despite FPLD2 being the most studied form of lipodystrophy, other subtypes, including yet unidentified forms, may present with greater metabolic severity and risk of pancreatitis. Thus, increased attention is warranted in diagnosing patients with genetically and phenotypically diverse forms from Dunnigan syndrome. **Keywords:** lipodystrophy; familial partial lipodystrophy; metabolic alterations.

METABOLISMO ÓSSEO E MINERAL

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SEVERE HYPERCALCEMIA AS A MANIFESTATION OF PRIMARY HYPERPARATHYROIDISM DUE TO PARATHYROID ADENOMA – A CASE REPORT

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Case presentation: A 38-year-old female presented to an orthopedic emergency department of the public health system due to a fall from standing height, resulting in a partial tear of the quadriceps tendon in the right knee and signs of proximal injury to both the quadriceps and patellar tendons in the left knee, necessitating surgical correction. Upon investigation, severe hypercalcemia was identified (corrected serum calcium levels by albumin = 15.52 mg/dL) associated with elevated parathyroid hormone (PTH) levels at 1276.2 pg/mL. She had a protein electrophoresis without monoclonal spike and a history of recurrent urinary lithiasis. A parathyroid ultrasound (USG) revealed a predominantly solid and hypoechoic nodule with cystic spaces and discrete calcifications in between, located posterior to the middle and lower third of the right thyroid lobe, measuring 4.0 x 2.5 x 2.6 cm. A parathyroid scintigraphy showed hyperactivity in the right parathyroid region. The patient underwent a parathyroidectomy with histopathological and immunohistochemical results consistent with a parathyroid adenoma. She evolved without new episodes of hypercalcemia but is under nephrology follow-up for chronic kidney disease as a result of the late diagnosis of hyperparathyroidism. **Discussion:** This case draws attention due to the atypical laboratory presentation of primary hyperparathyroidism associated with a parathyroid adenoma. Benign parathyroid disease usually presents with mild to moderate elevations in calcium or even normal calcium levels with modest PTH elevations, often 1.5 to 2 times the upper limit of normal. In this case, calcium levels compatible with severe hypercalcemia were found, along with PTH elevation more than 10 times the upper limit of normal, raising concerns among the medical team due to the potential indication of malignancy, especially parathyroid cancer, since hypercalcemia was accompanied by extreme PTH levels. Histological and immunohistochemical confirmation was essential to reach the final diagnosis**. Final comments:** This case underscores the importance of thorough investigation and exclusion of differential diagnoses, particularly malignancies. Prompt diagnosis and treatment are crucial to avoid associated complications. **Keywords:** hypercalcemia; hyperparathyroidism; nephrolithiasis.

DIABETES MELLITUS

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SYSTEMIC ARTERIAL HYPERTENSION ASSOCIATED WITH DIABETES MELLITUS IN THE NORTHEAST: AN EPIDEMIOLOGICAL PROFILE FROM 2019 TO 2023

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Introduction: Systemic arterial hypertension (SAH) and diabetes mellitus (DM) are two comorbidities that predominate in public health problems and are frequently associated in clinical practice. There is an increase in prevalence possibly related to population aging and increased sedentary lifestyle that raises overweight and obesity rates. This coexistence increases the risk of vascular complications, such as acute myocardial infarction. **Objectives:** To analyze the epidemiological profile of the concomitant SAH and DM in the northeastern population in the last 5 years. **Methods:** This is a descriptive and retrospective study analyzing the association between SAH and DM in the population of the Northeast between 2019 and 2023. The data were obtained from the Department of Information Technology of the Unified Health System (DATASUS), using the Health System. Hospital Admissions – SIH. The variables analyzed were: year of processing, age group, sex, color or race, number of deaths, average length of stay and total value. Statistical analysis was performed using Microsoft Excel software. **Results:** During that period, 290,495 cases occurred in the NE region. Among these, it is worth noting that the most affected age group is 60 to 69 years of age, accounting for 23.23% of the affected population. Most hospitalizations occurred on an emergency basis, representing 93.26% of the total. Furthermore, mixed race (65.04%) and female patients (53.56%) are the most affected epidemiological variables. 11,144 cases resulted in death, with a predominance in the age group of 80 years or older (28.74%). Regarding the average length of stay, the total value was 6.4 days, and the highest average found was among children under 1 year old, with 8.4 days. The cost of hospitalizations reached the value of 194,470,971.00 *reais*, with a greater predominance of expenses in the female population and in the age group of 60 to 69 years. **Conclusion:** Thus, a specific portion of the population demonstrated the association. It is worth highlighting the urgent nature of hospitalizations, which is possibly related to the difficulty of managing these morbidity factors when combined. Therefore, greater action is needed from health services aimed at this population, in order to promote access to treatments, continuous monitoring and, consequently, better blood pressure and glycemic control. This will reduce both hospital costs and mortality due to complications of SAH and DM. **Keywords:** diabetes mellitus; systemic arterial hypertension; mortality.

METABOLISMO ÓSSEO E MINERAL

2623

SERUM BIOMARKERS RELEVANCE IN ROUTINE BLOOD TESTS ON THE DIAGNOSIS OF A RARE ASSOCIATION OF ASYMPTOMATIC BONE DISEASES

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Case presentation: A 73-year-old female patient was referred to a specialized bone disease outpatient clinic for investigation of an alkaline phosphatase (ALP) of 127 U/L, reference value (RV) up to 104 U/L, in routine blood tests. The biochemical tests showed an increase in bone turnover: C-telopeptide 0.896 ng/mL (lower value 0.650 ng/mL) and procollagen amino terminal propeptide type 1 104 micro/L (RV 16.3 to 73.9 micro/L), and the hypothesis of Paget's disease of bone (PDB) was raised. The serum calcium 10.8 mg/dL (RV up to 10.3 mg/dL), PTH 92 pg/mL (RV up to 67 pg/mL) and calciuria 337 mg/24 h (RV 100 to 300 mg/24 h) confirmed the diagnosis of primary hyperparathyroidism (PHPT). During follow-up, bone scintigraphy identified hyperuptake in the skull region and a simple skull x-ray showed thickening of the skull cap and mixed lytic and blastic lesions compatible with PDB. Bone densitometry revealed a T-score of -3.1 in the distal radius. Ultrasound, 4D computed tomography of the cervical region and bone scintigraphy of the parathyroid glands with Sestamibi did not identify an adenoma, which is why the surgeon refused to operate even in the face of patient's osteoporosis and high calciuria. As therapy, the patient received an intravenous infusion of zoledronic acid and is being followed up. **Discussion:** PDB is a rare disease characterized by excessive osteoclastic activity and disordered increase in osteoblastic activity, which seems to involve genetic and environmental factors. PHPT is defined as the presence of high or inadequately normal PTH levels and normo or hypercalcemia, which can lead to osteoporosis, hypercalciuria, as observed in the patient, and renal lithiasis. More than 80% of cases of PHPT occur due to the presence of single adenomas. Although PDB and PHPT have different physiopathology, both are chronic bone diseases, often asymptomatic and more prevalent in the elderly. Thus, the diagnosis is suggested by incidental radiological or laboratory findings (ALP, PTH and serum calcium) in investigations of other clinical conditions. In the case, these pathologies coexist in the same patient, a rare scenario, and the dosage of these biomarkers in routine blood tests was essential for diagnosis and enabled early management of the condition. **Final comments:** The case shows a rare association of osteometabolic diseases and the importance of including ALP, PTH and serum calcium as routine blood tests, since most cases of PDB and PHPT are asymptomatic. **Keywords:** osteitis deformans; hyperparathyroidism, primary; biomarkers.

METABOLISMO ÓSSEO E MINERAL

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NON-LETHAL RAINE SYNDROME: A CASE REPORT

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A female patient, 18 years old, was referred for endocrinology follow-up due to hypophosphatemic rickets, reporting a diagnosis of Melnick-Needls syndrome since the age of 8. The daughter of non-consanguineous parents, born at term, had a history of intensive care hospitalization after birth, hydrocephalus since the first year of age and delayed neuropsychomotor development. On physical evaluation, she presented with short stature, microcephaly, arched eyebrows, midface hypoplasia, ocular proptosis, downward slanting palpebral fissures, thin upper lip, short neck, micrognathia, absence of teeth in the upper and lower arches, high-arched palate, brachydactyly and genu valgum. Imaging tests identified dysplasias in the carpal and hand bones, dysplastic changes in the femur with slight bowing. A molecular panel for hypophosphatemic rickets was performed, and two heterozygous pathogenic variants in the FAM20C gene associated with Raine syndrome were identified. Raine syndrome is a rare autosomal recessive disease, with a prevalence of less than 1:1,000,000, caused by pathogenic variants in the FAM20C gene, located on chromosome 7p22.3. It is an osteosclerotic bone dysplasia characterized mainly by the presence of cerebral calcifications, exophthalmos, choanal atresia or stenosis, and underdeveloped midface, and may present with varying degrees of intellectual disability, microcephaly, short stature, dental alterations (dental enamel hypoplasia, yellow teeth), among other phenotypic alterations. Patients usually present with hypophosphatemia, hypocalcemia and reduced levels of 25-OH-vitamin D, elevated levels of FGF23 (fibroblast growth factor 23) and PTH (parathyroid hormone), hyperphosphaturia, among other findings. Although it was initially described as a lethal entity, non-lethal cases of Raine syndrome have been described over time, highlighting the broad phenotypic spectrum of the disease. We will describe one of the non-lethal cases diagnosed. **Keywords:** rickets, hypophosphatemic; hydrocephalus; microcephaly.

ADRENAL E HIPERTENSÃO

2626

ADRENAL INCIDETALOMA CO-SECRETING ALDOSTERONE AND CORTISOL IN A HYPERTENSIVE PATIENT: A CASE REPORT

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Case presentation: A 57-year-old woman was taking 4 antihypertensive drugs and had undergone right nephrectomy for recurrent nephrolithiasis, prediabetes, and grade I obesity. She was investigated for secondary hypertension and adrenal incidentaloma due to a finding of a solid nodular image in the topography of the right adrenal gland on ultrasound of the kidneys and urinary tract. In the anamnesis, the patient denied symptoms of paroxysms, and no Cushingoid phenotypes were found on physical examination. The nodule was confirmed on contrast-enhanced magnetic resonance imaging, which measured 3.3 cm and had characteristics of an adenoma. In the investigation of the nodule's hormonal function, a serum cortisol level of 4.6 mg was found after suppression with 1 mg of dexamethasone, and free cortisol in 24-hour urine showed discordant values: one test was positive and the other negative. The adrenocorticotropic hormone level was 7 pg/mL. Furthermore, the patient had an aldosterone level of 24 ng/dL with plasma renin activity (PRA) of < 0.1 ng/mL/h (adjusted to 0.4 ng/mL/h due to suppressed levels). The aldosterone:renin ratio considering the PRA adjustment was 60, suggestive of primary hyperaldosteronism. Screening for pheochromocytoma was negative. Spironolactone was started to improve blood pressure control and the patient was referred to urology for surgical evaluation for removal of the adenoma. **Discussion:** The approach to an adrenal incidentaloma includes the exclusion of malignancy and the evaluation of hormonal functionality, with subclinical Cushing's syndrome being the most frequently detected. The incidence of co-secretion of aldosterone and cortisol is unclear, with the first case reported in the literature in 1979. The prevalence of the association of the two conditions varies from 5% to 19% in the literature, with the most common scenario being the presence of hyperaldosteronism with subclinical production of cortisol, without clear symptoms of Cushing's syndrome, compatible with the case presented. This fact justifies the underdiagnosis of the condition in many patients, which is worrying because the dual secretion of cortisol, albeit subtle, and aldosterone exposes the patient to a greater risk of cardiovascular events**. Final comments:** The case highlights the importance of careful evaluation of an adrenal incidentaloma in a hypertensive patient. Proper screening is essential, aiming at preventing adverse cardiovascular outcomes.
Keywords: adrenal gland; hypercortisolism; hyperaldosteronism.

ENDOCRINOLOGIA DO EXERCÍCIO

2627

IMPACT OF EXERCISE ON BONE HEALTH AS A PREVENTION OF OSTEOPOROSIS: A SYSTEMATIC REVIEW

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Introduction: Osteoporosis is a clinical condition in which a reduction in bone density weakens bones, making them susceptible to breakage. Bone health is crucial for the prevention of diseases such as osteoporosis, and physical exercise plays an important role in maintaining bone density and preventing fractures, so that bone regeneration and remodeling can be stimulated when needed. This systematic review aims to explore the impact of exercise on bone health. **Objective:** To assess the impact of exercise on bone health, including its influence on bone mineral density and the prevention of bone diseases such as osteoporosis. **Methods:** A systematic review was carried out according to the PRISMA 2020 guideline. The question was: "What is the impact of physical exercise on bone health?" The descriptors "Physical Exercise", "Bone Health" and "Bone Mineral Density" were used in Portuguese, English and Spanish, combined with Boolean operators OR and AND. The search was carried out in the PubMed, BVS and *Periódicos Capes* databases. Free articles were included, in Portuguese, English or Spanish, published in the last 10 years, with solid methodology. Reviews, case reports, animal studies and inconsistent methodologies were excluded. **Results:** The search resulted in 950 articles. After applying the eligibility criteria, 300 studies were selected, with 15 being duplicated and removed. The review identified 10 relevant articles. The studies showed that physical exercise, especially resistance exercise and exercise involving impact, has a positive impact on bone mineral density and overall bone health in the long term. The combination of strength training with impact activities showed the best results for preserving bone health and stimulating the prevention of osteoblasts and osteocytes. **Conclusion:** Physical exercise is essential for maintaining bone health, helping to prevent bone loss and reduce the risk of fractures. It is recommended that resistance exercises and impact activities be incorporated into the routine to promote bone health and prevent associated diseases. Conflicts of Interest: There are no conflicts of interest.
Keywords: physical exercise; bone health; bone mineral density.

ENDOCRINOLOGIA PEDIÁTRICA

2628

ANALYSIS OF GOVERNMENT EXPENDITURE ON INFANTILE MALNUTRITION IN HOSPITAL ADMISSIONS IN THE STATE OF BAHIA BETWEEN 2020 AND 2024

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Introduction: Infantile malnutrition (IM) is characterized by many pathological conditions caused by deficiency of proteins and calories, affecting children and associated with chronic infectious and metabolic pathologies. **Objective:** To evaluate public spending on Infantile malnutrition in hospital admissions in the state of Bahia over the last 5 years. **Methods:** Descriptive and retrospective study analyzing financial investments in Bahia with malnutrition in pediatric age, considering patients under 1 year old up to 14 years old between 2020 and 2024. Data were obtained from the Department of Informatics of the Unified Health System (DATASUS), using the Hospital Admissions System – SIH. The variables "Total value", "Year/month of processing", "Age group", "CID 10 Morbidity List" were selected. Statistical analysis was performed using Microsoft Excel software. **Results:** Expenditure on malnutrition in pediatric age in the State of Bahia decreases with increasing age, being mostly concentrated in the age group under 1 year old (representing 91,6% of total in 2020, 88,51% in 2021, 81,24% in 2022, 84,35% in 2023 and, until May, 80,62% in 2024). The average monthly amount of IM in the stipulated period is R$ 163.361,63 and there is no linear decreasing trend, with decreases between 2020 and 2022 (-5.17% and -12.5%) and increases in 2023 (+19.97%). During this period, the number of hospitalizations was 3797, with a total cost of R$ 8.658.166,79 and the average outlay per hospitalization was R$ 2280,26. 2023 recorded the maximum number of patient hospitalizations (930) and 2020 recorded the minimum (791). The average number of hospitalizations per year between 2020 and 2023 was 849,75 and there was no regression over the years, with increases and decreases interspersed. **Conclusion:** The highest values used for the treatment of IM are concentrated in those aged less than one year, although there is no linear decrease over the years analyzed. This suggests that public measures aimed at avoiding possible expenses should be carried out with parents and guardians from the prenatal period and in childcare monitoring. Campaigns are necessary in the Family Health Strategy, encouraging monitoring by relatives and guardians during the growth period, in addition to training the multidisciplinary team. This will make it possible to reduce government cost on IM, avoid metabolic disorders and promote a better quality of life to those families. **Keywords:** nutrition; children; pediatrics.

NEUROENDOCRINOLOGIA

2629

HUMAN ENDOGENOUS RETROVIRUSES (HERVS) AND THEIR ROLE IN PITUITARY TUMORIGENESIS

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Introduction: Pituitary neuroendocrine tumors (PitNETs) represent 10%-20% of brain tumors, with non-functioning pituitary neuroendocrine tumors (NF-PitNETs) constituting 15%-30% of PitNETs and lacking hormonal hypersecretion. Recent studies suggest that human endogenous retroviruses (HERVs), which make up 8%-9% of the human genome, may play roles in various cancers. This study investigates HERV expression in NF-PitNETs and their potential contribution to tumorigenesis. HERVs are known to contribute to tumorigenesis through mechanisms such as genomic instability, dysregulation of neighboring genes, and modulation of the tumor microenvironment. The immunogenic properties of HERVs present a unique opportunity to develop cancer vaccines and targeted therapies, potentially revolutionizing the treatment of several human cancers. **Methods:** Ethical approval was obtained, and NF-PitNET samples were collected from patients with clinical, hormonal and pathological diagnosis of NF-PitNET. RNA-Seq data from public repositories and local cohorts were analyzed to identify differentially expressed HERVs. The quantification of HERV transcripts was performed using the bioinformatics pipeline Telescope, with differential expression of HERVs ($p < 0.05$, fold-change $\log2 > 1.0$) illustrated through the construction of volcano plots. Gene expression was validated using an orthogonal RT-PCR developed for HERV sequences. Comparisons between group means were conducted using the Mann-Whitney U test ($p < 0.05$). **Results:** RNA-Seq data revealed distinct HERV expression profiles in NF-PitNETs compared to normal pituitary tissue. Specifically, two HERV-K loci (HML3_7q11.21 and HML3_4q13.3b) were upregulated in NF-PitNETs, while several HERV-H loci were downregulated. RT-PCR validation and IHC confirmed higher HERV-K protein expression in NF-PitNET tissues *versus* controls. **Conclusion:** This research is the first to comprehensively analyze HERV expression in NF-PitNETs, uncovering novel molecular mechanisms that could revolutionize our understanding and treatment of these tumors. Our study reveals significant differential expression of HERV-K and HERV-H in NF-PitNETs, implicating these retroviruses in tumorigenesis. Specifically, the overexpression of HERV-K and underexpression of HERV-H may drive tumor growth and progression. These findings position HERVs as promising biomarkers and therapeutic targets in NF-PitNET. **Keywords:** pituitary adenomas; non-functioning pituitary neuroendocrine tumors; neuroendocrine hormones.

OBESIDADE

2630

WERNICKE'S ENCEPHALOPATHY AS AN EARLY COMPLICATION POST-GASTRIC BYPASS IN A YOUNG PATIENT WITH FOOD SELECTIVITY: CASE REPORT AND CHALLENGES IN CLINICAL SUSPICIONS

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Case presentation: A 20-year-old female, from Recife, PE, with a history of obsessive-compulsive disorder, generalized anxiety disorder, and food selectivity, underwent laparoscopic gastric bypass (gastric sleeve) three months prior and cholecystectomy nine days before admission due to symptomatic cholelithiasis. She developed diplopia immediately post-operatively after cholecystectomy. Upon admission, she exhibited restricted lateral eye movement and diplopia, with no abnormalities on imaging studies. The second day after admission, she experienced postural instability, developing paresthesia in the lower limbs and requiring assistance for ambulation. On the fourth day, she presented with drowsiness and vertiginous symptoms, progressing to disorientation and ataxia. Thiamine replacement was initiated due to clinical suspicion of Wernicke's Encephalopathy (WE). Magnetic resonance imaging (MRI) showed changes consistent with this disorder, and vitamin B1 levels were measured at 16.9 µg/L (reference range 28-85 µg/L). Follow-up MRI demonstrated bilateral and symmetrical improvement in the thalamus and brainstem, showing significant response to the instituted therapy. There was considerable regression of symptoms after thiamine replacement and multidisciplinary rehabilitation. **Discussion:** The incidence of neurological complications following bariatric surgery varies from 0.7% to 5%, with WE classically characterized by the triad of motor ataxia, altered mental status, and ophthalmoplegia – showing increased sensitivity to detection when considering nutritional deficits, as seen in the patient described. Low thiamine levels prior to the procedure (a vitamin with rapidly depleting stores in the absence of intake) may contribute to a rapid clinical progression. In this reported case, there were dietary restrictions, a status post-bariatric surgery, alongside emesis and reduced intake due to symptomatic cholelithiasis. **Final comments:** It is crucial to consider WE as a potentially fatal complication stemming from thiamine deficiency, highlighting the significance of its early presentation post-gastroplasty in a patient with food selectivity. Therefore, a multidisciplinary approach to managing nutritional deficiencies is essential, along with establishing care not only in the post-operative phase but fundamentally, in the pre-nutritional status of patients. **Keywords:** Wernicke encephalopathy; thiamine deficiency; gastroplasty.

TIREOIDE

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ANALYSIS OF PEDIATRIC HOSPITALIZATIONS FOR THYROID DISORDERS RELATED TO IODINE DEFICIENCY IN THE NORTHEAST OVER THE LAST 5 YEARS

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Introduction: Thyroid disorders related to iodine deficiency include goiter, hypothyroidism, and hyperthyroidism, and their repercussions can significantly impact physical and mental development, especially when they occur in childhood. **Objective:** To statistically analyze pediatric hospitalizations for thyroid disorders related to iodine deficiency in the Northeast (NE) between 2019 and 2023, in order to enable the planning of more effective interventions. **Methods:** This is a cross-sectional, quantitative, and descriptive study that evaluates hospitalizations for thyroid disorders related to iodine deficiency in the pediatric age group from January 2019 to December 2023 in BA. Data were obtained from the *Departamento de Informática do Sistema Único de Saúde* (DATASUS), using the *Sistema de Internações Hospitalares* (SIH). The selected variables were "*Unidade da Federação*", "*Ano atendimento*", "*Caráter atendimento*", "*Faixa etária*", "*Cor/raça*" and "*Sexo*" Statistical analysis was performed using Microsoft Excel software. **Results:** From the analysis of the data obtained with the application of the filters, it is possible to observe that the highest number of hospitalizations recorded throughout the Northeast was concentrated in 2019, representing about 33% of all hospitalizations in the analyzed period. Furthermore, this concentration in 2019 was attested in all regions of Brazil. Moreover, delving into the age profile study, it is pertinent to note that the pediatric share of hospitalizations in the NE, for the type of thyroid disorder researched, consisted of 28% of the period's records in the region. Additionally, conducting a sociodemographic study of this pediatric share of hospitalizations, no major discrepancies were identified regarding the sex and ages of the patients, with an almost homogeneous distribution among these variables. However, 83% of hospitalizations occurred in emergency situations, with a notable concentration in the state of Pernambuco. **Conclusion:** These findings underline the need for special attention to thyroid disorders related to iodine deficiency in the pediatric population of the Northeast, especially considering the high rate of emergency hospitalizations. It is imperative that public policies and health strategies are directed towards the prevention and early treatment of these disorders in this region, aiming to reduce the incidence of critical cases that require urgent hospitalizations. **Keywords:** thyroid disorders; pediatrics; epidemiology.

DIABETES MELLITUS

2634

ASSESSMENT OF MANNOSE-BINDING LECTIN CONCENTRATION AND THE HEALING OF DIABETIC FOOT ULCERS

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Introduction: Mannose-Binding Lectin (MBL) is a plasma protein of the innate immune system that plays a role in pathogen neutralization. MBL is part of the lectin group, which are proteins that bind on the surface of pathogens, activating the complement system and promoting pathogen degradation. Studies suggest that in diabetic patients, particularly those with poor glycemic control, MBL deficiency may be associated with an increased risk of infections and the severity of diabetic foot ulcers. **Objective:** To measure MBL levels in the serum of patients with diabetic foot ulcers and assess the influence of different concentrations on the healing process. **Materials and methods:** A prospective cohort with nine patients diagnosed diabetes mellitus and foot ulcers. Ulcers of vascular, mixed, or other etiologies, as well as lesions lasting longer than 2 years, were excluded. Patients were followed for two and a half months, and ulcers were clinically assessed by specialist professionals. Peripheral blood samples were collected at four different time points for each patient to assess the MBL concentration curve. An in-house indirect ELISA method was used for MBL measurement. The plate (96-well Nunc MaxiSorp) was pre-coated overnight with mannose, blocked with BSA solution, washed three times with PBS + Tween-20 solution, and the samples were diluted in a buffer consisting of 0.5% BSA/TBS + 0.0005 M calcium, using an avidin-biotin peroxidase system, performed in duplicates. **Results:** Patients showed varying clinical progression with different healing percentages. Regarding the composition of predominant tissues in the wound bed, edges, and perilesional skin, there was progression to granulation tissue formation and epithelialization, with reduced exudate, decreased maceration, and replacement of non-viable tissues with viable ones. MBL concentration in peripheral blood showed a concentration pattern according to the stage of the healing process, with higher levels during periods of non-viable tissue such as liquefactive and coagulative necrosis, and lower levels when granulation predominated. **Conclusion:** Fluctuations in MBL levels appear to be an adjunctive factor in the healing process of diabetic foot ulcers, as the studied protein may act in an immunomodulatory manner by activating components of the innate immune system to promote tissue repair. Understanding the relationship between MBL and diabetic foot ulcers is important for developing preventive interventions. **Keywords:** diabetes; foot ulcers; mannose-binding lectin.

OBESIDADE

2635

THE EFFICACY OF TIRZEPATIDE IN THE TREATMENT OF OBESITY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Introduction: Weight loss is essential for promoting health in obese patients with type 2 diabetes mellitus (T2DM). Tirzepatide is a dual agonist of GLP-1 and GIP receptors that offers an innovative approach to effective glycemic control and weight loss, along with improvements in metabolic parameters. **Objective:** In this current context, this study aims to evaluate the efficacy of tirzepatide in managing patients with obesity and T2DM. **Methods:** This is a systematic review with a descriptive and qualitative approach, constructed according to PRISMA guidelines. The search was conducted in online databases: PubMed, Scopus, and Web of Science, using the descriptors “tirzepatide,” “type 2 diabetes mellitus,” and “obesity.” Clinical trials, observational studies, and systematic reviews published between 2019 and 2024, focusing on the efficacy of tirzepatide in patients with T2DM and obesity, were included. Exclusion criteria included duplicate articles on search platforms, those not addressing the central theme, opinion articles, and incomplete works. **Results:** The search yielded 37 articles; however, after applying the aforementioned criteria, 8 were selected for this study. The analysis revealed that tirzepatide is highly effective in reducing weight and improving glycemic control. The medication reduced hemoglobin A1c levels by 1.7% to 2.4% and promoted an average weight loss of 11.3% to 12.9% of initial body weight. Additionally, tirzepatide improved important metabolic parameters such as blood pressure, with average reductions of 8-10 mmHg, and also benefited the lipid profile by reducing LDL cholesterol and triglyceride levels. In terms of safety, tirzepatide was well tolerated, with the most common adverse effects being gastrointestinal, such as nausea, vomiting, and diarrhea. Serious adverse effects were reported infrequently. This analysis indicates that tirzepatide showed superiority over other available therapies, such as other GLP-1 agonists and insulin, in terms of efficacy for glycemic control and weight reduction. **Conclusion:** Tirzepatide appears to be a promising therapeutic option for patients with T2DM and obesity, offering significant improvements in glycemic control and weight loss. The benefits outweigh the risks for most patients, although continuous monitoring is needed to track long-term adverse effects and optimize treatment strategies. **Keywords:** tirzepatide; type 2 diabetes mellitus; obesity.

NEUROENDOCRINOLOGIA

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CENTRAL DIABETES INSIPIDUS AS THE INITIAL MANIFESTATION OF LANGERHANS CELL HISTIOCYTOSIS

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Case presentation: A 24-year-old Caucasian female patient, with no prior comorbidities, presented with polyuria (approximately at 8 L/day) and polydipsia. Five months later, she developed amenorrhea and moderate-intensity headache (tight, frontal, non-radiating). By the 9th month, she experienced bitemporal hemianopsia. Laboratory tests revealed pan-hypopituitarism with the following. **Results:** cortisol levels at 8 am of 1.1 and 1.9 mcg/dL, TSH 0.45 µUI/mL (reference range 0.38 - 5.33), free T4 0.67 ng/dL (reference range 0.54-1.24), FSH 1.56 mUI/mL, LH < 0.20 mUI/mL, E2 < 15 pg/mL, IGF-1 43 ng/mL (reference range 98-289), and hyperprolactinemia (PRL 83.23 ng/mL). An MRI of the pituitary showed a suprasellar tumor (1.7 x 2.2 x 2.1 cm) near the optic chiasm, suggestive of craniopharyngioma. The patient was admitted for an endocrinological evaluation and subsequent surgery. During hospitalization, she continued to experience polyuria (10 L/day), with a fluid intake of 6 L/day, plasma sodium of 147 mEq/L, and urine specific gravity < 1.005. She was treated with hydrocortisone, levothyroxine, and desmopressin. Transsphenoidal microsurgery revealed a lesion macroscopically suggestive of optic nerve glioma. Biopsy results were inconclusive, but immunohistochemistry (IHC) supported the diagnosis of Langerhans Cell Histiocytosis (LCH). Post-surgery chest CT and abdominal MRI showed no abnormalities. **Discussion:** LCH is a rare neoplastic histiocytic disorder that primarily affects the bones and skin, with a higher incidence in male children (5 cases per million). Central diabetes insipidus may precede the diagnosis in 4% of cases, occur concurrently in 18%, or manifest after diagnosis. Other pituitary hormone deficiencies may be associated, most commonly growth hormone deficiency followed by gonadotropin deficiency, while corticotropin and thyrotropin deficiencies are less frequent; hyperprolactinemia may also occur. **Concluding remarks:** LCH presents with heterogeneous clinical manifestations and a broad differential diagnosis. The case described here is epidemiologically and clinically unusual, with central diabetes insipidus as the initial manifestation and pituitary involvement, without clinical evidence of involvement in other systems. Therefore, evaluating pituitary tumors should be performed carefully, including IHC techniques for accurate etiological analysis and subsequent therapeutic management. **Keywords:** Langerhans cell histiocytosis; diabetes insipidus; pan-hypopituitarism.

TIREOIDE

2640

EFFECTIVENESS OF THERAPIES FOR MULTINODULAR GOITER: A SYSTEMATIC REVIEW

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Introduction: Multinodular goiter is a condition characterized by the presence of multiple nodules in the thyroid gland, which can cause compressive symptoms and metabolic problems. Toxic uni- or multinodular goiter (Plummer's disease) sometimes results from mutations in the TSH receptor gene, causing continuous activation of the thyroid. Patients with toxic nodular goiter do not have the autoimmune manifestations or circulating antibodies seen in Graves' disease. Furthermore, in contrast to Graves' disease, uninodular or multinodular goiters do not usually go into remission. The efficacy of therapies for multinodular goiters is fundamental to the management of the condition. **Objective:** To evaluate the effectiveness of therapies for multinodular goiter, including drug treatment, radioactive iodine therapies and surgical interventions. **Methods:** A systematic review was carried out in accordance with the PRISMA 2020 guideline. The question was: "What is the effectiveness of therapies for multinodular goiter?" The descriptors "Multinodular Goiter", "Treatment" and "Therapies" were used in Portuguese, English and Spanish, combined with Boolean operators OR and AND. The search was carried out on the PubMed, BVS and *Periódicos Capes* databases. Free articles were included, in Portuguese, English or Spanish, published in the last 10 years, with solid methodology. Reviews, case reports, animal studies and inconsistent methodologies were excluded. **Results:** The search resulted in 1,020 articles. After applying the eligibility criteria, 300 studies were selected, with 17 being duplicated and removed. The review identified 8 relevant articles. The studies showed that therapies for multinodular goiter, including radioactive iodine treatment and surgery, are effective in reducing goiter volume and improving symptoms. Drug treatment can be used for less severe cases or as a complement to other therapies. **Conclusion:** Therapies for multinodular goiter, including radioactive iodine and surgery, are effective in reducing nodules and improving symptoms. The choice of treatment should be based on the severity of the condition and the patient's characteristics. Conflicts of Interest: There are no conflicts of interest. **Keywords:** multinodular goiter; treatment; therapies.

METABOLISMO ÓSSEO E MINERAL

2641

AUTOSOMAL DOMINANT OSTEOPETROSIS TYPE II IN A YOUNG WOMAN: CASE REPORT

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Introduction: The term osteopetrosis refers to a group of hereditary bone diseases, characterized by generalized osteosclerosis and potential pathological fractures. Autosomal dominant osteopetrosis type II (ADO2) is the most common form, being caused by mutations in the chloride channel 7 (CLCN7) gene, which impair osteoclastic activity. We present a case of genetically confirmed ADO2 in a young woman. **Case presentation:** A 28-year-old woman arrives at the endocrinology outpatient clinic with chronic and intense low back pain, resistant to conventional analgesics, causing limited mobility. In initial complementary exams, radiographs of the thoracic and lumbar spine demonstrated sclerosis of the vertebral bodies in the upper and lower portions, with a radiolucent center, without evidence of fractures and with preserved intervertebral spaces. Laboratory tests demonstrated: Serum calcium (corrected by albumin): 9.4 mg/dL; serum phosphorus: 3.4 mg/dL; parathyroid hormone: 13.0 pg/mL. Blood count, renal function, lipids and blood glucose were normal. Additional investigation identified elevated serum levels of tartrate-resistant acid phosphatase (TRAP) [11.5 U (37 °C)/L; normal: <5.8 U (37 °C)/L] and creatine kinase BB isoenzyme (CK-BB) (23 U/L; normal: undetectable). Genetic sequencing aimed at osteometabolic diseases was requested, which identified the c.785G>A variant in the CLCN7 gene, in heterozygosity, confirming the diagnosis of ADO2. The patient continues to be monitored for possible complications of the disease and is undergoing symptomatic treatment. **Discussion:** Initial radiographic findings were compatible with osteopetrosis. The autosomal recessive form is associated with high morbidity and mortality in early childhood, being incompatible with the patient's clinical condition. The increase in TRAP and CK-BB are associated with the presence of ADO2, which was confirmed through genetic sequencing. The c.785G>A variant in the CLCN7 gene promotes the exchange of arginine for glutamine at codon 262 of the CLCN7 protein, being harmful to its function. The patient did not have other complications possibly seen in ADO2, such as anemia, bone marrow invasion or cranial nerve compression. **Final comments:** We described a case of ADO2 in a young woman, with a history of intense low back pain and without multisystem involvement, with a genetic panel demonstrating a mutation in the CLCN7 gene. **Keywords:** osteopetrosis; osteosclerosis; bone diseases.

TIREOIDE

2646

SECONDARY HEART FAILURE DUE TO SEVERE HYPOTHYROIDISM TRIGGERED BY PEMBROLIZUMAB USE: A CASE REPORT

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Case presentation: A 30-year-old woman presented with symptoms one month after completing immunotherapy with pembrolizumab for triple-negative breast cancer. She had a family history of breast cancer in her paternal grandmother and sister. She reported rapidly progressing fatigue, myalgia, dyspnea, and edema. Bilateral mastectomy was planned. On physical examination, she had myxedema, madarosis, slowed speech, dyspnea, and muscle pain. Tests showed heart failure (HF) with an ejection fraction (EF) of 47%, TSH 143 µIU/mL, free T4 0.13 µIU/mL, and CPK 4,139 U/L. Cardiac MRI ruled out myocarditis. Thyroid function was normal 6 months before the event. LT4 replacement was initiated (up to 225 mcg/day), and heart failure therapy was adjusted. She showed symptom improvement and EF recovery 4 weeks later, allowing for mastectomy. **Discussion:** The use of monoclonal antibodies, such as pembrolizumab, is gaining attention due to their targeted action on neoplastic cell molecules, inhibiting the programmed death-1 (PD-1) receptor present in immune system cells. However, certain tumors express a ligand (PD-L1) that allows them to evade the immune system. Although considered safe, this therapy can lead to immune-mediated effects, such as hypothyroidism and myocarditis. Inhibition of the PD-1 and PD-L1 interaction restores T-cell immune response. Different tissues express PD-L1, and blocking this interaction is associated with the onset of autoimmune diseases, with hypothyroidism being the most common. However, its diagnosis is challenging. Cardiac changes, although rare, are mostly severe. They occur due to lymphocyte infiltration, as neoplastic and myocardial cells have similar T-cell receptors, causing dysfunctions that can be fatal. **Final comments:** Checkpoint inhibitors are promising but induce various immune responses beyond those needed for tumor suppression. It is necessary to establish effective protocols for preventing adverse effects and their complications and to increase sensitivity to the complaints of cancer patients to avoid unfavorable outcomes. In this case, heart failure and myositis were secondary to severe hypothyroidism developed after pembrolizumab use. **Keywords:** hypothyroidism; heart failure; pembrolizumab.

NEUROENDOCRINOLOGIA

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UNVEILING POTENTIAL THERAPEUTIC CANDIDATES FOR ACTH-SILENT PITUITARY NEUROENDOCRINE TUMORS THROUGH HIGH-THROUGHPUT DRUG SCREENING

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Introduction: ACTH-silent pituitary adenomas (PAs) arise from corticotroph cells of the anterior pituitary gland and are characterized by their aggressive behavior and high recurrence rates. Currently, there are no approved pharmacological therapies for this tumor subtype. **Aim:** To identify and repurpose drugs to treat ACTH-silent PAs by screening 3,113 FDA-approved compounds and discover drugs that can modulate ACTH secretion and inhibit tumor progression. **Methods:** Pituitary cells were differentiated from human induced pluripotent stem cells (iPSCs) using SHH, FGF8, and FGF10 over a 30-day period. Pituitary cells were exposed to 3,113 FDA-approved drugs at a concentration of 1 µM for 72 hours through a high-throughput drug screening process – a robust and established method to identify therapeutic candidates. ACTH levels were assessed using immunofluoresce with an ImageXpress® HCS platform. ACTH intensity was normalized to total cell number, and analyzed using MetaXpress Software. Drugs with z-score ≥ +2.5 were selected for further analysis. Gene enrichment and mechanistic pathway analyses were performed on top hits. Histologically confirmed ACTH-silent PAs from 3 patients were cultured, and hormone levels were measured by automated ELISA. The top 3 drugs (Letrozole, Linsitinib, and Raloxifene) were tested and ACTH secretion, mRNA and protein expression from key markers were assessed. *In vivo* validation was carried out using mouse and zebrafish models. **Results:** We identified 3 drugs that significantly reduced ACTH levels in differentiated pituitary cells. In PAs cultures, Letrozole notably decreased ACTH secretion from 972.1 ± 31.7 pg/mL to 600.9 ± 25.8 pg/mL ($p < 0.001$). Letrozole also altered tumor cell morphology, reducing PAs aggregation. *In vivo* studies confirmed these findings, showing a significant reduction in ACTH and decreased expression of oncogenes (Ki67, caspases, Sox2) after Letrozole treatment. **Conclusion:** We developed a novel model for differentiating pituitary cells from iPSCs and used high-throughput drug screening to identify potential treatments for ACTH-silent PAs. Letrozole emerged as a promising candidate, demonstrating significant reductions in ACTH levels and tumor-related gene expression both *in vitro* and *in vivo*. This study is the first to present a cell culture-based model and drug repurposing approach for aggressive ACTH-silent PAs, offering new insights into potential therapeutic strategies and our understanding of PA pathology. **Keywords:** high-throughput drug screening; pituitary adenoma; iPSC.

DISLIPIDEMIA E ATEROSCLEROSE

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OLEZARSEN FOR THE TREATMENT OF DYSLIPIDEMIAS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Elevated levels of triglycerides and triglyceride-rich lipoproteins (TRL) are associated with heightened cardiovascular risks. Apolipoprotein C-III (APOC3) increases plasma triglyceride levels by modulating triglyceride-rich lipoprotein hepatic uptake, inhibiting lipoprotein lipase and reducing hepatic clearance. Olezarsen, an investigational GalNAc3-conjugated antisense oligonucleotide, has been shown to decrease serum triglycerides and TRL levels in healthy individuals with modestly elevated triglyceride levels by reducing apolipoprotein C-III production. However, its effect on higher risk populations has not been fully determined. **Objective:** To evaluate the use of Olezarsen as a potential treatment for patients with hypertriglyceridemia and increased risk of atherosclerotic cardiovascular disease. **Methods:** PubMed, Scopus, Web of Science, and Cochrane databases were systematically searched for randomized clinical trials (RCTs) comparing Olezarsen with placebo in adult patients with hypertriglyceridemia. We computed odds ratio (RR) for the binary outcome and mean difference (MD) for the continuous endpoint, with 95% confidence interval (CI). A random-effects model was used for all outcomes. Statistical analyses were performed using the R software, version 4.4.0. **Results:** A total of three RCTs were included, comprising 187 patients with dyslipidemias, of whom 101 (54.01%) were randomized to receive Olezarsen. Compared with the control group, the use of Olezarsen achieved a significant decrease in triglyceride level (MD -57.88; 95% CI -71.79 to -43.96; $p < 0.00001$; $I^2 = 84\%$). Furthermore, regarding the safety analysis, although Olezarsen showed a slightly higher rate of any adverse events, there was no statistical difference between groups (RR 3.05; 95% CI 0.55 to 17.06; $P = 0.275506$; $I^2 = 23\%$). **Conclusion:** In this meta-analysis showed that, when compared to placebo, Olezarsen was associated with significant reductions on serum triglyceride levels and was not associated with a statistically significant difference in risk of develop any adverse events. **Keywords:** olezarsen; dyslipidemias; safety.

OBESIDADE

2654

CLINICAL TREATMENT OF OBESITY BY TELEHEALTH AND IN PERSON IN A SAMPLE OF USERS OF A TERTIARY SERVICE OF SUS-SP/BRAZIL: POSSIBILITY, REALITY, IMPACT AND METABOLIC OUTCOMES

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The rise in Obesity is due to sedentary lifestyles, food insecurity, sleep deprivation, eating patterns, genetic predisposition, emotional disorders, as well as hormonal and adaptive changes due to senility. This chronic and relapsing disease involves non-modifiable and modifiable factors and Telehealth (TH) is emerging and growing against this backdrop. TH is a system for providing health services at a distance, using information and communication technologies. The study aimed to evaluate the effectiveness of clinical treatment for obesity using TH (adherence and weight loss > 5.0%) and the possible anthropometric and metabolic benefits. This was a prospective, open, controlled and randomized master's degree study, with two parallel and paired arms, carried out in a tertiary service of a federal university hospital in SP, Brazil, in 2023. It was approved by the institution's Research Ethics Committee and all participants volunteered and signed an Informed Consent Form. The teleconsultations took place via WhatsApp and in person at the hospital, with 5 consultations in the 2 groups. The sample consisted of adults (aged > 18years) with a body mass index (BMI) ≥ 30-39.9 kg/m^2 followed up in this service. The participants (n = 36/4 men and 28 women) were matched according to BMI, gender, age, type of treatment (clinical or surgical) at the start of the study and divided into 2 groups according to the type of service: face-to-face or remote (TH), by drawing lots. The study included n = 32 (87.5%F), mean age 54 ± 12y, BMI: 34.5 ± 4 kg/m^2. After 4 dropped out, 16 qualified to undergo HT for weight control. After 12 months, there was a significant weight loss of 92.3 ± 16.4 to 88.4 ± 14.8 kg, $p < 0.05$ in the HT and 91.8 ± 17.2 to 87.3 ± 17.0 kg in the CG, $p < 0.05$. The average percentage of weight loss during follow-up was similar in the HT (6.65% ± 3.1%) to CG (6.20% ± 4.37%). In addition, there was a significant reduction in abdominal and hip circumferences in both groups (AC: 109.4 ± 10.9 to 102.8 ± 12.3 and 109.3 ± 10.9 to 107.6 ± 13.2 cm; HC:115.7 ± 8. to 111.3 ± 7.7 and 118.9 ± 13.3 to 114.1 ± 11.0 cm in TH and CG; $p < 0.05$). There were significant reductions in glucose 109,8 ± 38,9 to 101,1 ± 20,2 mg/dL and HBA1C: 6,39 ± 1,0 to 5,98 ± 0,4% only in TH. TH proved to be just as effective as face-to-face therapy in weight loss and reduction of anthropometric measurements, superior in glycemic improvement and adherence, due to the ease of access, as it doesn't require the patient to travel and guarantees specialized health care anywhere. **Keywords:** obesity; telehealth; clinical treatment.

NEUROENDOCRINOLOGIA

2655

STUDY ON CONGENITAL ADRENAL HYPERPLASIA THROUGH NEONATAL BIOLOGICAL SCREENING IN MATO GROSSO DO SUL, BRAZIL

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Congenital adrenal hyperplasia (CAH) comprises autosomal recessive syndromes caused by deficiencies in cortisol biosynthesis by the adrenal glands, resulting in glandular hyperplasia and overproduction of aldosterone and androgens due to reduced feedback in the Hypothalamic-Pituitary-Adrenal axis. Neonatal Biological Screening (NBS) for the salt-wasting classical form of the disease (SW-CAH) uses 17-OH-progesterone (17-OHP) measurement, which is not converted to cortisol in 21-hydroxylase (21OH) deficiency. Ideal sample collection occurs between the 2nd and 5th days of life, and early diagnosis is crucial for initiating treatment within 10 days to avoid adrenal crises. However, the national average time from testing to diagnosis is 35.3 days, including transportation time, result issuance, and confirmatory retesting. This study aims to analyze the efficiency of NBS for CAH diagnosis in Mato Grosso do Sul (MS), Brazil, and to study the sociodemographic characteristics of these patients. The study was approved by the research ethics committee. A retrospective observational study (2015-2023) was conducted using data from the Institute of Research, Education, and Diagnosis of the Association of Parents and Friends of Exceptional Children of Campo Grande (Iped – Apae), responsible for newborn screening tests in the state's public network. The laboratory receives an average of 35,000 tests annually, covering 86% of the state's newborns. Eleven cities account for 79% of the analyzed tests. The highest prevalence of abnormal tests was in Sidrolândia (0.87%) and the lowest in Dourados (0.34%). Since 2020, at least 50% of tests have been collected by the 5th day of life. The transport time for 75% of samples was 8 days or less, better than the national average of 8.06 days. Compared to Paraná (4.7 days), MS showed greater agility in half of the samples in the years 2016, 2017, and 2019 to 2022. In 2022 and 2023, the time between the sample's arrival at the laboratory and the result issuance exceeded the national average of 7.9 days in the first quartile, with half of the tests exceeding 10 days. It is known that the COVID-19 pandemic impacted diagnostic efficiency in 2020 and subsequent years. The NBS program in MS covers a significant portion of newborns and has shown progress despite challenges. Studying the prevalence among municipalities and the difficulties in the diagnostic process will guide public efforts for the benefit of the population. **Keywords:** biological neonatal screening; congenital adrenal hyperplasia; 17-OH-progesterone.

NEUROENDOCRINOLOGIA

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HYPERPROLACTINEMIA DUE TO ANTIPSYCHOTICS AND SEXUALITY IMPAIRMENT: A SYSTEMATIC REVIEW

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Introduction: Sexual adverse effects (SAE) are common with antipsychotics, especially those that causes hyperprolactinemia (HPL), impacting quality of life and treatment adherence. **Materials and methods:** We conducted a systematic review following the PRISMA statement on PubMed and Cochrane Library, focusing on sexual side effects of HPL induced by antipsychotics. The initial search yielded 150 articles, of which 13 were selected, from 2018 to 2024, after excluding off-topic studies, animal research, reviews, and case reports. **Results:** HPL was strongly associated with risperidone and typical antipsychotics. Studies such as Patel *et al.* (2023) highlighted that sexual dysfunctions, though not the most reported side effect, were spontaneously mentioned by about a third of patients, which can lead to high discontinuation rates. Lower serum testosterone levels in men were noted by Redman *et al.* (2021) and Tasaki *et al.* (2021), along with subclinical hypothyroidism as indicated by Zhang *et al.* (2018). Significant correlations were found between HPL and impaired orgasm, desire, and sexual arousal as reported by Shettima *et al.* (2023) and Zhang *et al.* (2018). SAE such as gynecomastia, erectile and ejaculatory disorders in men, and changes in vaginal lubrication, difficulty in sexual arousal, and ability to achieve orgasm in women were linked to HPL by Koch *et al.* (2023), Redman *et al.* (2021), Sørup *et al.* (2020), and Zhang *et al.* (2018). Martínez-Giner *et al.* (2022) reported that HPL and loss of libido intensified proportionally with increasing antipsychotic dosage. Divergent studies like Alshabeeb *et al.* (2024) and Martín *et al.* (2018) indicated not all HPL patients develop SAE, especially older patients, singles, divorced individuals, or those with depressive symptoms. Düring *et al.* (2019) found conflicting results regarding the direct relationship between antipsychotics and SAE but suggested a possible link with HPL in treated patients. Atypical antipsychotics such as aripiprazole and brexpiprazole were recommended by Raaveendranthan *et al.* (2018), Kelly *et al.* (2021), and Tasaki *et al.* (2021) due to their ability to minimize SAEs, not causing HPL by reducing prolactin. **Conclusion:** The impact on sexual function associated with HPL, induced by antipsychotics, include disturbances in erection, lubrication, desire, and sexual satisfaction. Faced with symptomatic HPL, switching antipsychotics should be considered. **Keywords:** prolactin; sexual health; antipsychotics.

DIABETES MELLITUS

2658

REDUCTION IN THE INCIDENCE OF TYPE 2 DIABETES RELATED TO LIFESTYLE INTERVENTION OR METFORMIN: A SYSTEMATIC REVIEW

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Introduction: Type 2 diabetes (T2D) is a chronic metabolic disease characterized by insulin resistance and elevated blood glucose levels, with both its prevalence and incidence rapidly increasing worldwide. Due to its role as a potent risk factor for cardiovascular diseases, neuropathy, nephropathy, and retinopathy, along with its growing incidence, the prevention and treatment of T2D have been the focus of numerous studies over the years. **Objective: T**his review aims to explore how lifestyle changes and the use of metformin can contribute to reducing the incidence of type 2 diabetes. **Methods:** A systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, using the Health Sciences Descriptors (DeCS/MESH) "lifestyle changes," "diabetes mellitus, type 2," and "metformin," combined with the operator "and," in the PubMed database. Inclusion criteria included studies published between 2019 and 2024, in English or Portuguese, available in full text, while review studies, duplicates, or those not directly related to the topic were excluded. Finally, 10 articles were included in this systematic review. **Results:** Recent systematic reviews on the prevention of T2D in high-risk groups uniformly conclude that the onset of T2D can be delayed or prevented with lifestyle changes, including adopting a healthy diet, regular physical activity, weight management, and adequate glucose monitoring. Metformin also demonstrated a risk-reducing effect due to its favorable safety profile and ability to reduce insulin resistance. Furthermore, combining lifestyle changes with metformin use showed additional benefits, such as quicker improvement in glycemic control and reduced need for high-dose medications. These findings underscore the importance of an integrated approach in preventing and managing T2D, aiming to maximize benefits and reduce risks associated with the condition. **Conclusion:** Based on the evidence presented in this study, it is concluded that lifestyle changes play a crucial role in reducing the incidence of T2D. Additionally, metformin has been shown to have a reducing effect on the risk of developing this condition, albeit to a lesser extent compared to lifestyle changes. Therefore, the study supports the crucial importance of lifestyle and metformin as supportive and preventive measures for patients with T2D, enabling them to achieve a better quality of life. **Keywords:** type 2 diabetes; lifestyle intervention; metformin efficacy.

ENDOCRINOLOGIA PEDIÁTRICA

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ANALYSIS OF GOVERNMENT EXPENDITURES ON OBESITY IN THE PEDIATRIC POPULATION IN BRAZIL BETWEEN 2020 AND 2023

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Introduction: Childhood obesity is a public health problem associated with significant physical and social repercussions, as well as economic impacts on the healthcare system. **Objectives:** The aim is to analyze government expenditures on obesity in Brazil's pediatric population over the past five years, identifying the cost trends and economic impacts of childhood obesity to support the formulation of more effective interventions against it. **Methods:** This is a cross-sectional, quantitative, and descriptive study analyzing government expenditures on hospitalizations for childhood obesity in Brazil from January 2019 to December 2023. Data were obtained from the Informatics Department of the Unified Health System (DATASUS), using the Hospitalization Information System (SIH). The variables "Total value", "Region/State", "Year/Month of service", "Age group", "Color/Race" and "Sex" were selected, including age groups up to 19 years. Statistical analysis was performed using Microsoft Excel. **Results:** During the analyzed period, R$ 1,687,283.17 was spent on hospitalizations for childhood obesity in Brazil. The data are underestimated, as information from only 19 states is available, excluding five states from the North and two from the Northeast, compromising the analysis in these regions. The South region accounted for most of the costs (66%). The year 2019 concentrated most of the expenses (52.9%), while 2021 had the lowest total costs (8%), observed predominantly in the South, with 2020 being the year with the least spending for the other four regions. There was a significant disparity between sexes, with 70% of the expenses allocated to female patients. The 15-19 age group represented 97.4% of the costs, while the 1-4 age group was less than 0.1%. Most of the expenses (69.4%) were allocated to white patients, but the lack of data on color/race for 7.2% hinders the analysis. **Conclusion:** Despite limitations due to the absence of information from the North and Northeast regions, costs associated with childhood obesity are significant. The data demonstrate the need to improve data collection for a more comprehensive assessment and the urgency of public policies focused on preventing and combating childhood obesity, with special attention to females, the 15-19 age group, and the South region, aiming to minimize the potential risks associated with childhood obesity. **Keywords:** overweight; epidemiology; public expenditures.

NEUROENDOCRINOLOGIA

2660

CLINICAL AND MOLECULAR ASPECTS OF GIANT NON-FUNCTIONING PITUITARY NEUROENDOCRINE TUMORS

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Introduction: Non-functioning pituitary neuroendocrine tumors (NF-PitNETs) account for 15-30% of PitNETs. Giant tumors, with a diameter greater than 40 mm, make up 5%-15% of NF-PitNETs and are often non-functioning and present higher rates of invasion and recurrence. Understanding their molecular biology is essential for the development of targeted therapies. **Methods:** NF-PitNET samples were collected after tumor resection for RNA-Seq and RT-PCR analysis. Transcriptomic analysis was performed using bioinformatics pipelines to identify differentially expressed genes between giant tumors and macroadenomas. Additionally, public RNA-Seq data were analyzed to complement findings from the local cohort. Gene expression and regulatory pathway analyses were conducted to determine key genes and biological processes associated with giant NF-PitNETs. A Kaplan-Meier survey was performed to evaluate tumor recurrence. **Results:** Clinical and molecular analysis of 410 patients with NF-PitNETs revealed that 14.1% were giant tumors, with a higher prevalence in men. Giant tumors showed shorter progression-free survival and higher recurrence risk. Differentially expressed genes in giant NF-PitNETs included KCNK2, PMAIP1, CHD7, and AANAT. KCNK2, encoding potassium channels, and CHD7, associated with chromatin remodeling were overexpressed. Reduced expression of AANAT, involved in melatonin synthesis, may indicate a loss of tumor-suppressive effects. Regulatory pathway analyses highlighted neurogenesis and dopamine metabolism as upregulated processes. Given the upregulation of the dopamine metabolism pathway, the dopaminergic agonist cabergoline was administered to 10 cases of giant NF-PitNETs (3.5 mg/week for 12 months), resulting in tumor shrinkage (>30%) in 2/10 patients (20%) and stable disease in 8/10 patients (80%). **Conclusions:** Giant NF-PitNETs exhibit a distinct clinical profile with a higher recurrence risk and specific molecular characteristics. Overexpression of KCNK2 and CHD7, along with reduced AANAT expression, suggests a unique transcriptional signature. Pathways related to neurogenesis and dopamine metabolism may be explored as new therapeutic targets. The observed response to cabergoline underscores its potential as a treatment option. These findings provide crucial insights for developing diagnostic and therapeutic strategies for giant NF-PitNETs, representing a significant advancement in the field of neuroendocrine oncology. **Keywords:** pituitary adenomas; non-functioning pituitary neuroendocrine tumors; neuroendocrine hormones.

OBESIDADE
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COMBINED NALTREXONE/BUPROPION AND SEMAGLUTIDE AS AN ANTI-OBESITY TREATMENT: CASE SERIES

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Introduction: Obesity is a metabolic and multifactorial disease whose prevalence has been increasing exponentially worldwide, leading to the search for more effective treatments. Over the past decade, new obesity medications have been developed, resulting in higher success rates. However, studies on the combination of these drugs are scarce in the medical literature. This study aims to report the experience with the combination of Semaglutide, at a dose of 2 mg per week, and Naltrexone with Bupropion, at doses ranging from 180/16 mg to 360/32 mg, in 5 patients treated at a private hospital in Recife-PE. All patients were male, with class II or III obesity and a history of previous treatment failure. Therefore, a combined therapeutic approach was chosen for 6 months. **Case series:** Case 1: A 67-year-old started treatment weighing 108.9 kg and with a BMI of 40.5 kg/m². Achieved a 20.3% reduction in body weight, equivalent to 22.1 kg, reaching 85.8 kg. Case 2: A 41-year-old with an initial weight of 146 kg and a BMI of 42.6 kg/m², achieved a 23.9% reduction in body weight, with a loss of 35 kg, reaching 111 kg after treatment. Case 3: A 36-year-old with an initial weight of 154.3 kg and a BMI of 42.5 kg/m², showed a 27.4% reduction in body weight, equivalent to 42.3 kg, reaching 112 kg after treatment. Case 4: A 33-year-old with an initial weight of 107 kg and a BMI of 39.8 kg/m², demonstrated a 17.7% reduction in total body weight, equivalent to 19 kg, reaching 88 kg after treatment. Case 5: A 50-year-old with an initial weight of 112 kg and a BMI of 38.75 kg/m², achieved a 12.8% reduction in body weight, equivalent to 14 kg, reaching 98 kg after treatment. **Discussion:** The efficacy of GLP-1 analogs (aGLP-1) in treating obesity is well-documented in the current literature, as is the combination of Bupropion and Naltrexone, albeit with somewhat lower efficacy. In the reported cases, the combined prescription of Semaglutide (aGLP-1) and Bupropion/Naltrexone resulted in significant weight loss, including in patients with a history of previous therapeutic failure. These results support the findings of a retrospective cohort study conducted in Canada, which assessed the effectiveness of combined therapy compared to monotherapy with aGLP-1, reaffirming the additive effect of this combination on weight loss. **Conclusion:** The combination of Naltrexone/Bupropion and Semaglutide are an effective treatment for weight loss. **Keywords:** obesity; anti-obesity agents; combined modality therapy.

OBESIDADE
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EFFECTIVENESS OF PHARMACOLOGICAL INTERVENTIONS IN OBESITY: A SYSTEMATIC REVIEW

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Introduction: Obesity is a chronic, multifactorial and relapsing disorder characterized by excess body weight and defined as a body mass index (BMI) ≥ 30 kg/m². Complications include cardiovascular disease, diabetes mellitus and certain types of cancer. Diagnosis is based on BMI and treatment includes lifestyle changes. Obesity is a multifactorial condition that requires diverse therapeutic approaches. A balanced diet is important for weight loss and weight maintenance. Pharmacological interventions are one of the options for managing obesity, aimed at reducing body weight and improving metabolic parameters. **Objective:** To evaluate the effectiveness of pharmacological interventions in the treatment of obesity, considering different classes of drugs and their impact on weight loss and metabolic health outcomes. **Methods:** A systematic review was carried out according to the PRISMA 2020 guideline. The question was: "What are the most effective pharmacological interventions in the treatment of obesity?" The descriptors "Obesity", "Pharmacological Interventions" and "Treatment" were used in Portuguese, English and Spanish, combined with Boolean operators OR and AND. The search was carried out on the PubMed, BVS and *Periódicos Capes* databases. Free articles were included, in Portuguese, English or Spanish, published in the last 10 years, with solid methodology. Reviews, case reports, animal studies and inconsistent methodologies were excluded. **Results:** The search resulted in 1,200 articles. After applying the eligibility criteria, 340 studies were selected, with 24 being duplicated and removed. The review identified 16 relevant articles. The studies indicated that drugs such as orlistat, liraglutide and phentermine-topiramate are effective in reducing body weight and improving metabolic parameters and pharmacotherapy should be considered to treat obesity in people with a BMI > 27 kg/m² in the presence of comorbidities or > 30 kg/m² in the absence of comorbidities. The choice of drug should take into account the patient's profile and potential side effects. **Conclusion:** The increase in energy expenditure, basal metabolic rate and diet-induced thermogenesis indicates that it better regulates appetite to caloric needs. Pharmacological interventions are effective in the treatment of obesity, with several drugs demonstrating significant benefits in reducing weight and improving metabolic indicators. **Keywords:** obesity; pharmacological interventions; treatment.

ENDOCRINOLOGIA BÁSICA

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IMPACT OF THE FOUNDATION OF AN ACADEMIC ASSOCIATION OF ENDOCRINOLOGY AND METABOLOGY: EXPERIENCE REPORT

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Introduction: Medical education in Brazil faces challenges regarding the quality of training for health professionals, service to the population, and scientific advancement, given the lack of access to scientific knowledge in some institutions. In this context, the creation of an Academic Association stems from the common desire among students from various regions of Brazil to unite their interests in the field of Endocrinology and Metabology, leveraging their knowledge and institutional access to commit to science and the quality of their professional and humanitarian education. **Objectives:** To describe the union of medical students in promoting the involvement of students in scientific research and health actions in the field of Endocrinology. **Methods:** This descriptive study reports the experience of eight medical students who founded the Academic Association of Endocrinology (AAE). Over one year, from July 2023 to July 2024, academic and social activities were developed, including online and in-person actions focused on volunteerism, knowledge dissemination, and research development. **Results:** The Academic Association of Endocrinology (AAE) aims to expand knowledge in Endocrinology and Metabology, encourage research, and participation in voluntary and extension events. Students join online and participate in projects by signing a code of conduct. Currently, there are 390 members, 15 conference presentations (2 oral, one of which was awarded), and 5 book chapters. The AAE offered a scientific writing workshop and a medical oratory course, and partnered with the Mogi Mirim city government for a campaign that screened 159 patients for diabetes and metabolic syndrome. These achievements directly contribute to the scientific training of students. **Conclusion:** The AAE significantly contributes to the academic community, enhancing students' education by involving them in the scientific community. It also offers practical opportunities that positively influence technical improvement in endocrinological propaedeutics, promoting humanized and evidence-based medicine. **Keywords:** education; endocrinology; science.

ENDOCRINOLOGIA BÁSICA

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EPIDEMIOLOGICAL PROFILE OF ADMISSIONS FOR ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES

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Introduction: Chapter IV of ICD-10 includes endocrine, nutritional, and metabolic diseases such as diabetes mellitus, thyroid and pancreatic disorders, and malnutrition, including obesity. These conditions are risk factors for non-communicable diseases (NCDs), which account for 74% of deaths worldwide, according to the WHO. Risk factors for NCDs include consumption of ultra-processed foods, alcohol, tobacco, obesity, physical inactivity, low education, income, race/color, negative health perception, sex, and age. Sociodemographic profile and lifestyle, especially among the elderly, influence the prevalence of such diseases. **Objective:** To analyze the epidemiological profile of hospitalizations for endocrine, nutritional, and metabolic diseases from 2019 to 2023. **Methods:** This is a descriptive observational study with a quantitative approach using data from the Hospital Information System of SUS available on DATASUS, corresponding to hospitalizations for endocrine, nutritional, and metabolic diseases that occurred between 2019 and 2023 according to the following variables: age group, biological sex, race, Brazilian region, year of service, and death outcome. **Results:** A total of 1,132,810 hospitalizations for endocrine, nutritional, and metabolic diseases were reported. The age group with the highest number of notifications was 60 to 69 years with 222,441 (19.6%) and the lowest was 15 to 19 years with 25,626 (2.2%). The analysis revealed that of the total cases during the period, the two regions with the highest numbers were the Southeast Region with 464,103 cases (40.9%), followed by the Northeast with 324,299 cases (28.6%). It was observed that in all the years that follow, the number of hospitalizations remained similar, except for 2020 with a decline of 18.6% compared to 2019. The most affected sex was female with 577,177 (50.9%), and the brown race stood out with 488,374 hospitalizations (43.1%). About 5.7% (64,979) of hospitalizations due to endocrine, nutritional, and metabolic diseases resulted in death. **Conclusion:** Therefore, it is evident that despite being treatable, endocrine, nutritional, and metabolic diseases continue to be a significant public health problem in Brazil. The decline observed in 2020 may be related to changes in hospital care-seeking behavior during the COVID-19 pandemic. Thus, it is crucial to pay closer attention to the 60 to 69-year age group, females, and the brown race. **Keywords:** epidemiology; endocrine and metabolic diseases; sociodemographic factors.

DIABETES MELLITUS

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LED PHOTOTHERAPY IN THE TREATMENT OF DIABETIC ULCERS: A CASE REPORT

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Case presentation: A 58-year-old man with type 2 diabetes and a history of alcohol abuse presented with an ulcer on the second toe of his right foot, with a Wagner score of 2 and an area of 76.6 mm², diagnosed with osteomyelitis. Treatment involved sessions with an LED device (ISIS V.1, using visible light at 615-635 nm and 400-415 nm) three times a week. For wound aspirate collection, the wound was disinfected with PHMB solution, then 1 mL of buffer solution (0.9% saline) was aspirated with a 1 mL syringe and a 13 x 4.5 needle. **Discussion:** By the 27th session, significant improvement in the healing of the diabetic ulcer was observed. The ulcer area progressively decreased throughout the treatment period, indicating a positive response to LED phototherapy. Wound cultures taken during sessions 8 and 15 identified Escherichia coli and Pseudomonas aeruginosa, respectively, but both strains were sensitive to the antibiotics used, highlighting the effectiveness of the associated antimicrobial treatment. The patient experienced no adverse effects related to the treatment and achieved complete ulcer healing after the intervention period. These results suggest that LED phototherapy may be an effective option for managing diabetic ulcers. **Final comments:** This case demonstrates the effectiveness of LED phototherapy in treating diabetic foot ulcers (DFU) and osteomyelitis in patients with type 2 diabetes. The therapy was effective in promoting ulcer healing, even in severe cases with bone exposure. Additionally, LED phototherapy emerges as a promising alternative in managing diabetic complications, offering a non-invasive and effective approach to promote wound healing. **Keywords:** osteomyelitis; type 2 diabetes mellitus; diabetic ulcer.

NEUROENDOCRINOLOGIA

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PANHYPOPITUITARISM IN A PATIENT WITH ANTIPHOSPHOLIPID SYNDROME: CASE REPORT

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Case presentation: A 41-year-old woman with a history of stroke due to antiphospholipid syndrome (APS) was admitted with a one-month history of abdominal pain. Upon admission, biochemical tests revealed hyponatremia; abdominal-pelvic imaging showed no acute changes to justify the symptoms. Intestinal angina was suspected and an angiotomography revealed prominence of the arcuate ligament compressing the Celiac Trunk, consistent with arcuate ligament syndrome. A videolaparoscopic correction was performed, followed by stent placement due to clinical refractivity and local stenosis, resulting in symptomatic remission. Concurrently, an investigation for hyponatremia was initiated. Adrenocorticotropic hormone (ACTH) was 12.9 pg/mL and cortisol 2.7 µg/dL. Corticosteroid therapy was started for adrenal insufficiency management. Reviewing the history, it was noted that the patient had amenorrhea for months before admission, which, combined with hypocortisolism and reduced ACTH, led to a pituitary panel: TSH 0.19 µIU/mL, free T4 0.74 ng/dL, Prolactin 1.19 ng/mL, Estradiol < 11.8 pg/mL, FSH 3.19 mIU/mL, LH 0.14 mIU/mL, IGF-1 111 ng/mL – resulting in the diagnosis of panhypopituitarism. Brain and sella turcica MRI showed no evidence of tumor or macroadenoma, however it revealed ischemic sequelae with hemorrhagic transformation in part of the territory irrigated by the middle cerebral artery. In this context, the possibility of hypophysitis secondary to an autoimmune mechanism and ischemic insult in the setting of APS was considered, leading to the resumption of anticoagulation and maintenance of corticosteroid and levothyroxine therapy for outpatient follow-up. Considering the history of APS, estrogen and progesterone replacement was not prescribed in light of the associated risks. **Final considerations:** Hypophysitis due to systemic disease activity is a rare entity with few reported cases, which can delay diagnosis. It should be considered in cases of glandular insufficiency with an underlying inflammatory disease, after excluding ischemic or anatomical causes. The presence of autoimmune or ischemic inflammatory conditions can trigger an inflammatory process culminating in pituitary dysfunction. Improvement is expected with the control of the underlying disease in immunomediated cases. This case report highlights an exceptional presentation by correlating antiphospholipid syndrome as a probable cause of panhypopituitarism. **Keywords:** hypopituitarism; antiphospholipid syndrome; hypophysitis.

NEUROENDOCRINOLOGIA

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PASIREOTIDE AS A THERAPEUTIC ALTERNATIVE FOR POST-SURGICAL RELAPSE OF CUSHING'S DISEASE: CASE REPORT

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Case presentation: A 35-year-old woman with Cushing's disease for 16 years presented with: weight gain; weakness; full moon facies; buffalo hump; baldness; skin thinning; hirsutism; facial plethora; abdominal violaceous striae (>2 cm thick) and <10 periods/year. Magnetic resonance imaging of the sella turcica revealed 2 pituitary microadenomas, which were surgically resected. She developed panhypopituitarism, requiring continuous use of cabergoline, corticosteroids, levothyroxine and estrogen/progesterone. Her post-surgical ACTH was 36 pg/mL. However, 5 years ago some signs/symptoms returned, such as: weight gain; weakness; easy full moon; thinning of the skin; facial plethora and menstrual changes. Laboratory tests showed urinary cortisol 1,771.80 ug/24 hours; salivary cortisol 0.460 ug/dL; ACTH 116 pg/mL; estradiol 8.63 pg/mL, LH 1.26 mUI/mL, FSH 1.94 mUI/mL; TSH < 0.02 mIU/L. MRI showed an empty sella turcica, with no evidence of recurrent lesions or remaining pituitary tissue. Chest and abdominal CT scans showed no significant findings. As the patient had no indication for surgery, the use of pasireotide was recommended. **Discussion:** Pasireotide, a new somatostatin analog, acts on multi-receptors with high SSTR5 binding affinity and on subtypes 1, 2 and 3, promoting a decrease in ACTH release at pituitary level. In this sense, studies show that the functional efficiency of pasireotide is superior to that of octreotide. The medication has been shown to control the disease in moderate to severe cases, with rapid control of cortisol secretion and attenuation of the clinical picture or tumor mass. Pasireotide is administered subcutaneously twice a day with dosages ranging from 300 to 1,200 µg/d. However, it has some disadvantages: the form of application; the risk of hyperglycemia and additional adverse effects such as diarrhea, nausea, abdominal pain and asthenia. **Final considerations:** The proposed therapeutic alternative showed positive results in frame attenuation. Management after surgical failure is complex and requires more than one type of treatment in most cases, with the choice being made individually. It is therefore crucial to consider the practical aspects of pasireotide and its possible adverse effects. Additional studies are needed to confirm its long-term efficacy and optimize its safety profile, aiming to improve patients' quality of life. **Keywords:** Pasireotide; Cushing's disease; recidivism.

DIABETES MELLITUS

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HOSPITALIZATIONS FOR DIABETES MELLITUS IN BRAZILIAN REGIONS FROM 2018 TO 2023

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Introduction: Diabetes mellitus is a complex clinical syndrome characterized by endocrine-metabolic abnormalities that disrupt metabolic homeostasis. These abnormalities include absolute or relative insulin deficiency, leading to significant dysfunctions in carbohydrate, lipid, and protein metabolism in the human body. These metabolic changes are responsible for the emergence of characteristic symptoms of diabetic syndrome, such as increased urine production, increased thirst, increased appetite, and weight loss. Its unstable condition can lead to decompensation requiring hospital intervention. **Methods:** This is a descriptive cross-sectional study with a quantitative approach to data from January 2018 to December 2023. The study involved data collection from the Brazilian Unified Health System Hospital Information System (SIH/SUS) linked to DATASUS, focusing on variables such as regions, hospitalizations, year of service, and costs related to diabetes mellitus hospital treatment. Data collected as of July 20, 2024, underwent descriptive statistical analysis using Excel to organize the research findings. **Results:** A total of 789,149 hospitalizations were identified, with the highest incidence occurring in 2022 (137,161) and a total cost of R$ 706,409,203.72, also predominantly in 2022 (R$ 136,223,994.14), due to hospitalizations for diabetes mellitus decompensation. Among these hospitalizations, prevalence was highest in the Southeast region (36.50%), followed by the Northeast (31.92%), South (14.25%), North (10.55%), and Midwest (6.78%) regions. Furthermore, there was a predominance in 2022 (137,161 hospitalizations), followed by 2019 (136,106), 2018 (134,259), 2023 (129,482), 2021 (128,832), and 2020 (124,014). Similarly, costs were equally predominant in regions with higher hospitalizations. **Conclusion:** The data presented show similar hospitalization numbers in 2019 and 2022, with a marked decrease in 2020. It is important to note that this study has limitations, such as underreporting of hospitalizations. Therefore, further research is needed to understand the reduction in hospitalizations in 2020 and to develop policies aimed at promoting the health of the Brazilian population to reduce hospitalizations due to diabetes mellitus decompensation. **Keywords:** diabetes mellitus; hospitalizations; Brazilian regions.

TIREOIDE

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EPIDEMIOLOGICAL PROFILE OF PEDIATRIC PATIENTS HOSPITALIZED FOR THYROTOXICOSIS IN NORTHEAST BRAZIL FROM 2019 TO 2024

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Introduction: Thyrotoxicosis involves clinical and biochemical changes due to an excess of thyroid hormones, mainly from hyperthyroidism, affecting also children. The condition manifests with a wide range of symptoms, including gastrointestinal and neurological disturbances, and can significantly impact growth and pubertal development. **Objectives:** To evaluate the epidemiological aspects of pediatric thyrotoxicosis hospitalizations in Northeast Brazil from May 2019 to May 2024, to enhance understanding and plan effective interventions. **Methods:** This cross-sectional, quantitative, and descriptive study analyzed hospital data on thyrotoxicosis in pediatric patients from 2019 to 2024 in Northeast Brazil. Data source: Department of Health Informatics of the Unified Health System (DATASUS) via the Hospitalization Information System (SIH). Variables included "Federative Units," "Year/month of attendance," "Type of attendance," "Age group," "Race/ethnicity," and "Sex." Age groups up to 19 years were considered. Statistical analysis was conducted using Microsoft Excel. **Results:** During the study period, 39 pediatric thyrotoxicosis hospitalizations were recorded in Northeast Brazil, representing 16.59% of the national total, making it the third highest region. The most affected age group was 15 to 19 years, with 19 cases (48.71%), noted in 4 of 8 states. Sergipe did not report data. Ceará had the highest number of cases (11), while Piauí had only 1. The average annual hospitalization rate was 7.8, with 2022 having the most cases (11). A peak occurred between February and April 2022, but no clear seasonal trend emerged over the 5 years. A notable sex disparity was observed: females (74.35%) and males (25.64%). Urgent cases comprised 79.48%. Among the hospitalized, 53.84% were of mixed race, 7.69% white, and both blacks and yellows were 2.56% each. **Conclusion:** The study highlights Northeast Brazil's significant role in national pediatric thyrotoxicosis cases, stressing the need for preventive measures due to the severity and urgency of many cases. Measures should address the identified patterns, including the prevalence among 15 to 19-year-old, females, and in Ceará. Further research is needed to better understand the regional epidemiological situation. **Keywords:** thyrotoxicosis; epidemiology; pediatrics.

NEUROENDOCRINOLOGIA

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EFFICACY OF GLP-1 RECEPTOR AGONISTS IN PARKINSON'S DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Recent studies suggest that GLP-1 receptor agonists (GLP-1RA), primarily used for diabetes management, may offer neuroprotective effects that could benefit Parkinson's patients. This systematic review and meta-analysis aims to evaluate the efficacy of GLP-1RAs compared to placebo in this population. Methods: PubMed, Embase, and Cochrane Central databases were searched to identify randomized controlled trials (RCTs) that compared the efficacy of GLP-1RA with that of a placebo in patients with Parkinson's disease. Pooled treatment effects for continuous outcomes were compared using mean differences (MD) with 95% confidence interval (CI). The DerSimonian and Laird random-effects model was used for all outcomes due to expected clinical heterogeneity between study participants. Heterogeneity was examined with Cochran Q test and I2 statistics, where p values inferior to 0.10 and I2 > 25% were considered significant for heterogeneity. A trial sequential analysis (TSA) was conducted to (1) calculate the required information size (RIS) or number of patients required to determine if results are conclusive; (2) to aid the making of robust inferences about whether there is a truly significant finding; and (3) whether including more trials would possibly change the non-significant finding reported. **Results:** Two RCTs comprising 321 with Parkinson's were included. There's no statistically significant difference between groups in the Movement Disorder Society Unified Parkinson's Disease Rating Scale (MDS-UPDRS) part I (MD 0.30; 95% CI -0.51 to 1.11; p = 0.47) and for MDS-UPDRS part II (MD 0.08; 95% CI -0.72 to 0.87). The calculated Required Information Size was 4,762 for the MDS-UPDRS part 1, indicating a lack of power to exclude the possibility of a type 2 error confidently. **Conclusion:** This analysis of two randomized controlled trials found no significant differences between GLP-1 receptor agonists and placebo in improving outcomes for patients with Parkinson's disease, as measured by the MDS-UPDRS. The required information size indicates a need for more extensive studies to confidently assess treatment effects and the risk of type 2 error. **Keywords:** neuroprotective; GLP-1; Parkinson.

DIABETES MELLITUS

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HOSPITAL MORBIMORTALITY OF DIABETIC ELDERLY PEOPLE IN THE NORTHEAST REGION IN THE YEARS 2020-2023

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Introduction: Diabetes mellitus (DM) is a chronic disease characterized by elevated blood glucose levels, resulting from insufficient insulin production by the pancreas or the body's inability to effectively use the insulin produced. Over time, this condition leads to serious damage to the heart, blood vessels, eyes, kidneys, and nerves. The prevalence of DM is rapidly increasing, with an estimated 422 million people worldwide having diabetes, most of whom live in low- and middle-income countries, and 1.5 million deaths are directly attributed to diabetes each year. In Brazil, the national health survey estimated that about 6.2% of the population aged 18 and over reported a medical diagnosis of diabetes, with a higher prevalence in the age group of 65 to 74 years. **Objective:** The study aims to assess the prevalence of hospitalizations and deaths due to DM in hospitals in the Northeast region from 2020 to 2023. **Methods:** This is a descriptive observational study with a quantitative approach based on data available in the Hospital Information System of SUS and the Department of Informatics of the Unified Health System, corresponding to the number of hospitalizations, deaths, and mortality rate in the Northeast region and Brazil from 2020 to 2023 for ICD-10 DM in patients over 60 years old. **Results:** In Brazil, from 2020 to 2023, 271,191 hospitalizations for DM were recorded in patients over 60 years old, of which 16,913 resulted in death, resulting in a mortality rate (MR) of 6.24%. Of the total, there were 93,291 hospitalizations in the Northeast region, with 5,758 deaths, revealing an MR of 6.17%. The states of Pernambuco, Maranhão, and Bahia were identified as having the highest hospitalization rates in the analyzed period. Pernambuco recorded 11,556 hospitalizations with 538 deaths, denoting an MR of 4.66%. In Maranhão, there were 22,710 hospitalizations and 840 deaths, describing an MR of 3.70%. In Bahia, the number of hospitalizations was 25,618 with 2,177 deaths, denoting an MR of 8.50%. **Conclusion:** Therefore, the data found demonstrate that although the Northeast region has a mortality rate lower than the national average, some states show discrepancies concerning these numbers. Thus, it is imperative to evaluate the factors responsible for the discrepancy in hospital admission rates among elderly diabetic patients, with the aim of developing and implementing measures to reduce the morbidity and mortality of these patients in the Northeast region. **Keywords:** epidemiology; morbimortality; diabetes mellitus.

OBESIDADE

2684

PREVALENCE OF OVERWEIGHT AND OBESITY IN CHILDREN AND ADOLESCENTS IN BARBALHA AFTER THE COVID-19 PANDEMIC

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Introduction: The impacts of the COVID-19 pandemic were not limited to the health crisis but affected the economic, political, social, psychological, and environmental spheres of society. Thus, the scenario of social isolation and changes in individuals' lifestyles may have directly influenced the increased risk of children and adolescents developing obesity. **Objective:** To assess the impacts of the pandemic on the prevalence of obesity in children and adolescents attending middle school grades of public schools in the municipality of Barbalha. **Methods:** This is an epidemiological, cross-sectional, descriptive, correlational study with a quantitative approach, conducted among students in the 8th and 9th grades of municipal public elementary schools in Barbalha-CE, from November to December 2022. Age, sex, grade level, weight, height, BMI were evaluated, and overweight was defined as BMI percentile between 85%-97% and obesity as above 97%. **Results:** A total of 69 students were evaluated, of whom 55.07% were male and 44.9% were female, aged 13 to 16 years. According to the sample analyzed, 4.34% of participants were obese, with BMI percentiles between 98.3-98.8. It was also observed that 66.6% of these were female and aged between 13 and 14 years. Additionally, 17.39% of participants were overweight, with BMI percentiles between 87.1-97, with 66.6% of these being male and aged between 13 and 15 years. Overweight was present in 23.68% of male students and 19.35% of female students. Stratifying by age group, the highest prevalence of overweight was found at ages 13 and 14, 12 (80%), followed by 15 years, 3 (20%). **Conclusion:** The majority of individuals with obesity in the analysis were female aged 13-14 years, while those affected by overweight were male aged 13-15 years, totaling 80% of cases. Therefore, the prevalence of obesity and overweight among the students evaluated is concerning, emphasizing the importance of preventive measures and health promotion during this critical period of child and adolescent development. It is essential to conduct studies with larger samples and longitudinal follow-up for a more accurate definition of obesity in children and adolescents in school settings, in order to implement effective intervention measures to mitigate this issue. **Keywords:** overweight; obesity; COVID-19 pandemic.

TIREOIDE

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MANAGEMENT OF HYPOTHYROIDISM: A SYSTEMATIC REVIEW

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Introduction: Hypothyroidism is a common endocrine condition characterized by a deficiency in thyroid hormone production. It is caused by thyroid hormone deficiency. Symptoms are cold intolerance, fatigue and weight gain. Signs can be a typical facial appearance, slow and hoarse speech, and dry skin. Diagnosis is by thyroid function tests. Treatment consists of the administration of thyroxine. Effective management of hypothyroidism is crucial to preventing complications and improving patients' quality of life. **Objective:** To evaluate approaches to the management of hypothyroidism, including drug treatment strategies and long-term monitoring. **Methods:** A systematic review was carried out in accordance with the PRISMA 2020 guideline. The question was: "What are the most effective approaches in the management of hypothyroidism?" The descriptors "Hypothyroidism", "Treatment" and "Management" were used in Portuguese, English and Spanish, combined with Boolean operators OR and AND. The search was carried out on the PubMed, BVS and *Periódicos Capes* databases. Free articles were included, in Portuguese, English or Spanish, published in the last 10 years, with solid methodology. Reviews, case reports, animal studies and inconsistent methodologies were excluded. **Results:** The search resulted in 1,050 articles. After applying the eligibility criteria, 325 studies were selected, with 20 being duplicated and removed. The review identified 7 relevant articles. The studies showed that levothyroxine therapy is the first-line treatment for hypothyroidism, with dose adjustments based on regular monitoring of hormone levels. Additional strategies include a personalized approach to treatment and consideration of comorbidities. **Conclusion:** The management of hypothyroidism should be centered on levothyroxine therapy and regular monitoring of hormone levels. Personalization of treatment and attention to comorbidities are essential to optimize results and improve patients' quality of life. Conflicts of Interest: There are no conflicts of interest. **Keywords:** hypothyroidism; treatment; management.

OBESIDADE

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ASSOCIATION BETWEEN WEIGHT GAIN AND SMOKING CESSATION: A SYSTEMATIC REVIEW

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Introduction: Quitting smoking is highly recommended to reduce the risk of cardiovascular and pulmonary diseases. However, short-term weight gain is a common concern, leading to increased body mass index and potential complications like diabetes mellitus and metabolic syndrome. This weight gain often deters individuals from quitting due to initial health risks and psychological factors. **Objective:** Analyze the relationship between weight gain and smoking cessation. **Methods:** The present study is a Systematic Review whose construction steps are described in the PRISMA protocol. The guiding question was established based on the PICO acronym: "Can smoking cessation influence patient weight gain?" The selection of articles was conducted in a double-blind manner during the second half of 2024 using the following databases: PubMed, Cochrane, and Lilacs. Boolean operators "AND" and "OR" were used, with the search term "(Weight gain) AND (after smoking cessation OR quit smoking)". **Results:** In this systematic review, 13 articles were selected that address the influence of smoking cessation on weight gain in patients. In an observational study that among patients in continuous abstinence, 64.6% maintained their initial weight or had a variation of around 5%, while the remaining 35.4% experienced an increase of approximately 10% in weight. Vulnerable groups to weight gain after cessation included, such as sedentary youth, individuals with higher initial weight, those with a greater reduction in nicotine during the intervention, and African Americans. Nonetheless, smoking cessation accompanied by substantial weight gain did not increase the risk of cardiovascular diseases (CVDs) or all-cause mortality. It was also found to be a preventive factor for type 2 diabetes and systemic arterial hypertension and reduced CVDs in diabetic patients. Smoking cessation paired with cardiac rehabilitation activities led to less weight gain and improvements in health behaviors, physical activity levels, psychosocial health, and alcohol consumption, significantly reducing the risk of lung cancer and CVDs. The study emphasizes the role of lifestyle, social contexts, and individual characteristics in managing weight gain during smoking cessation. **Conclusion:** Therefore, smoking cessation, in the majority of the population leads to an insignificant weight gain. These effects were mitigated by nutritional education and encouragement to exercise. **Keywords:** smoking; weight gain; cessation.

DISLIPIDEMIA E ATEROSCLEROSE

2687

SAFETY AND EFFICACY OF THE USE OF ALIROCUMAB IN TREATMENT OF FAMILIAL HYPERCHOLESTEROLEMIA IN PEDIATRIC PATIENTS: A SYSTEMATIC REVIEW

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Introduction: Alirocumab, a monoclonal antibody inhibitor of PCSK9, treats familial hypercholesterolemia (FH), a genetic condition, in its heterozygous (HeFH) or homozygous (HoFH) forms, which cause elevated levels of serum cholesterol. Initially used in adults who do not respond to other treatments, it was FDA-approved in 2024 for pediatric patients aged 8 years and older, specifically for HeFH. **Objective:** To evaluate current evidence on the safety and efficacy of Alirocumab in the treatment of familial hypercholesterolemia in pediatric patients. **Methods:** This is a systematic review conducted according to PRISMA guidelines. Searches were made in PubMed, Cochrane, and BVS databases. The search strategy included the terms "Alirocumab" AND "Pediatric patients" AND "Hypercholesterolemia". As a result of applying the filter for studies published within the last 10 years, 19 articles were retrieved. From these, 3 were selected for the review, excluding literature reviews, systematic reviews, duplicate articles, unrelated topics, and article corrections. **Results:** A total of 215 patients with familial hypercholesterolemia in HFHo and HFHe forms, originating from the European, Asian, African, and American continents, aged 8 to 17 years and resistant to optimized statins, were analyzed. In a study with HFHe patients, alirocumab significantly reduced LDL cholesterol, with an average decrease of 43.3% when administered every two weeks (Q2W) and 33.8% when administered every four weeks (Q4W), using Least Squares (LS) method. Another study with the same genetic factor demonstrated LDL levels below 110 mg/dL in 77% (Q2W) and 73% (Q4W) of patients after 8 weeks, with total reductions of 15% and 4%, respectively. In the evaluation of HFHo, at week 12, 50% of patients had an LDL reduction greater than 15%, with an absolute variation between 25 and 52 mg/dL, indicating a heterogeneous response according to genotype. Adverse effects in HFHe patients were mostly mild to moderate, with no significant differences between groups. In HFHo patients, 94% experienced adverse effects, with infections being the most frequent (38.9%). **Conclusion:** The evaluation of studies demonstrated that alirocumab is well tolerated in pediatric patients with HeFH, reducing LDL-C levels, especially in cohorts with higher dosages. Regarding HoFH, the need for studies with larger sample sizes is evident to establish robust evidence. **Keywords:** alirocumab; hipercholesterolemia; pediatric.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2688

EVALUATION OF BODY COMPOSITION AND METABOLIC PROFILE OF A COHORT OF PATIENTS WITH HYPOGONADOTROPIC HYPOGONADISM

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Introduction: Hypogonadism can be defined as testosterone deficiency that can be manifested by a decrease in spermatogenesis production, as well as in numerous clinical manifestations – low libido, weight gain, worsening of the glycemic profile, and lipid profile, among other manifestations. When this testosterone deficiency occurs from birth, it can have more intense repercussions, which is what occurs in congenital hypogonadism. **Objective:** To establish parameters of body composition and metabolic profile of patients with hypogonadotropic hypogonadism followed up at a referral center. Materials and methods: This retrospective study consisted of 31 male patients with 46,XY karyotype over the last 5 years after molecular biology analysis of mutation, and evaluated the following parameters – weight, height, body mass index (BMI), gonadotrophic hormone dosage (FSH, LH, total testosterone, and SHBG), fasting glucose, ferritin, lipidogram and InBody electrical bioimpedance. Patients were allocated into two groups: total testosterone above 300 mg/dL in the treatment trough (A), and testosterone levels below 300 mg/dL (B). Statistical analysis was performed using the Shapiro-Wilk test. **Results:** In the cohort analyzed, the mean age was 35 years, with the predominant white ethnicity. After molecular biology analysis, the most prevalent genetic mutations: KAL1, FGFR1, PROK2R, CDH7 and GNRHR mutations corresponding to the diagnosis of Kallmann syndrome, normosmic hypogonadotrophic hypogonadism, and charge syndrome. In group A, we observed a lower incidence of fat mass and visceral fat (p:0,02), in contrast to a higher lean mass, serum ferritin, and SHBG with statistical significance when compared to group B. Regarding the parameters: fasting glucose, glycosylated hemoglobin, FSH, and LH, there was no significant difference between the groups. **Conclusion:** Therefore, we can highlight a possible positive influence of hormone replacement therapy with testosterone on metabolic parameters in men with congenital hypogonadism. Studies on body composition in men with hypogonadotropic hypogonadism are scarce, and are of paramount importance for elucidating the factors involved. **Keywords:** hypogonadotropic hypogonadism; body composition; testosterone.

DIABETES MELLITUS

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ASSOCIATION OF DIABETES AND CLINICAL OUTCOMES IN ELDERLY PATIENTS HOSPITALIZED FOR DECOMPENSATED HEART FAILURE

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Introduction: Heart failure (HF) is a condition affecting millions of people worldwide and represents one of the leading causes of hospital admissions, which increases public health costs. Patients with diabetes or pre-diabetes have a 2 to 4 times higher risk of developing heart failure, with an estimated prevalence of 22% among individuals with diabetes. The relationship between diabetes and cardiovascular diseases is well-established. **Objective:** To evaluate the association between diabetes and outcomes in elderly patients hospitalized for decompensated heart failure at a cardiology referral center during the years 2021 and 2022. **Materials and methods:** A cross-sectional, analytical study conducted using electronic medical records. The sample consisted of individuals aged ≥ 65 years, admitted for decompensated heart failure in a tertiary cardiology hospital. Outcomes assessed included mortality, length of hospitalization, and readmission. The significance level was set at 5%, and Pearson's chi-square test was used. The study was approved by the hospital's ethics committee. **Results:** The sample comprised 533 patients, with a mean age of 75.3 ± 7.56 years, and there was a predominance of males, representing 52.3% of the analyzed sample. Of the total, 44.2% had diabetes mellitus, 88.7% had hypertension, 29.5% had dyslipidemia, 22.2% were obese, 40% were smokers or former smokers, and 13.6% were alcohol users or former users. The average ejection fraction was 41.9 ± 16.9%. Regarding the studied outcomes, 19.4% of diabetic patients died during the index hospitalization compared to 18% in the non-diabetic group (p = 0.698). For readmission within 1 year, 27.7% of diabetics were readmitted, compared to 26.6% of non-diabetics (p = 0.815). Concerning length of hospitalization, 36.4% of diabetic patients and 34.1% of non-diabetics had a hospitalization longer than 15 days (p = 0.607). **Conclusion:** In the studied sample, a high prevalence of diabetes was observed among patients hospitalized for decompensated heart failure, along with other comorbidities such as hypertension, obesity, and dyslipidemia. No statistically significant differences were found concerning the analyzed outcomes between diabetic and non-diabetic patients. **Keywords:** diabetes; heart failure; outcomes.

METABOLISMO ÓSSEO E MINERAL

2695

VITAMIN D TOXICITY AFTER UNNECESSARY SUPPLEMENTATION: A CASE REPORT

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Case report: Woman, 47 years old, seeks care with polyarthralgia, tiredness, limiting weakness, lower limb edema, intermittent headaches, weight loss, appetite loss, difficulty swallowing, vaginal dryness and dyspareunia. Reported a previous diagnosis of Sjogren's syndrome. The patient had been using 160.000 IU/day of vitamin D for 2 months prescribed by an orthomolecular doctor that confused international units with micrograms, as well as gestrinone and progesterone implants to improve physical performance. In addition, was in use of prednisone 20 mg and vitamin supplementation for 10 days, as advised by the rheumatologist. Upon admission, presented bilateral acute nephropathy and plasmatic vitamin D levels of 4.683 ng/mL (RV 40-60 ng/mL), calcium of 14,8 mg/dL (RV 8,4-10,2 mg/dL), CKD-EPI of 21 mL/min (RV > 90 mL/min), urea of 106 mg/dL (RV 10-45 mg/dL) and creatinine of 2,76 mg/dL (RV 0,6-1,3 mg/dL). She was treated with hydration, pamidronate 60 mg, hydroxychloroquine 200 mg, and prednisone with a progressive decreasing dose from 40 mg/day to 5 mg/day. After treatment, there was a progressive reduction of the laboratorial parameters, with stable levels of vitamin D (83,1 ng/mL), calcium (9,6 mg/dL), urea (41 mg/dL) and creatinine (1,1 mg/dL). **Discussion:** Vitamin D toxicity can result from inadequate supplementation, manufacturing, prescription or administration. Symptoms include hypercalcemia, nausea, vomiting, weakness, fatigue, dehydration, renal failure and tissue calcification. The ideal vitamin D values are > 20 ng/mL for the healthy population up to 60 years of age and 30-60 ng/mL for risk groups. Values above 100 ng/mL have a risk of toxicity. Supplementation is indicated exclusively for patients with 25(OH)D deficiency, according to individual needs. The patient in question had been supplementing a high dosage without any literature-based indication, presenting with intoxication. Treatment includes rehydration, stopping supplementation and restricting dietary calcium intake. Severe cases may require glucocorticoids, bisphosphonates or hemodialysis. The patient in the case was treated accordingly and had progressive improvement and complete recovery. **Final comments:** Vitamin D supplementation requires adequate monitoring due to the risk of intoxication. Prescribing is an act of great responsibility, requiring ethical and technical expertise. Monitoring outcomes, adverse effects, complications and providing immediate treatment is imperative. **Keywords:** vitamin D; toxicity; hypercalcemia.

ENDOCRINOLOGIA PEDIÁTRICA

2697

IMPACTS OF THE COVID-19 PANDEMIC ON THE LIFESTYLE OF CHILDREN AND ADOLESCENTS IN THE MUNICIPALITY OF BARBALHA

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Introduction: The social isolation resulting from the COVID-19 pandemic has had psychological and physical consequences across different age groups of Brazilians. Regarding the child population, there have been implications for their intellectual and social development, as well as changes in their dietary habits and physical conditioning. **Objective:** To assess the impacts of the pandemic on the lifestyle of children and adolescents attending the middle school grades of public schools in the municipality of Barbalha. **Methods:** This is an epidemiological, cross-sectional, descriptive, correlational study with a quantitative approach. The sample consisted of students from the 8th and 9th grades of a municipal public elementary school in Barbalha. A questionnaire was administered regarding the pandemic's impacts, consisting of six objective questions covering diet, physical exercise, screen time, mental health, and weight changes. **Results:** A total of 69 students were evaluated, of whom 82.60% reported weight changes during the COVID-19 pandemic. According to the responses, 57.97% noted that the period of social isolation had an impact on their eating habits, with 62.5% reporting improvement and 37.5% reporting worsening. Additionally, 79.71% acknowledged increased screen time during the pandemic. It was also observed that 69.56% of the sample perceived a relationship between the pandemic scenario and increased anxiety and worry. Data analysis further revealed that among participants who increased their screen time during social isolation, 67.11% also gained weight and 60.86% reported increased anxiety. **Conclusion:** Based on the individuals assessed, it was evident that during the pandemic, those students who reported increased screen time also showed a proportional increase in weight gain and anxiety symptoms. The dietary changes among children may have been positive in some cases due to better meal control by caregivers, although many did not have access to adequate nutrition. Therefore, for these students, lifestyle changes during the pandemic appear to have had direct short-term impacts. However, larger sample studies and long-term follow-ups are needed for a more accurate assessment of the pandemic's impact on the lifestyles of these children and adolescents. **Keywords:** lifestyle; COVID-19; children and adolescents.

DIABETES MELLITUS

2700

ASSOCIATION OF DIABETES AND HYPERGLYCEMIA WITH ASPECTS SCORE IN ADMISSION OF PATIENTS WITH ACUTE ISCHEMIC STROKE

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Introduction: Diabetes mellitus (DM) is a metabolic disease characterized by chronic hyperglycemia and is a risk factor for vascular complications such as ischemic stroke. The ASPECTS score is a tool used to assess early ischemic changes in stroke patients using non-contrast head computed tomography (CT). However, the association between DM and the ASPECTS score is still not well explored. **Objective:** The aim of this study was to evaluate the association between diabetes and admission ASPECTS values in patients admitted to a stroke referral service in Recife, PE. **Methods:** This is an observational, cross-sectional study conducted in a specialized stroke unit involving patients aged 18 years or older admitted for thrombolytic therapy following a diagnosis of stroke of all etiologies. Data were collected during 2022 and 2023. The significance level was set at 5%, and the statistical test used was Fisher's Exact Test. **Results:** A total of 238 patients were studied, with a mean age of 64 ± 13.6 years (ranging from 28 to 94 years), and 50.8% were female. Among the patients, 80% had hypertension, 37.4% had DM, 5.4% had hypercholesterolemia, 18.5% had atrial fibrillation, 13.4% had a previous stroke, and 7.1% had a previous acute myocardial infarction. The average blood glucose test (HGT) was 144.60 ± 66.42, with 20.6% of patients having an HGT ≥ 180. The mean Alberta Stroke Program Early CT Score (ASPECTS) on admission for all patients studied was 9.53 ± 0.76, while the mean for patients with diabetes was 9.51 ± 0.77 and for non-diabetics was 9.55 ± 0.75. Among diabetic patients, 55.06% had an ASPECTS of 10, compared to 58.4% of the non-diabetic population ($p = 0.675$). In patients with HGT ≥ 180, the mean ASPECTS was 9.67 ± 0.61, compared to 9.53 ± 0.77 in patients with HGT < 180. Finally, 61.2% of individuals with HGT ≥ 180 had ASPECTS of 10, compared to 58.5% of patients with HGT < 180 ($p = 0.748$). **Conclusion:** The study found no statistically significant difference in ASPECTS scores between diabetic and non-diabetic patients, nor between those with hyperglycemia (HGT ≥ 180) and normoglycemia (HGT < 180) on admission. Although DM is a risk factor for vascular complications, such as stroke, and hyperglycemia is associated with DM, these factors do not seem to significantly influence the extent of the initial ischemic changes detected by non-contrast head CT, as assessed by the ASPECTS score. **Keywords:** high blood sugar; acute stroke; diabetes mellitus.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2701

COMPARISON OF THE EFFICACY OF ORAL CONTRACEPTIVE AND METFORMIN THERAPY *VERSUS* ORAL CONTRACEPTIVE ALONE IN REDUCING INSULIN RESISTANCE IN WOMEN WITH POLYCYSTIC OVARY SYNDROME: A SYSTEMATIC REVIEW

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Introduction: Polycystic ovary syndrome (PCOS) is a common condition affecting women of reproductive age, characterized by hyperandrogenism and ovarian dysfunction. Insulin resistance plays a central role in its pathophysiology. Understanding and managing insulin resistance is crucial for addressing the symptoms of PCOS and improving the overall quality of life for these patients. **Objective:** To compare the efficacy of the combined use of Metformin and oral contraceptives (OCP) *versus* the isolated use of OCP in PCOS. **Materials and methods:** This review followed PRISMA guidelines and formulated the research question based on the PICO model. The research was conducted in the PubMed, Cochrane, BVS, and Capes Periodicals databases, using the following MeSH terms: "Polycystic Ovary Syndrome", "Metformin", "Oral Contraceptives", and "Insulin Resistance". The search was limited to the period from 2010 to 2024 and to articles in Portuguese and English. The quality of the studies was assessed based on NHLBI criteria. **Results:** 434 articles were identified, but only 10 were selected. The analyzed articles compared treatments with OCP, metformin, and the combination of both. In studies comparing isolated metformin and OCPs, metformin showed improvements in insulin resistance in several cases, while OCPs either worsened or did not significantly influence glycemic metabolism. Isolated OCP therapy was more effective in regulating hyperandrogenism. The combination of metformin with drospirenone was effective in reducing BMI and insulin resistance, contrary to the combination with cyproterone acetate. Metformin, either alone or combined with OCPs, significantly reduced insulin resistance. Most studies on isolated OCPs showed maintenance or worsening of insulin resistance, with only one showing improvement, but less than that provided by metformin. **Conclusion:** Metformin proved essential in improving insulin resistance in patients with PCOS. Combined OCP and metformin therapy offers additional benefits in symptom regulation, improving insulin sensitivity compared to isolated hormonal treatment. More studies are needed to fully understand the impact of different therapies on insulin resistance in women with PCOS. **Keywords:** metformin; oral contraceptive; polycystic ovary syndrome.

TIREOIDE

2703

THE IMPORTANCE OF MOLECULAR TESTING IN IDENTIFYING THYROID TUMORS WITH UNDEFINITE DIAGNOSIS

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Introduction: The thyroid is a gland responsible for producing metabolic hormones. Thyroid neoplasms are the most common endocrine tumors, generally after fine needle puncture (FNA) most diagnoses are benign. However, there are situations in which, even after imaging exams or FNAC, the cytology of the nodule is indeterminate. In these cases, repeating FNAC or diagnostic hemithyroidectomy is recommended, as this method is considered invasive and radical. The emergence of molecular tests came to revolutionize clinical management, using thyroid tissue samples for mutation analysis, gene expression profiling and genetic panels. **Objective:** Understand the advantages and importance of molecular tests for patients with indeterminate thyroid neoplasia. **Materials and methods:** This study is a systematic review, whose bibliographical approach was carried out in the PubMed database. The search strategy included the descriptors "Molecular Diagnostic Techniques", "Thyroid Neoplasms" and "Missed Diagnosis" combined with the operator Boolean AND. The inclusion criteria were: publications from the last 5 years, written in English, Spanish and Portuguese. Exclusion criteria: escape from the topic, studies without access to the full text and duplicates. **Results:** The articles reported that nodules with indeterminate cytology carry a 10% to 40% risk of malignancy. There are several types of molecular tests, which can reach a sensitivity of up to 92% and a specificity of 52% to 82%. The primary objective is to improve the management of patients who are considered for surgery, as this leads to a better quality of life perspective. In addition to initial diagnosis, it can be used in cases of lymph node metastases in thyroid cancer types. However, the cost of a molecular test is much higher than a diagnostic thyroidectomy, which is one of the factors that prevent it from being used frequently in clinical practice. **Conclusion:** The studies showed that molecular tests are tools of phenomenal diagnostic importance for patients with an indeterminate report, despite the large budget burden, the number of unnecessary nodule resections would decrease with diagnostic accuracy. **Keywords:** molecular diagnostics; thyroid neoplasms; indeterminate cytology.

TIREOIDE

2704

ANALYSIS OF THE NUMBER OF HOSPITALIZATIONS, HOSPITAL COSTS, AVERAGE LENGTH OF STAY AND MORTALITY DUE TO THYROTOXICOSIS, IN THE NORTHEAST, BETWEEN 2019 AND 2023

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Introduction: Thyrotoxicosis is the clinical manifestation of excessive thyroid hormone action at the tissue level due to inadequately high circulating concentrations of thyroid hormone. Patients present with a variety of signs and symptoms such as tachycardia, elevated heart rate, changes in mental status, gastrointestinal disturbances, and hyperthermia. **Objective:** To analyze hospital admissions and costs, average length of stay, and mortality rate of patients with thyrotoxicosis in the Northeast region (NE) between 2019 and 2023. **Methods:** This is an observational, cross-sectional study on the morbidity and mortality profile due to thyrotoxicosis from January 2019 to December 2023 in the NE region. The data were obtained using the Hospital Admissions System (SIH/SUS). The variables "Region", "Total Value", "Sex", "Color/Race", "Deaths" and "Average Length of Stay" were selected. **Results:** During the period analyzed, there were a total of 581 hospitalizations in the region, with an average length of stay of 8.2 days, most of which occurred as emergencies, corresponding to 353 (60.75%) cases. The states of Ceará, Maranhão, Bahia, Pernambuco and Paraíba had the highest incidence of thyrotoxicosis. Of the total, 448 (77.10%) hospitalizations were female and 133 (22.90%) were male. Furthermore, the age group most affected was the group between 40 and 49 years old, with 158 (27.20%) hospitalizations. Of the total number of hospitalizations, 13 (2.23%) deaths were recorded in the NE region, of which 10 were women and 3 were men. Of the 13 deaths, 8 occurred in Bahia, with no records in Paraíba. The age group with the most deaths was 20 to 29 years old, with 6 (46.15%) records. Regarding hospital costs, the total amount was R$ 507,807.33, with most of this amount allocated to women and the group between 40 and 49 years old. **Conclusion:** Given the above, it is noteworthy that it is extremely important to analyze the morbidity and mortality profile due to thyrotoxicosis in the Northeastern population, since it is evident that hospitalizations occur mostly on an emergency basis. These data reinforce the need for healthcare professionals to master the case and implement preventive and intervention measures, which should be used as tools aimed at reducing hospitalizations, mortality and, consequently, the financial cost to the national healthcare system. **Keywords:** thyroid hormones; hospitalizations; mortality.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2705

RESISTANCE INSULIN SYNDROME TYPE A: A FORGOTTEN DIAGNOSIS

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A 22-year-old female referred to an endocrinologist due to an investigation of hyperinsulinemia, skin hyperpigmentation, and suspicion of non-classic congenital adrenal hyperplasia (NC-CAH). The patient reported a menarche only after treatment with estrogen. On examination, observed overweight (BMI 26.69), acneiform eruptions and areas of skin hyperpigmentation suggestive of acanthosis nigricans, with wide distribution, occurring not only in body creases, as commonly seen. No Cushing's syndrome or acromegaly manifestation. Observed high levels of insulin and HOMA-IR, increases in some parameters of the androgenic profile, a 46,XX karyotype and normal thyroid function, prolactin, glycemic profile and pelvic ultrasonography. 17-hydroxy-progesterone slightly increased at admission, but progressed to normal levels later, excluding NC-CAH as the main hypothesis. Empirical treatment was implemented with metformin and pioglitazone, plus lifestyle changes, leading to improvement in acanthosis nigricans as well as normalization of insulin levels. Even though there were no molecular genetic testing results, IRS was considered as the main diagnostic hypothesis mainly due to two factors. First, the important improvement in skin hyperpigmentation and insulin levels with the chosen treatment. Besides that, the uncharacteristic manifestation in a non-obese female with severe insulin resistance of an extensive acanthosis nigricans, even in atypical locations. The type A insulin resistance syndrome (IRS) is a rare condition caused by mutations in the insulin receptor gene. Common characteristics are primary amenorrhea or oligomenorrhea, hyperandrogenism and acanthosis nigricans. Furthermore, females usually are non-obese, contrary to what is expected of people with insulin resistance. The IRS is often undiagnosed, mistaken for other similar conditions as polycystic ovary syndrome and NC-CAH, which may lead to different clinical decisions, mostly because of its rarity and heterogeneous clinical presentation. We report a female patient with a suggested case of IRS type A, treated with a combination of medications and lifestyle measures. IRS is commonly forgotten and underdiagnosed. So, it is important to remember this diagnosis mainly in non-obese women, with atypical features and insulin resistance, since a proper diagnosis may provide better treatment options, life quality and prognosis. **Keywords:** hyperinsulinemia; acanthosis; insulin resistance.

OBESIDADE
2706

HOSPITALIZATIONS FOR OBESITY IN BRAZIL: A COMPARATIVE EPIDEMIOLOGICAL STUDY OF THE BRAZILIAN MACROREGIONS OVER THE LAST 5 YEARS

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Introduction: Obesity is characterized by excessive accumulation of body fat in individuals. It has a complex and multifactorial etiology, resulting from the interaction of genes, environment, metabolic disorders, lifestyle, and socioemotional factors. It is a risk factor for a range of diseases such as cardiovascular pathologies and type 2 diabetes, leading to a high number of hospitalizations. For diagnosis in adults, the parameter used by the World Health Organization is the body mass index (BMI), which identifies individuals as obese when equal to or greater than 30. Treatment is based on adopting a healthier lifestyle with reduced caloric intake and increased energy expenditure. **Methods:** This is a descriptive, observational, quantitative, population-based study, using data obtained from the Department of Health Informatics of the Unified Health System (DATASUS) on hospital admissions due to obesity in Brazil from 2019 to 2024. We evaluated the number of obesity-related hospitalizations across Brazilian macro-regions. **Results and Discussion:** Analysis of the data shows a general increase in hospital admissions due to obesity nationwide, with a prevalence of cases in the southeast region of the country, accounting for more than 45% of the 35,204 admissions, while the northern region contributes less than 3% of this total. This reflects regional disparities in healthcare service availability, underreporting, as well as cultural and socioeconomic differences affecting obesity. Additionally, other regions also significantly contribute to hospitalizations, in increasing order: Midwest, Northeast, and South. The latter is notably responsible for almost 32% of total admissions despite its population comprising less than 15% of the national population. **Conclusion:** The data demonstrate a rising trend in obesity-related hospitalizations in Brazil over the past 5 years, highlighting a possible link between this increase and the unhealthy lifestyle of the Brazilian population, particularly sedentary behavior and consumption of ultra-processed foods. Therefore, given that obesity is a risk factor for various chronic diseases, public health measures are necessary to reduce obesity rates and subsequent hospitalizations. **Keywords:** obesity; hospitalizations; prevalence.

METABOLISMO ÓSSEO E MINERAL
2707

PRIMARY HYPERPARATHYROIDISM – FROM DIAGNOSTIC SUSPICION TO POST-TREATMENT CHALLENGES: A CASE REPORT

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A 47-year-old woman, admitted for an investigation of vomiting, retrosternal pain, weight loss and progressive dysphagia from 3 months of evolution. She had a history of recurrent nephrolithiasis and attacks of arthralgia in the ankles. At the physical examination she was lucid and oriented, dehydrated and pale. In the cervical region, an enlarged thyroid was identified, without delimitation of the lower border with the sternal notch, little mobile when swallowing and a palpable hardened mass in the left lobe. Blood testes results showed total serum calcium corrected by albumin 19.6 pg/mL (8,8-10,4 pg/mL), creatinine 2.8 pg/mL (clearance 20 mL/minute) and parathyroid hormone 1359.8 pg/mL (normal range 20-80 pg/mL). Parathyroid scintigraphy detected contrast uptake with an expansive, hypodense formation with regular contours extending below the lower left lobe of the thyroid and insinuating itself through the thoracic introitus to the superior mediastinum, suggestive of parathyroid adenoma (PA). A sternal lesion suggestive of osteoclastoma was also evident. The patient was referred for surgery, and a left lower parathyroidectomy with isthmectomy was performed. The histopathological examination revealed a 6 x 4 x 2 cm lesion, confirming PA, without vascular invasion, in adjacent structures or atypia. Post-operatively, the patient developed continued renal dysfunction and bone starvation syndrome, characterized by severe hypocalcemia for a period longer than 4 days after prolonged exposure to the action of parathyroid hormone. Intravenous and oral calcium bicarbonate replacement was offered in addition to significant doses of vitamin D. The patient was able to be discharged from the hospital with safe calcium control only 1 month after surgery. Primary hyperparathyroidism is the main cause of outpatient hypercalcemia, represented by parathyroid adenoma, followed by hyperplasia and carcinoma, respectively. Although the initial diagnostic suspicion was parathyroid carcinoma due to severe hypercalcemia, mediastinal invasion of the lesion and an increase in PTH greater than 20 times the reference value, histopathology excluded the primary hypothesis. However, patients with chronic renal dysfunction secondary to recurrent nephrolithiasis with bone injuries or fractures should be investigated for parathyroid changes, aiming to minimize short- and long-term systemic repercussions. **Keywords:** Primary hyperparathyroidism; bone starvation syndrome; hypercalcemia.

OBESIDADE
2709

LIPEDEMA, A DISEASE THAT DOES NOT RESPOND TO WEIGHT LOSS: A CASE REPORT

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Case presentation: A 45-year-old woman had been followed at the endocrinology outpatient clinic since November 2023 due to the desire to undergo bariatric surgery. She reported that after the death of her mother 5 years ago, she was diagnosed with depression and progressively gained around 30 kg, reaching her maximum weight of 138 kg in early 2023. On physical examination, her body weight (BW) was 105 kg with a BMI of 40.5 kg/m². She reported having lost 33 kg in recent months after changing her dietary habits and taking walks on her own. During this period, she was evaluated by an angiologist for venous insufficiency, which led to a diagnosis of lipedema. She began treatment for obesity with topiramate and bupropion, and was referred for psychological and nutritional counseling. In March 2024, her BW was 102 kg (-3 kg) with a BMI of 39.35 kg/m², and she reported adherence to obesity treatment and regular low-intensity physical activity due to lower limb pain. The dosage of obesity medication was increased. Recently, in July 2024, her BW was 95 kg (-10 kg) with a BMI of 36.64 kg/m². Despite weight loss, her lipedema remained unchanged, still classified as type (IV) and stage IV. The patient was informed about the minimal impact of weight loss on lipedema and was cleared for bariatric surgery. **Discussion:** Lipedema is a progressive condition characterized by an abnormal accumulation of subcutaneous fat, mainly in the hips, but it can also affect the thighs, legs and arms, sparing the trunk, hands and feet. It can be classified according to its location and severity, with a scale ranging from type I to V and stage 1 to 4, respectively. Although often confused with obesity, which is an aggravating factor, lipedema does not improve with weight loss. Symptoms include edema, pain, increased sensitivity and a tendency to bruise. The greater the stage and the lack of adequate treatment, the higher the likelihood of lipedema progressing to associated lymphatic insufficiency, as seen in this patient. **Final comments:** Lipedema is an underrecognized condition among physicians, leading to diagnostic delays of 15 to 18 years. Therefore, disseminating information about lipedema is essential to enable proper recognition and management of patients with this condition. **Keywords:** lipedema; weight loss; diagnostic delay.

DIABETES MELLITUS
2710

DIABETES MELLITUS AND DEPRESSION: A SYSTEMATIC REVIEW

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Introduction: Diabetes mellitus (DM) is a chronic condition characterized by high blood glucose levels due to insulin deficiencies. Depression is a common comorbidity in DM patients and can negatively influence glycemic control, the severity of complications and quality of life. However, the interaction between DM and depression still needs to be explored. **Objective:** To assess the prevalence, impact and treatment of depression in patients with DM, and its relationship with glycemic control and quality of life. **Methods:** A systematic review was carried out according to the PRISMA 2020 guidelines. The question was: "What is the relationship between depression and DM in terms of prevalence, glycemic control and quality of life?" Descriptors such as "Diabetes mellitus", "Depression", "Glycemic control" and "Quality of life" were used in Portuguese, English and Spanish. The search was carried out on the PubMed, Virtual Health Library (VHL) and CAPES journals platforms. Included were free articles, in Portuguese, English or Spanish, published in the last 10 years and with robust methodology. Reviews, case reports, animal studies and inconsistent methodologies were excluded. **Results:** The initial search generated 798 articles (PubMed: 44, BVS: 259, *Periódicos Capes*: 495). After applying the eligibility criteria, 205 studies were selected, with 17 duplicates excluded. Reading the titles and abstracts resulted in the selection of 11 articles. The prevalence of depression in DM patients ranged from 0% to 60.5%. Depressive symptoms are associated with poorer glycemic control, greater severity of complications, poorer quality of life and a negative impact on social and economic aspects. The treatment of depression showed potential for improving glycemic control and DM management. **Conclusion:** There is a clear association between depression and DM, with a significant impact on glycemic control and patients' quality of life. Treatment of depression is essential to improve glycemic control and reduce the complications of DM. **Conflicts of interest:** There are no conflicts of interest. **Keywords:** diabetes mellitus; depression; glycemic control.

TIREOIDE

2711

PREVALENCE OF THYROID DYSFUNCTION AND ASSESSMENT OF MORTALITY IN PATIENTS HOSPITALIZED FOR DECOMPENSATED HEART FAILURE

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Introduction: Thyroid hormones play roles in various organs of the body and impact the cardiovascular system, including the myocardium, conduction system, and peripheral vasculature. Alterations in thyroid hormone levels are associated with dyslipidemia, ventricular arrhythmias, atrial arrhythmias, and can also lead to the development of heart failure. **Objective:** To study the prevalence of hypo and hyperthyroidism in patients hospitalized for decompensated heart failure at a cardiology referral center during the years 2021 and 2022. **Materials and methods:** This is a retrospective cohort study conducted through the collection of information from medical records. Patients aged 18 years or older, admitted for decompensated heart failure between 2021 and 2022, were included. The significance level was set at 5%, and Pearson's chi-square test was used. **Results:** A total of 1,091 patients were evaluated, but only 146 were included in the study as they had thyroid function tests. The average age of the sample was 62.4 ± 14.6 years, with a slight predominance of females, representing 50.7% of the patients evaluated. Among the total, 39.3% had a diagnosis of diabetes mellitus, 82.1% had hypertension, 29.3% had obesity, 30.3% had dyslipidemia, 33.1% had atrial fibrillation, 37% were smokers or former smokers, and 25.3% were alcohol users or former users. Thyroid function assessment revealed that 62.8% of the patients were euthyroid, while 37.2% had some thyroid dysfunction. Among those with thyroid abnormalities, subclinical hypothyroidism was the most common, affecting 20.5% of the patients. Additionally, 11% had clinical hyperthyroidism, and 6.2% had clinical hypothyroidism. There was no statistically significant relationship between free T4 levels and the studied outcomes: mortality ($p = 0.982$), readmission within 1 year ($p = 0.273$), or hospitalization longer than 30 days ($p = 0.468$). **Conclusion:** In the studied sample, only a few patients hospitalized for decompensated heart failure had their thyroid function assessed. Among these patients, most had some degree of thyroid dysfunction. Subclinical hypothyroidism was the most prevalent. There was no statistical significance between thyroid abnormalities and the studied outcomes. **Keywords:** prevalence; thyroid dysfunction; heart failure.

NEUROENDOCRINOLOGIA

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TRANSSPHENOIDAL HYPOPHYSECTOMY MORTALITY AMONG HIGH-VOLUME SURGERY CENTERS IN BRAZIL

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Introduction: Pituitary tumors are usually adenomas, which can present with both hormonal or compressing symptoms, such as low visual acuity. These adenomas are well visualized on magnetic resonance imaging and, with the exception of prolactinoma, surgical intervention via the transsphenoidal route tends to be the first treatment option. In addition, treatment should ideally be carried out in high-volume centers, given the lower morbidity and mortality rates compared to low-volume centers. Methods: Public health data about the transsphenoidal hypophysectomy (TH) surgery was extracted from the DATASUS TABNET platform, from January 2008 to December 2023. We compared data from Pernambuco State (PE) and its hospitals to Brazilian reference surgery centers. The variables compared were: Deaths, Mortality rate and Hospital admission authorization, meaning procedures performed. **Results:** During this period, 349 THs were recorded in PE, slightly above the Brazilian average of 339. Out of 8,817 THs in the country, the state of São Paulo (SP) performed the highest number of surgeries, totaling 4,327 followed by Minas Gerais (MG) which performed 843. The reference centers for neurosurgery in SP such as *Hospital São Paulo* (Unifesp) and *Hospital das Clínicas São Paulo* (FMUSP) performed 449 and 1,392 THs, respectively. In MG, *Hospital das Clínicas da Universidade Federal de Minas Gerais* EBSERH (HC-UFMG), performed 208 THs. Meanwhile, in PE, *Hospital Pelópidas Silveira* (HPS) performed 114 procedures and *Hospital da Restauração* (HR), 88. As for the mortality rate, both FMUSP and Unifesp 0.01 per 100.000 inhabitants and in MG, HC-UFMG rated 0.009. In Pernambuco, on the other hand, mortality rated 0.03 per 100. inhabitants at both HR and HPS. However, the absence of ICD-10 in the SUS databases limited a better analysis by not accounting tumor etiology. **Conclusion:** The number of transsphenoidal hypophysectomies performed in Pernambuco was close to the Brazilian average, however considerably lower compared to the top-performing states, São Paulo and Minas Gerais. This may explain its mortality rate rating 3 times bigger when compared to higher volume centers in SP and MG. Additionally, the inclusion of tumor etiology in the DATASUS TABNET public health data would allow richer and more accurate analysis. **Keywords:** transsphenoidal hypophysectomy; pituitary tumor; Pernambuco.

OBESIDADE

2713

SAFETY AND EFFICACY OF GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONISTS (GLP1RA) IN POST-BARIATRIC PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

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Introduction: The GLP1RAs are a new class of drugs that cause weight loss mainly by delaying gastric emptying. However, considering the altered anatomy and the issues of inadequate weight loss and weight gain after surgery in post-bariatric patients, it is still not clear if the GLP1RA would have the same effects, so its safety and efficacy remains unclear. Objectives: We aimed to perform a systematic review and meta-analysis accessing the effects of GLP1RAs in post-bariatric surgery patients. Methods: We systematically searched PubMed, Web of Science, Cochrane for randomized controlled trials (RCT). Statistical analysis was performed in R software 4.4.0. A fixed (for low heterogeneity, and $I^2 < 25\%$) and a random-effects model (for high heterogeneity, and $I^2 > 25\%$) was employed to compute mean differences (MD) and risk ratios (RR) with 95% confidence intervals (CI). A p-value of < 0.05 was considered statistically significant. Heterogeneity was examined with the Cochran Q test, prediction interval and I^2 statistics. The results were reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement guideline. **Results:** A total of 5 RCTs with 280 patients were included, of whom 153 were randomized to GLP1RA therapy. Over follow-up that ranged from 24 to 48 weeks, the analysis showed that patients receiving GLP1RA presented a significant reduction in body weight (MD -5.6 kg; 95% CI -8.8 to -2.4; P < 0.001; I2 = 84%) and a significant increase in serum levels of HBA1c (MD 3.4842%; 95% CI 1.38 to 5.58; P = 0.001; I2 = 99%) and in the risk of develop a decreased appetite (RR 3.22; 95% CI 1.2 to 8.6; P = 0.020199; I2 = 0%). Additionally, when compared to placebo, the GLP1RA group did not present any significant difference regarding the risk of present the following adverse events: dyspepsia (RR 2.45; 95% CI 0.51 to 11.85; P = 0.26; I2 = 0%), reflux (RR 1.46; 95% CI 0.37 to 5.68; P = 0.58; I2 = 0%), nauseas (RR 1.83; 95% CI 0.93 to 3.58; P = 0.079; I2 = 0%), vomiting (RR 1.09; 95% CI 0.44 to 2.71; P = 0.858; I2 = 0%) and Constipation (RR 2.41; 95% CI 0.86 to 6.73; P = 0.093; I2 = 0%). Conclusions: In conclusion, our results showed that, when compared to placebo, the GLP1RA presented a significant effect in reduction of appetite and body weight of the patients, while had no significant difference in predisposing any of the listed adverse events. However, the patients receiving GLP1RA therapy presented a significant increase in HBA1c serum levels. **Keywords:** glucagon-like peptide-1 receptor agonists (GLP1RA); post-bariatric patients; meta-analysis.

TIREOIDE

2714

PARAPLEGIA SECONDARY TO METASTATIC LESION OF FOLLICULAR THYROID NEOPLASIA: A CASE REPORT

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A female patient, approximately 60 years old, obese, diabetic, hypertensive, with a history of chronic low back pain, was referred to a tertiary hospital. She presented with paresthesia in the lower limbs three months before admission, which progressed to paraparesis and urinary retention. Imaging exams (spinal CT and MRI) identified a tumor in the right sacroiliac joint with an expansive appearance, showing invasion of soft tissues and the spinal cord at the levels of L5-S1 and S1-S2. Similar lesions were also found at D2-D3 and in the right transverse process of D8. The spine team opted for conservative treatment and prescribed corticosteroids. During hospitalization, the patient developed progressive paresthesia and loss of sensitivity up to the T6 dermatome level. Laboratory tests revealed subclinical hyperthyroidism (TSH 0.24 and T4L 0.91), and pathology of the spinal lesion showed follicular neoplasia, confirmed by immunohistochemistry (thyroid origin). Physical examination revealed a non-painful left nodulation, and thyroid ultrasound showed a normal thyroid with preserved dimensions and regular contours. A TI-RADS 4 nodule on the left side measured 1.0 x 0.6 x 0.6 cm, without vascular invasion, while two TI-RADS 3 nodules were found on the right side, measuring 1.6 x 1.2 x 1.0 cm and 0.9 x 0.7 x 0.4 cm, along with an atypical cervical lymph node. The patient was referred to the oncology service for follow-up and specialized treatment. Follicular thyroid tumors most frequently affect women in a ratio of 3:1 and occur at an older age, between 40 and 60 years old, compared to other thyroid cancer pathologies. Distant metastases may be the initial manifestation of follicular carcinoma, even when the tumor is smaller than 1 cm. Fine needle aspiration biopsy has limitations in diagnosing follicular thyroid neoplasia, unlike papillary thyroid carcinoma, due to its inability to differentiate adenomas from malignant processes, requiring immunohistochemistry for confirmation. As it affects older patients and presents with disseminated disease, the prognosis is poorer than that for other thyroid pathologies. **Keywords:** thyroid cancer; follicular; paraplegia.

DIABETES MELLITUS

2715

LIFESTYLE IN PATIENTS WITH TYPE 1 DIABETES MELLITUS: A SYSTEMATIC REVIEW

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Introduction: Type 1 diabetes mellitus (DM1) is a chronic disease characterized by autoimmune destruction of the beta cells of the pancreas, resulting in insulin deficiency. Adequate blood glucose control is essential to prevent complications. In addition to insulin therapy, lifestyle, including diet, physical activity and diabetes education, is fundamental to the management of the disease. **Objective:** To evaluate the influence of lifestyle on glycemic control in patients with DM1. **Methods:** A systematic review was carried out following the PRISMA 2020 guideline. The research question was: "How does lifestyle affect glycemic control in patients with type 1 diabetes mellitus?". The descriptors "Type 1 diabetes mellitus", "Lifestyle" and "Physical activity" were used in Portuguese, English and Spanish, with the Boolean operators OR and AND. The search was carried out on the PubMed, BVS and *Periódicos Capes* platforms. Free articles were included, in Portuguese, English or Spanish, published in the last 10 years, with consistent methodology. Reviews, case reports, animal studies and inconsistent methodologies were excluded. **Results:** 471 articles were found on the PubMed (17), VHL (159) and Capes (295) portals. After applying the eligibility criteria, 105 studies remained, of which 30 were duplicated and excluded. After reading the titles and abstracts, 7 articles were selected. The studies indicate that an active lifestyle, with regular physical activity, a balanced diet and diabetes education, have a significant impact on the glycemic control of patients with DM1. Regular physical activity was the variable that showed the greatest relationship with improved glycemic levels. In addition, an active and healthy lifestyle, combined with a balanced diet and diabetes education, improved patients' glycemic control. **Conclusion:** The results show that an active and healthy lifestyle, with physical activity, a balanced diet and diabetes education, has a positive impact on the glycemic control of patients with DM1. The adoption of a healthy lifestyle should be encouraged to improve the health of these patients. Conflicts of interest: There are no conflicts of interest. **Keywords:** type 1 diabetes mellitus; lifestyle; physical activity.

NEUROENDOCRINOLOGIA

2717

DEGREE OF ACTIVITY AND THERAPEUTIC RESPONSES IN PATIENTS WITH ACROMEGALY: A SINGLE-CENTER EXPERIENCE

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Introduction: Acromegaly is a rare chronic condition characterized by the elevation of serum growth hormone (GH) and insulin-growth factor 1 (IGF-1), mostly due to the presence of pituitary tumors. It is usually diagnosed in the fifth decade of life, with no significant difference in sex distribution and prevalence ranging from 2.8 to 13.7 cases per 100.000 habitants. Treatment involves pituitary surgery in most cases, but pharmacotherapy and radiotherapy can help. The goals are to normalize serum IGF-1 and improve acromegaly symptoms and complications, increasing quality of life. We describe the clinical and laboratory parameters of patients with acromegaly treated in a reference center. Methods: Cross-sectional study involving 27 patients diagnosed with acromegaly from 2010 to 2023 in a neuroendocrinology outpatient clinic. Data was obtained through medical records. Categorical variables were described as frequencies. Quantitative variables were described with mean ± standard deviation or with median and interquartile range. **Results:** 21 patients were female (77,78%), showing an important sex frequency distribution. Mean age was 52,81 ± 12,29 years old. Mean time since acromegaly diagnosis was 10,25 ± 6 years, reinforcing the chronic aspect of the disease. Mean initial tumor size was 2,1 ± 1,0 cm. Most patients were treated with trans-sphenoidal surgery (77,78%) and many (70,37%) required at least one adjuvant therapy. Most patients (77,78%) had controlled disease, considering normal serum IGF-1 for sex and age, with a median of 209 ng/dL (155-308). Also, most patients (69,23%) had stable disease after treatment when ACRODAT disease activity categories were used. When considering IGF-1 and other features, SAGIT score was used, with a mean score of 6,5 ± 4,21. Both ACRODAT and SAGIT showed a significant statistical association with IGF-1 ($p < 0.001$) and disease control ($p < 0.001$). Many patients had complications that might be associated with acromegaly, such as arthropathy (78%), hypertension (55,56%) and diabetes (51,58%). The quality of life in patients with acromegaly was measured through the AcroQoL questionnaire, with a mean final score of 75,5 ± 19,1. But AcroQoL score did not have association with IGF-1 levels after treatment ($p = 0.90$). **Conclusion:** We found a greater predominance of acromegaly in female patients. AcroQoL questionnaire was not a good tool to measure quality of life in patients with acromegaly related to disease control. **Keywords:** acromegaly; therapeutic response; clinical profile.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

2720

EVALUATION OF SLEEP QUALITY IN PATIENTS WITH HYPOGONADOTROPHIC HYPOGONADISM

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Introduction: Hypogonadism can be defined as testosterone deficiency that can be manifested by decreased spermatogenesis production, as well as in numerous clinical manifestations – low libido, weight gain, worsening of the glycemic profile, and lipidogram, among other manifestations. When this testosterone deficiency occurs from birth, it can have more intense repercussions, which is what occurs in congenital hypogonadism. **Objective:** To establish sleep quality parameters in patients with hypogonadotropic hypogonadism followed up at a referral center. Materials and methods: Retrospective study consisting of 31 male patients with 46 XY karyotype over the last 5 years after molecular biology analysis of mutation, and application of the Pittsburg sleep quality index (PG) questionnaire. The following parameters were evaluated - weight, height, body mass index (BMI), gonadotrophic hormone dosage (FSH, LH, total testosterone, and SHBG), fasting glucose, ferritin, lipidogram and inbody electrical bioimpedance. Patients were allocated into two groups: total testosterone above 300 mg/dL in the treatment trough (A), and testosterone levels below 300 mg/dL (B). Statistical analysis was performed using the Shapiro-Wilk test. **Results:** In the cohort analyzed, the mean age was 35 years, with the predominant white ethnicity. After molecular biology analysis, the most prevalent genetic mutations: KAL1, FGFR1, PROK2R, CDH7 and GNRHR mutations corresponding to the diagnoses of Kallmann syndrome, normosmic hypogonadotrophic hypogonadism, and charge syndrome. PG analysis showed a high incidence of poor sleep quality, and sleep disturbances with no statistically significant relationship with testosterone levels. We observed in patients with good sleep quality, statistical significance in the metabolic profile parameters – weight, glycemia, lipidogram, and visceral fat when compared. **Conclusion:** Therefore, we can observe in this study a high incidence of poor sleep quality and sleep disturbance independent of serum testosterone levels evidenced after application of the Pittsburgh Sleep Quality Index. **Keywords:** hypogonadotrophic hypogonadism; sleep; testosterone.

ENDOCRINOLOGIA BÁSICA

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HOSPITALIZATIONS IN THE UNIFIED HEALTH SYSTEM (SUS) BY ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES (2014-2023)

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Introduction: Endocrine, nutritional and metabolic diseases can be risk factors (RF) for chronic diseases or be considered as such, as is the case with diabetes. Chronic non-communicable diseases have high mortality rates worldwide, raising the attention of public health managers. **Objective:** To assess the prevalence of hospitalizations in the Unified Health System (SUS) from 2014 to 2023 due to endocrine, nutritional and metabolic diseases in Brazil by region and state. **Methods:** This is an ecological, observational, retrospective, descriptive and quantitative study. The data were obtained from the SUS Hospital Information System (SIH/SUS) provided by the Department of Informatics of the Unified Health System (DATASUS), referring to hospitalizations for nutritional and metabolic endocrine diseases in Brazil from 2014 to 2023. The variables evaluated were: number of hospitalizations by region of Brazil, by Federative Unit, evaluating the total and average amount paid by SUS per hospitalization, average length of stay, deaths and mortality rate and ICD-10 Morb List. **Results:** The Southeast region accounted for 40% of all hospital admissions for endocrine, nutritional and metabolic diseases in Brazil, followed by the Northeast with 28%, the South with 15%, the North with 7.7% and the Midwest with 7%. In terms of costs, R$ 2,190,554,155.18 was spent, 41.81% of which was in the Southeast. The average cost per hospitalization was R$ 916.68. The longest average stays were recorded in the North (6.4 days). The highest mortality rate was in the Southeast, at 6.49%. With regard to deaths from endocrine, nutritional and metabolic diseases, 46.28% occurred in the Southeast. Compared to the total number of patients, the overall mortality rate was 0.57%.Emergency care accounted for 88.06% of hospitalizations. It was observed that 55.92% of hospital morbidity was related to a diagnosis of diabetes mellitus. **Conclusion:** Endocrinological, nutritional and metabolic diseases, especially diabetes mellitus, are pathologies that require care at various levels of health. The Southeast region stands out in terms of the number of hospital admissions and, consequently, the costs of these diseases. These diseases are responsible for high rates of hospitalization and emergency crisis care. **Keywords:** endocrine diseases; metabolic diseases; epidemiological study.

METABOLISMO ÓSSEO E MINERAL

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MEDIASTINAL ECTOPIC PARATHYROID ADENOMAS ASSOCIATED WITH SEVERE HYPERCALCEMIA: CASE REPORT

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Case presentation: An 80-year-old white man, previously hypertensive, diabetic and with a history of melanoma in the past, was admitted to the emergency room due to severe hypercalcemia. He complained of mental confusion, fatigue, drowsiness, lack of appetite and weight loss for 3 weeks. Initial exams showed severe hypercalcemia and elevated PTH. Total Calcium: 19.4 mg/dL (RV: 8.6 to 10.3) and PTH: 1335 pg/mL (RV: 10 to 65), which confirmed the suspicion of primary hyperparathyroidism. The initial treatment was acute management of hypercalcemia. CT scans of the neck and mediastinum showed heterogeneous lymph nodes in the paratracheal chains. After performing parathyroid scintigraphy (99mTc Sestamibi SPECT scan) and correlation with tomographic studies, the presence of hyperfunctioning parathyroid tissue, bilaterally, with ectopic location, in the projection of the superior mediastinum was suggested. Parathyroid excision surgery was performed and histopathology confirmed the presence of 2 ectopic parathyroid adenomas. During follow-up of 5 years, the patient remained asymptomatic and had adequate calcium and PTH levels. **Discussion:** Mediastinal ectopic parathyroid adenomas are rare tumors, constituting only 1%-2% of all parathyroid adenomas. In most cases, the adenoma is unique. Additionally, severe hypercalcemia is often associated with malignancy. We report an unusual case of severe acute hypercalcemia resulting from primary hyperparathyroidism due mediastinal ectopic parathyroid adenomas. **Final comments:** Severe hypercalcemia is not always associated with malignant disease. Primary hyperparathyroidism due to adenoma or hyperplasia of the parathyroid (s) should be considered in the differential diagnosis. The 99mTc Sestamibi SPECT scan is important for localizing hyperfunctioning parathyroid tissue. **Keywords:** hypercalcemia; ectopic parathyroid adenomas; mediastinum.

METABOLISMO ÓSSEO E MINERAL

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PRIMARY HYPERPARATHYROIDISM WITH COMPLICATIONS EXACERBATED BY LITHIUM USE: CASE REPORT

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Case report: A 79-year-old female was admitted with mental confusion, tremors, dizziness, and weakness for the past week, which had progressed to muscle spasms and severe constipation. Laboratory results revealed a total calcium level of 14.5 mg/dL, phosphorus 4.0 mg/dL, and PTH 325 pg/mL, alongside a lithium level of 0.79 mmol/L. The patient was on 15 medications, including hydrochlorothiazide, furosemide, coenzyme Q10, duloxetine, olanzapine, and lithium (600 mg/day), with the latter two initiated three months prior. Three years ago, she was evaluated for mild hypercalcemia (10.5-11.5 mg/dL) with elevated PTH (238-293 pg/mL), and a parathyroid scintigraphy had shown no abnormal uptake initially. On admission, there was acute kidney injury, necessitating aggressive hydration, discontinuation of thiazide diuretics, lithium, and olanzapine, and initiation of IV pamidronate. Bone radiographs revealed areas of bone resorption, and bone densitometry demonstrated significant osteoporosis in the lumbar spine (T-score -3.9) and distal radius (T-score -3.3). The patient was diagnosed with primary hyperparathyroidism. A repeat SESTAMIBI-Tc99m scan indicated hypercaptation suggestive of adenoma or hyperplasia in the lower parathyroid glands. However, after 17 days of lithium cessation, a whole-body scan to investigate ectopic glands revealed no hyperfunctioning parathyroid glands. Concurrently, there was progressive reduction in calcium levels, returning to baseline values. She was discharged with adjusted psychiatric treatment and recommended for cervical exploration surgery. Significant improvement in initial symptoms and overall well-being was noted. **Discussion:** Lithium, used in psychiatric disorders, can induce side effects such as hypercalcemia. This occurs due to decreased urinary calcium excretion by antagonism of renal calcium- sensing receptors and lithium's effect on parathyroid tissue. Although serum calcium and PTH levels may remain normal for most individuals, this defects can persist even after hypercalcemia resolves, typically within one to four weeks post-discontinuation and the impact on bone health remains unclear. **Final comments:** Caution is warranted in lithium prescription due to potential adverse effects such as hyperparathyroidism and associated renal, bone, and metabolic complications. However, thorough exclusion of other causes and evaluation of overlapping etiologies are crucial for effective treatment and improving patient quality of life. **Keywords:** hypercalcemia; lithium; parathyroid diseases.

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A endocrinologia e seu protagonismo nos ciclos da vida

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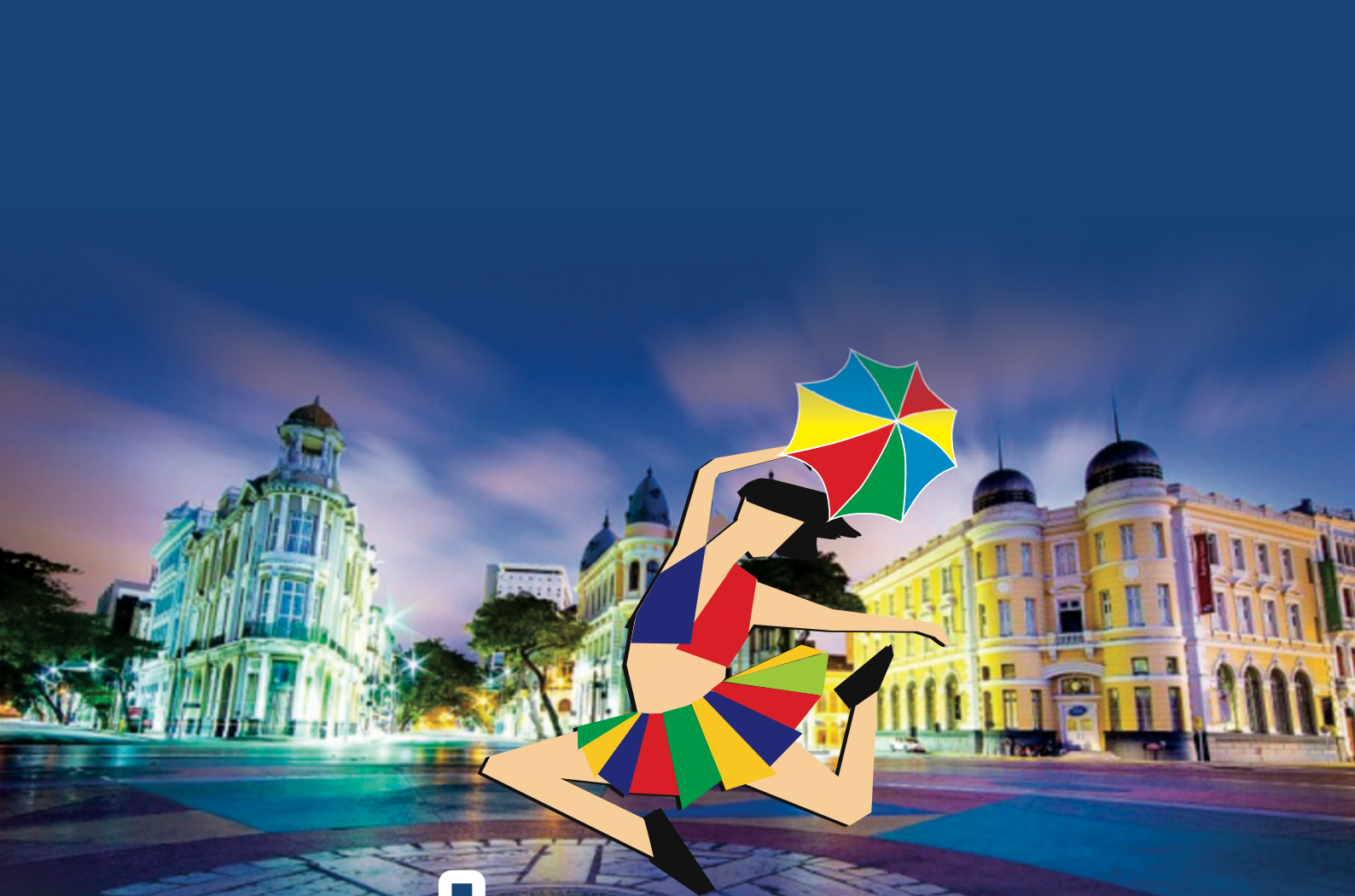

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36º CONGRESSO BRASILEIRO DE ENDOCRINOLOGIA E METABOLOGIA

ENDO RECIFE 2024

A endocrinologia e seu protagonismo nos ciclos da vida