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CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

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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CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

INFORMAÇÕES GERAIS

Local do CBAEM	Centro de Convenções de João Pessoa Endereço: PB 008, KM 05 – Polo Turístico Cabo Branco João Pessoa, Paraíba
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	Os expositores aguardam sua visita.
Horário da Secretaria	Dias 6, 7 e 8/9: das 08h00 às 18h00 Dia 9/9: das 08h00 às 13h00
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 6, 7 e 8/9: das 08h00 às 18h00 Dia 9/9: das 08h00 às 13h00
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 e do 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://cbaem2023.com.br a partir do dia 21 de setembro.
Achados e Perdidos	Estarão concentrados na secretaria do evento.

CBAEM 2023
6 a 9 de setembro
Centro de Convenções
João Pessoa - PB

CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

MENSAGEM DO PRESIDENTE DA COMISSÃO ORGANIZADORA

Prezadas e prezados colegas endocrinologistas, caros amigos,

Estamos felizes e orgulhosos por sediar o Congresso Brasileiro de Atualização em Endocrinologia e Metabologia (CBAEM) 2023, na nossa capital João Pessoa, quatro anos depois da edição de Florianópolis, o último que tivemos de forma presencial, comandado pelo dinâmico Prof. Alexandre Hohl, e dois anos após o evento *on-line* liderado pelo Prof. César Boguszewski, os quais conquistaram merecidos elogios pela qualidade científica de seus programas. Agora, nós paraibanos, temos o prazer de oferecer a vocês, no belíssimo conjunto arquitetônico do nosso Centro de Convenções Poeta Ronaldo Cunha Lima, um evento que deverá corresponder às expectativas, pela sua diversidade, pelo interesse prático/científico e pelo congraçamento, que, seguramente, tomará conta de todos.

O nosso Centro de Convenções será palco de um congresso cuja originalidade residirá, neste período pós-crise sanitária, no entrelaçamento de eventos presenciais em quase sua totalidade, com alguns poucos remotos, graças às tecnologias digitais e de comunicação, que conheceram crescimento rápido e exponencial nestes últimos anos. A Comissão Científica, liderada pelo dinâmico e sempre atento Dr. Neuton Dornelas, conseguiu desenvolver um programa muito diversificado, abrangendo todos os aspectos de nossa especialidade, graças à participação de especialistas reconhecidos nacional e internacionalmente.

Para enfrentar o desafio de se igualar ao sucesso dos congressos anteriores, as comissões responsáveis – nacional e local – não pouparam esforços, com a ajuda das várias habilidades representadas nos diversos departamentos, além da indispensável orientação do presidente da SBEM nacional, Prof. Paulo Miranda, e da Profa. Alana Abrantes, presidente da SBEM regional Paraíba, que esteve à frente da comissão local. Tudo estudado para compor um programa original, destacando as muitas inovações de uma especialidade em rápido progresso e com as esperadas consequências para a nossa prática diária. Afinal, temos a sorte de viver um período muito estimulante na endocrinologia, com a disseminação de novas tecnologias e a chegada de medicamentos inovadores.

Por seu turno, a nossa bela, acolhedora e simpática cidade, onde se encontra a Ponta de Seixas – Cabo Branco, permitirá que se descubra logo cedo o surgimento dos raios solares, no ponto mais oriental das Américas.

Estamos prontos e esperando por vocês para este evento científico e festivo, que ocorrerá de 6 a 9 de setembro deste ano.

Sejam todos muito bem-vindos!

João Modesto Filho
Presidente do
CBAEM 2023

CBAEM 2023
6 a 9 de setembro
Centro de Convenções
João Pessoa - PB

CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

MENSAGEM DO PRESIDENTE DA SBEM

Prezados colegas,

É com grande satisfação e entusiasmo que damos as boas-vindas a todos os participantes do Congresso Brasileiro de Endocrinologia e Metabologia (CBAEM 2023), que acontece na belíssima cidade de João Pessoa. Este evento representa mais um marco em nossa trajetória, refletindo o comprometimento e a dedicação de todos os envolvidos na condução da Sociedade Brasileira de Endocrinologia e Metabologia (SBEM).

À Comissão Executiva do CBAEM 2023, cujo incansável trabalho e visão criativa resultaram na construção deste encontro que promete ser memorável, os meus mais sinceros elogios. A dedicação da Comissão Científica é igualmente digna de aplausos, pois é por meio de sua *expertise* que poderemos explorar as fronteiras da endocrinologia e metabolismo, compartilhando conhecimento e promovendo avanços significativos em nossa especialidade.

Não podemos deixar de reconhecer a contribuição inestimável das empresas organizadoras e patrocinadores, que, juntamente com a SBEM, deram vida a esta grandiosa iniciativa. Sua colaboração demonstra a importância do compromisso mútuo em prol do avanço científico e da educação médica continuada.

A SBEM, como uma das maiores entidades representativas da endocrinologia e metabologia no mundo, está honrada por recebê-los neste evento. Desde sua fundação, temos trabalhado incansavelmente para promover a excelência em nossa área, proporcionando recursos educacionais e promovendo intercâmbio de conhecimento entre profissionais e pesquisadores.

Esta edição do CBAEM é ainda mais especial, pois celebra a força e a abrangência da SBEM, composta hoje por 22 Regionais, 11 Departamentos Científicos e 18 Comissões, que, juntos, formam um sólido alicerce para o avanço de nossa especialidade. É importante reforçar que todos os envolvidos exercem suas funções voluntariamente, dedicando seu tempo e conhecimento em prol de um objetivo conjunto: o crescimento da nossa especialidade e a prática médica ética e voltada ao bem-estar das pessoas.

Neste encontro, teremos a oportunidade de compartilhar *insights*, explorar novas descobertas e fortalecer as redes profissionais que impulsionam nossa comunidade. Que o CBAEM 2023 seja um espaço fértil para a troca de ideias, o estabelecimento de parcerias e a criação de soluções inovadoras que moldarão o futuro da endocrinologia e metabologia no Brasil e no mundo.

Desejo a todos um congresso repleto de aprendizado, inspiração e momentos enriquecedores. Que possamos aproveitar ao máximo cada instante deste evento que celebra o nosso compromisso com a excelência e o avanço científico.

Sejam bem-vindos ao CBAEM 2023!

Atenciosamente,

Paulo Miranda
Presidente da SBEM
2023-2024

CBAEM 2023
6 a 9 de setembro
Centro de Convenções
João Pessoa - PB

CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

MENSAGEM DO PRESIDENTE DA COMISSÃO CIENTÍFICA

Ciência ética, diversa e inclusiva: uma atualização em Endocrinologia e Metabologia

Prezados colegas,

Congressos existem para atualizar profissionais, qualificando-os para agir em prol de seus clientes, e a ciência, para guiar condutas.

Na confecção do programa do Congresso Brasileiro de Atualização em Endocrinologia e Metabologia (CBAEM) de 2023, tive a honra de coordenar uma Comissão Científica de altíssimo grau de conhecimento, harmonia, entusiasmo e espírito colaborativo. Reuniões presenciais e virtuais e frequentes trocas de mensagens permitiram ajustes de temas que, ao final, produziram uma grade científica densa, abrangente e que permeia as necessidades diagnósticas, terapêuticas e até transformadoras das diversas fases da vida.

A edição do CBAEM 2023 terá o maior número de atividades (215 palestras), com mais de duas centenas de palestrantes e/ou moderadores, e, na data em que este texto estava sendo escrito, já contava também com mais de 2.000 congressistas inscritos, um recorde das edições presenciais.

Foram 349 trabalhos científicos aceitos, 20 selecionados para apresentação oral e os demais para a sessão de pôsteres. Sete desses trabalhos, cada um por seu caráter inclusivo, social e ambiental, foram ainda selecionados para apresentação oral durante o "Café com Diversidade", uma modalidade de encontro realizada em espaço aberto, o *Lounge* da SBEM, para mostrar a importância da pesquisa ética, capaz de impactar a vida de pessoas e comunidades.

Mas são também pessoas que impactam, criam vínculos, produzem ciência e fortalecem uma sociedade. Por isso, cinco personalidades de fundamental relevância para a SBEM recebem como homenagem a outorga de Título de Sócio Honorário: Marisa Helena César Coral, Henrique de Lacerda Suplicy, Mário Vaisman, Eduardo Pimentel Dias e, em um ato para celebrar a dignidade, a ética e o conhecimento que o caracterizaram em vida, uma homenagem póstuma ao professor Marcello Delano Bronstein.

Também como reconhecimento ao estudo e às publicações científicas, três jovens receberão prêmios significativos: Gabriel Henrique Marques Gonçalves (Prêmio Bernardo Léo Wajchenberg), por ter sido o primeiro colocado na prova para obtenção do Título de Especialista em Endocrinologia e Metabologia (TEEM), ocorrida em maio de 2023, Cristine Dieter (Prêmio Thales Martins de melhor artigo na categoria básica/translacional) e Pâmela Cristina de S. G. R. Oliveira (Prêmio Waldemar Berardinelli de melhor trabalho na área clínica), pesquisadoras premiadas pelas melhores publicações nos *Archives of Endocrinology and Metabolism* (AE&M) em 2022.

Por fim, mais uma vez, a SBEM promove o Projeto Preceptoria, que visa acolher, atualizar e abrir horizontes para o "Endocrinologista do futuro", futuro esse que chega a cada dia e que, em João Pessoa, ponto mais oriental das Américas, como frisado sempre por João Modesto, presidente do CBAEM 2023, trará, junto com a luz do sol e a amplitude do horizonte, uma excelente atualização científica dos temas da especialidade que cuida do equilíbrio dinâmico da vida.

Em nome da Comissão Científica, desejo boa leitura do conteúdo deste Suplemento dos *AE&M* (a revista científica oficial da SBEM) e um magnífico CBAEM 2023 a todos.

Neuton Dornelas Gomes
Presidente da Comissão
Científica CBAEM 2023

CBAEM 2023

6 a 9 de setembro
Centro de Convenções
João Pessoa - PB

CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

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CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

Apresentação oral

AO-001 TRIIODOTHYRONINE ACTIVATES CYTOPLASMATIC PATHWAYS TO STIMULATE ATP RELEASE AND P2X7 PURINERGIC RECEPTOR EXPRESSION IN HUMAN SUBCUTANEOUS ADIPOSE TISSUE

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Obesity is associated with inflammation, increased production of reactive oxygen species, and oxidative stress in white adipose tissue (WAT). The WAT stores energy as triacylglycerol, which, during lipolysis, releases free fatty acids and glycerol. The T3 stimulates lipolysis and enhances adenosine 5'-triphosphate (ATP) production. This hormone can modulate gene expression through cytoplasmic pathways involving phosphatidylinositol 3 kinase (PI3K) and mitogen-activated protein kinase (MAPK) in WAT. ATP signals in the WAT, via P2 purinoceptors activation, are controlled by its extracellular breakdown by NTPDases. The ATP-sensitive P2X7 purinoceptor can modulate lipid metabolism and lipolysis. The relationship between T3 and purinergic signalling may be relevant in various physiological and pathological conditions. Our objective is to demonstrate the impact of T3 on purinergic signalling by examining whether cytoplasmic pathways involving MAPK/ERK and PI3K are involved in human subcutaneous adipocytes (HSA). HSA were treated with T3 (10nM) for 24 hours, in the absence and the presence of inhibitors of MAPK/ERK and PI3K pathways. Subsequently, we evaluated lipid accumulation, basal lipolysis, oxidative stress, the density of the P2X7 receptor and NTPDases, as well as the extracellular ATP levels. We analyzed normally distributed data using one-way ANOVA and the Tukey test (mean ± SD), while data without normality followed the Kruskal-Wallis and Dunn's test (median, interquartile deviation). Our findings indicate that T3 treatment reduced lipid accumulation and glycerol release without altering the oxidative stress. T3 downregulated the expression of NTPDase1, NTPDase3, and ecto-5'-nucleotidase, resulting in increased extracellular ATP concentration (2.92 [2.20-3.91]) *versus* control (1,64 [0,49-4,00]). However, blockage of MAPK/ERK (1.46 (0.85-1.69)) and PI3K (0.80 [0.55-1.68]) pathways decreased ATP release. T3 increased the P2X7 receptor density in the cells (1193 ± 63) compared to the control condition (962 ± 11), which was abolished by blocking MAPK/ERK (411 ± 99) and PI3K (396 ± 103) pathways. In conclusion, T3 stimulates ATP-P2X7 signalling by activating MAPK and PI3K pathways in HSA. These results suggest that in situations of altered thyroid hormone levels leading to cellular oxidative stress, ATP-P2X7 signalling may be involved downstream of MAPK and PI3K activation. **Keywords:** triiodothyronine; cytoplasmatic pathways; purinergic signaling.

AO-002 CHALLENGES AND INNOVATIONS FOR THE TREATMENT OF PEDIATRIC ADRENOCORTICAL CANCER: A SYSTEMATIC REVIEW

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Introduction: Children diagnosed with pediatric adrenocortical tumors (pACT) are typically hormone-secreting tumors that have a benign clinical course, but, rarely, they can behave as aggressive malignancies, their incidence is particularly high in southern Brazil. These have a challenge in terms of coping with the disease, since the treatment has variable results and, so far, they lack efficient therapies and alternatives to surgery. However, new studies bring insights that aim to explore the metabolic profile of these tumors, in order to offer new alternatives to treatment. **Objective:** Exposure of new treatment parameters for adrenocortical cancer in children. **Methods:** This study used the Prysma review system and uses the following guiding question: "What are the main advances in the development of methods for the treatment of adrenocortical cancer in children?". For this, the following electronic databases were used: Science Direct, PubMed (U.S. National Library of Medicine) and an electronic library: SciELO. Thus, the descriptors "cancer, adrenocortical and pediatric" were used. Furthermore, studies that fit the theme and were published in the last 7 years, with no language restriction, were incorporated. After the eligibility criteria, 6 articles that make up the final sample of this study were identified and included. **Results:** In view of the study of the 6 articles incorporated in this work, the discoveries in the analysis of the cellular mechanism associated with the formation of adrenocortical tumors revealed the conversion of hypermethylation of the vitamin D receptor as a biomarker for pediatric adrenocortical tumors. Moreover, it was revealed that DNA methylation favors a key marker predictive and prognostic biomarkers for pACT. Therefore, such findings are essential for the development of the treatment of this disease, which still has surgery as its only treatment. **Conclusion:** According to research, pediatric adrenocortical tumors are rare, representing approximately 0.2% of all pediatric cancers. But they are up to 18 times more frequent in Brazil, especially in the South and Southeast regions of the country. Therefore, advances in the study of these alternatives to the still unique treatment of this disease are of paramount importance, given its relevance at the national level. **Keywords:** cancer; adrenocortical; pediatric.

AO-003 TERT PROMOTER MUTATIONS C228T AND C250T HAVE DISTINCT IMPACTS ON THE TRANSCRIPTIONAL PROGRAM AND CLINICAL BEHAVIOR OF PAPILLARY THYROID CARCINOMAS

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TERT promoter mutations C228T and C250T are associated with disease aggressiveness and poor clinical outcomes in patients with papillary thyroid carcinomas. However, very little is known about the transcriptional consequences of these mutations and whether they both carry similar oncogenic potential. Here we characterized the transcriptional disturbances and clinical outcomes associated with the presence of each of these two mutations using data derived from The Cancer Genome Atlas. We observed that tumors harboring the C228T mutation exhibited a 15-fold increase in TERT mRNA levels (P = 5.3 x 10-42), whereas C250T tumors showed only a 2-fold increase in expression (P = 0.034). The C228T mutation was also associated with the activation of signaling pathways controlling the cell cycle, cellular division, and extracellular matrix degradation. Univariate analysis demonstrated that the C228T mutation was associated with older age at diagnosis, large tumor size, lymph node invasion, distant metastasis at diagnosis, and distant metastatic recurrence. Our data indicate that TERT promoter mutations C228T and C250T have distinct transcriptional consequences in PTC, suggesting a more substantial oncogenic potential for the C228T mutation. TERT promoter mutation C228T may be a useful prognostic marker to identify patients at high risk of distant recurrence. Clinical data for the C250T mutation is still limited, with no evidence up to date to confirm its prognostic significance. **Keywords:** thyroid cancer; telomerase; TERT mutations.

AO-004 GLYCATED HEMOGLOBIN AND GLYCEMIC VARIABILITY AS PREDICTORS OF MORTALITY IN HOSPITALIZED PATIENTS WITH COVID-19: A PROSPECTIVE COHORT

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Introduction: Coronavirus disease 2019 (COVID-19) is associated with several risk factors for complications. Thus, glycemic variability is estimated as a possible predictor of mortality, considering that high levels of glycated hemoglobin (Hb1Ac) are related with worse clinical outcomes in infected patients. **Objective:** This study aimed to estimate the mortality of patients hospitalized with COVID-19, based on HbA1c on admission and in-hospital glycemic variability. **Materials and methods:** This was a prospective cohort which included 236 patients hospitalized with COVID-19 in a reference hospital, between June and August 2020. HbA1c and blood glucose levels were collected on admission and in-hospital to calculate variability parameters: standard deviation (SD), coefficient of variation (CV), maximum blood glucose difference (MGD) and J index, which is × 0.001 (mean blood glucose + SD). In statistical analysis, it was used Mann-Whitney test and Fisher's exact test, univariate and multivariate logistic regression, to assess the relative risk of mortality, in addition to Kaplan-Meier survival analysis and ROC curve, considering the significance level of $p < 0.05$. **Results:** A total of 236 patients hospitalized with COVID-19 were evaluated, of which 86.4% (204) had the diagnosis of diabetes, 41.5% of which were discovered upon admission. There was no significant difference between known, newly diagnosed or decompensated diabetes and mortality. On the other hand, high blood glucose, SD, MGD, CV and J index showed a significant increase in critically ill patients and non-survivors, compared to non-critical patients and survivors. However, admission blood glucose and HbA1c showed no discrepancy. Lower survival was observed in patients with HbA1c > 12%, MGD > 142, CV > 0.38 and J index > 26.7 (HR 4.49-45.8; $p < 0.01$). In the ROC curve, in descending order, the best predictors of mortality were MGD, VC, SD, hyperglycemia and J index. J index < 36.7 (OR 6.0), CV > 0.38 (OR 5.8) and MGD > 142 (OR: 5.77). **Conclusion:** In this study, HbA1c did not appear to be a good predictor of mortality in hospitalized patients with COVID-19. Glycemic variability was associated with worse outcomes, in which all parameters correlated with mortality, showing up as an independent risk factor. **Keywords:** glycated hemoglobins; COVID-19; hospital mortality.

AO-005 SARCOPENIC OBESITY IN PATIENTS WITH HEART FAILURE

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Introduction: Sarcopenic obesity (SO) is characterized by the coexistence of high fat mass and impaired muscle mass and functionality. Heart failure (HF) is a complex and limiting syndrome that can cause changes in body compartments. **Objective:** To assess the prevalence of SO in patients hospitalized for HF. **Methods:** Cross-sectional study involving patients aged 40-64 years with established HF, hospitalized due to decompensation. Body composition was assessed by dual-energy X-ray absorptiometry. Muscle strength was assessed using handgrip strength (HGS). SO was defined by the presence of body mass index (BMI) ≥ 25 kg/m², increased percent body fat (%BF) (≥25% in men or ≥35% in women) and confirmed sarcopenia (HGS < 16 kg in women or < 27 kg in men, together with low appendicular lean mass [ALM] by the Baumgartner index [ALM/height² < 7.0 kg/m² in men or 5.5 kg/m² in women] and/or by the Foundation for the National Institutes of Health [FNIH] index [ALM/BMI < 0.789 in men or <0.512 in women]). **Results:** A total of 203 patients were evaluated, of which 54.7% were men. Medians age, BMI, and left ventricular ejection fraction (LVEF) were 57.0 (interquartile range [IQR] 51.0-61.0) years, 26.9 (23.6-31.0) kg/m² and 47.0% (34.0-59.0), respectively. 44.8% had preserved LVEF (≥50%), 16.7% had mildly reduced LVEF (41-49%) and 38.4% had reduced LVEF (≤40%). According to the New York Heart Association functional classification (NYHA-FC), 40.9% had NYHA-FC I-II and 59.1% NYHA-FC III-IV. Diabetes mellitus was observed in 46.3% of patients and pre-diabetes in 33.5%. 11.3% had a history of fragility fracture. Low HGS was present in 60.1%, low ALM in 36.0% and confirmed sarcopenia in 25.1%. High %BF was observed in 63.5% of patients and overweight/obesity by BMI in 65.0%. The prevalence of SO was 11.3%. The presence of SO was associated with a history of fragility fractures (26.1% *vs.* 9.4%; p = 0.018) and older ages (61.0 [57.0-63.0] years *vs.* 57.0 [50.0-60.5] years; p = 0.003). SO was not associated with gender (69% male *vs.* 52.8%; p = 0.128), NYHA-FC (65.2% NYHA-FC III-IV *vs.* 58.3%; p = 0.527), LVEF classification (43.5% reduced LVEF and 13% mildly reduced LVEF vs. 37.8% and 17.2%; p = 0.821) or glycemic status (47.8% diabetes and 34.8% pre-diabetes *vs.* 46.1% and 33.3%; p = 0.939). **Conclusion:** There is a relevant prevalence of SO in patients < 65 years old with HF, which was associated with a history of fragility fractures and older ages. **Keywords:** obesity; sarcopenia; heart failure.

AO-006 GROWTH HORMONE STIMULATION TESTS: EXPERIENCE OF A LARGE COHORT FROM A BRAZILIAN DIAGNOSTIC MEDICAL CENTER

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Introduction: Growth hormone (GH) stimulation tests are used to diagnose short stature in children and to assess hypothalamic-pituitary axis in adults. The most frequently stimulation tests are: oral clonidine (CLO), insulin-induced hypoglycemia (ITT), glucagon (GLU) and exercise (EXE). Well-known side effects are hypotension, nausea and vomiting. **Objective:** The aim of this study was to evaluate side effects and intercurrences observed during the performance of GH stimulation tests and to identify their possible predisposing factors. **Material and methods:** From April/2022 to May/2023, in a large diagnostic medical center, with 8 different sites in Brazil, 3,006 GH stimulation tests were performed, with 266 patients with two or more GH stimulation tests. Considering only patients aged < 18 years (95% of the tests), the mean age was 10.3 ± 2.7 years (median 10.6 years), with 62.5% being male. GH stimulation test was distributed as follows: 64% CLO, 27.6% ITT, 7% GLU and 1.4% EXE. Patients with a history of asthma, allergies, seizure and heart disease were reported in 3%, 1.7%, 0.9% and 0.6%, respectively. More than 2 punctures for venous access were necessary in 9.3% of the cases, particularly in CLO test. The age of patients submitted to GLU was significantly lower compared to CLO and ITT (9.5 ± 3.3 years *vs.* 10.3 ± 2.7 years and 10.6 ± 2.6 years, p < 0.001). Side effects were noted in only 5.1% of the total tests (145/2,863 tests), most frequent in the GLU (50/197 tests, 25%) and none observed in the EXE. There was no correlation of reported side effects with age and weight. As expected, hypotension was more frequent in CLO (27%), not associated with the oral clonidine administered dose (0.1 or 0.150 mg/SC). Nausea and vomiting occurred in 23% of the GLU tests. Symptomatic hypoglycemia that needed glucose administration (oral or parenteral) occurred in 8% of the ITT. Cough was observed in 6 patients during CLO, with no previous history of asthma or allergies. There were no occurrences that hospital transfer was need. **Conclusion:** GH stimulation tests are safe and rarely cause serious side effects, certainly due to the presence of a prepared team for promptly support. **Keywords:** growth hormone; stimulation test; side effects.

AO-007 EVALUATION OF FACTORS ASSOCIATED WITH LIVER FIBROSIS IN PATIENTS WITH TYPE 2 DIABETES

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Introduction: Type 2 diabetes mellitus (T2DM) is one of the main risk factors for non-alcoholic fatty liver disease (NAFLD) and appears to be the mayor predictor of progression to liver inflammation and fibrosis. However, so far it is not clear in the literature what are the risk factors for progression to liver fibrosis in the subgroup of patients with T2DM. **Objective:** To evaluate clinical, laboratory and body composition factors associated with the presence of liver fibrosis in patients with T2DM. **Methods:** We evaluated individuals attending the outpatients diabetes clinic of Endocrinology division of *Hospital de Clínicas de Porto Alegre* (HCPA) aged over 18 years and diagnosed with TDM2. Data collection includes: 1) a self-administered questionnaire on sociodemographic characteristics and health conditions of participants; 2) laboratory analysis on blood samples; 3) anthropometric and body composition measurements; and 4) ultrasound and hepatic elastography. Medical records of 614 patients were reviewed, of which 335 were excluded and 219 were invited to participate in the study. At the end of the selection, 194 patients agreed to participate in the study and 25 refused. Pearson's correlation was used to assess the association between the degree of liver fibrosis and the analyzed variables. **Results:** So far, 52 patients have been evaluated, 20 (38%) male. The mean age was 62 ± 12 years, mean duration of TDM2 was 22 ± 11 years, mean HbA1c was 8.9 ± 1.3% and the mean BMI was 31.5 ± 6.6 kg/m². In liver ultrasound evaluation, 22 (42.3%) patients had mild steatosis, 5 (9.6%) moderate and 2 (3.8%) severe. A direct correlation was found between the degree of hepatic fibrosis and hepatic transaminases ($r = 0.598$ and $p < 0.01$ for aspartate aminotransferase; and $r = 0.532$ and $p < 0.01$ for alanine aminotransferase) and an inverse correlation with serum platelet levels ($r = -0.332$ and $p = 0.03$). There was no correlation between the degree of fibrosis and the glycemic and lipid profile, albumin, BMI, neck, abdominal and hip circumferences, as well as other body composition variables. **Conclusion:** In the present study, a correlation was found between the degree of liver fibrosis and the levels of platelets and liver transaminases. No association was found between the other analyzed variables. However, these data are preliminary since only 25% of the sample calculated for the study was evaluated. **Keywords:** diabetes mellitus; liver fibrosis; non-alcoholic fatty liver disease.

AO-008 ASSESSMENT OF CARDIOMETABOLIC RISK AND INSULIN RESISTANCE WITH HYPERINSULINEMIC EUGLYCEMIC CLAMP IN PATIENTS WITH RESISTANCE TO THYROID HORMONE β

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Introduction: In resistance to thyroid hormone due mutations in thyroid hormone receptor β (RTHβ), the peripheral tissues show variable refractoriness to the action of thyroid hormones (TH). The effect of TH on insulin sensitivity differs by tissue - it enhances glucose uptake in the muscle but reduces it in the liver. The overall net effect in hypothyroidism favors insulin resistance **Objectives:** To assess cardiometabolic risks and insulin sensitivity in RTHβ patients. **Methods:** 16 patients (8 adults and 8 children/teenagers) with RTHβ and 29 healthy individuals (15 adults and 14 children/teenagers), matched for sex, age, and body mass index (BMI), were evaluated with anthropometric measurements and with dosages of glycemia, lipids, insulin, interleukin-6 (IL-6), TNF-alpha, leptin and adiponectin, ultrasensitive c-reactive protein. Fat percentiles and lean mass were also evaluated using the bioimpedance technique (BIA) and the trunk and peripheral fat percentiles using the dual emission X-ray absorptiometry technique (DXA). Insulin sensitivity was performed in adult patients and controls with the hyperinsulinemic euglycemic clamp (CEH); HOMA-IR was calculated in all individuals studied. **Results:** the mean ages (in years) of adult patients and controls and affected children/teenagers and controls were, respectively, 52.3 ± 16.3 *vs.* 48.5 ± 16.6 ($P = 0.5$), and 10.88 ± 3.94 *vs.* 10.00 ± 3.08 ($P = 0.4$). By univariate analysis, there was no difference between waist-hip and waist-height ratio in both adult and children/teenagers groups. RTHβ patients exhibited higher cholesterol ($P = 0,04$) and LDL than controls ($P = 0.03$) but no difference in triglycerides levels. A significant difference was observed in IL-6 levels between RTHβ patients and controls ($P < 0.01$). There was no evidence of insulin resistance evaluated by CEH and HOMA-IR. **Conclusion:** We did not demonstrate insulin resistance in patients with RTHβ studied, using the gold standard method, the hyperinsulinemic-euglycemic clamp. However, higher levels of total cholesterol and LDL-cholesterol were found in adult patients, which implies the need for controlled and continuous patient monitoring to prevent increased cardiometabolic risks in this disease. We demonstrated for the first time the increase in IL-6 levels in patients with RTHβ, as occurs in autoimmune thyroid diseases and goiter. A larger number of patients should be studied to confirm these results. **Keywords:** resistance to thyroid hormone B; insulin resistance; cardiovascular risk.

AO-009 HIGH RISK PREGNANCY INCREASES SUSCEPTIBILITY FOR SELENIUM DEFICIENCY

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Introduction: Selenium (Se) is a fundamental trace element for several homeostatic processes, being essential in the maintenance of health. Se deficiency in pregnancy is common and increases the risk of maternal-fetal complications, including fetal growth restriction, miscarriages, preterm birth, hypertension, preeclampsia, glucose intolerance, and diabetes. Given the above, it is recommended that pregnant women have an intake of 60 µg/day of Se, in order to promote adequate nutrition. The high-risk pregnancies (HRP) account for 10%-20% of pregnancies and accounts for 50% of perinatal mortality and may still pose a risk group vulnerable to nutritional selenium deficiency, which in turn further increases the maternal mortality rates, abortions, stillbirths and disability neurocognitive. **Objective:** To analyze the nutritional status of selenium and socioeconomic, demographic and anthropometric characteristics in high-risk pregnancy women (HRPW) and low-risk pregnancy women (LRPW) screened at the main reference public health center in Bahia, Brazil. **Materials and methods:** Cross-sectional study conducted in 330 PW, 15-46-year-old (226 HRPW and 104 LRPW as a group of control) in Salvador, Bahia, Brazil. Urinary Selenium concentration (USC), socio-demographic data, anthropometric evaluation were performed **Results:** The median USC (MUSC) was 25 µg/L (25-75th, 17-35,8 µg/L), mean was 28,4 ± 6,79 µg/L, indicating sufficiency. Low USC (<15 µg/L) was detected in 20% (N = 66). In the HRPW, The MUSC was 24 (15,3-33,8) and in the LRPW, The MUSC was 29,1 (20,2-40,6), p = 0,0035. HRPW had 24.3% (n = 55) of selenium deficiency and LRPW had 10.6% (n = 11) of selenium deficiency, p = 0.0037. In the analyzed analyses, the use of multivitamins was also statistically associated with a lower risk of selenium deficiency (p-value < 0.5) **Conclusion:** The MUSC of 28,4 ± 6,79 µg/L indicates an overall adequate Selenium intake. However, it is still concerning that 20% of PW analyzed had insufficient Selenium (IS) intake. HRP and not using multivitamins increased susceptibility for selenium deficiency. This situation emphasizes that sustainable optimal Selenium nutrition demands continuing effective monitoring of pregnant women nutrition. **Keywords:** pregnancy; selenium; high risk.

AO-010 HUMAN VISCERAL ADIPOCYTES OXIDATIVE STRESS BIOMARKERS DECREASED AFTER TREATMENT WITH IRISIN

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Introduction: Obesity is a chronic disease of multifactorial causes, developed when caloric consumption exceeds energy expenditure and characterized by excess adipose tissue (AT). Thyroid hormones (TH), especially triiodothyronine (T3), are essential for the differentiation of AT. Irisin is a protein synthesized and secreted in the skeletal muscle, produced after physical exercise, increasing the release of temperature directly in the AT, and with that, reducing fat. Both T3 and irisin trigger actions that result in thermogenesis and energy consumption. Individuals with obesity have a chronic inflammatory process and increased oxidative stress. Therefore, based on the hypothesis that both T3 and irisin influence AT metabolism, it became necessary to verify the oxidation indicators in human visceral adipocytes. **Objective:** To evaluate the influence of T3 and irisin on oxidative stress biomarkers in human visceral adipocyte culture. **Materials and methods:** Cell culture of human visceral preadipocytes (AVH), composed of 4 groups: untreated adipocytes (C); adipocytes treated with a physiological dose of T3 at 10 nM for 24h (T3); adipocytes treated with Irisin 20 nM for 24 h (I) and adipocytes treated with a physiological dose of T3 at 10 nM + Irisin 20 nM for 24 h (T3+I). The oxidative stress concentration was measured in a microplate reader using malondialdehyde (MDA) at 532 nM and 600 nM readings and protein carbonylation (CP) at 450 nM readings. The result was expressed in nmol/mg of proteins. **Results:** The concentration of MDA showed a decrease in the comparisons of groups C *vs.* I (26429 ± 1669 *vs.* 19885 ± 1170, $p < 0.001$); T3 *vs.* T3+I (24951 ± 1167 *vs.* 19885 ± 1170, $p < 0.05$); in agreement with CP C *vs.* I levels (365 ± 17.4 *vs.* 330 ± 10.4, $p < 0.05$); T3 *vs.* T3+I (374 ± 14.8 *vs.* 334 ± 16.5, $p < 0.05$); we observed with these comparisons for both MDA and CP that irisin promoted an improvement in oxidation indicators. When comparing groups C *versus* T3 and I *versus* T3+I, they did not present meaningful results on PC and MDA analysis. The difference in the groups occurred when the cells were in the presence of irisin, and the physiological dosage of T3 did not interfere with the results. **Conclusion:** Irisin decreased oxidative stress biomarkers in AVH culture, and the physiological dosage of T3 did not influence AT metabolism, suggesting irisin is a potential therapeutic target for the treatment of obesity. **Keywords:** obesity; irisin; oxidative stress.

AO-011 METRELEPTIN FOR THE TREATMENT OF PATIENTS WITH BERARDINELLI-SEIP SYNDROME: EXPERIENCE FROM A TERTIARY CENTER

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Introduction: Congenital generalized lipodystrophy (CGL), or Berardinelli-Seip syndrome, is a rare autosomal recessive disease characterized by an extreme decrease in adipose tissue, evolving with metabolic changes, such as diabetes, hypertriglyceridemia, steatohepatitis. Due to decreased adipose tissue, serum leptin decreased and, upon its replacement with metreleptin, improvements in insulin sensitivity, reduction of fasting plasma glucose (FPG), glycated hemoglobin (A1c), and lipids are expected. **Objective:** To evaluate the metabolic benefits in patients who underwent metreleptin replacement. **Patients and methods:** We evaluated 28 patients with genetically confirmed diagnosis of CGL (12 female; median age 10,6 (0,2-48,3) years; 16 patients aged ≤ 10 years), comparing clinical and laboratory data of those who used metreleptin (n = 11) with those who did not; 2 discontinued the use. The follow-up was carried out through regular outpatient care and laboratory test collections, in the period of 2016 to 2023. **Results and conclusions:** The mean follow-up of 4,7 ± 2 years; at the baseline, there was no difference in A1c or FPG between groups. Patients on metreleptin got a reduction in A1c and fasting glucose levels, while an increase was observed in the non-metreleptin group (A1c -0,2% *vs.* +1,0%, p = 0,007, and FPG -16 mg/dL *vs.* +45 mg/dL, p = 0,04); more patients on metreleptin achieved A1c < 6.5% AND triglycerides < 500 mg/dL (73% *vs.* 35%, p = 0,04). The diabetes frequency did not change in the metreleptin group (36%), but increased in the group not using metreleptin (from 45% to 70%). At the end of follow-up, metreleptin patients had lower TG (184 *vs.* 452 mg/dL) and total cholesterol (138 *vs.* 175 mg/dL), but this was not statistically significant. The present report is not a randomized clinical trial, but a real-life data and has methodological limitations that may have contributed to not showing even better results. Some patients used metreleptin irregularly because of problems with drug availability; six of the 11 patients are children with less severe metabolic alterations; CGL is a rare disease and, despite being a relatively large series, it does not have sufficient statistical power; once there were laboratory improvements, the medications were adjusted (one patient stopped using insulin), making the therapeutic response less obvious. We report good results of the first CGL Brazilian patients treated with metreleptin. **Keywords:** Berardinelli-Seip; metreleptin; lipodystrophy.

AO-012 ORAL MICRONIZED PROGESTERONE FOR PERIMENOPAUSAL AND POSTMENOPAUSAL NIGHT SWEATS AND HOT FLUSHES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Relief from hot flushes and night sweats, also called vasomotor symptoms (VMS), is the primary reason why perimenopause and postmenopause women seek hormone therapy. This report presents a systematic review and meta-analysis comparing the efficacy of oral micronized progesterone (OMP) *versus* placebo in VMS. **Methods:** PubMed and Cochrane databases were searched for randomized controlled trials that compared OMP to placebo treatments for vasomotor symptoms in perimenopausal or postmenopausal women. VMS outcomes are reported as VMS Score, frequency, and severity. The VMS Score is the day frequency times day intensity plus the night frequency times night intensity. Heterogeneity was examined with I2 statistics. A random-effects model was used for outcomes with high heterogeneity. **Results:** We included 2 RCTs with 303 patients, of whom 86 (54.1%) underwent oral micronized progesterone treatment. VMS Score (MD -3.59; 95% CI -7.56, 0.38; p > 0.05) was not significantly better in patients who undergo OMP treatment. Similarly, VMS severity and frequency scores were not better in the OMP group (MD -0.22; 95% CI -0.41, -0.04; p < 0.05) and (MD -1.24; 95% CI -2.46, -0.01; p = 0.05) respectively. **Conclusion:** These findings suggest that oral micronized progesterone treatment has no superior benefit to placebo in VMS score and VMS Frequency, but a superior benefit in VMS Severity. **Keywords:** vasomotor symptoms; menopausal; hormone.

AO-014 CLINICAL AND GENETIC OVERLAP BETWEEN CONGENITAL HYPOGONADOTROPIC HYPOGONADISM AND CLEFT LIP AND/OR PALATE

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Introduction: Congenital hypogonadotropic hypogonadism (CHH) is a rare heterogeneous genetic form of GnRH deficiency characterized by altered/absent puberty and infertility. CHH can present with associated phenotypes including cleft lip and/or palate (CL/P) which is also a genetically complex event. This overlap, observed in the clinical practice, needs a comprehensive assessment to improve the patient's care. **Objective:** To perform clinical and genetic analysis of patients with CHH and CL/P. **Patients and methods:** First we focused on the analysis of 41 patients with CHH and CL/P. After we focused on 442 patients with CHH without CL/P and studied the implication of candidate genes for CL/P genes in these populations. Clinical evaluation was done by endocrinologists with expertise in the care of patients with CHH. For the genetic analysis we performed whole exome sequencing (WES) or whole genome sequencing (WGS) to look for pathogenic or likely pathogenic variants in candidate genes for both conditions. The classification of the variants was made in accordance with the criteria of ACMG. **Results:** In the first cohort of 41 patients (CHH and CL/P) we found pathogenic (P) and likely pathogenic (LP) variants in 11 patients (27%) in 7 candidate genes (*FGFR1, SOX9, CHD7*, *KLB+PROKR2, CTNND1*, and *SOX10*). The most frequent gene involved was *FGFR1* (31 P and LP variants, 60%). The second most prevalent gene was *CHD7* with 9 patients exhibiting deleterious variants. In the second cohort of 442 CHH patients without CL/P we identified P or LP variants in genes classically associated with CL/P, including two variants in *DVL3* and P or LP variants in *PLCB4*, *PIEZO2*, *TP63*, *TGFBR2*, *TCOF1*, *NIPBL*, *CHD1*, *KMT2D*, *INTS1* and *COL2A1*. This was an intriguing result; we did not expect to have these variants in patients with "pure" CHH and no other associated phenotype. **Conclusion:** This extensive clinical and genetic study revealed heterogeneity in the genetic landscape of patients exhibiting both central hypogonadism and cleft lip and/or palate. **Keywords:** hypogonadotropic hypogonadism; cleft lip or palate; genetic diagnosis.

AO-015 LIPOPROTEIN SUBFRACTIONS IN FAMILIAL PARTIAL LIPODYSTROPHY (FPLD) TYPES 2 AND 3

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Introduction: Familial partial lipodystrophy (FPLD) is a rare genetic disorder characterized by a partial lack of subcutaneous fat. There are few data on cardiovascular disease prevalence and lipid metabolism of FPLD patients. **Objective:** To characterize lipoprotein subfractions on patients with FPLD type 2 and 3 and to assess the genetic, clinical characteristics, metabolic abnormalities, and end-organ complications of this patients. **Patients and methods:** This is a multicenter cross-sectional study where we assessed lipoprotein subfractions measured by ion mobility and the genetic, clinical characteristics and end-organ complications, of 47 patients followed in 3 Brazilian reference centers for Lipodystrophies. Clinical diagnosis of FPLD was based on documented fat loss in selected areas (core diagnosis) plus a screening of metabolic abnormalities. For genetic confirmation of the FPLD, panel sequencing of lipodystrophy candidate genes was performed. The main results are presented as mean ± SD and relative proportions. **Results:** 47 patients with a genetically confirmed diagnosis of FPLD who are registered in the BRAZLIPO database. The mean age of these patients was 45 years ± 15. The majority of them were female (87%). Most mutations found (n = 42) were in the LMNA gene (86%), followed by 5 patients with PPARG mutations (14%). Diabetes mellitus (DM) was diagnosed in 74% of patients. The analysis of lipoprotein subfractions demonstrated a pattern of high cardiovascular risk (phenotype B and low peak LDL) in 97% of the patients with LMNA mutation and all the patients with PPARG mutations. Regarding comorbidities, patients with LPFD3 (PPARG mutation) had a higher prevalence of severe hypertriglyceridemia (above 500 mg/dL) and diagnosis of DM, compared to patients with LFPD2 (LMNA mutation). There was no effect on Lp(a), LDL-c calculated levels or LDL-c particle number. **Conclusion:** In a young population of patients with genetically confirmed familial partial lipodystrophy (types 2 and 3), analysis of lipoprotein subfractions with ion mobility demonstrated a pattern of high cardiovascular risk (phenotype B and low peak LDL) in 97% of LMNA patients and 100% of the patients with LPFD3 (PPARG mutation). More analyzes are needed, with a larger number of patients and a control group, in order to correlate other CV risk markers. **Keywords:** lipodystrophy; cardiovascular risk; CARDIO ID.

AO-016 EFFECTS OF METFORMIN ON PREGNANCY: A META-ANALYSIS

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Introduction: Metformin is a therapy used for women with overweight or obesity or metabolic syndrome during pregnancy. However, the potential benefit and risks of metformin in pregnancy for children still is controversial. **Objective:** To assess the effects of metformin in an attempt to reduce pregnancy complications. **Materials and methods:** We performed a systematic review and meta-analysis following the recommendations of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). PubMed, Scorpus, Web of Science, and Cochrane Library databases were searched for studies evaluating the outcomes in children of women with gestational diabetes mellitus (GDM), polycystic ovary syndrome (PCOS), preeclampsia and obesity exposed to metformin or placebo. Statistical analysis was performed using RevMan 5.4.1 using DerSimonian and Laird random-effects models. Heterogeneity was examined with Cochran Q test and I^2 statistics. A p-value of <0.05 was considered statistically significant. **Results:** Twenty studies, involving 5,515 patients, were included in the analysis: 18 were randomized controlled trials and 2 were cohorts. Nine studies included pregnant women with PCOS, nine included those with overweight/obesity, three included GDM, one included preeclampsia. There were 2,716 patients (49.25%) in the metformin group. Compared to placebo, metformin showed no significant difference for APGAR < 7 at 5 min (OR 0.62; 95% CI, 0.25-1.50; p = 029; I^2 = 0%), respiratory distress syndrome (OR 0.74; 95% CI, 0.38-1.46; p = 0.38; I^2 = 0%), preterm birth (OR 1.01; 95% CI, 0.48-2.12; p = 0.99; I^2 = 75%), neonatal death (OR 0.74; 95% CI, 0.29-1.87; p = 0.52; I^2 = 0%) and hypoglycemia (OR 0.59; 95% CI, 0.19-1.84; p = 0.36; I^2 = 0%). **Conclusion:** The use of metformin in pregnant women with GDM, preeclampsia, overweight/obesity or PCOS is not associated with adverse effects on offspring. Thus, metformin may be considered a safe option for use during pregnancy. **Keywords:** metformin; pregnancy; metabolic diseases.

AO-017 PROSPECTIVE ASSOCIATION OF SARCOPENIA-RELATED PARAMETERS WITH BONE MINERAL DENSITY OVER ONE YEAR AFTER BARIATRIC SURGERY

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Introduction: Skeletal changes in patients undergoing bariatric surgery (BS) are multifactorial and result from pre- and postoperative factors, involving nutritional, hormonal, and body composition aspects. **Objective:** To prospectively and separately evaluate the association between low muscle mass or low muscle strength and bone mineral density (BMD) over 1 year after BS. **Patients and methods:** Low muscle mass or low muscle strength were analyzed in thirty-four women before BS and for one year after this surgery. Low muscle mass was characterized by the lowest quartile of muscle mass index (MMI), which was defined by weight-adjusted appendicular skeletal muscle mass. Low muscle strength was defined by the lowest quartile of handgrip strength (HGS). Body composition was assessed by inbody 370 bioimpedance and HGS by the Jamar dynamometer. BMD (g/cm^2), T-score, and Z-score in the lumbar spine (L1-L4), femoral neck, and total femur were evaluated by dual-energy X-ray absorptiometry with a properly calibrated densitometer (model Lunar 8743). For the prospective analysis of association models of Generalized Estimating Equations (GEE) were used. For the GEE models, BMD variables were used, all with normal distribution, using the "Gaussian family" specification. Potential confounding factors considered in the analysis were included in four models: Model 1 – crude analysis model (BMD and low MMI or low HGS); Model 2 – model 1 adjusted for age; Model 3 – model 2 adjusted for body mass index (BMI) and body fat percentage; Model 4 – model 3 adjusted for homeostasis model assessment-insulin resistance (HOMA). **Results:** The lowest quartile of the MMI was positively and prospectively associated with BMD, T-score and Z-score of the L1-L4 vertebrae and femoral neck in all evaluated models ($p < 0.05$). Femoral BMD was positively and prospectively associated with MMI depending on BMI, body fat percentage and HOMA ($p < 0.05$). Thus, with each increment of muscle mass unit, over time, there is an increase of 0.263 in the BMD L1-L4 and 0.190 in the BMD femoral neck. Low HGS was not prospectively associated with BMD, T-score and Z-score of none of the evaluated sites (L1-L4, femoral neck and total femur). **Conclusion:** Throughout the post-bariatric surgery follow-up, low muscle mass was an important factor for bone health, given its positive correlation with BMD. In contrast, low muscle strength was not prospectively associated. **Keywords:** bariatric surgery; sarcopenia; bone mineral density.

AO-018 BIOCHEMICAL AND HORMONAL DATA COMPARISON BETWEEN PATIENTS WITH NORMOCALCEMIC AND HYPERCALCEMIC HYPERPARATHYROIDISM

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Introduction: Normocalcemic primary hyperparathyroidism (NHPT) is characterized by elevated PTH, confirmed on two occasions (3 and 6 months), normal total calcium levels, and the absence of secondary causes of elevated PTH, such as VIT D deficiency. Hypercalcemic primary hyperparathyroidism (HHPT) is defined as hypercalcemia with elevated or unsuitably normal PTH levels. Both conditions may be associated with a risk of nephrolithiasis and osteoporosis. **Objective:** To analyze medical records of patients with hyperparathyroidism and divide them into two groups: NHPT and HHPT, comparing their biochemical and hormonal profiles. **Methods:** Observational and cross-sectional study with a retrospective evaluation of patients with hyperparathyroidism. The next variables were observed: age, PTH (12-88 pg/mL), total calcium (8.8-10.2 mg/dL), ionized calcium (1.2-1.4 mmol/L), phosphorus (2.3-4.3 mg/dL), urea (10-45 mg/dL), creatinine (0.6-1.2 mg/dL), 25 OH VIT D (20-100 ng/mL), and bone densitometry. Data from hypocalcemic patients, renal insufficiency, lithium and hydrochlorothiazide users, and VIT D deficiency were excluded. A Student's T-test was applied to compare the data between NHPT and HHPT, with $p < 0.05$ considered significant. **Results:** We analyzed 39 medical records of patients with hyperparathyroidism, final sample of 26 patients. Among the 26, 2 had nephrolithiasis (both from the NHPT group), and 11 had osteopenia/osteoporosis (8 from the normocalcemic group and 3 from the hypercalcemic). The NHPT group included 20 patients (77%), mean age 67.15 + 6.0 years, total calcium 9.35 mg/dL + 0.48, PTH 150.84 pg/mL + 63.9, 25 OH VIT D 35.16 ng/mL + 5.84, urea 33.65 mg/dL + 8.67, creatinine 0.91 mg/dL + 0.2 mg/dL. This group had a higher prevalence of compromised bone mineral density. The HHPT group consisted of 6 patients (23%), mean age 61.5 + 14.57 years, total calcium 11.72 mg/dL + 1.2, PTH 295.92 pg/mL + 188.78, 25 OH VIT D 26.03 ng/mL + 6.73, urea 31.33 mg/dL + 13.6, creatinine 0.8 mg/dL + 0.27. The Student's T-test did not reveal a significant difference in age ($p = 0.39$) and PTH ($p = 0.18$), but showed a significant difference in calcium ($p = 0.005$) and 25 OH VIT D ($p = 0.02$). **Conclusion:** The prevalence of NHPT was higher than HHPT. There was no statistically significant difference between the groups regarding PTH, but there was a difference in VIT D and calcium. Further, we observed a higher prevalence of osteopenia and nephrolithiasis in the NHPT group. **Keywords:** hyperparathyroidism; hypercalcemic; normocalcemic.

AO-019 ASSOCIATION OF DIO2 THR92ALA POLYMORPHISM WITH HYPERTENSION: INSIGHTS FROM A STUDY ON COVID-19 PATIENTS AND META-ANALYSIS

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The Thr92Ala polymorphism of the type 2 iodothyronine deiodinase (DIO2) gene has been implicated in various chronic diseases, but its association with hypertension remains uncertain. Our previous study suggested a protective role of Thr92Ala-DIO2 heterozygosity in COVID-19 mortality. This study aimed to investigate the potential association between the DIO2 Thr92Ala polymorphism and hypertension. We conducted a prospective, longitudinal cohort study on adult COVID-19 patients hospitalized between June and August 2020. The association between the Thr92Ala-DIO2 polymorphism and hypertension prevalence was assessed. Additionally, a systematic review and meta-analysis followed PRISMA guidelines, including original studies retrieved from PubMed up to June 4, 2023. The cohort comprised 208 patients (median age 62; range 24-93 years), categorized into two subgroups: 73 (35%) were Thr/Thr homozygotes, and 135 (65%) were either Ala/Ala or Thr/Ala heterozygotes. The overall mortality rate was 31.1%, with higher lethality observed in Thr/Thr individuals (42.5%) compared to Thr/Ala or Ala/Ala genotypes (23%); however, the difference did not reach statistical significance ($p = 0.161$). Patients without the DIO2 polymorphism exhibited a higher prevalence of hypertension, with an odds ratio (OR) of 0.51 (95% confidence interval [CI] 0.27-0.96). Our meta-analysis, including six studies (including the present one) encompassing 2,445 patients, found significant heterogeneity among the included studies ($Tau^2 = 0.22$, $Chi^2 = 20.31$, $df = 5$, $p = 0.001$). The overall analysis revealed no significant association between the DIO2 Thr92Ala polymorphism and hypertension ($Z = 0.25$, $p = 0.81$, OR 0.94, 95% CI [0.60, 1.50]). This study suggests that the role of DIO2 Thr92Ala polymorphism in hypertension remains uncertain. While patients without the polymorphism exhibited a higher prevalence of hypertension in the COVID-19 cohort, the overall meta-analysis did not demonstrate a significant association. Further research involving larger sample sizes and addressing the observed heterogeneity is needed to understand better the potential impact of the DIO2 Thr92Ala polymorphism on hypertension. **Keywords:** hypertension; polymorphism, genetic; COVID-19.

AO-020 EFFICACY AND SAFETY OF FEZOLINETANT FOR THE TREATMENT OF MODERATE TO SEVERE VASOMOTOR SYMPTOMS ASSOCIATED WITH MENOPAUSE: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Hot flashes are vasomotor symptoms (VMS) that may occur in the menopause and are described by intense heat feelings several times a day, significantly compromising the quality of life. Fezolinetant is a neurokinin 3 receptor antagonist which acts in neurons of the hypothalamu's thermoregulatory centre and has been tested to relieve VMS related to menopause. However, it's efficacy and safety remains unclear. **Objective:** To assess the efficacy and safety of fezolinetant for the treatment of VMS associated with menopause. **Materials and methods:** This systematic review and meta-analysis followed the recommendations of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). PubMed, Embase, Web of Science and Cochrane were systematically searched for randomized controlled trials (RCTs) that compared fezolinetant *versus* placebo and reported efficacy or safety endpoints. The primary outcomes were change in frequency and severity of VMS at week 12 of treatment. We computed weighted mean differences (WMDs) for continuous outcomes and risk ratios (RRs) for binary endpoints, with 95% confidence intervals (CIs). **Results:** A total of six studies and 3,302 patients were included, of whom 2,260 were assigned to fezolinetant. Compared with placebo at 12-week follow-up, fezolinetant significantly reduced daily frequency (WMD −2.34 events; 95% CI −2.72, −1.95; p < 0,01; I2 = 0) and severity (WMD −0.24 points; 95% CI −0.31, −0.16; p < 0,01; I2 = 0) of moderate/severe VMS from baseline. There was a significantly reduction in the Menopause-Specific Quality of Life score (WMD −0.41 points; 95% CI −0.54, −0.27; p < 0,01; I2 = 0) and a relevant augment in the number of patients with a better Patient Global Impression of Change in Sleep Disturbance (RR 1.23; 95% CI 1.08, 1.4; p < 0,01; I2 = 0). Non-significant differences were identified in treatment-emergent adverse events (TEAEs) related to fezolinetant (RR 1.43; 95% CI 1.06, 1.94; p = 0,02; I2 = 63%) and in serious TEAEs related to the drug (RR 2.02; 95% CI 0,42, 9.79; p = 0,38; I2 = 0%). **Conclusion:** In this meta-analysis of RCTs, the use of fezolinetant proved to be effective and safe on treating moderate to severe VMS associated with menopause compared to placebo. **Keywords:** fezolinetant; vasomotor symptoms; menopause.

CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

Pôsteres

AP-001 A 14 CM ADRENAL MASS IN A PATIENT WITH SUSPECTED 11B-HYDROXYLASE DEFICIENCY: CASE REPORT AND LITERATURE REVIEW

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Case report: Male, 43 years old, son of consanguineous marriage, with previous history of precocious puberty, early growth cessation, hypertension and chronic kidney disease (CKD) at age 20. First hospitalized in 2001 due to uremic syndrome with creatinine 7.9 mg/dL and K 2.3 mEq/L. Ultrasound showed bilateral enlarged adrenal gland and the presence of a uterus. Karyotype 46 XX. Congenital adrenal hyperplasia (CAH) due to 11β-hydroxylase deficiency(11β-OHD) was suspected, and dexamethasone prescribed, but the patient abandoned treatment. In 2002, he underwent a right nephrectomy and adrenalectomy indicated by the urologist. After kidney transplant, in 2003, he started therapy with prednisone and, 6 months later, was admitted for hematocolpos and submitted to histerectomia and ooforectomia. In 2015 he was referred to the endocrinologist, and testosterone replacement was added to corticotherapy. In 2023, an abdominal TC showed a solid left adrenal mass with heterogeneous attenuation and lobulated contours, measuring 14.7 x 0.8 x 7.0 cm, containing adipose material interspersed with soft tissue and internal septations. Although the diagnosis of myelolipoma was considered, malignancy could not be excluded, and surgery was indicated. The patient is currently waiting for the procedure. **Discussion:** Patients with CAH have a higher prevalence of adrenal masses, including mostly nodular hyperplasia, benign adenomas, myelolipomas (AML) and testicular adrenal rest tissue. It has been postulated that chronic elevations of ACTH due to absent or irregular treatment, such as observed in this case, may contribute to the formation of those masses. AML are benign tumors characterized by mature adipose tissue intermixed with hematopoietic elements. It may occur concomitantly to other benign or malignant adrenal lesions, but no cases of malignant transformation or metastatic spread have been reported. Treatment depends on lesion size, clinical presentation, and inability to exclude cancer, so surgery is generally reserved for symptomatic lesions, > 7 cm, that increase in size or with undetermined malignant potential, such as in this case. **Final comments:** CAH due to 11β-OHD should be included in the differential diagnosis of secondary hypertension associated with hypokalemia. Early diagnosis and good disease control may avoid complications such as short stature, early virilization, CKD and also giant adrenal masses such as described here. **Keywords:** congenital adrenal hyperplasia; hypertension; adrenal mass.

AP-002 YOUNG MAN WITH POLYCYTHEMIA-PARAGANGLIOMA SYNDROME: FIRST CASE REPORT IN BRAZIL

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Case presentation: Male, 20 years old, with a history of erythrocytosis since he was 5 years old. Laboratory tests at age 11 showed erythropoietin 81 mIU/mL (RV < 20), absent JAK2 V617F, normal hemoglobin electrophoresis and normal myelogram. Chest and abdomen CT scans without alterations. Initially, symptomatic treatment was maintained with hydroxyurea and bloodletting. At age 19, he was diagnosed with arterial hypertension (SAH). At the age of 20, complaining of hyperemia in the hands and conjunctiva, he restarts the diagnostic investigation in a tertiary service with a hemoglobin of 22 g/dL and a hematocrine of 70%. Normal leukocytes and platelets. New erythropoietin dosage = 78.4 mIU/mL (VR < 29). Abdominal tomography showed multiple coalescing retroperitoneal nodules with hypervascular enhancement and central areas of necrosis, the largest of which was located in the interaortocaval chain, measuring 2.8 cm in the short axis. Such lesions were sensitive to the whole-body research with MIBG and PET-FDG. In the investigation of SAH, urinary metanephrines were measured, which were increased due to normetanephrine (5846 mcg/24 h – RV <732). In view of the findings, a hypothesis of polycythemia-paraganglioma syndrome was suggested, currently awaiting the result of a genetic test to confirm the mutation compromising the VHL/EPAS1/HIF2a pathway (cluster1B) and a surgical procedure for tumor cytoreduction. **Discussion:** Paragangliomas are rare neuroendocrine tumors originating from the autonomic nervous system, with a high degree of heredity. The genetic pattern is associated with different biochemical phenotypes, clinical behavior and long-term prognosis. Polycythemia-paraganglioma syndrome is extremely rare, with only 32 cases reported, most of which are associated with mutations in the HIF2A gene or in the prolyl hydroxylase domain. No cases have been found described in Brazil, so far, on the PubMed or SciELO platforms. Furthermore, the 15-year interval between the first manifestation of the disease and its diagnosis is also noteworthy, indicating little knowledge about this syndrome and patient exposure to the risks related to its clinical manifestations. **Final comments:** The disclosure of this case can contribute to the expansion of knowledge about this syndrome and greater agility in the diagnosis of this condition. **Keywords:** paraganglioma, extra-adrenal; polycythemia; hypertension.

AP-003 POLYCYTHEMIA-PARAGANGLIOMA SYNDROME: A CASE REPORT

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A 29-year-old female patient was referred to our hospital due to resistant hypertension, associated with episodes of acute elevations of blood pressure (BP). She had the diagnosis of polycythemia at age of 7 (hemoglobin and hematocrit levels about 15 g/dL and 47.1%, respectively). JAK2 mutation analysis was negative and the patient started to undergo periodic therapeutic bleedings. At age 22, the patient developed hypertension requiring antihypertensive drugs. Six months before admission, the patient began to present headache, palpitations and diaphoresis and her systolic pressure became persistently elevated, with acute BP elevations, higher than 220 mmHg. In admission, she was using losartan, anlodipine and atenolol. On physical examination, her BP was 132/90 mmHg and heart rate was 75 per minute. Secondary hypertension was screened and elevated levels of 24 hours urinary metanephrines (7 times the upper limit of normal) were found. An abdominal CT scan showed solid retroperitoneal para-aortic lesions, suggestive of paragangliomas (PGLs). An MRI scan showed three retroperitoneal nodular lesions with heterogeneous signal and enhancement, located: 1) close to lower pole of left kidney; 2) in the interaortocaval space, close to duodenum; and 3) in left paraaortic area. These tumors measured 2.6 cm, 2.0 cm and 1.7 cm, respectively. Alpha-blockade with doxazosin in increasing doses was started in preparation for the surgery, and, later, the dose of atenolol was increased. Resection of the lesions was performed without serious complications, except for the need to use nitroprusside during manipulation, and for noradrenaline after surgical removal of the lesions, which was discontinued approximately after 24 hours. There were no postoperative complications. The patient was discharged, still with elevated hematocrit levels. The result of the anatomopathological examination confirmed multiple PGLs. NGS multigene panel testing for Pheochromocytoma/PGL was negative. Polycythemia-paraganglioma syndrome (PPS) is a rare condition (about 32 cases reported). The classic presentation is female patients with polycythemia at birth or in early childhood, and multiple and recurrent PGLs. Duodenal somatostatinomas may also be present. Most reports of PPS have been linked with HIF2A gene mutations, but some patients have no identifiable mutations. However, somatic HIF2A mutations or somatic mosaicism may occur as postzygotic events, which is hypothesized for our patient. **Keywords:** paraganglioma; polycythemia; hypertension.

AP-004 CASE REPORT: HYPERCORTISOLISM DUE TO ECTOPIC ACTH PRODUCTION

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Case presentation: D.M.L., 32 years old, female, Caucasian, from Campina Grande – PB. She was referred to the Endocrinology service at the *Hospital Universitário Alcides Carneiro* by the assistant Oncologist with whom she is being monitored for neuroendocrine carcinoma of the left maxillary sinus diagnosed four years ago, having already undergone surgery, radiotherapy and chemotherapy. Since October 2022, she has evolved with fatigue, asthenia, insomnia, irritability, skin darkening, violaceous stretch marks on the abdomen, arms and legs, weight gain, muscle weakness, bruises, hypertension, dysglycemia and hypokalemia. Laboratory tests showed hypercortisolism with increased ACTH (salivary cortisol = 2 pg/dL; after 1 mg of dexamethasone = 21,7 pg/dL; free urine greater than the machine detection limit; ACTH = 174 pg/mL). Imaging exams showed an expansive lesion measuring 6,6 x 6,2 x 5,5 cm in the left maxillary sinus, pulmonary and subcutaneous face metastases, in addition to brain resonance with a pituitary lesion measuring 0,4 cm. Immunohistochemistry of the 2019 tumor resection biopsy showed no ACTH secretion. The patient was hospitalized and drug therapy was started with Cabergoline 0.5 mg twice a week and Ketoconazole 200 mg twice a day, with signs of hepatotoxicity appearing when the dose was increased to three times a day. In conjunction with the Oncologist, PET-CT with gallium-68 was performed, and somatostatin receptor uptake was verified only in neoplastic lesions, without uptake in the pituitary. **Discussion:** Endogenous hypercortisolism is difficult to diagnose due to the diverse clinical picture and multiple factors that can falsify diagnostic tests. Cushing's disease is the most common cause, and may also be due to adrenal disease or ectopic ACTH secretion usually produced by lung, thymic, or pancreatic tumors. In the current case, the patient has symptoms of hypercortisolism, probably coming from the maxillary sinus carcinoma or its metastases. Due to the impossibility of a new tumor resection, drug therapy with cabergoline, ketoconazole was indicated and, after positive PET-CT, awaits the acquisition of Lanreotide and a new chemotherapy regimen. **Final comments:** The reported case brings to light the discussion of the therapy of a complex and rare situation due to its origin, which is Cushing's syndrome due to ectopic ACTH production from maxillary sinus carcinoma. **Keywords:** adrenal; ectopic Cushing; maxillary sinus neuroendocrine tumor.

AP-005 HYPOKALEMIC PARALYSIS IN A PATIENT WITH ALDOSTERONE-PRODUCING ADENOMA: A CASE REPORT

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Case presentation: A 50 years old female, with medical history of hypertension and multiple episodes of weakness, presented with acute hypokalemic paralysis. During the etiological investigation, laboratory work up revealed high level of aldosterone = 25,5 ng/dL (reference range [RR]: 1,8-23,2 ng/dL), plasma renin activity suppressed = < 0,14 ng/mL/h (RR: 0,32-1,84 ng/mL/h), high level of aldosterone/renin ratio = 63,75 (RR < 25 ng/dL/ng/mL/h) and hypokalemia = 2,3 mmol/L (RR: 3,5-5,5 mmol/L). Abdominal computerized tomography showed a nodule with 1,6cm in diameter, localized at the right adrenal topography, compatible with adenoma. A laparoscopic unilateral adrenalectomy was performed with good result. **Discussion:** Hypokalemic paralysis is an acute and potentially lethal pathology, with varied etiology. Hypertension, in association with severe hypokalemia, is one of the main presumptive factors of primary hyperaldosteronism. Aldosterone-producing adenoma is the leading curable cause of primary hyperaldosteronism and systemic arterial hypertension. Hypokalemic paralysis, as a rule, carries an underlying cause. The clinician must be able to identify it and determine its primary cause for proper conduct. Due to its hypokalemic potential, primary hyperaldosteronism needs to be considered in the differential diagnosis. It is essential for the physician to screen for hyperaldosteronism in cases of hypertension accompanied by hypokalemia, and in cases of adrenal incidentaloma, in order to establish treatment as soon as possible and, thus, avoid acute and chronic complications of high blood pressure and potassium deficiency. **Final comments:** When the patient presents with low potassium associated with hypertension, it is necessary to investigate the primary cause of hypertension, because the etiology might be curable. Although rare, the aldosterone-producing adenoma needs to be considered in these cases as a differential diagnosis. **Keywords:** primary hyperaldosteronism; hypokalemic paralysis; aldosterone-producing adenoma.

AP-006 IATROGENIC ADRENAL INSUFFICIENCY AFTER "SERUM THERAPY" INFUSION DURING OVERWEIGHT TREATMENT

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Case presentation: Female, 40 years old, had nausea, sweating and hypotension. In the last month she went to the emergency service multiple times, with clinical improvement after had intravenous hydrocortisone. Recent cardiological investigation showed no abnormalities. She had been complaining of asthenia, malaise, and weight gain for the past year. For these reasons, she asked a "nutrologist for help when she received an "adrenal fatigue" diagnosis and a "therapeutic plan". She took intravenous formulas which resulted in an improvement of fatigue and malaise symptoms. However, she was unable to continue the treatment due to the costs and the treatment was discontinued abruptly. In an emergency visit, about a month after the last session of "serum therapy", basal cortisol was measured at 0.5 mcg/dL and ACTH at 2 pg/mL, with no other abnormalities in laboratory tests. The hypothesis of iatrogenic adrenal insufficiency was raised, and prednisone 20 mg/day and fludrocortisone 0.1 mg every 12 hours was initiated, followed by tapering and improvement of the initially reported symptoms. **Discussion:** Adrenal insufficiency (AI) is characterized by deficient production of glucocorticoids by the adrenal glands. It usually manifests in an insidious and nonspecific manner. A frequent cause of AI is the abrupt discontinuation of supraphysiological doses of glucocorticoids used to treat an underlying condition. "Adrenal fatigue" is a term not recognized by the Brazilian Medical Association or current scientific literature. It is used by some groups to refer to a reaction that the body would have to continuous stress, and its treatment would be based on "glucocorticoid replacement". Symptoms would include asthenia and malaise. All these signs and symptoms are nonspecific and associated with many conditions, including high degree of sedentarism, obesity, and inadequate nutrition and sleep. Therefore, "adrenal fatigue" is not a recognized diagnosis and this condition does not justify the use of glucocorticoids or any other hormonal replacement therapy. **Final comments:** Nonspecific symptoms such as fatigue and malaise lead individuals to seek medical help, mostly associated with various conditions such as sedentarism and obesity. Treatment should be based on addressing these factors. Consequently, there is no indication for hormone and nutrient replacement without a proven deficiency because it may cause serious harm to health. **Keywords:** adrenal insufficiency; iatrogenic disease; glucocorticoids.

AP-007 EFFECTIVE USE OF LOW-DOSE ENDOMIDATE IN SEVERE CUSHING'S SYNDROME: CASE REPORT

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We present the clinical case of a female patient, 20 years old, diagnosed with severe Cushing's syndrome during the investigation of bilateral adrenal masses, associated with tremor, sweating, palpitation, headache, intermittent elevation of blood pressure levels, weight loss, ecchymosis, livedo reticularis and increased abdominal circumference, an intensified clinical condition after beginning intense work activity approximately 3 months after admission. Laboratory evaluation during ICU stay revealed hyperglycemia, hypokalemia (K 2.7 mg/dL), basal cortisol:59 ug/dL (RV: 6-18), urinary free cortisol: 2,201.9 mcg/24 h (RV: 58-403), ACTH 108.2 pg/mL (RV: <46),urinary metanephrines > 5,000 mcg/24 h, urinary normetanephrines: 2,870.6 mcg/24 h, plasma renin activity: 9.7 ng/mL/h (RV supine position:0.32 to 1.84), plasma aldosterone: 6.31 mg/dL (PR lying down: 1.76 to 23.2) and abdominal CT showed solid and regular masses, related to the adrenals, with peripheral enhancement and measuring up to 5.5 cm on the right and 7.8 cm on the left, suggesting pheochromocytoma. The patient was hospitalized with urinary infection by candida albicans and hypokalemia refractory to intravenous and oral replacement. As a way of stabilizing the clinical picture to make the adrenalectomy feasible, the use of doxazosin 3 2mg/d was prescribed; spironolactone 200 mg/d; losartan 100 mg/d; metoprolol 200 mg/d; hydralazine 300 mg/d; amlodipine 10 mg/d; clonidine 0.8 mg/d; ketoconazole 800 mg/d; KCl syrup 90 mL/d; NPH 36 IU/d; in addition to sodium nitroprusside solution and potassium chloride in continuous infusion. Despite the interventions performed, the paroxysms and high serum cortisol concentrations (40.14 ug/dL) persisted, making it impossible to safely perform the surgery. At the time, the use of etomidate was associated with a low dose protocol (0.02 mg/kg/h) and a progressive reduction in serum cortisol concentrations was observed, reaching a value of 20.31 ug/dL after 4 days of initiation, allowing performing bilateral adrenalectomy. After the procedure, the patient became normotensive, euglycemic, normokalemic and was discharged using fludrocortisone and prednisone, the latter with a dose reduced to 7.5 mg/day. In outpatient follow-up, she remained normotensive, without use of antihypertensive drugs, normokalemic, with anatomopathological result of an adrenal tumor, compatible with bilateral pheochromocytoma, and presenting postoperative ACTH dosage < 5 ug/dL, thus suggesting that it was a pheochromocytoma with ectopic ACTH production. **Keywords:** etomidate; pheochromocytoma; Cushing's syndrome.

AP-008 CASE REPORT: METASTATIC PARAGANGLIOMA WITH SDHA MUTATION IN THE CONTEXT OF RARE VARIANT C.63+1GT

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Case presentation: A 29-year-old man presented to the emergency room with abdominal pain after a horse had fallen on his abdomen. A CT scan revealed a retroperitoneal hematoma in the right perirenal space. Surprisingly, the scan also showed a large heterogeneous expansive lesion with irregular contours, calcifications, enhancement at the periphery, and a hypodense area in the center. The surgical team opted for conservative treatment of the hematoma and further investigation of the tumor using MRI. The MRI revealed a mass measuring 21.6 x 14.1 x 10.8 cm, closely related to major blood vessels. It exhibited a solid component at the periphery and hyperintense signal on T2. The central portion showed heterogeneity, necrosis, and hemorrhage. Additionally, there were signal changes in vertebral bodies, posterior arch elements, and pelvic bones. A biopsy confirmed the presence of neoplasia composed of epithelioid cells. Immunohistochemistry results were positive for synaptophysin and chromogranin. At this point, the case was handed over to the endocrinology team. A biochemical evaluation was performed, including urinary metanephrines and catecholamines, plasma metanephrines, chromogranin, genetic panel, and 123I MIBG SPECT imaging. The results suggested the presence of chromaffin transporters/receptors in the primary tumor and metastatic sites. Palliative treatment was initiated with 200 mCi 131I MIBG. The genetic panel revealed mutations of the SDHA variant c.63+1G>T. **Discussion:** We diagnosed the patient with metastatic paraganglioma (PPGL). There were anatomic challenges in resecting the primary lesion, the patient was asymptomatic and had good quality of life. Debulking the primary lesion is controversial in terms of improving survival. According to the criteria of the American College of Medical Genetics and Genomics, the SDHA variant has an unclear significance and has not been previously reported in any other patient with PPGL (until march/2023). However, bioinformatics tools used at a renowned research center suggested its rarity and pathogenicity (contributed by a colleague). **Final comments:** The primary lesion demonstrated a 20% reduction after 5 months of initial radionuclide therapy. After 8 months, iodine treatment showed an 8% reduction compared to the pre-therapy examination. This case is of significant interest in the literature due to its complex management and the possibility of being a pioneering description of a potentially pathogenic SDHA variant. **Keywords:** metastatic paraganglioma; SDHA; rare variant.

AP-009 TRIPLE A SYNDROME: A CASE REPORT

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Case presentation: A 24-year-old female with symptoms of dizziness, syncope and difficulty in gaining weight (BMI of 16.4 kg/m^2) whose blood lab tests showed ACTH 93 pg/mL, cortisol 10 mcg/dL, aldosterone 33.8 ng/dL, potassium 4.5 mg/dL and sodium 139 mg/dL. The hypothesis of adrenal insufficiency resistant to the action of ACTH was raised and a glucocorticoid was prescribed with a good clinical response. In the patient's past history, since birth she had difficulty in producing tears, progressive amyotrophy with muscle weakness in the lower limbs, interfering with ambulation since childhood, and difficulty with solid and pasty foods due to grade III achalasia confirmed by esophageal manometry. A positive genetic test was performed for mutation in the AAAS gene, variation G>GGC, confirming the diagnosis of triple A syndrome (TAS). **Discussion:** TAS, also called Allgrove syndrome, is characterized by the triad: ACTH-resistant adrenal insufficiency, alacrimia and achalasia. In addition, most patients have neurological disorders such as pyramidal syndrome, peripheral neuropathy, amyotrophy, etc. It is a rare autosomal recessive disease caused by mutation in the AAAS gene located on chromosome 12q13 that encodes the ALADIN protein. However, there is no specific genotype-phenotype correlation. Adrenal insufficiency due to deficiency of glucocorticoid secretion is reported in 85% of patients and usually develops in the first or more rarely in the second decade of life. Its severity ranges from severe or moderate deficiency to borderline glucocorticoid secretion compensated by increased ACTH levels, without any change in adrenal function. In contrast, in published series mineralocorticoid deficiency is found in 0 to 15% of patients. Postmortem adrenal histology analysis of some cases demonstrated atrophy of the fascicular and reticular zone with relative preservation of the glomerular zone. **Final comments:** This case report illustrates a rare disease that is part of the differential diagnosis of adrenal insufficiency highlighting the importance of access to genetic testing in clinical practice allowing the patient early diagnosis and thus improving the prognosis of the disease. **Keywords:** triple A syndrome; Allgrove syndrome; adrenal insufficiency.

AP-010 CUSHING'S SYNDROME ASSOCIATED WITH THE USE OF STEROIDOGENESIS INHIBITOR

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A 22-year-old female patient with centripetal obesity, hirsutism, non-violaceous broad abdominal striae on admission, hematomas in non-traumatic regions demonstrating capillary fragility, full moon facie and with a history of secondary amenorrhea for 2 years, admitted for investigation of predominant lower abdominal pain and proximal lower limb weakness. Investigation of Cushing's syndrome (CS) was initiated. In the course of hospitalization, the patient worsened gradually, began to present delirium and hallucinations, agitation and decreased sleep, worsening capillary fragility, with exacerbation of lip and gingival bleeding, tachycardia, hypertension and appearance of violaceous streaks in the abdominal region, chest and upper limbs. Laboratory investigation revealed elevated 24-hour urinary cortisol and ACTH, hypokalemia and hypernatremia. Faced with the progressive worsening and severity of the case and the drugs available at the institution, the Endocrinology team opted for the use of an adrenal steroidogenesis blocker: the anesthetic Etomidate, an imidazole derivative that inhibits 11beta-hydroxylase. On starting the medication at a low non-hypnotic dose, a reduction in psychotic symptoms, adequacy of previously elevated blood pressure levels as well as heart rate was observed. A frustrating therapeutic trial was performed on weaning from Etomidate, turning off continuous infusion, and the return of hypertension, hallucinatory symptoms and tachycardia could be observed, demonstrating the benefit of the drug in controlling severe hypercortisolism. After clinical improvement and the patient's return to the ward, post dexamethasone cortisol was performed, with a result 10 times above the normal value. Parallel to the course of treatment with Etomidate during hospitalization, Ketoconazole, an inhibitor of the enzymes 17,20-lyase, 11beta-hydroxylase and the removal of the cholesterol side chain, was purchased. With these medications the patient showed gradual clinical improvement. An MRI of sella turcica was requested to investigate Cushing's disease and the patient was discharged to outpatient follow-up. With the continuity of home treatment with ketoconazole the patient persists in clinical improvement in outpatient follow-up for the etiologic investigation. With this report we highlight the importance of androgenic inhibitors, especially Etomidate, as reducers of hospitalization time and clinical improvement of the patient with CS. **Keywords:** Cushing; etomidate; hypercortisolism.

AP-011 OCCULT PHEOCHROMOCYTOMA: A CASE REPORT

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Case presentation: A 39-year-old man started in 2022 with intense temporal headache, which caused nocturnal awakenings associated with palpitations, chest pain, facial flushing, and profuse sweating. The patient progressed with progressive worsening of symptoms, which became daily and lasted for hours. In December of the same year, after measuring systolic blood pressure ≥ 200 mmHg, he was admitted to the intensive care unit for the use of venous vasodilators. Plasma levels of catecholamines showed epinephrine inferior to 15 pg/mL (URL 90 pg/mL), norepinephrine 1535,9 pg/mL (URL 460 pg/mL) and dopamine inferior to 15 pg/mL (URL 30 pg/mL). After five weeks, dosage of plasma metanephrines exhibited metanephrines 54,9 pg/mL (URL 100 pg/mL) e normetanephrines 1458,6 pg/mL (URL 216 pg/mL). Magnetic resonance imaging (MRI) of the abdomen showed thickening of both adrenals. Ga-DOTATATE PET/CT showed slight asymmetry of physiological uptake in the adrenals (R>L) without nodules. Scintigraphy with MIBG was then performed, which did not show uptake. Now, the patient is using doxazosin 6 mg a day, without defined location of the pheochromocytoma, and still presenting occasional adrenergic crises. **Discussion:** Pheochromocytomas are tumors of chromaffin cells of the sympathetic-adrenomedullary axis, producers of catecholamines, which determine severe sustained or paroxysmal arterial hypertension, and are the cause of 0.1% to 0.5% of cases of hypertension. Most pheochromocytomas (90%) are in the adrenal. Locations outside the adrenals are found in 10% of cases. The size of the tumors varies greatly in the diagnosis and can be microscopic and difficult to locate. The measurement of plasma metanephrines represents the screening tool of choice due to its high sensitivity. Values above 4 times the URL confirm the diagnosis. MRI is a method with high sensitivity (between 93%-100%). Other options used are MIBG scintigraphy and Ga-DOTATATE PET/CT when less invasive imaging tests are not successful. **Final comments:** The location of pheochromocytoma is a challenge in some cases. The main diagnostic criteria are elevated urinary catecholamines and metanephrines or plasma free metanephrines. Sometimes, investigation with more invasive methods is necessary since non-resection directly impacts on the morbidity and mortality of the patient. **Keywords:** pheochromocytoma; occult; diagnosis.

AP-012 EPIDEMIOLOGICAL CUT OF DEATHS FROM MALIGNANT NEOPLASM OF THE ADRENAL GLAND IN THE NORTHEAST FROM 2011 TO 2021

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Introduction: The adrenal gland is part of the endocrine system and is responsible for the production of metabolism hormones, like catecholamines, and sexual (androgens). Neoplasms in this organ are rare, with an incidence of up to 2 cases per 1.7 million inhabitants, and therefore many risk factors for this disease are not known yet, and more research on this subject is needed. **Objective:** Evaluate the number of deaths from malignant neoplasm of the adrenal gland in the Northeast from 2011 to 2021. **Methods:** This is a retrospective, detailed, and descriptive study built on secondary data obtained from the Mortality Information System of the Unified Health System (SIM/SUS), whereupon the age groups that died from malignant neoplasm of the adrenal gland were discriminated gathering the population from 0 to over 80 years old, in the period from 2011 to 2021 and divided by regions of the country. **Results:** In the period analyzed there were 3,584 deaths. The most affected region was the Southeast, with 1,706 deaths, followed by the Northeast, with 782. The age groups most affected by the deaths in the Northeast were children from 1 to 4 years old (166), 5 to 9 years (108), and 60 to 69 (100). About the less prevalent age groups, they are 15 to 19 years old (22), less than 1 year old, 10 to 14 years old (both 28), and 20 to 29 years old (30). Besides that, when it comes to age groups, children from 1 to 4 years old are the most affected in the Northeast and North, and are in second place in the other regions. Concerning the most prevalent states in the Northeast, Pernambuco is in first place with 221 deaths, followed by Bahia (188) and Ceará (137). **Conclusion:** Malignant neoplasm of the adrenal gland, although it occurs infrequently, is a disease that can lead to death and therefore more research should be done about it, especially when it comes to risk factors. With the data, it can be observed that the Northeast is the second region with the highest prevalence of deaths from this disease and that children aged 1 to 9 years, in general, are the most affected. Finally, it is necessary to note that children from 1 to 4 years old, in general, are the most affected in Brazil. Due to the limitations of the study, it is not possible to make a cause-and-effect relationship. **Keywords:** epidemiology; neoplasm; adrenal gland.

AP-013 CUSHING ACTH DEPENDENT OF ADRENAL ORIGIN: A CASE REPORT

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Cushing's syndrome is a rare disease, characterized by chronic exposure to high levels of cortisol. Among the ACTH-dependent forms, ectopic ACTH secretion (SEA) corresponds to a minority of cases, the main etiologies being bronchial carcinoid tumors, oat cells (small cells), pancreas or thymus carcinoids, medullary thyroid carcinoma and pheochromocytoma. Through the present work, we will report the case of a female patient, 35 years old at the diagnosis, referred to a University Hospital, in 2012, due to a significant weight gain of 32 kg in 9 months. On physical examination, she presented with obesity and typical signs of hypercortisolism, such as moon facies, facial plethora, buffalo hump and violaceous striae on the abdomen. In addition, she had already been diagnosed with hypertension, diabetes mellitus and dyslipidemia. Laboratory investigation was suggestive of ACTH-dependent Cushing's syndrome, with urinary free cortisol of 1,085 mcg/24 h VR (November 2011), 588 mcg/24 h VR (December 2011), 1-mg overnight dexamethasone suppression test of 31 ug/dL (December 2011) and ACTH, which reached 31 pg/mL in December 2011. High dose dexamethasone suppression test of either 8 mg overnight and 16 mg afterwards revealed non-suppressed cortisol concentration. Computed tomography of the abdomen (January 2012) revealed the presence of a solid nodule in the right adrenal gland measuring 3.5 x 3 cm, suggestive of atypical adenoma or secondary lesion, and another lesion suggestive of ovarian teratoma on the right. She underwent magnetic resonance of the pituitary (December 2011), which showed no abnormalities. The patient was submitted to a right adrenalectomy + right salpingo-oophorectomy in August 2012. Anatomopathological showed presence of solid neoplasm in right adrenal, and immunohistochemical analysis showed tumor cells diffusely positive for alpha-inhibin, positive staining for Melan-A and polyclonal positivity for ACTH. The ovarian lesion proved to be a mature cystic teratoma, without significant positivity for ACTH. Diabetes mellitus, hypertension, dyslipidemia, and cushingoid features were remitted soon after adrenalectomy. **Keywords:** Cushing's syndrome; hypercortisolism; adrenal.

AP-014 CUSHING'S DISEASE ASSOCIATED WITH PRIMARY HYPERALDOSTERONISM: A CASE REPORT

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Case report: Female, 39 years old, was referred to the Endocrinology clinic due to decompensated diabetes mellitus and Cushing's phenotype. She had daily headaches, impaired right visual field, dizziness, vomiting, irregular menses and weight gain. She reported glycemic and blood pressure peaks with multiple visits to the emergency room. Physical examination revealed facial plethora, blood pressure (BP) of 130 x 85 mmHg, body mass index of 36.9 kg/m^2, central obesity, hirsutism and cervical acanthosis, without violaceous striae. Fasting blood glucose was 205 mg/dL. ACTH-dependent hypercortisolism has been confirmed in laboratory tests. MRI Scan of the sella turcica showed an expansive lesion (1.2 x 1.2 x 1.1 cm) compressing the optic chiasm, thus opting for transsphenoidal neurosurgery. Postoperative cortisol was 2.0 mcg/dL and, during clinical follow-up, the patient reported amenorrhea, in addition to laboratory findings compatible with hypothyroidism. Deficiencies were treated properly. One year later, tests indicated normalization of the hypothalamic-pituitary axis with urinary free cortisol of 113.4 mcg/24 h (reference value 58-403) and 11pm salivary cortisol 0.190 ng/dL (reference value < 0.736) but significant persistence of hypertension, despite the use of four antihypertensive drugs. Screening for additional secondary hypertension was done: IGF-1 and renal artery doppler were normal. Pheochromocytoma was ruled out, but aldosterone/plasma renin activity ratio was > 200 in two different tests. Computed tomography (CT) of the adrenals did not show any adenoma. Spironolactone was introduced and up titrated, reaching BP control with three drugs. **Discussion:** Cushing's disease and primary hyperaldosteronism are diagnostic challenge diseases because of their low-prevalence, and requirement of specific tests that are not fully accessible to non-specialized clinics. In the reported case, two rare diseases are associated. No genetic correlation was found in the literature between pituitary tumors and primary hyperaldosteronism. **Final comments:** We report the unusual association of two infrequent diseases. Although it has not yet been reported in the literature and we have not found a single genetic basis, it alerts to the possibility of them occurring concomitantly. **Keywords:** primary hyperaldosteronism; Cushing's disease; hypertension.

AP-015 BILATERAL PHEOCHROMOCYTOMA AS PART OF VON HIPPEL-LINDAU SYNDROME: A CASE REPORT

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Case presentation: A 33-year-old female presenting with arterial hypertension, severe headache, excessive heat, and sweating for two years was diagnosed with bilateral pheochromocytoma. Laparoscopic bilateral adrenalectomy was performed, confirming the diagnosis of a non-cosecretory tumor with positive Ki67 (2% in the right adrenal and 5% in the left adrenal). Afterwards, a genetic panel for hereditary pheochromocytoma identified a pathogenic variant c.499C>T (p.Arg167Trp) in heterozygosis, in the Von Hippel-Lindau (VHL) gene. The patient was then investigated for other manifestations of Von Hippel-Lindau syndrome. Audiometry was normal, as well as magnetic resonance imaging (MRI) of skull, total abdomen, and cervical, thoracic and lumbar spine. On the other hand, retinal mapping and retinography showed an inferior temporal retinal hemangioblastoma with a sentinel vessel. **Discussion:** Pheochromocytoma is a rare neoplasm, occurring in less than 0.2 percent of patients with hypertension. Most catecholamine-secreting tumors are sporadic. However, the occurrence of bilateral tumors in a young patient, as in this case, warrants the investigation of a familial disorder, with genetic testing. Several familial syndromic disorders are associated with adrenal pheochromocytoma, all of which have autosomal dominant inheritance. The VHL syndrome is caused by the inactivation of VHL protein, encoded by the tumor suppressor gene VHL. It is characterized by the development of multiple vascular tumors, including pheochromocytomas in up to 60 percent of patients harboring mutations in the VHL gene. The VHL syndrome may also include paragangliomas, hemangioblastomas, retinal angiomas, clear cell renal cell carcinomas, pancreatic neuroendocrine tumors, and endolymphatic sac tumors of the middle ear. **Final comments:** Most cases of pheochromocytomas are sporadic. However, genetic testing should be considered in selected patients with documented pheochromocytoma. The discovery of familial syndromic disorders implies a change in management (screening and treatment) and leads to investigation of family members. **Keywords:** pheochromocytoma; Von Hippel-Lindau syndrome; adrenal gland diseases.

AP-016 IDIOPATHIC ISOLATED ADRENOCORTICOTROPIC HORMONE DEFICIENCY: CASE REPORT

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Case summary: A 41-year-old female patient with vitiligo, without other known comorbidities, was admitted to the Internal Medicine service complaining of abdominal pain associated with nausea, vomiting and lack of appetite for about 15 days before admission. She sought emergency service twice, before admission, with only prescription for symptomatic for home use. Upon admission, she underwent an abdominal ultrasound, which didn't show abnormalities. She had anemia (Hb 11.1 g/dL) and hyponatremia (Na 120 mEq/L), without other changes in electrolytes, renal function, pancreatic or canalicular enzymes. Due to symptomatic hyponatremia, she was submitted to sodium replacement and investigation for adrenal insufficiency. She had baseline cortisol of 1.4 mg/dL and ACTH inferior to 5 pg/mL. She underwent magnetic resonance imaging of the skull with contrast, which showed a saddle sign, partially empty sella and pituitary reduced of volume with homogeneous intensity enhancement signal after venous contrast. No other pituitary dysfunctions were evidenced, with slightly increased TSH (6.2 ng/dL) and normal prolactin (12.1 ng/mL). Corticosteroid therapy was initiated with prednisone 5 mg/day. The patient was discharged with improvement of hyponatremia and symptoms presented, for outpatient follow-up. **Discussion:** Adrenocorticotropic hormone (ACTH) deficiency is most commonly found in presence of global dysfunction of the pituitary gland, with changes in several axes pituitary hormones. Its idiopathic isolated deficiency constitutes a rare clinical condition, primarily a diagnosis of exclusion, and is characterized by secondary adrenal insufficiency without other pituitary dysfunctions, with normal pituitary gland image and no previous history of trauma. There is a higher prevalence in women and an association with autoimmune diseases. The clinical picture is insidious, with non-specific symptoms such as fatigue and weight loss. Laboratory findings may suggest adrenal insufficiency, such as hyponatremia, hyperkalemia and hyperglycemia. Treatment is based on the prescription of glucocorticoids. **Conclusion:** Adrenal insufficiency is a common clinical condition, however underdiagnosed, due to the nonspecificity of its symptoms, requiring high clinical suspicion for its diagnosis. Isolated ACTH deficit as a causal mechanism of the disease is a diagnosis of exclusion, but it should be done as early as possible for best institution of therapy. **Keywords:** adrenal insufficiency; adrenocorticotropic hormone deficiency; diagnosis.

AP-017 PRIMARY ADRENAL INSUFFICIENCY AFTER COVID-19: CASE REPORT

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Case presentation: Male, 61 years old, marathon runner, with significant asthenia, weight loss (12 kg), vomiting, dizziness when standing up, darkening of the skin started about 11 months after hospital admission in March 2023. From background, COVID-19 in February 2022, no hospitalization required. He had been under outpatient investigation, having done imaging tests and tumor markers, without significant alterations. He had no diagnostic definition. He was hospitalized due to recent temporo-spatial disorientation and hypotension followed by syncope. Hyponatremia (Na = 126 mEq/L) was evidenced and the suspicion of adrenal insufficiency was raised, with examinations before the start of corticosteroid therapy (ACTH > 1,250 pg/mL and basal cortisol 6.03 ng/dL (RV > 6.7 a22). After initiation of Hydrocortisone, the patient had significant clinical improvement. Adrenal tomography showed normal-sized glands without lesions, anti-HIV and anti-TPO were negative. After clinical stabilization, the patient was discharged with Prednisone 5 mg/day and Fludrocortisone 0.1 mg/day. **Discussion:** Currently, there is cumulative evidence that the endocrine system is particularly vulnerable to both destruction and functional alteration in the occurrence of COVID-19. Adrenal function, in particular, remains preserved in most patients. Although there are case reports of adrenal insufficiency in patients with COVID-19, related to acute vascular complications (*e.g.*, hemorrhage/thrombosis), corticosteroid production is not impaired. In the case reported, there is no data in the patient's history and in the tests performed that suggested a possible autoimmune, drug, neoplastic or immunosuppression-related etiology. By exclusion, and by establishing a temporal relationship with the onset of symptoms, an association is made with COVID-19. **Final comments:** A more assiduous scientific effort capable of grading the impact of this disease on the endocrine system is essential, since the current evidence on adrenal insufficiency as a complication of COVID-19 is shallow. Given the rarity of this occurrence, the case description is valuable to the medical community because it invites it to broaden perspectives in the management of the patient victim of COVID-19. In view of this, it is possible that SARS-COV-2 is an inducer of long-term endocrine changes in patients infected with this virus, as has been reported in the setting of SARS virus (SARS-COV-1) infection. **Keywords:** adrenal; COVID-19; insufficiency.

AP-018 ASSOCIATION BETWEEN PAPILLARY THYROID CARCINOMA AND PHEOCHROMOCYTOMA IN A PATIENT WITH A VARIANT OF UNDETERMINED CLINICAL SIGNIFICANCE IN THE ATM GENE

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Case presentation: A 44-year-old woman with hypertension, headache and palpitations, with a past of thyroidectomy 4 years before for papillary thyroid carcinoma (PTC), was investigated for persistently elevated thyroglobulin levels. She underwent a FDG-PET-CT with a finding of a suspicious nodule in the left adrenal gland, with an attenuation coefficient of 44.9 UH and dimensions of 2.1 x 2.2 cm, SUV 6.2. Hormonal dosages related to the adrenal gland were performed, with a finding of urinary metanephrines of 654.1 µg/24 hours (normal up to 280). Subsequently, a scintigraphy with MIBG was performed, with a finding of marked hyper-uptake in the known nodular adrenal formation and in the right parotid. She was then referred for adrenalectomy, after surgical preparation with doxazosin, and a genetic panel was requested. The panel showed a genetic variant of undetermined clinical significance for the ATM gene. **Discussion:** The case draws attention due to the concomitance of papillary thyroid carcinoma with pheochromocytoma and a probable parotid paraganglioma. It is known that paragangliomas can occur in the head and neck region, especially in the carotid artery, middle ear and larynx, but it was only in 2012 that the first case report of a parotid paraganglioma was made. Coincidentally, the finding occurred in the context of a PTC, after resection of a parotid incidentaloma whose anatomopathological and immunohistochemical confirmed the diagnosis. The coexistence of paragangliomas, pheochromocytoma and PTC has already been reported in a series of 4 women, whose median age at diagnosis of paraganglioma was 45 years, and of PTC, 49.5 years. Two patients had heterozygous variants of uncertain significance in the SHDB gene: Ser163Pro and Ala3Gly. The -79T>C polymorphism in the CDKN1B gene was present in all 3 patients. Our patient had a variant of undetermined clinical significance in the ATM gene, already described as a candidate for association with carotid paragangliomas and in a patient with pheochromocytoma who developed metastasis. **Final comments:** More studies are needed to assess whether the concomitance between PTC, pheochromocytoma and paragangliomas is a mere coincidence or if they are related to an unknown genetic basis. Our case reinforces the probable role of the ATM gene in the development of paragangliomas. **Keywords:** papillary thyroid carcinoma; pheochromocytoma; paraganglioma.

AP-019 ADRENAL ANGIOMATOUS CYST

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Adrenal cysts are rare lesions with an incidence of 0.06% to 0.18% in the general population, the vast majority being asymptomatic and classified as pseudocyst, endothelial cyst, epithelial cyst and parasitic cyst. Epithelial cysts are divided into lymphangiomatous and angiomatous. This is a case report of a 50-year-old patient referred to the endocrinology for follow-up of adrenal incidentaloma. An abdominal computed tomography scan was performed and revealed a lesion in the right adrenal gland, measuring 5.5 x 4.8 cm, with a density of 20 HU and close contact with the liver and vena cava, after presenting of abdominal pain. At diagnosis, the patient had no comorbidities. He was screened for pheochromocytoma and autonomic cortisol secretion, both negative. After hormonal evaluation, he was referred for right adrenalectomy because the tumor was larger than 4 cm, with density greater than 10 HU, and it was not possible to exclude malignancy by radiological features. The anatomopathological report showed adrenal angiomatous cyst, with positive immunohistochemistry for CD31 and CD34. Angiomatous adrenal cysts are extremely rare. CD31, CD34, Fli-1 and factor VIII are positive markers of endothelial cells. These lesions may at diagnosis be similar in size and growth to adrenocortical carcinoma, and pathological findings are the only tool capable of differentiating benign from malignant lesions. The vast majority are asymptomatic, but large lesions, especially those larger than 10 cm, can cause abdominal pain. The prevalence of adrenal incidentalomas has increased with the use of diagnostic technologies, requiring hormonal and radiological evaluation of these lesions. Often, it is not possible to differentiate adrenal cysts and carcinomas by imaging exams, requiring surgical indication. **Keywords:** adrenal; incidentaloma; cyst.

AP-020 METASTATIC PHEOCHROMOCYTOMA: CASE REPORT

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Case presentation: A previously healthy 20-year-old woman developed recurrent urinary tract infections and a 4 cm nodule was identified in the right adrenal gland during an ultrasound examination. Hormonal evaluation was within normal range. Resection of the mass was recommended, but during tumor manipulation, the patient experienced hypertensive peaks and acute pulmonary edema, leading to the interruption of the surgery. Endocrinological follow-up was initiated, and the patient underwent MIBG scintigraphy, which showed cortical adrenal uptake. Due to the suggestive presentation of pheochromocytoma, the patient started alpha and beta-blocker therapy as preparation for laparoscopic adrenalectomy. Resection was performed without complications. The patient remained under annual endocrinological follow-up until, 6 years later, MIBG scintigraphy revealed radiopharmaceutical uptake in the posterior aspect of the proximal third of the right thigh, which was confirmed by MRI. Normal metanephrines and catecholamines were observed. Bone biopsy was indicated, with one month of alpha and beta blockade, but the patient experienced another hypertensive emergency and required ventilatory support. The histopathological result of the lesion suggested metastatic pheochromocytoma. The patient underwent cryoablation guided by computed tomography at a reference center, successfully, without complications. Currently, the patient is asymptomatic, under endocrinological follow-up, with normal imaging and laboratory tests. **Discussion:** Pheochromocytoma is a neoplasm composed of chromaffin cells of the sympathoadrenal system capable of synthesizing catecholamines and other peptide hormones. They are can occur either inside the adrenal medulla or outside of it. Malignant lesions are recognized when metastatic lesions are present, commonly involving the liver, bones, kidneys, lymph nodes, lungs, and others sites. The recommended treatment includes controlling hypertension with a combination of alpha and beta-blockers and surgical resection. **Final remarks:** This case involves metastatic pheochromocytoma occurring 6 years after adrenal resection. The patient did not present suggestive symptoms or laboratory abnormalities, and the discovery of the bone metastasis was made through imaging exams. Long-term follow-up of these patients, along with clinical, laboratory, and imaging examinations, allowed for the diagnosis of metastasis and appropriate treatment. **Keywords:** pheochromocytoma; metastatic; bone.

AP-021 RELATIONSHIP OF VITAMIN D OF PATIENTS POSITIVE FOR COVID-19

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At the end of 2019, a new virus emerged in Wuhan, China, later named SARS-CoV-2. In view of its unrestrained widespread in several countries, the World Health Organization declared it a pandemic on December 31st, 2019. Vitamin D deficiency is suspected to cause possible complications in COVID-19 patients or they might be provided with a poor prognosis. However, this same vitamin D in excess is capable of causing toxicity, which may result in hypercalcemia and hypercalciuria. Approximately 20% of the COVID-19 patients develop severe respiratory problems, with an overall fatality rate around 2.3%. The present study was based on a qualitative/quantitative study carried out from July to September, 2021. Patients who tested positive for COVID-19 and who sought medical appointment in a private general practice in the city of Caçador, state of Santa Catarina (SC), were selected. The sample consisted of 54 patients who sought ambulatory care and who had a positive diagnosis for COVID-19. Vitamin D levels were found to be either insufficient or deficient in most patients. However, the plasma concentration of vitamin D in these patients cannot be related to the positivity of the disease or hospitalization. We conclude that, despite possible benefits of vitamin D for immunity, there was no correlation between vitamin D levels and hospitalization due to COVID-19. **Keywords:** D vitamin; COVID-19; vitamin D toxicity.

AP-022 OBESITY-RELATED COVID-19 COMPLICATIONS: WHAT ARE THE TRIGGERING FACTORS?

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Introduction: Obesity, a multifactorial disease, is already considered an epidemic and a problem for health systems due to its high prevalence and because it offers a greater probability of developing other comorbidities such as hypertension, diabetes mellitus, dyslipidemia and depression. In this context, it should be noted that obesity can also contribute to the worsening of other diseases, including the new coronavirus disease (COVID-19). This association of obesity with a worse prognosis for COVID-19 may be related to immune hyperreactivity and the unfavorable effects of adiposity. **Objective:** To investigate triggering factors for obesity-related COVID-19 complications. **Materials and methods:** This is a systematic review that collected articles in the Virtual Health Library (VHL) according to the PRISMA protocol, using the descriptors: "Obesity" AND "COVID-19" AND "Risk factors", with the filters: full text; Portuguese language; in the last 5 years; in the MEDLINE and LILACS databases. Of the 32 articles found, 26 were excluded due to thematic fugue, constituting a final corpus of 6 for analysis. RESULTS: Obesity and its evolution in society is a concern with regard to SARS-CoV-2 infection, since adiposity increases health degradation and death by this virus by up to four times. Although the relationship is still unclear, it is believed that the worsening of COVID-19 in obese people is associated with increased concentrations of the hormone leptin and reduced adiponectin, which results in ineffective immune response. Furthermore, the chronic inflammation caused by obesity causes oxidative stress, endothelial alteration, cardiovascular anomalies and reduced antiviral defense. Adipose tissue may also represent a reservoir for virus replication due to the expression of the angiotensin-converting enzyme 2 for which SARS-CoV-2 shows affinity. Physiologically, obese people are also predisposed to narrowing of the airways due to the accumulation of fat in the ribs, diaphragm and abdomen, resulting in decline in functional capacity and lung compliance. **Conclusion:** Thus, given that obesity is gradually increasing along with the complications and weakness of the patient, it is necessary to work on the prevention of this pathology, in order to reduce the unfavorable impact, especially in cases of COVID-19. In the face of incipient studies, more scientific evidence is suggested about this important topic. **Keywords:** obesity; COVID-19; systematic review.

AP-023 PROGNOSIS AND MANAGEMENT OF PATIENTS WITH CUSHING'S SYNDROME INFECTED WITH SARS-COV-2: A SYSTEMATIC REVIEW

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Introduction: Cushing's syndrome (CS) is a rare disease in which there is an increase in serum cortisol levels, causing a series of changes in the body such as immunosuppression, hypercoagulability and cardiovascular changes. Faced with such dysfunctions, patients with CS may be more severely affected by infections such as SARS-CoV-2, with the possibility of thrombogenic events and even greater elevation of cortisol). **Objective:** Evaluate the implications of COVID-19 in patients with Cushing's syndrome, as well as the appropriate management. **Method and materials:** This is a systematic review that carried out a survey of evidence according to the PRISMA protocol, using the descriptors: "Cushing syndrome" AND "COVID-19", finding 29 articles. After applying the filters: full text; Databases: MEDLINE; Language: English; from 2019 to 2023; main subject: Cushing's syndrome and COVID-19, 19 articles were found. **Results:** Of these 19 articles found, 3 studies were excluded per thematic escape, constituting a final corpus of 16 articles, with 2 thematic axes being identified: (I) The management of patients with Cushing's syndrome with COVID-19 and (II) The relationship between hypercortisolism and the worst prognosis of COVID-19. An expressive number of patients infected with SARS-CoV-2 has been reported, however, this may be related to the atypical condition presented by patients with CS, as well as due to the rarity of the syndrome. The high level of cortisol to a worse prognosis of COVID-19. In these patients, it is important to use anticoagulants, pay attention to opportunistic infections and control cortisol levels, with the possibility of performing a blockade and replacement scheme with steroidogenesis inhibitors and hydrocortisone. **Conclusion:** Therefore, patients with CS infected by SARS-CoV-2 deserve greater attention since they have high cortisol levels, thus requiring better clinical management. In addition, it is a relationship that is still little discussed, requiring further studies to clarify it. **Keywords:** Cushing's syndrome; COVID-19; hypercortisolism.

AP-024 IMPACT OF THE HYPOGLYCEMIATING THERAPEUTIC SCHEME ON THE MORTALITY OF DIABETIC PATIENTS HOSPITALIZED WITH COVID-19: A PROSPECTIVE STUDY

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Introduction: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection has a broad clinical spectrum and is associated with a higher risk of complications and mortality in diabetic patients than in the general population. **Objective:** This study aimed to evaluate the effect of antidiabetic therapy on mortality in patients hospitalized with Coronavirus disease 2019 (COVID-19). **Materials and methods:** This was a prospective cohort, carried out in 2020, as an offshoot of another study, which evaluated thyroid dysfunction in patients with SARS-CoV-2. A total of 236 patients hospitalized for COVID-19, with or without a diagnosis of diabetes, were included. Among diabetics, the use of metformin, sulfonylureas and insulin was evaluated, correlating them with in-hospital mortality. Statistical analysis used Fisher's exact test, Kaplan-Meier survival curve, and univariate and multivariate logistic regression, attributing statistical significance to p values < 0.05. **Results:** It was found that 86.4% (n = 204) of the patients had a diagnosis of type 2 diabetes mellitus (DM2). Of the total, 44.9% had already known DM2, while 41.5% were newly diagnosed. Among diabetics, 30.9% (n = 63) used hypoglycemic agents as monotherapy: 7.8% with sulfonylureas, 17.6% with metformin and 5.4% with insulin. There was no significant association between metformin therapy and patient severity or mortality. On the other hand, treatment with sulfonylureas showed a significant difference in mortality from COVID-19, being more used by non-survivors (17%) and critical patients (12.3%), than by survivors (4.6%) and non-critical patients (4.7%) ($p < 0.01$). Insulin therapy also had a significant difference, comprising 12.1% of non-survivors and 3.1% of survivors ($p < 0.025$). Kaplan-Meier curves showed lower survival of patients using sulfonylureas [HR = 10.8 (2.98-39.3); p = 0.0003] and insulin [HR = 32.1 (5.8-175); $p < 0.0001$]. In multivariate logistic regression, sulfonylureas were shown to be associated with a 7 fold increase (95% CI: 1.89-26.3; p = 0.0034) in the odds of mortality, whereas insulin was associated with an increase in 4.5 fold (95% CI: 1.18-16.5; p = 0.022). **Conclusion:** In this study, regarding hypoglycemic agents, patients using metformin did not show any difference in terms of in-hospital mortality, while those using sulfonylureas and insulin had a higher mortality rate. **Keywords:** hypoglycemic Agents; COVID-19; hospital mortality.

AP-025 CONVERSION OF HYPOTHYROIDISM TO HYPERTHYROIDISM AFTER COVID VACCINE

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Introduction: The conversion of Hashimoto's thyroiditis (HT) to hyperthyroidism due to thyrotropin receptor antibodies (ab) is intriguing and considered rare. A limited number of Graves' disease after COVID vaccine have been reported in literature up to now. **Objective:** To describe a case of Graves' disease developed after the COVID-19 vaccine previously with hypothyroidism for 6 years. **Case report:** A 45 years old male patient, showed symptoms and signs of hyperthyroidism, ten days after the first Pfizer COVID vaccine (06/26/21) and was in use of 125 mcg of levothyroxine for six consecutive years, that now was stopped. Three months after he has received the second dose keeping symptomatic for hyperthyroidism and had lost 18 kg. Metimazol was prescribed. Laboratory data showed: TSH-0.001 mIU/L (0.3-5.6), FT4- 3.28 ng/dL (0.76-1.70) anti TPO > 1,000, TRAB > 40.00 UI/L (1.75) The Ultrasound thyroid volume now was 30.0 cm^3 and six years before was 11 cm^3. The patient keeps in treatment with metimazol until now. **Conclusion:** Literature research revealed cases of Graves' disease after COVID-19 vaccine. Our case is the first of hypothyroidism changed to hyperthyroidism. This is an unusual presentation on a longstanding history of hypothyroidism. Clinicians should remain vigilant about potential thyroid dysfunction after COVID-19 vaccine. **Keywords:** hyperthyroidism; COVID vaccine; hypothyroidism.

AP-026 INFLAMMATORY PROFILE IN COVID-19 CRITICALLY ILL PATIENTS WITH DIABETES AND STRESS HYPERGLYCEMIA: A PROSPECTIVE COHORT STUDY

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Introduction: Patients with diabetes (DM) are at increased risk of mortality as a consequence of the cytokine storm related to COVID-19 infection. The role of hyperglycemia and stress-induced hyperglycemia in this relationship is not clear. **Objective:** To evaluate patterns of inflammation related to the cytokine storm in severe COVID-19 patients with or without DM and its relationship with mortality. **Methods:** COVID patients admitted to the intensive care unit were prospectively included and classified according to their glycemic status as: DM (HbA1c ≥ 6.5% or previous history), stress hyperglycemia (SH; glucose > 140 mg/dL and HbA1c < 6.5%), normoglycemia (NG; HbA1c < 6.5% and glucose ≤ 140 mg/dL). Insulin resistance was estimated as C-peptide/glucose ratio (CPGR). A cytokine profile was collected in order to better estimate the impact of cytokine storm on endpoints and compared with the following groups of critically ill patients without COVID: brain-dead controls (BD), septic controls (SC), and non-septic controls (NSC). Disease severity was assessed by SAPS-3 score. Kaplan-Meier analysis with log-rank test was performed to estimate the hazard ratio (HR) between groups. Pearson's correlation was performed to evaluate cytokine according to CPGR and glucose. **Results:** We included 80 patients (53% men, 58 [SD 13.7] years), 41 (51%) with DM, 24 (30%) with SH, and 15 (18.8%) with NG. DM was older than non-DM patients (61 *vs.* 55y, p = 0.04) and had higher SAPS-3 scores (p = 0.03). DM had a higher risk of in-hospital mortality (HR = 2.4 [CI 1.2-4.9], p = 0.01). There was a higher risk of mortality in DM compared to NG (NG *vs.* DM HR = 5.4 [CI 2.2-12.9], p = 0.008). There was no difference between NG *vs.* SH (HR = 3.26 [CI 0.98-10.8], p = 0.09) nor SH *vs.* DM (HR = 1.72 [CI 0.8-3.6], p = 0.16). IL-10 was positively correlated with glucose (r = 0.255; p = 0.02). There was a positive correlation of CPGR with IL-8 (r = 0.364; p < 0.001), IL-10 (r = 0.358; p = 0.001), INFγ (r = 0.236; p = 0.04), TNFα (r = 0.283; p = 0.01), and MCP-1 (r = 0.328; p = 0.003). COVID had higher levels of INFγ, TNFα, and MCP-1 than BD, SC, and CNS (p < 0.001 for all comparisons). IL-6 and IL-8 were lower in COVID than BD (p < 0.001). **Conclusion**: Patients with DM and hyperglycemia have a higher mortality rate. Insulin resistance, rather than hyperglycemia alone, was associated with the inflammatory response. The cytokine profile in these patients differed from that observed in other critically ill conditions. **Keywords:** COVID-19; cytokine storm; stress hyperglycemia.

AP-027 HYPOTHYROIDISM AS A CONSEQUENCE OF THE COVID-19 INFECTION: A SYSTEMATIC REVIEW

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Introduction: The COVID-19 pandemic has had significant impacts in people's health, causing several physiological disorders as a result of the SARS-CoV-2 infection. One aspect observed was the potential development of hypothyroidism in individuals infected by the virus. The thyroid gland plays a crucial role in regulating human metabolism, and the severe infection caused by the Coronavirus can directly affect it, leading to hormonal dysregulations, such as a decrease in T3 and T4 hormone levels. In this context, this study aims to discuss the correlation between hypothyroidism and the consequences brought by the SARS-CoV-2 infection. **Purpose:** To address the correlation between hypothyroidism and the consequences of SARS-CoV-2 infection. **Methods and materials:** 14 articles were selected from the research platforms Lilacs, PubMed and SciELO, based on the descriptors "hypothyroidism" and "COVID", using as inclusion criteria: articles published in the last 3 years with free full text and that dealt with the proposed theme. **Results:** Based on the analyzed scientific studies, it was observed that the relational mechanisms between hypothyroidism and COVID-19 are not fully understood. It is believed that the virus directly affects the thyroid due to the high expression of protein angiotensin-converting enzyme 2 (ACE 2) by thyroid follicles, which works as a viral receptor for SARS-CoV-2, pointing to the thyroid as an important target in the viral infection. It was found that intense thyroid inflammation in infected individuals can lead to hypothyroidism due to the post-viral inflammatory response, which can lead to the development of an autoimmune condition. Some studies have even shown that about 15% of mild to moderate cases of COVID-19 may present thyroid dysfunction. **Conclusion:** Given the lack of knowledge about the direct action of COVID-19 in the development of hypothyroidism, the evaluation of the thyroid function during and after virus infection, is recommended due to the high concentration of viral receptors present in the gland. In addition, the patient's inflammatory condition should be monitored, seeking to prevent future post-viral inflammatory response, and the possible development of an autoimmune thyroid disorder. It is also emphasized that patients with thyroid problems should continue their regular treatment to avoid complications. **Keywords:** hypothyroidism; COVID-19; thyroid.

AP-028 IMPACT OF THE COVID-19 PANDEMIC ON THE PROFILE OF HOSPITAL ADMISSIONS FOR ENDOCRINE CAUSES IN BRAZIL

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Introduction: The Brazilian National Healthcare System – *Sistema Único de Saúde* (SUS) – is responsible for meeting the health demands of the Brazilian population, but there is often a lack of resources at various levels of care. The emergence of COVID-19 has become another obstacle in ensuring health services, causing a significant impact on the care of non-COVID-19 affections. **Objective:** To describe and analyze the profile of hospitalizations for endocrine causes in Brazil before and during the COVID-19 pandemic. **Methods:** Cross-sectional study using data from the Hospital Information System of SUS (SIH/SUS), through Hospital Admission Authorizations (AIH), comparing the biennium 2018-2019, representing the pre-pandemic period, with the biennium 2020-2021, representing the period during the COVID-19 pandemic. **Results**: A 9.3% reduction in hospitalizations for endocrine, nutritional, and metabolic causes was observed in Brazil during the pandemic (annual average: 243,926 ± 4,675 *vs.* 202,361 ± 1,846, $p < 0.01$), accompanied, in contrast, by an 11.8% increase in the mortality rate (5.85 ± 0.03 *vs.* 6.15 ± 0.02, $p < 0.01$). The greatest reduction in hospitalization for endocrine diseases occurred in obesity and thyroid disorders, with a 53% and 26% reduction during the pandemic, respectively. The most frequent age group for hospitalizations was 60-69 years, with males being the highest responsible for these hospitalizations (50.5%). There was a 14.3% reduction in healthcare expenditures for endocrine, metabolic, and nutritional diseases during the pandemic (in millions of Brazilian Real: 242.85 ± 15.06 *vs.* 181.7 ± 2.14, $p = 0.04$), with a decrease of 9.74% in the amount allocated per HAA ($p = 0.11$), while the average length of stay per AIH increased by 5.1% ($p = 0.34$). **Conclusion:** During the pandemic, there was a redirection of assistance and budget of the healthcare system towards combating COVID-19. The observed increase in the mortality rate of individuals with endocrine diseases during this period may be related to the public health emergency status. **Keywords:** COVID-19;endocrine system diseases; health services.

AP-029 EVALUATION OF ANTHROPOMETRIC AND METABOLIC RESULTS OF BARIATRIC SURGERY BEFORE AND AFTER THE START OF THE COVID-19 PANDEMIC

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Introduction: The prevalence of global obesity is ascending and, among therapeutic options, bariatric surgery has shown to be highly effective in weight decrease and obesity-related comorbidities reduction. The COVID-19 pandemic and its relation with obesity is the target of studies, and there are few data about its impacts and outcomes of bariatric surgery. **Objective:** To evaluate the anthropometric and metabolic outcomes on patients with class 2 and 3 obesity submitted to bariatric surgery before and after the beginning of the COVID-19 pandemic. **Methods:** Retrospective cohort study with individuals submitted to bariatric surgery in the year of 2018 (Group 1 = before the pandemic) and 2021 (Group 2 = after the beginning of the pandemic) and followed for 6 months after the surgical procedure. **Results**: 68 patients were analyzed. In group 1, n = 46 (67.65%), 78.3% were female, with average body mass index (BMI) of 49.44 ± 8.87 kg/m² and average glycated hemoglobin of 6.20 ± 1.08%, of which twenty individuals (43.5%) had type 2 diabetes (T2D) diagnosis and 44 (95.7%) had HOMA-IR ≥ 2.7. In group 2, with n = 22 individuals (32.35%), 81.8% were female, with average BMI of 46.79 ± 5.91 kg/m² and average glycated hemoglobin of 6.35 ± 1.56%, of which 8 (36.4%) had T2D diagnosis and 16 (72.7%) had HOMA-IR ≥ 2.7. The most frequent surgical technique was Roux-en-Y (36 [78.3%] in Group 1 and 19 [86.4%] in Group 2). Six months after the surgical procedure, there was a greater reduction in BMI in 2018 than in 2021 (respectively 13.17 ± 3.88 kg/m² and 10.96 ± 2.45 kg/m², $p = 0.017$), however, there was not a statistically significant difference between other anthropometric nor laboratorial data in comparison of the years studied. In relation to the surgical technique, independent of the studied year, a higher weight reduction was observed with the *Sleeve* technique than with the Roux-en-Y technique (respectively 38.82 ± 3.04 kg and 32.65 ± 1.15 kg, p = 0.034), in contrast to glycated hemoglobin, higher in Roux-en-Y than *Sleeve* (respectively 1.12 ± 0.15% and 0.38 ± 0.28%, $p = 0.034$). **Conclusions:** Data analyzes did not show important differences in anthropometric and metabolic outcomes between the period before and after the COVID-19 pandemic. Further studies are necessary about the theme and prolonged periods of following can corroborate with the findings of this study. **Keywords:** obesity; bariatric surgery; COVID-19.

AP-030 OBESITY AS A RISK CONDITION FOR THE DEVELOPMENT OF SEVERE FORMS OF COVID-19 IN CHILDHOOD: INTEGRATIVE REVIEW

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Introduction: WHO data reveal that childhood obesity is a hugely prevalent disease that affects more than 340 million adolescents and 39 million children worldwide. This condition is a key factor in the development of several risk factors that lead to the worsening of COVID-19 in this age group. **Objective:** To identify the relationship between childhood obesity and the development of severe forms of COVID-19 in childhood. **Materials and methods:** This is an integrative literature review, through a search in the PubMed database, using the descriptors: "Child obesity"; "COVID-19"; "COVID-19 Severity". The inclusion factors used were: availability of the full text and free access to the database, published between 2019 and 2023 and that were appropriate to the theme. Initially, 67 articles were found, of which 7 suited the proposed objective. **Results:** In the texts studied, it was observed that childhood obesity promotes the emergence of several conditions that are risk factors for the worsening of COVID-19, such as: increased insulin resistance, dyslipidemia, hypertension, modifications in cardiac anatomy, increased endothelial inflammation, reduced hematosis, already compromised in these patients, and finally, a chronic inflammatory process that can be potentiated and transformed into a multisystemic inflammatory syndrome. **Conclusion:** Childhood obesity is a condition that predisposes to the emergence of several risk factors that lead to an exacerbation in patients in this age group with COVID-19. **Keywords:** Child obesity; COVID-19; COVID-19 severity.

AP-031 PRESENCE OF ENDOCRINE-METABOLIC COMORBIDITIES AND THEIR ASSOCIATION WITH THE DEGREE OF PULMONARY INVOLVEMENT ON COMPUTED TOMOGRAPHY OF PATIENTS HOSPITALIZED FOR SEVERE COVID-19 IN CAMPINA GRANDE-PB

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Introduction: Qualified as a public emergency of global interest in 2020, the COVID-19 disease decimated more than 700,000 Brazilians by March 2023. Hospitalization and mortality from COVID-19 are linked to conditions such as obesity, high blood pressure (SAH) and Diabetes Mellitus (DM). Of the COVID-19 cases, estimates suggest that 5% will develop respiratory failure and up to 40% of those hospitalized may developing acute respiratory distress syndrome (ARDS), the leading cause of death in this population. Computed tomography (CT) is the most sensitive imaging tool for assessing the extent of pulmonary involvement in these patients. **Objective:** To associate the presence of endocrine-metabolic risk factors with the severity of pulmonary involvement at CT in patients hospitalized in Intensive Care Units (ICU) of Campina Grande-PB. **Material and method:** This observational and retrospective study used data from medical records belonging to 45 patients hospitalized with severe forms of COVID-19 in ICUs. To measure the extent of pulmonary involvement on CT, the classification: mild (<25% involvement), moderate (25% to 50%) and marked (>50%). The statistics were performed by frequency analysis absolute, relative and, in addition to the use of Fisher's Exact Test. He was $p \leq 0.05$ was considered for rejecting the null hypothesis. **Results:** Of the 45 patients analyzed, all (100%) had some degree of pulmonary involvement. Of these, 32 (71%) had some comorbidity endocrine-metabolic (SAH, DM and/or obesity). There was no statistical association significant difference ($p = 0.907$) between having endocrine-metabolic comorbidities with the findings of the chest tomography. There was a predominance of moderate pulmonary involvement (25%-50%) among patients with endocrine-metabolic comorbidities. **Conclusion:** This study endorses the role of SAH, DM2 and obesity as predictors of greater severity in the prognosis of patients affected by COVID-19, but does not establish expressive link with the severity of lung impairment in terms of the area. Cytokine discharges resulting from a chronic inflammatory state are included as catalysts for the inflammatory storm seen in severe COVID-19 episodes, allowing a critical clinical compromise, with reduction of the organic capacity of resist and circumvent the infectious condition. **Keywords:** degree of pulmonary; COVID-19; endocrine-metabolic comorbidities.

AP-032 EFFICACY AND SAFETY OF BEXAGLIFLOZIN IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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SGLT2 inhibitors act decreasing the renal glucose reabsorption, leading to glycosuria and consequent glycemia reduction, being used in the treatment of type 2 diabetes (T2DM). Bexagliflozin is a new highly specific and potent SGLT2 inhibitor, which has been associated with a significant reduction in hemoglobin A1c (HbA1c) and glycemic levels. The aim of this study was to assess the efficacy and safety of bexagliflozin in reducing HbA1c and the occurrence of side effects in patients with T2DM. This systematic review and meta-analysis followed the recommendations of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). We searched PubMed, Embase, Cochrane and ClinicalTrials.gov databases for placebo-controlled, randomized clinical trials until February 15, 2023. Six studies were included. The primary outcome was change in HbA1c. We computed weighted mean differences (WMD) for continuous outcomes and odds ratios (OR) for binary endpoints, with 95% confidence intervals (CI). The heterogeneity was evaluated with I^2 statistics. RoB-2 was used for risk of bias assessment. Review Manager 5.4 was used for statistical analysis. A total of 6 studies and 3,111 patients were included, of whom 1,951 were prescribed bexagliflozin. Compared to placebo, bexagliflozin significantly reduced HbA1c levels (WMD -0.53%; 95% CI -0.75,-0.31), fasting plasma glucose levels (WMD -1.45 mmol/L; 95% CI -2.32,-0.57), systolic blood pressure (WMD -4.66 mmHg; 95% CI -6.41,-2.92), diastolic blood pressure (WMD -2.12 mmHg; 95% CI -3.94,-0.30), body weight (WMD -1.61 kg; 95% CI -2.14,-1.07), and body weight in patients with a body mass index > 25 kg/m^2 (WMD -2.05 kg; 95% CI -2.78,-1.31). The proportion of patients who achieved HbA1c < 7% was higher in patients who received bexagliflozin as compared with placebo (OR 1.94; 95% CI 1.36-2.78). There were no significant differences between groups regarding side effects as hypoglycemia, genital mycotic infection, urinary tract infection, diarrhea, headache, nausea, polyuria, diabetic ketoacidosis, or all-cause mortality. There was no evidence of bias in the quality assessment. In this meta-analysis, the use of bexagliflozin was associated with improved clinical and laboratory measures in patients with T2DM compared to placebo, with a similar profile of side effects. These findings support the efficacy of bexagliflozin in the treatment of T2DM. **Keywords:** sodium-glucose transporter 2 inhibitors; type 2diabetes mellitus; glycated hemoglobin.

AP-033 CONSTRUCTION AND VALIDATION OF A BUNDLE FOR SCREENING AND DIAGNOSIS OF DIABETES MELLITUS AFTER KIDNEY TRANSPLANTATION

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Although kidney transplantation (KTx) is the best therapy available for patients with terminal chronic kidney disease, as it provides a better quality of life and an increased survival rate, some adverse effects may occur, such as post-transplantation diabetes mellitus (PTDM). Early detection of PTDM has a favorable impact on both patient survival and graft preservation. Despite the diagnostic criteria for PTDM remaining the same as for the general population, the accuracy of the tests changes in this population, and its detection is often underestimated when only fasting glucose (FG) is used for screening. The *bundle* consists of a care package, intended to promote care in a systematic way, based on the best practice indicated by the evidence. Our objective was to construct and validate a *bundle* for screening and diagnosing PTDM after KTx. The process of construction and validation of the *bundle* was carried out using the following steps: a) a review of the literature; b) elaboration of the *bundle*; and c) the validation of content by specialized judges. The literature review which was carried out used an integrative review with research in the Scopus, Medline, Embase and Lilacs databases on the accuracy of the tests for diagnosis of PTDM. The findings found in the integrative review were considered as aids in the construction of the *bundle*. The *bundle* was structured with the purpose of providing information about: 1) which test(s) to request; 2) when to request them to better differentiate between PTDM and transient hyperglycemia and 3) for whom to request additional tests from the FG. The analysis of the *bundle* evaluation by the specialists was performed based on the calculation of the Content Validity Index (CVI). The calculation of the binomial test was performed to assess the experts' agreement and consistency regarding the items in the *bundle*, accepting a value $p > 0,05$. All *bundle* items were considered validated, with general CVI of 0.99. The *bundle* was considered valid to facilitate decision-making for the physician to conduct, in a practical and effective way, the screening and confirmation of the diagnosis of PTDM in KTx recipients. It is argued that the tool should not be used to replace the individualized assessment and autonomy of the attending physician. It is recommended that the structured form should be incorporated into medical care in view of its easy applicability, low cost and potential to contribute to the management of these patients. **Keywords:** post-transplantation diabetes mellitus; kidney transplantation; diagnosis.

AP-034 COMPARISON BETWEEN COMPUTER-GUIDED INSULIN INFUSION REGIMENS AND CONVENTIONAL PAPER-BASED REGIMENS IN THE TREATMENT OF ACUTE HYPERGLYCEMIC STATE: AN OBSERVATIONAL STUDY

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Infusion of intravenous insulin to treat acute hyperglycemic states (AHS - diabetic ketoacidosis or hyperosmolar hyperglycemic state) should follow standardized methods that can be facilitated using computerized protocols (CP). The InsulinAPPUTI®, a Brazilian application for insulin infusion calculation, was developed for the insulinization of patients with hospital hyperglycemia, but it is not validated for use in AHS. **Objective:** To compare computerized insulin infusion regimen (InsulinAPPUTI) with paper-based protocol (PP) in adult patients with AHS in the emergency unit. **Materials and methods:** This is an observational study with data obtained from electronic medical records. We included patients with AHS criteria admitted to the emergency department of a tertiary hospital in Salvador (BA). Treatment regimens were compared in two periods: May 2019 to May 2020 and July 2020 to July 2021, respectively, before and after InsulinAPP implementation. The primary outcomes were time to resolution of AHS and length of hospital stay. **Results:** We evaluated 52 patients (PP = 16; CP = 46). There was a higher prevalence of type 2 diabetes mellitus (DM) in the CP group (50% *vs.* 93%; p = 0.03). There was no difference regarding gender, age, body mass index, initial capillary glucose level, type of admission, type of AHS and previous use of subcutaneous insulin. The prevalence of COVID-19 was higher in the CP group (0% *vs.* 19.4%; p = 0.085), although not significant. The time to initiation of intravenous insulin was higher in PP: 155 (83-281) *vs.* 117 (35-270) minutes, and the resolution rate of AHS was lower in PP (69% *vs.* 81%), but the difference was not significant. There were no differences in length of hospital stay, time to initiation of intravenous insulin, time to resolution of EHA, ICU admission, and mortality. The glycemic parameters did not differ between PP and PC, respectively: time (hours) to reach glucose < 250 mg/dL: 5.4 (2.7-8.3) *vs.* 6.7 (3.9-10.5), percentage > 300 mg/dL: 14.4 (6.1-31.1%) *vs.* 16.9 (11.5-28.5%); and < 70 mg/dL: 36.2 (±17.1%) *vs.* 32.9 (±13.5%). **Conclusion:** InsulinAPPUTI (CP) was shown to be non-inferior to the paper protocol for the treatment of AHS. The higher prevalence of COVID-19 and type 2 DM in the CP group and the monitoring with capillary glucose upper limit of 500 mg/dL may have influenced the results. Further studies with larger samples sizes and less heterogeneity are suggested to confirm the findings. **Keywords:** hyperglycemia; insulin infusion systems; emergencies.

AP-036 QUALITY OF CARE PROVIDED TO PATIENTS WITH DIABETIC KETOACIDOSIS ADMITTED TO A HOSPITAL IN THE WESTERN REGION OF SANTA CATARINA

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Introduction: Diabetic ketoacidosis (DKA) is a serious complication of diabetes mellitus (DM) characterized by metabolic acidosis, ketosis and volume depletion in varying degrees. Its diagnosis consists of metabolic acidosis and ketonemia or ketonuria secondary to lack of insulin and the severity of the condition is related to serum bicarbonate levels, pH values and the patient's general condition. Therapeutic measures in DKA are: hydration, electrolyte replacement if necessary and insulin therapy. **Objective:** Analyze health care provided for patients with DKA admitted to a hospital in the western region of Santa Catarina. **Materials and methods:** Retrospective cohort study that evaluated all medical records of patients admitted in hospital from 2018 to 2022 classified with DKA by the International Classification of Diseases. **Results:** A total of 281 medical records were analyzed, but 230 were excluded due to lack of data, which totalized 51 patients in this study. Most patients were male (54.9%) and the mean age was 23.9 years. More than half had already been diagnosed with DM (56.86%). Regarding the initial hemoglucotest (HGT), 84.32% were above 180 mg/dL. As for insulin therapy, 29.41% of patients were delayed for more than 2 hours in receiving insulin. It was observed that this delay was related to the release time of the gasometry analysis result ($P < 0.000$). However, it was shown that the higher the HGT at admission, the faster the insulinization ($P = 0.000$). Regular insulin was the most used one (76.47%) intravenously (43.13%). Arterial gasometry analysis was preferred over venous (82.36%) and most patients had a bicarbonate value below 10 mmol/L (50.98% - mean of 11.7 mmol/L). The pH of 29.41% patients was below 7.2 (mean 7.27). Regarding potassium, 76.47% showed values within the normal range, while 5.88% had hypokalemia. The predominant outcome of patients was discharge (88.24%). **Conclusion:** In the population studied there were few cases of hypokalemia and the value of HGT influenced the speed of initiation of insulin therapy. Insulin is the mainstay of DKA treatment and some factors may impair adequate treatment, such as the lack of speed in releasing test results as observed in this study. Even with this limitation, the care provided to the studied population was adequate considering the positive outcome of most patients.
Keywords: diabetic ketoacidosis; insulinotherapy; quality of care.

AP-037 EVALUATION OF GLYCEMIC CONTROL IN PATIENTS HOSPITALIZED IN THE INTENSIVE CARE UNIT

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Introduction: In the intensive care unit (ICU) environment, patients have an unstable clinical condition and evidence in the literature demonstrates that the lack of glycemic control can generate an unfavorable metabolic status, resulting in an inflammatory environment and being associated with increased mortality. **Objectives:** To analyze glycemic control and outcomes in patients admitted to the ICU in a hospital in the western region of Santa Catarina. **Methods:** Retrospective cohort study with a sample composed of electronic medical records of patients admitted to the ICU from May to July 2022. The information corresponds to the first twelve hours of admission to the ICU and the twelve hours prior to the outcome. The project was approved under the Presentation Certificate for Ethical Appreciation – 63215222.3.0000.0116. Using the IBM SPSS software platform, Pearson's chi-square statistical test was performed. Results $p < 0.05$ were considered statistically significant. **Results:** The sample was composed of 101 medical records that revealed a predominance of males (52.5) and mean age of 54.5 years. When observing the body mass index (BMI), eutrophy was predominant (46.1%) and 29.2% were obese, however the BMI had no statistical association with the Hemoglucotest (HGT) values. Insulin therapy was used on the first day in 3.5% of patients with HGT below 140 mg/dL, in 42.9% of cases between 140-180 mg/dL and in 81.8% of those above 180 mg/dL. In the 12 hours preceding the outcome, insulin was used under the same conditions of HGT in 13.2%, 71% and 80% cases respectively. As for the outcome, 33% of patients died and 67% were redirected to another hospital sector. It was observed that the use of insulin was carried out according to the levels of HGT ($P < 0.001$) and that the outcome was influenced by the levels of HGT in the last 12 hours ($P < 0.005$), with higher values being associated with higher mortality. **Conclusion:** The studied population behaved as predicted by current literature evidence, with higher mortality associated with uncontrolled glycemic control. The quality of care was evaluated through the use of insulin therapy, which was widely used and possibly contributed to the fact that most of the patients in the study were discharged from the ICU. **Keywords:** glycemic control; intensive care unit; insulinotherapy.

AP-038 EVALUATION OF THE FIRST YEAR OF IMPLEMENTATION OF THE CONTINUOUS GLUCOSE MONITORING PROGRAM AT THE STATE DEPARTMENT OF HEALTH OF THE FEDERAL DISTRICT

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Introduction: DM1 is an autoimmune disease, whose incidence is increasing. Glucose measurement using sensors adhered to the subcutaneous tissue enables continuous glucose monitoring (CGM). The State Department of Health of the Federal District (SES/DF) made this resource available from November 2020 through a protocol. **Objectives:** To evaluate the profile of patients included in the program, adherence to access criteria and the results achieved during the first year of program implementation. **Methods:** The data obtained from the digital database and the electronic glucose management system were analyzed, descriptively, in patients diagnosed with DM1, who registered to participate in the program, between January and December 2021. In the multivariate analysis, 254 patients were evaluated regarding adherence to the criteria and the results achieved at 3 and 6 months from the date of inclusion. **Results:** 79% of those included in the program came from the SUS. Age ranged from 05 to 74 years. Most patients had between 5.9 and 10.8 years of diagnosis. As for glycated hemoglobin (HbA1c), 70% had values between 6.9 and 8.7% in the initial registration. The presence of diabetic nephropathy was observed in 8%, sensory motor neuropathy in 3% and retinopathy in 16% of those studied. In the comparative analysis between the 1st and 2nd trimester, 26% of the patients presented continuity criteria. There was statistical significance for HbA1c values and program stay, where HbA1c values were significantly higher for patients who had program suspension as a result. The low number of scans and the higher frequency of grade 2 hypoglycemia were associated with suspension. In the first year of the program, two thirds of the patients were dismissed because they did not meet the continuity criteria. **Conclusion:** This was a pioneering study in Brazil, where it was possible to observe that only 26% of those evaluated presented continuity criteria, where factors such as HbA1c, number of scans/day and frequency of grade 2 hypoglycemia were significantly associated with the result. This is expressive data, making it possible to question the reasons for the high rate of suspension, however, further studies are needed to assess access to technology as a treatment option in the SUS. **Keywords:** diabetes mellitus, continuous glucose monitoring; insulin; glycated hemoglobin.

AP-039 INFLUENCE OF RISK FACTORS IN THE DEVELOPMENT OF CYSTIC FIBROSIS-RELATED DIABETES

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Introduction: Cystic fibrosis (CF) is a genetic disease that causes several multisystem complications, including changes in blood glucose that can progress to cystic fibrosis-related diabetes (CFRD). There are several risk factors that influence the development of this comorbidity, with no consensus in the literature regarding the impact of these characteristics in the evolution of the CF with diabetes. **Objective:** To identify the risk factors most related to the development of CFRD. **Methods:** The present study is a systematic review of the literature in the following indexed bases – PubMed, LILACS and SpringerLink. After defining the inclusion and exclusion criteria, the search was carried out by two independent reviewers, in a double-blind peer review, between the months of December 2022 and January 2023. Fourteen studies were selected, with themes regarding the epidemiology, diagnosis and treatment of DRFC. **Results:** The search and qualitative analysis of the articles in this review lead to the conclusion that age and pancreatic insufficiency are the most influential risk factors for the development of diabetes in patients with cystic fibrosis. Certain variables such as severe mutations of the CFTR gene, gender, pulmonary insufficiency were mentioned by a moderate number of authors, but without consensus on the real role of these factors in the development of CFRD. **Conclusion:** The real influence of potential risk factors for the development of diabetes related to cystic fibrosis is still not well understood, although age, pancreatic insufficiency and severe genotypes of the CFTR gene are considered the most impactful factors for the development of this comorbidity. **Keywords:** diabetes mellitus; cystic fibrosis; risk factors.

AP-041 EPIDEMIOLOGICAL ANALYSIS OF HOSPITALIZATIONS OF CHILDREN UNDER 19 YEARS OLD DUE TO DIABETES MELLITUS DURING THE PERIOD FROM 2018 TO 2022 IN BRAZIL

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Introduction: Diabetes mellitus is a chronic condition characterized by high levels of glucose in the blood. This is caused by either an alteration in insulin production in the pancreas (type 1) or insulin resistance (type 2). In children, type 1 diabetes is more common due to its autoimmune pathophysiology involving the destruction of pancreatic cells, while type 2 diabetes has been increasingly associated with childhood obesity. The main symptoms of diabetes mellitus include polydipsia, polyphagia, weight loss, and polyuria. Additionally, there are severe cases of diabetes that result in hospitalizations in children, making it necessary to analyze the epidemiological profile of these admissions. **Objective:** This study aims to evaluate the epidemiological profile of hospitalizations of children under 19 years old due to Diabetes Mellitus in Brazil during the period from 2018 to 2022. **Methods:** A descriptive, retrospective, and quantitative study was conducted based on secondary data provided by the Notifiable Diseases Information System (Sinan), from the Department of Informatics of the Unified Health System (Datasus). The collected information was stored and tabulated using Microsoft Office Excel™ software. **Results:** Among the 47,799 cases identified after analyzing the evaluated period, the years 2019, 2021, and 2022 stood out as having the highest incidence with 9,430, 9,965, and 10,374 cases, respectively. The regions with the highest number of hospitalizations due to diabetes mellitus were the Southeast (44.06%) and the Northeast (25.35%) after analyzing the 5 Brazilian regions. Furthermore, it was identified that individuals of mixed race (39.85%), females (56.90%), and children aged 15 to 19 years (31.11%) were the most affected epidemiological variables. After evaluating the reported cases, it was noted that 298 cases resulted in death. **Conclusion:** The epidemiological profile presented by the data analysis indicates a higher incidence in the Southeast and Northeast regions of the country. Moreover, specific patterns related to gender, race, and age were identified, which are relevant information for further study and the implementation of targeted interventions. **Keywords:** diabetes mellitus; epidemiology; public health.

AP-042 EPIDEMIOLOGICAL PROFILE OF DEATHS FROM DIABETES MELLITUS IN BRAZIL

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Introduction: Diabetes mellitus (DM) is a disease characterized by an impaired carbohydrate metabolism due to the decrease of production and/or action of insulin, resulting in hyperglycemia. Because of its great prevalence in Brazil, it's important to be aware of the groups in which the mortality by this metabolic condition shows itself bigger. **Objective:** Determine the groups most affected by DM mortality in Brazil, based on education, gender, race and age range. **Methods:** Was conducted an epidemiological investigation that analyzed the number of deaths by occurrences whose cause was Diabetes Mellitus between the years 2017-2021. The data was collected in 2023, through the information acquired by the Data Tabulation of the Unified Health System (Datasus). To determine the most affected groups, statistics on education, gender, race and age range were cross-referenced. Furthermore, the project did not require submission to the Research Ethics Committee, in accordance with Resolution 510/16 of the National Health Council. **Results:** There were 183,983 deaths from DM during the study period, 37,043 did not complete even 1 year of school, 51,168 studied from 1 to 3 years, 50,581 from 4 to 7, 35,330 from 8 to 11 and 9,861 studied at least 12 years. Analyzing this data, it can be seen that 75.4% of deaths are of people who studied for a maximum of 7 years, less time than necessary to complete required basic education in Brazil. The difference amid genders was minimal, with a slight predominance of men by <1%, practically being a statistical equality. Regarding race, in a population of 183983, 47.2% were white people, 10.4% were black people, 0.5% were yellow people, 41.4% were brown people and 0.2% were indigenous people. The age data are expressed in an increasing pattern: subjects aged 20-29 represent about 1%; those aged 30-39 represent 2.2%; individuals aged 40-49 account for 6.2% and those aged 50-59 represent 16.4%. The prevalence of deaths is seen in the elderly (60-79 years), who account for 74.2% of all DM deaths. **Conclusion**: It was noticed that mortality from DM is attached to aging and lack of education. The most affected race was white, and there was no considerable difference between genders. More research is necessary in order to establish the profile of people who die from DM in Brazil. This knowledge may be helpful for the construction of better and more targeted programs of healthcare aiming to reach individuals suffering from the disease in study. **Keywords:** epidemiological profile; diabetes mellitus; mortality.

AP-043 HEMICHOREA-HEMIBALLISM ASSOCIATED WITH HYPERGLYCEMIA – CASE REPORT

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Presentation: Male patient, 81 years old, diabetic, undergoing insulin therapy for diabetic control, hypertensive and dyslipidemic, presenting non-dialytic renal failure, sought the emergency room, referring body involuntary movements, in lower and upper limb, initiated in the previous 8 days, associated with pain in the left forearm and pruritus in the posterior chest. During admission, laboratory tests, computed tomography (CT) and magnetic resonance image (MRI) of the skull were requested, founding a glycemia of 569 mg/dL, 14.6% HbA1C, hyposignal on T2 weighting and foci of T1 hypersignal, both in the caudate nucleus. An adjustment of insulin was established, gradually reducing in amplitude the involuntary movement of the left hemibody, until it ceased. **Discussion:** Most cases of hemichorea or hemichorea-hemiballism occur due to vascular injury in the subthalamic nucleus or contralateral striatum. In rare cases, this symptom can be associated with hyperglycemia. Hemichorea-hemiballism can occur either associated with long-standing type 2 diabetes mellitus (DM2) or in newly manifested forms of DM2, and is usually unilateral. For the diagnosis of the syndrome, 6 criteria were proposed to be met: 1) choreiform or ballistic movements in at least two of the following: unilateral face, neck, upper limb, or lower limb; 2) large elevation of blood glucose; 3) hyperintense lesion in the contralateral striatum on CT or MRI; 4) abrupt disappearance of dyskinesia after glycemic control; 5) CT or MRI without evidence of stroke, infection, or inflammatory lesions; 6) no evidence of other metabolic alteration, drug abuse, or history of degenerative disease. Regarding the treatment, usually a reduction of involuntary movement is noticed, even a quick cessation, with the simple correction of glycemic values, performed with antidiabetics or insulinization. However, in other cases, a more specific therapy for involuntary movements may be necessary. **Final comments:** This is a rare manifestation associated with DM2. Normally the regression of symptoms can occur spontaneously after the resolution of hyperglycemia, but there is also the possibility of using some medication to stop the movements. Finally, it is important to be aware of this possible symptomatology of DM 2, to ensure its early diagnosis and treatment. **Keywords:** hemiballism; hemichorea; hyperglycemia.

AP-044 MATERNAL AND FETAL OUTCOMES OF PREGNANCY IN TYPE 1 DIABETIC MOTHERS IN A SECONDARY UNIT – BRAZIL

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Introduction: Pregnancy represents a major challenge for women with type 1 diabetes (DM1). The characteristic instability of DM1 associated with the physiological diabetogenic effect of pregnancy contributes to the higher occurrence of adverse pregnancy outcomes. To minimize these risks, it is essential to know the clinical and obstetric characteristics and the main pregnancy outcomes found in these patients. **Objectives:** The aims of this study were to describe relevant clinical aspects and pregnancy outcomes and to evaluate the association between glycemic control and maternal-fetal outcomes in a group of women with DM1. **Materials and methods:** Observational and retrospective study, in which data from the medical records of 75 women with DM1 monitored during pregnancy in a secondary unit of the SUS were evaluated. For statistical analysis, the SPSS program, version 27, 2020, was used and the appropriate statistical tests were applied. **Results:** The mean age of the patients during pregnancy was 25 ± 6 years, with a disease duration of 11.93 ± 6.29 years. About obstetric history, 26.6% of the patients had a history of miscarriages with five deaths perinatal in previous pregnancies. The gestational age at the first prenatal visit was on average 22.4 ± 10 weeks, 80% performed capillary blood glucose monitoring, and the mean HbA1c during pregnancy was 7.93 ± 1.6%. The mean HbA1c was below 7% in only 16 patients (21,3%). Dividing the pregnant women into two groups, one with mean glycated hemoglobin during pregnancy less than 7% and the other greater than 7%, it was observed that the mean gestational age at delivery was statiscally different between the groups (37,8 ± 1,6 and 35,5 ± 2,8 weeks, respectively, with p-value = 0,001). The mean number of consultations with an endocrinologist during pregnancy at the service was 3.1 ± 2.71. As for perinatal outcomes, there were two perinatal deaths and four malformations, two of which were in the cardiovascular system, in addition to four macrosomic fetuses. In those patients, no associations were observed between HbA1c levels during pregnancy or disease duration and fetal outcomes. **Conclusions:** These data describe inadequate metabolic control during pregnancy in a group of women with DM1 and some fetal complications. There was no association between glycemic control and maternal-fetal outcomes. **Keywords:** pregnancy; type 1 diabetes mellitus; gestational complications.

AP-045 EPIDEMIOLOGICAL PROFILE OF HOSPITALIZED CHILDREN DUE TO DIABETES MELLITUS IN BRAZIL'S NORTHEAST REGION BETWEEN THE YEARS 2019 AND 2022

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Introduction: Diabetes mellitus is one of the most common chronic diseases in the world. When it comes to children, most of them are affected by type 1 diabetes, caused by insulin deficiency following the destruction of the insulin-producing pancreatic beta cells. On the other hand, the incidence of type 2 diabetes mellitus has increased in many places since the late 1990s, linked to the rise in child obesity. In Brazil, it is clear this increase, with progressive rates mainly from 2014 until the present year. Tracking and the correct follow-up are important tools in the control of the disease and in the patient's life quality. From this information, it is clear that childhood diabetes mellitus is a problem that needs to be tackled in Brazil, highlighting places many times neglected, such as the Northeast and North regions. **Objective:** The aim was to determine the epidemiological profile of diabetes mellitus in children (0-19 years old) who needed hospitalization due to the problem in Brazil's Northeast Region between 2019 and 2022. **Methods:** This is an observational, descriptive, cross-sectional, and retrospective study. Data collection was performed using the information available at Hospital Information System (SIH/SUS) and at the SUS Department of Informatics (Datasus), in the period between January 1, 2019, and December 31, 2022. The patients selected had between 0 to 19 years old and had been hospitalized because of diabetes mellitus. The variables observed were age, sex, race, and the state of hospitalization. **Results:** The total number of reported cases was 9,958, and 2022 was the year with the highest number (2,659). The cases were predominant in Bahia, the female sex (56.6%), and brown people (59.7%). Regarding the age group, it was observed that during the study period, the highest prevalence occurred in individuals between 10 and 14 years old (36.6%). This data confirms the trend observed in the literature, following the increase in children's obesity (a risk factor for type 2 diabetes), but also related to autoimmune conditions (as type 1 diabetes remains the most common form of diabetes in childhood). **Conclusion:** There was a significant growth in the number of childhood diabetes mellitus cases in Brazil's Northeast Region, following the tendency of the country. It represents a public health problem, and the discussion of this topic is important to stimulate policies aiming for the correct follow-up and management. **Keywords:** diabetes mellitus; incidence; Brazil.

AP-046 EPIDEMIOLOGICAL ANALYSIS OF HOSPITALIZATIONS DUE TO DIABETES MELLITUS IN THE STATE OF RIO GRANDE DO NORTE BETWEEN 2012 AND 2022

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Introduction: Diabetes mellitus (DM) is a metabolic disorder with high worldwide prevalence. As triggering factors, DM has genetic factors and environmental factors closely associated with the patient's lifestyle. Hyperglycemia and insulin resistance caused by the disease are associated and lead to the exacerbation of other diseases, such as atherosclerotic disease and chronic kidney 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 DM in the state of Rio Grande do Norte to assist in strategies for preventing this serious medical complication. **Objective:** To describe the epidemiological profile of patients hospitalized due to DM over a period of 10 years in the state of Rio Grande do Norte. **Materials and methods:** This was a descriptive, cross-sectional study that used data from hospital admissions of patients due to DM in the state of Rio Grande do Norte, from 2012 to 2022. The information was obtained from the online data-base of the Brazilian Health Ministry (Datasus), selecting categories E10-E14 from the ICD-10. The data were tabulated using the Microsoft Office Excel program for subsequent descriptive statistical analysis. The data are in the public domain and approval by a research ethics committee is not required. **Results:** During the analyzed period, there were 27,230 hospitalizations related to DM, with the majority of cases recorded in women (51.05%). In terms of race/ethnicity, it was observed that the majority of admissions were individuals of mixed race (49.23%), followed by white individuals (11.00%) and Asian individuals (5.28%), although a significant proportion (32.67%) had no race/ethnicity recorded. Regarding age group, the most prevalent was the 60-69 years age group (25.04%), followed by 70-79 years (20.26%) and 50-59 years (19.60%). It was also observed that the majority of hospitalizations occurred in the microregion of Natal city, accounting for 59.85% of hospitalizations, while Mossoró city ranked second, with 7.65%. **Conclusion:** Therefore, it is noted that the highest number of hospitalizations due to DM consists of females, with a significant representation of mixed-race individuals, predominantly in the Natal city microregion, and with an age range of 60-69 years. Thus, preventive and health promotion measures need to be prioritized, especially for the most affected groups. **Keywords:** diabetes mellitus; hospitalization; public health.

AP-047 PRECISION MEDICINE APPLIED TO A PATIENT WITH MONOGENIC DIABETES: AN IMPORTANT THERAPEUTIC AND PROGNOSTIC TOOL

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Case presentation: A 34-year-old male patient with diabetes mellitus (DM) was referred to the endocrinology outpatient clinic of a tertiary hospital in Natal/Brazil. At the time of the first evaluation, he already had diabetic retinopathy, chronic kidney disease and hypertension. His medical history included that onset of symptoms (polyphagia, polyuria, and polydipsia) occurred at the age of 15. An early-onset diabetes led to suspicion of type 1 DM and the initial treatment was with insulin therapy. However, there was significant family history of DM (his father, paternal grandfather and sister had DM) and the diagnosis of monogenic diabetes was considered. The treatment was switched to glimepiride 4 mg and metformin 500 mg which resulted in frequent symptomatic hypoglycemia. Subsequently, glimepiride was reduced, and metformin was discontinued. A diagnostic genetic test for maturity-onset diabetes of the young (MODY) using the Sanger sequencing method was performed and a heterozygosity for the c.872dup variant in the HNF1A gene was identified, confirming a diagnosis of MODY 3. Subsequent treatment with glimepiride 1 mg demonstrated favorable glycemic therapeutic response. The patient has not required insulin therapy but presents with right-sided amaurosis and stage G3bA3 chronic kidney disease, characterized by subnephrotic proteinuria and microscopic hematuria. **Discussion:** Precision Medicine represents a paradigm shift in healthcare, incorporating genetic, molecular, and clinical data to tailor disease management and prevention strategies to individual patients. This case highlights the successful application of precision medicine in the context of monogenic diabetes. The HNF1A gene mutation observed in this patient confers heightened sensitivity to sulfonylurea therapy, resulting in optimal glycemic control. The misuse of sulfonylurea (in a patient with type 1 DM or LADA, for example) could harm the patient and lead to an unfavorable evolution of diabetes, especially in a patient who already had diabetic complications. **Conclusion:** This report highlights the transformative potential of precision medicine in clinical practice. By using molecular biology and genetic techniques, an accurate diagnosis of monogenic diabetes was achieved, allowing for a personalized treatment approach. The implications of precision medicine extend beyond establishing accurate diagnosis and prognosis, presenting novel therapeutic opportunities for improved patient outcomes. **Keywords:** maturity-onset diabetes mellitus; precision medicine; genetic testing.

AP-048 TYPE 2 DIABETES WITH TENDENCY TO KETOSIS: CASE REPORT

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Case report: Male, 45 years old, with grade I obesity (body mass index: 33.6 kg/m²), previously healthy, sought the emergency room with polyuria, polydipsia and loss of 12 kg in 6 weeks. Capillary blood glucose (GC): 440 mg/dL was identified, he was medicated with regular insulin (IR) and was discharged. After 3 days, it worsened with blurred vision, abdominal pain and vomiting. Had GC > 600 mg/dL, pH:7.10; pCO2: 20 mmHg; bicarbonate: 8.6 mmol/L; lactate:0.9 mmol/L; K: 5.0 mEq/L; creatinine: 1.0 mg/dL and EAS with ketones present (3+). The patient was diagnosed with diabetic ketoacidosis (DKA), and intravenous hydration was started, intravenous bolus IR followed by a continuous infusion pump. In the intensive care unit, he improved with DKA resolution within 24 hours and hospital discharge after 4 days of hospitalization. Outpatient treatment was started with Insulin Glargine (IG) once a day and Insulin Lispro (IL) before meals. After 7 days, still with GC between 180-290 mg/dL, tests were performed: AntiGAD: 3.1 IU/mL; AntiInsulin: 2.8 U/mL; Anti-Islets: Non-reagent; blood glucose: 237 mg/dL; HbA1c: 13.4%; HDL: 37 mg/dL; LDL: 123 mg/dL; triglycerides: 252 mg/dL. A lifestyle change was initiated to improve glycemic control, with the interruption of the IL after 1 month and the introduction of vildagliptin/metformin 100/2000 mg/day. With the maintenance of the goals, the GI was reduced until the suspension and association of empagliflozin 25mg/day. For one year, the patient has only been on oral antidiabetics and maintains a good blood glucose of 95 mg/dL and HbA1c of 6.2%. **Discussion:** The case presented here describes type 2 diabetes mellitus (DM2) with a tendency to ketosis – a rare condition that appears without apparent precipitating factors and is diagnosed through an episode of DKA – an acute complication associated with DM1. However, autoantibody dosages are negative and the clinical course of the disease, with rapid migration from insulin therapy to maintenance treatment with oral antidiabetic agents and lifestyle changes based on glycemic control, characterize DM2. **Comments:** DM2 with a tendency to ketosis is a rare endocrinopathy, more common in Hispanic and Caucasian patients, with an unclear mechanism, its main manifestation being a typical complication of another clinical condition, DM1. Thus, clinical investigation, correct diagnosis and early treatment are indispensable for a differential diagnosis and damage control. **Keywords:** diabetes; ketosis; diabetic ketoacidosis.

AP-049 MORTALITY BY BRAZILIAN REGIONS DUE TO DIABETES MELLITUS IN BRAZIL FROM 2011 TO 2021

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Introduction: Diabetes mellitus (DM) is a metabolic syndrome that has a multifactorial cause, but which is constituted as a lack or inability of insulin to adequately perform its functions. In Brazil, DM is the main cause of death due to endocrine, nutritional and metabolic diseases (Chapter IV of ICD-10). **Objective:** To describe the distribution, by federative units of Brazil and age group, of mortality from Diabetes Mellitus from 2011 to 2021. **Materials and methods:** It is an observational, ecological study, built from the Mortality Information System (SIM/SUS). For data analysis, they were organized into tables and the variables broken down by state, mortality, and affected age group. **Results:** From 2011 to 2021, 700,855 deaths due to DM were recorded. Of these deaths, it should be noted that the most affected macro-region was the Southeast with 272,620 deaths (38.8%), and the one with the fewest deaths was the Midwest with 42,259 (6%). In relation to the states, the one with the highest number of deaths was São Paulo (state in the southeast region) with 123,025 and the one with the lowest number of deaths was Roraima (state in the north region) with 1455 deaths. Regarding the total number of deaths, the most affected age groups are over 80 years old with 212,567 deaths (30.3%), followed by 70 to 79 years old with 197,133 deaths (28.1%). In relation to the less affected age groups, we have less than 1 year with 99 deaths (0,014%)and between 5 and 9 years with 148 deaths (0,02%). **Conclusion:** It can be observed that DM represents the major cause of mortality due to endocrine, metabolic and nutritional diseases in Brazil in the last 10 years. This mortality rate is higher in the Southeast region, followed by the Midwest region of the country. Regarding the most affected age groups, the population over 70 years of age represents more than 50% of deaths. It is important to highlight the limitation of this study, which, as it is an ecological observational study, it is not possible to establish a cause and effect analysis. **Keywords:** epidemiology; diabetes mellitus; Brazil.

AP-050 COMPARISON OF THE NUMBER OF HOSPITALIZATIONS DUE TO DIABETES MELLITUS BETWEEN THE YEARS 2011 AND 2022 IN THE MACROREGIONS OF BRAZIL

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Introduction: Diabetes mellitus is a complex metabolic syndrome resulting from insufficient insulin production, ineffective insulin, or both, leading to chronic hyperglycemia. It has garnered significant attention in recent years due to increased promotion of healthy living by the media, social media and influencers. Nonetheless, diabetes mellitus remains the leading cause of hospitalization among endocrine, nutritional, and metabolic diseases in Brazil. Therefore, it is interesting to evaluate whether there has been an increase or reduction in the number of cases. **Objective:** To describe and compare the number of hospitalizations due to diabetes mellitus from 2011 to 2022 in the macroregions of Brazil. **Materials and methods:** This is a cross-sectional, descriptive, retrospective study with a quantitative approach. Data were collected from the Hospital Information System of the Brazilian Unified Health System (SIH/SUS) for the period between January 2011 and December 2022. The study includes the population aged 0 to 80 years or older from all regions of Brazil, admitted for diabetes mellitus under elective and emergency care. **Results:** Between 2011 and 2022, a total of 1,620,600 patients were hospitalized due to diabetes mellitus in Brazil, with an average of 135,050 hospitalizations per year or 370 per day, and a 14.03% reduction over the period. The region with the highest number of hospitalizations was the Southeast with 571,060 (35.2%), while the lowest was the Midwest with 119,218 (7.3%). The year with the highest number of hospitalizations was 2011 with 148,358, followed by a 5-year decline until 2016 with 128,060 hospitalizations (a cumulative decrease of 13.6%). In 2017, 2018, and 2019, there was a new increase with an average of 134,193 hospitalizations. In 2020, there was a 7.6% decrease compared to the previous year (from 136,106 to 124,014), reaching the lowest number of the period, possibly due to the pandemic and reduced hospitalizations. In 2021 and 2022, there was an increase, but it remained below the average (129,482 and 127,530, respectively). **Conclusion:** Based on the above results, a significant decrease in hospitalizations due to diabetes mellitus (14.03%) was observed, with the cases concentrated in the Southeast region of the country (35.2%). However, as a limitation of a cross-sectional study, it is not possible to establish a cause-and-effect relationship, and further studies are needed to understand the reason for this decrease. **Keywords:** Brazil; diabetes mellitus; hospitalizations.

AP-051 AUTONOMIC DYSFUNCTION MIMICKING PHEOCHROMOCYTOMA: A CASE REPORT

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A 62-year-old man was referred for diabetes control. He was diagnosed at age 46 with type 2 diabetes mellitus (DM) and HbA1c values ranged between 8.4 and 11% in recent years. He also had systemic hypertension and hypogonadotropic hypogonadism. An MRI scan revealed a partially empty sella. The other pituitary hormones were normal, except for reduced IGF-1 levels. Testosterone undecanoate (TU) every 12 weeks was prescribed and the treatment of DM was adjusted, with improvement in glycemic control and complaints of hypogonadism. In the last year, the patient has reported episodes of malaise, palpitations, facial flushing, erectile dysfunction, anejaculation and increased blood pressure (BP) variability, including episodes of hypertension (requiring medication adjustment), followed by reduced BP and episodes of hypotension. The episodes occurred both spontaneously and after UT administrations. Physical examination revealed a supine BP of 100/60 mmHg with reduction in orthostasis to 80/50 mmHg associated with resting and orthostasis tachycardia of 105 per minute. There were signs of peripheral neuropathy of his lower limbs. Tests indicated a deficiency in vitamin B12 (175 pg/mL), but there was no improvement in his clinical condition despite treatment. Then, the patient was screened for a pheochromocytoma, revealing increased 24 hours urinary metanephrine 409.4 and 890.8 mcg/24 h (< 57 mcg/24h) and normetanephrine 67.5 and 133.3 mcg/24h (<148 mcg/24 h). A 5-hydroxyindoleacetic acid level normal. However, further investigation with abdominal computed tomography and MIBG scan did not reveal masses. Autonomic dysfunction is a condition that affects the autonomic nerves and can lead to symptoms related to peripheral nerve impairment, including vasomotor, cardiovascular and sexual dysfunctions. Pseudopheochromocytoma (pseudoPHEO) occurs due to increased sympathetic stimulation, resulting in a higher release of catecholamines by the adrenal gland. It is characterized by a slight elevation in catecholamine levels and the absence of an adrenal tumor. Few cases of pseudoPHEO related to diabetic autonomic dysfunction have been reported, most with elevations of catecholamines but not of metanephrines. However, considering the symptoms are characteristic of dysautonomia and exclusion of identifiable tumors, the diagnosis of pheochromocytoma can be excluded. In conclusion, autonomic dysfunction in patients with DM is a rare but important cause of pseudoPHEO. **Keywords:** autonomic dysfunction; pseudopheochromocytoma; diabetic neuropathy.

AP-052 PREVALENCE AND FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS DURING PREGNANCY AMONG WOMEN WITH GESTATIONAL DIABETES MELLITUS

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Introduction: Pregnancy is considered a period of great vulnerability for the development of mood disorders, due to intense hormonal changes. These symptoms are associated with pregnancy complications, including pre-term delivery, diabetes and Hypertension. The association of depression and diabetes has been described, inside and outside pregnancy, and is responsible for worsening of glycemic control. As it can have additive effects on the risk of adverse pregnancy outcomes, it is important to investigate the prevalence of depressive symptoms (DS) and factors associated with them in diabetic pregnancy. **Objective:** To investigate the prevalence and related factors of DS in women with gestational diabetes mellitus (GDM). **Methods:** Cross-sectional, observational study conducted through interviews in which sociodemographic, clinical and obstetric data were obtained, as well as the evaluation of DS by the Edinburgh Postnatal Depression Scale (EDPS), a validated scale also used during pregnancy, in which a score of ≥12 indicates the presence of clinical significative DP. The study was approved by IPADE ethic board (CAAE: 61303422.1.0000.5049). **Results:** A total of 331 pregnant women with GDM, ages varying from 20 to 46 years (average of 33.1 years), in the second or third trimester, gestational age of 29.1 ± 5.6 DP were evaluated. Regarding socioeconomical status, 16.3% had a low level of education, 5% were employed, 64,2% had a low family income and 94.4% a stable marital relationship. In addition, 21% had hypertension, 55,4% pre-pregnancy obesity and 14,6% had symptoms of anxiety or depression before pregnancy. DS during pregnancy were found in 29.7% of the patients, and it was more frequent in women who doesn't have a support of a partner (P = 0,03), had low educational level (p = 0,04), symptoms of daytime sleepiness(P < 0,02), and a history of anxiety or depressive episodes before pregnancy (P = 0.034). Neither insulin treatment nor auto monitoring blood glucose methods were related to DS in this group of patients. **Conclusion:** This study reports a prevalence of DS that is similar to previous literature data. We identified that patients with low educational level, previous episodes of anxiety or depression, daytime sleepiness or without a partner are more likely to present depressive symptoms and should be carefully evaluated during prenatal care. Also of interest, insulin use or glucose monitoring practice were not related to depressive symptoms in this group. **Keywords:** gestational diabetes; depression; epidemiology.

AP-053 EFFECTIVENESS OF NON-PHARMACOLOGICAL STRATEGIES IN THE MANAGEMENT OF TYPE 2 DIABETES IN PRIMARY CARE: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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Introduction: Despite the increasing number of drugs and various guidelines on the management of type 2 diabetes mellitus (T2DM), several patients continue with the disease uncontrolled. There are several non-pharmacological treatments available for managing T2DM, but various of them have never been compared directly to determine the best strategies. **Objective:** This study evaluated the comparative effects of non-pharmacological strategies in the management of T2DM in primary care or community settings. **Methods:** We performed a systematic review and network meta-analysis (NMA) following the Cochrane collaboration and reported according to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) Statement. We included randomized controlled trials if non-pharmacological strategies in the management of type 2 diabetes were applied in adult patients with T2DM in primary care. The primary outcome was glycemic control (glycated hemoglobin [HbA1c] [%]). We developed search strategies for Embase, Medline, Latin American and Caribbean Health Sciences Literature, Cochrane Central Register of Controlled Trials, Trip database, Scopus, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL). Four reviewers assessed the studies for their eligibility and their risk of bias in pairs and independently. A NMA have been performed using Stata Statistical Software 17 (Stata Statistical Software: Release 17. College Station, TX, StataCorp LLC, USA). **Results:** After removing duplicates, the search strategies yielded 4314 studies. After a thorough evaluation of the references, 129 studies encompassing a total of 35,975 individuals have been included in this review. Twenty and three strategies were founded. The most frequent strategy was diabetes self-management and support (DSMES) (60%), followed by diabetes self-management education (22%), self-monitoring of blood glucose (7%) and health coach (5). The most frequent comparator has been usual care (92%). Regarding relative rankings of treatments, the NMA has showed that nutritional therapy plate method has a 37.6% probability of being the best treatment in terms of HbA1c reduction, followed by DSMES associated with social support (24%) and low-fat diet (19.6%). **Conclusion:** This review has founded 23 non-pharmacological strategies in the management of type 2 diabetes in primary care, being the most frequent DSMES. **Keywords:** type 2 diabetes mellitus; non-pharmacological strategy; network meta-analysis.

AP-054 RELATIONSHIP BETWEEN EARLY WEANING AND HOSPITALIZATION RATES OF CHILDREN WITH DIABETES MELLITUS IN 2019

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Introduction: Breast milk has been acknowledged by numerous recent studies as a protective factor against type 1 diabetes mellitus (DM1) in children, not only due to its anti-infective properties but also because it helps avoid exposure to bovine serum albumin, a protein present in cow's milk that is associated with the development of DM1. Additionally, early weaning is linked to the development of childhood obesity, a contributing factor to the onset of type 2 diabetes mellitus (DM2). Therefore, it is essential to analyze the relationship between early weaning and the occurrence of childhood diabetes mellitus. **Objective:** To demonstrate the correlation between regions with the highest early weaning rates and the prevalence of hospitalizations among children with DM in these areas. **Materials and methods:** This is a retrospective observational study based on data obtained from the National Study of Child Food and Nutrition (ENANI), the Hospital Information System of the Unified Health System (SIH/SUS), and the Brazilian Institute of Geography and Statistics (IBGE) portal. **Results**: Firstly, it is important to mention that the North region has approximately 18.4 million inhabitants, of which around 10 million were not exclusively breastfed until six months of age in 2019, resulting in 421 hospitalizations of children with DM that year in the state. During the same period, the estimated number of children under 6 months of age who were not exclusively breastfed was 35 million in the Northeast, 44 million in the Southeast, 14 million in the South, and 9 million in the Midwest, leading to 2410, 4159, 1573, and 867 hospitalizations of children with DM, respectively, in each region in Brazil in 2019. **Conclusion:** Therefore, when examining the reported data, it is evident that in 80% of the cases, an increase in early weaning by region correlates with a higher rate of hospitalizations of children with diabetes mellitus during the analyzed period. Thus, it is essential to promote exclusive breastfeeding for up to 6 months of age as a measure to protect children against DM. **Keywords:** diabetes mellitus; early weaning; Brazil.

AP-055 IMMUNOMODULATORY THERAPY FOR PAIN CONTROL IN DIABETIC LUMBO-SACRAL RADICULOPATHY – CASE REPORT

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Diabetic lumbosacral radiculopathy (DLR) typically affects men aged 50 to 60 years old. It presents with sudden-onset pain and weakness in the proximal lower limbs, along with weight loss. The diagnosis is clinical, but neuroimaging plays a role in excluding other etiologies. We report the case of a 54-year-old woman referred to the Neurology outpatient clinic of a tertiary hospital due to burning pain and paresthesia in the proximal region of lower limbs. She experienced worsening weakness, distal paresthesia leading to the inability to walk and a 40 kg weight loss in five months. The patient had hypertension and type 2 diabetes mellitus (DM2) for 15 years, with no chronic complications, receiving antihypertensives, chronic pain medications, and metformin, gliclazide, and saxagliptin. During physical examination, she used a walker, had a dragging and ataxic gait due to paraparesis, reduced muscle strength in the lower limbs (grade 2-3) and in finger adduction and abduction, thenar and hypothenar atrophy, abolished deep tendon reflexes in the lower limbs and reduced in the upper limbs, and asymmetric painful hypoesthesia. Laboratory evaluation showed a glycated hemoglobin of 6.8% and LDL cholesterol of 148 mg/dL. A consultation with the Endocrinology and Metabolism service was requested due to the probable diagnosis of DLR. The diagnosis was confirmed through further investigation that revealed increased protein levels in the cerebrospinal fluid and contrast-enhanced magnetic resonance imaging of the lumbosacral nerve roots. Electroneuromyography demonstrated a sensory-motor axonal polyneuropathy. Due to difficult pain control, pulse therapy with methylprednisolone was chosen, and NPH insulin and regular insulin correction regimen were initiated simultaneously, with need of adjustments due to persistent hyperglycemia. Pulse therapy resulted in significant pain improvement and restored walking ability and lower limb strength. In this case, a woman with well-controlled DM2 and no chronic complications showed an excellent response to pulse therapy for pain control in DLR. Unlike other diabetic neuropathies, RLD can occur at the time of diagnosis, even in patients with well-controlled glycemia and no concurrent microvascular complications. The treatment of RLD is based on pain management and glycemic control. The use of corticosteroids is reserved for debilitating pain or cases refractory to standard therapy, which was successful in this case.
Keywords: diabetic lumbo-sacral radiculopathy; diabetic amyotrophy; immunomodulatory therapy.

AP-057 EVALUATION OF DIABETIC NEUROPATHY THROUGH DIABETIC FOOT EXAMINATION IN PATIENTS WITH DIABETES FOLLOWED AT A REFERENCE HOSPITAL IN MACEIÓ

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Introduction: Diabetes mellitus is a chronic primary condition resulting from glucose levels. According to the International Diabetes Federation (IDF), an insulin deficiency, if not controlled over time, can cause damage to many organs, leading to disability and life-threatening risks. According to the 2022 guideline of the Brazilian Diabetes Society (SBD), the prevalence continues to increase globally, associated with a growing number of foot complications, including infections, which are the most frequent complication requiring hospitalization. Therefore, osteomyelitis is potentially underlying any diabetic foot ulcer. **Objective:** This study aimed to analyze the clinical characteristics of foot examinations in diabetic patients and the data collected from medical records at a reference hospital in the city of Maceió, Alagoas. Additionally, it aimed to describe the profile of diabetic patients treated at a reference hospital in Maceió and perform foot examinations on diabetic patients, evaluating possible diabetes-caused alterations. **Methods:** A descriptive and exploratory approach was employed, evaluating 20 diabetic patients of both sexes at a hospital institution in Maceió. Data collection involved a semi-structured questionnaire based on the SISPED platform report, and studies on platforms such as PubMed and SciELO were used to expand knowledge on the subject and address the patients. **Results:** Among the diabetic patients, 12 had an HbA1C value above the reference range, with a proportionate representation of both sexes. Eight patients were within the reference range. **Conclusion:** It was observed that only one patient had previously undergone the examination. Due to its low cost and limited accessibility, as it is not performed at referral centers, this examination aims to detect conditions caused by DM and its risk factors early, thus being neglected, including by public policies.
Keywords: diabetes mellitus; chronic disease; diabetic foot.

AP-058 PSEUDOACROMEGALY ASSOCIATED WITH DIABETES MELLITUS

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Case presentation: G.P.F., 19 years old, male, was referred to the endocrinology service to investigate the etiology of diabetes under insulin treatment. On physical examination, the patient presented gynecomastia, mandibular protrusion, macroglossia, prognathism, acanthosis nigricans in the armpits, enlarged hands and feet, tall stature (two meters) outside the family canal, wingspan of 2.08 m, abdominal circumference: 119 cm, weight 125 kg and BMI 31.25 kg/m^2. Laboratory tests showed anti-GAD < 5 units/mL, alpha-fetoprotein < 0.605 ng/mL, C-peptide 5.3 ng/mL, SDHEA 128.2 mcg/mL; androstenedione 2.10 ng/mL; 8 h cortisol 17.2 mcg/mL; FSH 1.3 units/L; LH 2.98 units/L; FT4 0.89 ng/dL; TSH 3.41 microunits/mL; progesterone < 0.5 ng/dL; prolactin 15.14 ng/mL; estradiol 41.63 pg/mL; total testosterone 361.3 ng/dL; IGF1 286 ng/mL; GH 0.05 ng/mL. An MRI of the sella turcica was performed, which showed no alterations. After replacing insulin with metformin, he maintained good glycemic control. Given the normal clinical picture and laboratory findings, the patient was diagnosed with insulin-mediated pseudoacromegaly. **Discussion:** Pseudoacromegaly refers to a heterogeneous group of disorders in which patients share some clinical features of GH excess, but without axis abnormalities. The disease was first described in 1970 by RB Mims as a phenotypic condition similar to acromegaly, but in the absence of a pituitary or hypothalamic disorder. There are many conditions reported in the literature as the cause of pseudoacromegaly by various congenital and acquired mechanisms, such as Sotos syndrome, congenital generalized lipodystrophy, pachydermoperiostosis, severe insulin resistance, long-standing undiagnosed hypothyroidism, and drugs such as minoxidil. Insulin resistance is one of the most common conditions of pseudoacromegaly. These patients presenting hyperinsulinemia with acromegaloid body features. **Final comments:** This clinical case shows the importance of raising the hypothesis of overgrowth syndromes in patients with acromegalic features without excess growth hormone production, despite being a challenging diagnosis due to the rarity, variability of these conditions and the high demand for complementary tests. **Keywords:** diabetes mellitus; pseudoacromegaly; overgrowth.

AP-059 GASTROPARESIS AS A DIFFERENTIAL DIAGNOSIS OF CHRONIC DIARRHEA IN A PATIENT WITH LADA: CASE REPORT

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Case presentation: A 41-year-old male patient, smoker, with insulin-dependent diabetes mellitus (DM) for 06 years, was admitted to the ward with diarrhea for 3 months, associated with unintentional weight loss of 17 kg. He reported that the diarrhea was not associated with food and had more than 6 episodes a day, including waking up at night. He had performed empiric treatment with antibiotics, with no effective result. During hospitalization, empirical therapy for intestinal parasitosis and dietary guidelines were performed, also without clinical improvement. Thus, an investigation for wasting syndrome and chronic diarrhea was initiated. Laboratory tests showed FBG: 147 mg/dL, HbA1c 6.1%, anti-GAD 252.7 IU/mL (RV: negative up to 10 IU/mL), C-peptide < 0.1 ng/mL (RV:1.1 to 4.4 ng/mL), anti-islet cell antibody 28.1 U/mL (RV: reagent greater than or equal to 28 U/mL) and TSH 1.810 mU/L. Also researched were toxins A and B for *Clostridium difficile*, viral serology and for celiac disease, amylase, lipase and pancreatic elastase, all without alterations. Total abdominal ultrasonography and chest X-ray were performed, with no alterations. Endoscopy with duodenal biopsy and colonoscopy also did not visualize alterations that would justify the condition, which was then attributed to diabetic gastroparesis, with nutritional and drug management (with prokinetics) in addition to adequate glycemic control being advised. After two months, the patient returned for an outpatient consultation with improvement of diarrhea and reacquisition of 3 kg. **Discussion:** Involuntary weight loss is defined as an involuntary reduction of 4.5 kg or more than 5% of body weight in 6 to 12 months. Its etiology is associated with malignant or non-malignant organic diseases, psychiatric and idiopathic disorders. Among the causes of non-malignant organic origin, DM stands out, which can lead to diabetic gastroenteropathy due to changes in the motility and physiology of the gastrointestinal system, with diarrhea as its main symptomatology, and consequently the loss of body fluids, dehydration and reduced intestinal absorption. **Final comments:** Despite advances in the understanding of its pathophysiology, diabetic gastroparesis is still a problem of difficult clinical approach, with limited therapeutic success. Thus, it is necessary to consider the possibility of diabetic gastroparesis whenever there is chronic diarrhea in diabetic patients, so that the treatment is as early as possible. **Keywords:** diabetes mellitus; weight loss; autonomic neuropathy.

AP-060 ANALYSIS ON TYPE 2 DIABETES MELLITUS MORTALITY AFTER THE ONSET OF THE CORONAVIRUS PANDEMIC IN NORTHEAST BRAZIL

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Introduction: Type 2 diabetes mellitus (T2DM) is a chronic disease that affects thousands of people worldwide, characterized by insulin resistance (a disruption in the action of insulin to decrease blood glucose levels) and strongly linked to lifestyle habits. In this regard, when discussing the post-2019 world, another global disease comes to the forefront: COVID-19, which has altered many population habits due to the necessity of quarantine measures, such as the decrease in physical activity. Consequently, there is a clear need to analyze the impact of the pandemic due to the mortality of people with this severe disease, T2DM, specifically in the Northeast region of Brazil, which currently lacks this crucial epidemiological data. **Objective:** The objective of this study is to analyze the change in T2DM mortality in Northeast Brazil during the COVID-19 pandemic, between 2019 and 2021. **Materials and methods:** This is an observational, descriptive, cross-sectional, and retrospective study. Data collection was performed using the information available at Mortality Information System (SIM/SUS) and at the SUS Department of Informatics (Datasus), in the period between January 1, 2019, and December 31, 2022. For data analysis, they were organized into tables and the variables were broken down by state's capital, mortality by T2DM, and year. **Results:** Between 2019 and 2021, a total of 1,948 deaths were reported due to T2DM. It is important to note that there was a 20.4% increase (from 561 to 676) when comparing 2019 to 2020, and a further 5.1% increase (compared to 2020) in 2021 (711). It is also worth highlighting the differences among the capital cities in the Northeast region during this period. Salvador, the most populous capital, recorded 477 deaths (24.4% of the total), while Teresina reported 59 deaths (3.0%). However, João Pessoa and Aracaju deviate from this trend and showed a decrease in deaths during this period, with a decline of 25.0% and 22.7% respectively. Notably, Recife, had the second-highest mortality rate with 348 deaths, accounting for approximately 17.8% of the total. **Conclusion:** Based on the observed results above, it is evident that the COVID-19 pandemic has had a significant impact on the increased mortality due to T2DM in the entire Northeast region. This underscores the need for public interventions to mitigate and effectively manage this pressing issue in Brazil. **Keywords:** diabetes mellitus; mortality; Brazil.

AP-061 EVALUATION OF DEPRESSION IN PATIENTS WITH TYPE 2 DIABETES MELLITUS WITH DIABETIC PERIPHERAL NEUROPATHY

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Introduction: Type 2 diabetes mellitus (T2DM) and its complications represent a significant global health burden. Among them, the most common is diabetic peripheral neuropathy (DPN), which often leads to amputation, impacting the mobility and the individual's familial, occupational, and social roles. As a result, there is a higher prevalence of psychological disorders, such as depression, which presents as a significant complicating factor in the treatment of diabetes, resulting in slower establishment of disease control. **Objective:** To assess depression in patients with T2DM and DPN. **Materials and methods:** Observational, descriptive, quantitative, prospective study to evaluate the presence of depression in patients with T2DM and DPN treated at the outpatient clinics and endocrinology ward of a hospital in the northeast of Brazil. Screening for DPN was performed using the Michigan Neuropathy Instrument, and depressive symptoms were assessed using the Beck Depression Inventory. A questionnaire was administered to collect sociodemographic data (age, sex, education level, use of mobility devices), duration of T2DM diagnosis, time until the development of peripheral neuropathy, presence of other chronic diabetes complications, smoking status, comorbidities, and glycemic profile. **Results:** In the population of 33 individuals with DPN, eligible after the application of inclusion and exclusion criteria, 23 were found to have depression, comprising the sample. The majority were men over 50 years old, with incomplete elementary education, income between 1000.00 to 2500.00 *reais*, without mobility devices, non-smokers, with diabetes for more than 10 years, and associated retinopathy. **Conclusion:** A high frequency of depression was observed in individuals with DM2 and DPN, negatively impacting glycemic control. **Keywords:** diabetes; peripheral diabetic neuropathy; depression.

AP-062 ASSOCIATION EVALUATION BETWEEN GLYCEMIC CONTROL AND DIABETES-RELATED QUALITY OF LIFE IN INDIVIDUALS WITH TYPE 2 DIABETES WHO USE PRIMARY HEALTH CARE SERVICES IN JUIZ DE FORA, MINAS GERAIS STATE

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Introduction: The care of the person living with diabetes encompasses a set of factors and measures, with primary health care as the primary role in care coordination and promotion of actions for better health and living conditions. **Objective:** To investigate the relationship between glycated hemoglobin (A1c) levels assessed last year and diabetes distress in individuals with type 2 diabetes (T2D) who use PHC services in Juiz de Fora, Minas Gerais, between 2022 and 2023. **Methods:** Cross-sectional study involving individuals with T2D ≥ 18 years old, living in Juiz de Fora for at least one year and randomly selected from 1 to 2 PHC services belonging to the 13 health regions of the municipality, according to the percentage distribution of their coverage. The study outcomes were collected by calculating the mean A1c values over the last year and the response to the Brazilian version of the Problem Areas in Diabetes (B-PAID) scale, whose total score ranges between 0 and 100 points. The distribution of the collected data was analyzed using the Shapiro-Wilk test. Variables with normal distribution are presented as mean ± standard deviation and those without normal distribution as median [Quartile 1-Quartile 3]. The study outcomes were submitted to the Spearman correlation test [correlation coefficient classification: non-existent (≤0.1); weak (between 0.1 and 0.3); moderate (between ≥ 0.3 and 0.5) and strong (≥0.5)]. The significance level adopted for all tests was 5%. **Results:** Seventy-five individuals with DM2 (61.3% women, 61.0 ± 12.4 years old, time-elapsed diagnosis 14 years [8-20 years], and 53.3% using insulin) participated in the study. The median values of mean annual A1c and total B-PAID score were 8.4% [7.1-10.7%] and 38.8 points [15.0-63.2 points], respectively. There was a significant, positive, and weak correlation ($\rho = 0.234$; $P = 0.043$) between A1c levels and total B-PAID scores. Additionally, the participants showed a lack of adequate glycemic control (HbA1c > 7%) and a substantially reduced diabetes-related quality of life (total B-PAID score < 7 0 points). **Conclusion:** Although the relationship between the study outcomes was weak, strategies aimed at the clinical control of patients with DM2 PHC users in Juiz de Fora may facilitate better management of the quality of life in this population. **Keywords:** diabetes type 2; glycated hemoglobin; quality of life.

AP-063 REFERENCE INTERVAL PROPOSAL FOR FASTING INSULIN AND HOMA-IR MEASUREMENT BASED ON ACCESS TO AN EXTENSIVE BIG BRAZILIAN LABORATORY DATABASE

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Objectives: Insulin resistance (IR) is considered the cause of metabolic syndrome (MS) and is associated with increased risk for several highly prevalent pathologies, such as type 2 diabetes mellitus, cardiovascular disease, and non-alcoholic liver disease. Insulin and especially homeostatic model assessment of insulin resistance (HOMA-IR) index is a relatively simple and reliable noninvasive marker of IR. Many problems are associated with the calculation of reference interval (RI) and most laboratories and manufacturers refer to studies done decades ago when both methods and the studied population were quite different. This study aimed to determine fasting insulin and HOMA-IR index RIs by an indirect so-called *a posteriori* study of the patient data already collected and stored in the laboratory database applying a validated algorithm – LABRI. These algorithms offer the advantages of being low-cost, convenient, and time-saving in their implementation. **Methods:** Fasting serum insulin levels of 204,388 subjects submitted to blood sampling from January to December of 2019 in Rio de Janeiro were obtained retrospectively through access to an extensive database of a Brazilian laboratory. Insulin was determined by the electrochemiluminescence immunoassay (ECLIA) method. After applying exclusion criteria and after exclusion of outliers 21,684 subjects [18,576 (86%) women] ≥ 20 years and ≤ 60 years were included (average 36 ± 3.66). Reference interval was established using validated mining algorithms (LABRI). **Results:** Overall, 95% RIs for fasting insulin levels were, respectively, 2.54-13.30, 2.43-11.89, and 2.52-13.14 µU/mL (15.0-79.8, 14.6-71.3, and 15.1-78.8 pmol/L) in women, men, and the total population. HOMA-IR index RIs were 0.38-2.88, 0.34-2.85, and 0.37-2.88 in women, men, and the total population. Although the difference in insulin levels and HOMA-IR index between men and women were statistically significant, it does not justify using sex-specific RIs. **Conclusion:** Since the evaluation of our data showed no clinical significance for sex-specific RIs for fasting insulin and HOMA-IR index, we conclude that separate RIs for men and women are unnecessary. Reference intervals of fasting insulin and HOMA-IR index found in the total population can be applied to both sexes. Thus, we suggest the following RIs for our population: fasting Insulin: 2.52-13.14 µU/mL (15.1-78.8 pmol/L) and HOMA-IR index: 0.37-2.88. **Keywords:** Insulin; HOMA-IR; reference interval.

AP-064 IMPORTANCE OF MULTIDISCIPLINARY EDUCATION IN THE TREATMENT OF PATIENTS WITH DIABETES MELLITUS WITH A FOCUS ON SELF-ADMINISTRATION OF INSULIN: AN INTERVENTIONIST STUDY

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Introduction: There are many failures in the self-administration of insulin among diabetics with diabetes mellitus (DM) using syringes or applicator pens. This study, carried out in a diabetes outpatient clinic, has 66 patients aged 18 years and over. The main results were: 51.5% of the patients were instructed to apply insulin in the first consultation with the physician; 94% used NPH insulin (neutral protamine Hagedorn). Of these, 92.7% who used a syringe did not mix the insulin correctly, and of those who used a pen, 100% did not mix it correctly. Diabetic patient education aims to make them enlightened and self-sufficient. **Objective:** To identify possible errors in the self-administration of insulin in diabetics. **Materials and methods:** Interventionist study, approved by the ethics committee, carried out in a diabetes outpatient clinic. There were 66 diabetic patients using insulin to demonstrate how they applied themselves from hand hygiene to material disposal. Each procedure task is a variable in a total of 36. A foam simulator covered by artificial skin was attached to the patient. U30, U50, U100 insulin syringes or applicator pens, insulin vials, pen needles were provided. A checklist was completed during the observation of the demonstration by the researcher and an assistant. **Results:** 63.6% of the patients were female, 55.4% were between 18 and 59 years old, 51.5% were instructed to administer insulin by a doctor in the first consultation; 78.8% used a syringe; 77.7% were taking NPH insulin. As a result, the main error found was in the homogenization of NPH insulin: 94% made a mistake in the homogenization. Of these, 92,7% used syringes and did not homogenize correctly, and 100% who used pens did not homogenize too. **Conclusion:** There are many parameters involved in good glycemic control, in addition to the numerous variants used in this research. A very important observation to be highlighted was the issue of homogenization regarding the application of insulin, the most used in our environment, in order to obtain better control. Thus, a multidisciplinary team becomes necessary in the treatment of DM, as it aims to provide knowledge about DM and complications, help with insulin administration, monitoring and social adaptation. **Keywords:** diabetes mellitus; multidisciplinary team; homogenization.

AP-065 INVESTIGATION OF MITOCHONDRIAL DIABETES: A RARE CASE REPORT

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Case presentation: A 40-year-old woman started treatment for diabetes mellitus previously diagnosed in young adulthood. He had already used metformin, without success in glycemic control, quickly evolving to the need for insulin. He complained of weight loss, thirst and excessive hunger, with a BMI of 12.6 kg/m^2, short stature, in addition to paresthesia and cramps in the lower limbs. At that time, she was diagnosed with diabetic neuropathy. She manifested bilateral acusia since the age of 31 and used a sound amplification device, however, 5 years ago, she was diagnosed with profound sensorineural hearing loss, and no longer benefited from its use. In the ophthalmological evaluation, diabetic retinopathy was not evidenced. She had a maternal family history of diabetes. Complementary exams showed absence of autoantibodies related to diabetes. In view of these findings, the hypothesis of mitochondrial diabetes was considered and subjected to molecular-genetic analysis using total saliva DNA, which resulted in the pathogenic variant (m.3243A>G), in heteroplasmy (22.78%), in the MT gene -TL1. **Discussion:** Mitochondrial diabetes, also called maternally inherited diabetes and deafness (MIDD) is a rare type of diabetes resulting from a mutation in mitochondrial DNA commonly at position 3,243 (adenine instead of guanine), the clinical manifestations are mainly diabetes onset in adults, sensorineural deafness, short stature, muscle weakness, ophthalmological and neuropsychiatric problems and involvement of the cardiac, renal and gastrointestinal systems, as these are organs that require greater energy intake. Heteroplasmy is the ability of mitochondrial DNA to be inherited at different rates to offspring, containing more wild-type or mutated DNA, thus multiple phenotypes are possible. **Final comments:** Despite being a rare cause of diabetes, it should be part of clinical reasoning, as there are peculiarities in the follow-up of these patients, as in the case of the patient in this study and family members who may have information about her pathology, in addition to genetic counseling. Furthermore, there is a scarcity of research in this topic in the Brazilian medical literature. Thus, MIDD needs to be the subject of research and of interest to public and private institutions. **Keywords:** mitochondrial diseases; diabetes; deafness; maternal inheritance.

AP-066 KNOWLEDGE AND PRACTICE OF FOOT CARE IN DIABETES MELLITUS, A CROSS-SECTIONAL STUDY

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Knowledge about foot self-care in diabetes mellitus is essential to avoid amputations. With the aim of evaluating this care in a sample of patients with diabetes, a cross-sectional study was carried out through a diabetes campaign promoted in partnership with 2 City Halls in 2019 and 2021. During the study, sociodemographic data and information related to foot care were collected through a questionnaire. The questions addressed the frequency of daily examination of the feet, the performance of the examination by the health professional, use of moisturizing creams, nail trimming, removal of cuticles, care with shoes, and use of external agents to warm the feet, such as heaters, electric blankets or hot water immersion baths. To investigate associations between variables, binomial logistic regressions, Spearman correlation tests and Kruskal-Wallis tests were performed. In total, 195 patients with a median age of 64 years (IQR: 59-71) who had lived with diabetes for a median of 12 years (IQR: 10-20) participated. Of the group, 62.5% were women, 63.1% performed daily foot self-examinations and 23.6% had had their feet examined by medical professionals prior to the campaign. The median number of correct answers for the five questions about knowledge of foot self-care proper was 3 (IQR: 2-4), with a higher number of correct answers being associated with female gender, daily self-examination of the feet and lower chronological age. While self-examination of the feet was correlated with greater knowledge about foot care and greater chronological age, medical foot examination showed no association with any variable. In conclusion, the low number of patients who had their feet examined by medical professionals was surprising, as well as the finding that this examination was not correlated with foot care knowledge or practices. This suggests that patient education is as critical as the medical examination itself in promoting good foot practices for people with diabetes. In addition, the finding that younger and female patients tend to have greater knowledge on the subject also indicates that older male patients should be the target of this education. Finally, the lack of association between time living with diabetes mellitus and knowledge about foot care strengthens the idea that the education of diabetic patients should be carried out regardless of the time elapsed since diagnosis. **Keywords:** diabetic foot; patient education; medical examination.

AP-067 PREVALENCE OF RISK FACTORS ASSOCIATED WITH CARDIOVASCULAR DISEASE IN TYPE 1 DIABETES IN A BRAZILIAN TERTIARY HOSPITAL

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Type 1 diabetes mellitus (DM1) is a chronic autoimmune disease characterized by insulin deficiency and evolved into hyperglycemia. If carefully controlled, DM1 will be associated with chronic, microvascular and macrovascular complications. Ideal cardiovascular health indexes have been protected in several studies, the main ones being smoking, physical activity, weight, height, body mass index (BMI), blood pressure, abdominal resistance, glycated hemoglobin (HbA1c), LDL, total/HDL cholesterol and albumin/creatinine ratio in individuals with DM1. The aim of the present study was to describe the profile of patients with type 1 diabetes treated at the endocrinology service of the *Hospital Geral de Fortaleza* (HGF) and to identify the prevalence of the aforementioned risk factors above and calculate cardiovascular risk over the next 10 years on the Steno calculator, taking into account sociodemographic, clinical and laboratory aspects. This is a single-center, retrospective, observational study, in which 155 patients treated until December 2022 at the Endocrinology and Metabology outpatient clinic were analyzed. It is concluded that the mean of the study population, included in the Steno calculator, showed a low prevalence (6.3%) of cardiovascular risk in the next 10 years. The study proved a predominantly young and female profile, consistent with the literature, with the average of patients showing a low prevalence of cardiovascular risk over the next 10 years prescribed on a Steno calculator. Note that the average of patients had a low prevalence of cardiovascular events in the next 10 years according to the risk factors analyzed by the Brazilian Society of Diabetes. In a subanalysis, patients with established microvascular and cardiovascular disease had as risk factors disease duration of more than 10 years, diagnosis of diabetes before the age of 20, with blood glucose outside target, with glycated hemoglobin greater than 7%, with increased albumin/creatinine ratio, and sedentary patients. Of the patients who had a previous cardiovascular event, only 1 of the 9 patients did not have associated microvascular complications, suggesting automaticity between microvascular and macrovascular events. According to analyzed data, we found modifiable risk factors to avoid the increase of established cardiovascular disease in patients with type 1 diabetes in our study, but without specific exam validation to minimize the risk of macrovascular event. **Keywords:** type 1 diabetes mellitus (DM1); cardiovascular disease; risk factors.

AP-068 THE PREVALENCE OF DIABETIC RETINOPATHY IN PARTICIPANTS OF A HEALTH PROFESSIONALS TASK FORCE TO PREVENT BLINDNESS IN A GROUP OF HIGH-RISK PATIENTS

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Introduction: Diabetes is a leading cause of vision loss worldwide, and chronic hyperglycemia and prolonged disease duration are the main risk factors for diabetic retinopathy (DR). Early detection and treatment allow prevention of diabetes-related visual impairment. Unfortunately, population assessment to trained eye-care professionals, specialized eye-care resources and therapies are scarce. Aware of this gap in public health care, the regional branches of the Brazilian Society of Diabetes and the State Society of Ophthalmology carried out a screening and educational campaign for diabetic retinopathy in a reference service for the treatment of diabetes on the World Diabetes Day. **Objective:** Describe the prevalence of diabetic retinopathy (DR) in participants of a group of consultations alluding to World Diabetes Day held at a reference center for the treatment of diabetes, in partnership with medical societies of Ophthalmology and Endocrinology. **Methods:** Descriptive, cross-sectional study where patients with diabetes who consented to participate in the task force were evaluated. Data collection took place through face-to-face interviews and a structured questionnaire. The data was compiled using the Zoho Forms application. **Results:** 135 patients were evaluated, 53.2% female, 55.3% with more than 10 years of disease, 39.3% from the interior of the state, 88.7% with DM2, with a mean age of 61.1 (±10.4 SD) years and 11.2% DM1, with a mean age of 28.7 (±15.8SD). In this group, 13.7% already had some chronic complication of the disease. It was observed that 53.63% of the patients had some degree of DR, with 65.15% Non-proliferative DR (mild, moderate and severe) and 34.8% proliferative DR. Of these patients, 13.64% had macular edema and 9.09% had vitreous hemorrhage. Among those affected by the proliferative DR, 30.43% had retinal detachment (RD). In this group, 13.7% already had some chronic complication of the disease, which was even more frequent in patients with retinal detachment (25.7%). The presence of cataracts prevented the examination of 11 patients. **Conclusion:** This study, carried out in a high-risk population, demonstrates the severity of ocular disease in people with diabetes and reinforces the importance of spreading the routine practice of ocular evaluation, making it accessible to all people with diabetes. **Keywords:** diabetes mellitus; diabetic retinopathy; public health.

AP-069 ASSOCIATION BETWEEN SERUM SCLEROSTIN LEVELS AND NEUROPATHY IN MEN WITH TYPE 2 DIABETES

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Introduction: Diabetes mellitus, particularly type 2 diabetes mellitus (DM2), is a worldwide public health problem due to an epidemic of obesity and metabolic syndrome. DM2 causes many complications that are categorized into microvascular and macrovascular complications, including atherosclerosis, which is one of the main pathological manifestations in macrovascular diseases. Patients with diabetes have a higher risk of accelerated atherosclerosis, eventually leading to chronic complications, as neuropathy. Sclerostin (SCL) is a glycoprotein that inhibits osteoblastic action. There is evidence of higher SCL levels in diabetic patients with atherosclerosis caused by the harmful effects of hyperglycemia on vascular integrity. Despite evidence of the usefulness of SCL as a serum marker of atherosclerosis and vascular lesions in patients with DM2, studies clarifying the relationship between serum SCL levels and neuropathy in males with DM2 are lacking. **Objective:** To determine SCL levels in male patients with DM2 and evaluate their relationship with neuropathy. **Methods:** Cross-sectional analytical study with 53 patients with DM2. Patients were divided into four groups. According to serum SCL levels, they were classified into <25th percentile, 25th to <50th percentile, 50th to <75th percentile, and ≥75th percentile. Subsequently, serum SCL levels were analyzed for neuropathy. The project was approved by the Agamenon Magalhães Hospital Ethics and Research Committee under Certificate of Presentation for Ethical Evaluation no. 95038518.7.3001.5197. **Results:** The age of patients ranged from 42 to 89 years, with a mean age of 62.11 ± 10.10 years and a mean DM2 duration of 13.40 ± 8.07 years. Data showed a mean fasting glycemia of 155.16 ± 62.02 mg/dL and a mean HbA1c of 8.70% ± 1.92%. The mean BMI was 27.07 ± 3.89 kg/m². Neuropathy was evidenced in 60.4% of subjects. The mean serum SCL level was 217.48 ± 215.29 pmol/L. The relationship of serum SCL and neuropathy was analyzed, but it was not statistically significant (p = 0.268). **Conclusion:** Serum SCL levels were not associated with neuropathy in men with DM2. **Keywords:** atherosclerosis; males; microvascular.

AP-070 PATIENT YOUNGER THAN 2 YEARS OLD DIAGNOSED WITH TYPE 1 DIABETES MELLITUS SECONDARY TO DIABETIC KETOACIDOSIS

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Case presentation: Patient, male, hospitalized for 1 year and 4 months in the intensive care unit due to severe respiratory discomfort, flu-like symptoms, vomiting, polyuria, polydipsia and lack of appetite. The glycated hemoglobin (HGT) dosage indicated a result higher than 500 mg/dL and a diabetic ketoacidosis protocol was initiated with subsequent hospitalization in the ward after 24 hours in the ICU. The treatment of type 1 diabetes mellitus (DM1) began with 0.3 IU/kg/day of NPH with corrections of regular insulin according to HGT. After two months of several dysglycemia episodes, insulin therapy and diet adjustments, good glycemic control for 48 hours was achieved and he was discharged for outpatient follow-up. During the appointments, frequent episodes of hypoglycemia were reported, the dosages were adjusted monthly and then switched to glargine and aspart insulins. One month after changing the therapeutic conduct, he was hospitalized to control a hypoglycemic episode. He reported worsening of the condition in the following month, with daily hypoglycemic episodes associated with neuroglycopenic symptoms. After adjusting the therapeutic dosages, the patient evolved with a partial improvement in glycemic levels and associated symptoms. **Discussion:** DM1 is characterized as an immune-mediated disease that develops due to the gradual destruction of insulin-producing pancreatic beta cells. One of the most common complications of DM1 is ketoacidosis, whose main symptoms are: polydipsia, polyuria, nocturia, polyphagia, nausea, vomiting, abdominal pain and weight loss. The treatment of DM1, carried out with insulin therapy, is frequent with the possibility of hypoglycemia, as in the case of the patient in discussion, or those presented in recurrence. The incidence of DM1 has a peak in the age group between 4-6 years and another around 10-14 years. This presents an exceptional condition, given the diagnosis of DM1 at 1 year and 4 months. In this age group, the autoimmunity associated with DM1 may be related to genetic syndromes. In addition, there is few evidence about the specific management of DM1 for this age. **Final comments:** Although DM1 is uncommon in children younger than 5 years old, it is a disease that can affect any age group. Therefore, it is necessary to be aware of the presence of this condition. In addition, it is essential to carry out studies aimed at this population in order to base the treatment of these patients. **Keywords:** type 1 diabetes mellitus; infant; diabetic ketoacidosis.

AP-071 MORTALITY AND OCCURRENCE OF HEART FAILURE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AFTER ACUTE MYOCARDIAL INFARCTION UNDERGOING PERCUTANEOUS CORONARY INTERVENTION TREATED WITH SGLT2 INHIBITORS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Sodium-glucose cotransporter-2 (SGLT2) inhibitors are used for the prevention of cardiovascular events in patients with type 2 diabetes mellitus (T2DM). However, there are controversies about the reduction of mortality and hospitalizations due to heart failure (HF) in this population after acute myocardial infarction (AMI) undergoing percutaneous coronary intervention (PCI). **Objective:** To assess the effects of SGLT2 inhibitors on mortality and hospitalization due to HF after AMI in patients with T2DM undergoing PCI. **Materials and methods:** This systematic review and meta-analysis followed the recommendations of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). PubMed, Scopus, Cochrane Library and Web of science databases were searched for randomized controlled trials (RCTs) or cohort studies comparing SGLT2 inhibitors with placebo after AMI in patients with T2DM undergoing PCI. After selection, 4 studies were included. We computed risk ratios (RRs) for binary endpoints, with 95% confidence intervals (CIs). The heterogeneity was evaluated with I^2 statistics. R Software, version 4.2.1, was used for statistical analysis**. Results:** Three RCTs and one retrospective cohort involving 905 patients with T2DM were included, of whom 237 were prescribed SGLT2 inhibitors therapy. The mean age was 62.4 years in the SGLT2 inhibitors group and 69.1 years in the placebo group. Compared to placebo, SGLT2 inhibitors therapy significantly reduced cardiovascular death (RR 0.38; 95% CI 0.16-0.91; p = 0.03; I^2 = 20%) and all-cause death (RR 0.47; 95% CI 0.23-0.93; p = 0.03; I^2 = 0%). However, there was no difference between SGLT2 inhibitors group and placebo in hospitalizations due to HF (RR 0.87; 95% CI 0.12-6.21; p = 0.89; I^2 = 69%). **Conclusion:** In this meta-analysis, the use of SGLT2 inhibitors was associated with a reduction in cardiovascular mortality and all-cause mortality, with a similar risk of hospitalization for HF after AMI in patients with T2DM undergoing PCI compared to placebo. **Keywords:** SGLT2; diabetes mellitus; acute myocardial infarction.

AP-072 PREVALENCE OF THE MORTALITY PROFILE DUE TO COMPLICATIONS FROM DIABETES MELLITUS IN THE NORTHEAST REGION OF BRAZIL BETWEEN 2018-2022

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Introduction: Diabetes mellitus (DM) is a chronic and complex endocrine disease that affects thousands of people worldwide. It has a vast potential to cause complications, such as macro and microvascular damage leading to cardiovascular problems, renal issues, retinopathy, and diabetic neuropathy. These factors can contribute to the high rates of morbidity and mortality. The importance of genetic predisposition in the development of DM is well-known, and recent research is aimed at understanding the correlation between DM and the patient's gender. **Objective:** To evaluate the prevalence of deaths caused by complications of DM in the Northeast region of Brazil from 2018 to 2022. **Materials and methods:** This is a quantitative epidemiological study, and the data were obtained through consultation of Tabnet, a generic public domain tabulator developed by the *Departamento de Informática do Sistema Único de Saúde* (Datasus). The obtained data were accessed under "Epidemiology and Morbidity," "Hospital Morbidity of SUS (SIH/SUS)," and "General, by place of residence starting from 2008." The individual geographical scope considered the options: "Alagoas," "Bahia," "Ceará," "Maranhão," "Paraíba," "Pernambuco," "Piauí," "Rio Grande do Norte," and "Sergipe." The selected filters were: "ICD-10: IV, Endocrine, nutritional, and metabolic diseases"; "ICD-10 morbidity list: Diabetes Mellitus"; and the period "year" was from 2018 to 2022. Submission to the Research Ethics Committee (CEP) was not required for this study. **Result:** According to the data obtained from 2018 to 2022, a total of 9,795 deaths due to DM complications were recorded. Among these, the states with the highest number of cases were respectively: BA (3,688), MA (1,339), PE (1,039), CE (1,020), PB (770), RN (547), AL (536), PI (486), SE (370). Furthermore, analyzing the same period, it was observed that females (5,262) were more affected than males (4,533), and the year 2020 recorded the highest number of cases, totaling 2025 deaths. **Conclusion:** It can be concluded that the number of deaths caused by DM complications in the Northeast is more prevalent among females than males. Additionally, it was not possible to establish a consistent increasing trend in the number of deaths over the past 5 years, as the numbers in 2020 and 2021 are lower, likely due to underreporting resulting from the COVID-19 pandemic. **Keywords:** diabetes mellitus; quantitative epidemiology; Northeast region of Brazil.

AP-073 EVALUATION OF THE REMOTE SERVICE OF THE CONTINUOUS MONITORING PROGRAM FOR GLUCOSE PROVIDED BY THE HEALTH DEPARTMENT OF THE FEDERAL DISTRICT (SES/DF)

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Introduction: Type 1 diabetes mellitus (DM1) is an autoimmune disease that leads to destruction of pancreatic beta cells and culminates in the depletion of production insulin. New technologies have been implemented to optimize care when patient with DM1 and SES/DF started to make available in November 2020 the continuous glucose monitoring (CGI) technology. In addition to new technologies, the means of care advanced and Teleattendance came to revolutionize care to the chronically ill. **Objective:** To evaluate the implementation of the remote outpatient clinic of the SES/DF MCG program in a health unit in specialized attention. **Methods:** Cross-sectional and descriptive study of the analysis of implementation of the remote guidance clinic for the use of MCG technology in the treatment of DM1 carried out by a nurse educator in diabetes at the Centro Specialized in Diabetes, Obesity and Hypertension (CEDOH) via phone call. **Results:** 74 patients were followed up for 1 year and for analysis of follow-up outcome they were grouped into 4 groups: Group 1 patients who were discharged for good adherence and maintenance of time on target > 70%, comprising 22.9% of the total. Group 2 remained in follow-up, since they did not reach the time at the established target, there was no unjustified absence and they still remained with doubts about using the tool (32.4%). Group 3 follow-up was interrupted by unjustified absences, non-adherence to the proposed guidelines and non-progression of time in the target (9.4%). Group 4 there was loss of sensor supply, since there was no fulfilled the criteria for continuity in the program (largest group in percentage 35.13%). **Conclusion:** Studies demonstrate that the early initiation of the use of MCG decreases glycated hemoglobin, on the other hand, access interruption is associated with a worsening of the results, it is therefore important that individuals have continued access to this device. Telemarketing can improve the results of the treatment, especially when it includes real-time engagement with the team and when it allows therapeutic adjustments, but simply having access to technology does not changes outcomes, unless the patient gets involved and knows how to handle it to create benefits for your health. **Keywords:** continuous glucose monitoring; teleattendance; diabetes mellitus.

AP-074 MULTIDISCIPLINARY MODEL OF CARE FOR THE CHRONIC PATIENT IN THE UNITED HEALTH SYSTEM OF THE FEDERAL DISTRICT

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Introduction: The proposed care model is based on comprehensive, multidisciplinary, longitudinal care and interventions that promote health and supported self-care. Extensive research was carried out in the literature to corroborate the need for changes in care for chronic conditions, with a description of the models and their historical evolution. **Objectives:** The main objective of the study is to organize a flowchart of care for patients with chronic diseases assisted in a specialized center in the Federal District. **Methods:** Qualitative and quantitative descriptive study, with the proposal to discuss a new model of care for chronic conditions. There were seven patients selected with a diagnosis of diabetes mellitus type 1 or 2, aged over 19 years. The application was carried out in two moments at the Center specialized in diabetes, obesity and hypertension (CEDOH) of the Health Department of the Federal District. During reception, data from the glucometer was transferred and active listening was carried out with the aim of individualizing care. Patients who came for the first time were referred for appointments with the nurse and endocrinologist and for a healthy eating group with nutrition. Patients with good control went for medical evaluation and document renewal. Users with inadequate control or without blood glucose monitoring were evaluated by nutrition and nursing, and if recurrent, psychology intervention was proposed. In cases of inadequate control but with monitoring, they were evaluated by nutrition and insulin therapy adjustment with the physician. Finally, cases of unavailable glucometer data were referred to nursing. **Results:** Key aspects were detected for the proper follow-up of patients, the main ones being comprehensive and trained reception; glycemic monitoring. During the application of the flowchart, there were some challenges for better effectiveness of the process, such as, unification of the anamnesis model; tool for simultaneous storage and access by all professionals involved; rear team; Easy access to team agendas. It was also verified the importance of structuring a group on diabetes education for first-time patients. **Conclusion:** The research contributes to the assessment of the current scenario and description of an evidence-based model that, in the long term, is expected to show results from the perspective of reducing associated comorbidities and costs to the health system. **Keywords:** health care; chronic disease; diabetes mellitus.

AP-075 INDIVIDUAL GENETIC PROFILES IN THE SELECTION AND EFFECTIVENESS OF PHARMACOLOGICAL TREATMENTS FOR TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW

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Introduction: Type 2 diabetes mellitus (DM2) is a complex and multifactorial chronic disease that presents challenges experienced in the treatment and control of glycemia. Understanding individual genetic profiles has proven to be increasingly important in personalizing pharmacological treatments and improving therapeutic efficacy. **Objective:** Evaluate the medical literature to assess the role of individual genetic patterns in the selection and effectiveness of pharmacological treatments for DM2. **Methods:** Following the Prism methodology, PubMed and BVS databases were systematically reviewed, with the descriptors Genetic Profile, Drug Therapy and Diabetes Mellitus, Type 2. Clinical studies, systematic reviews and meta-analyses published between June 2013 and May 2023 were included. In the end, four studies served as the basis for writing the review. **Results/Discussion:** The analysis of the included studies revealed consistent evidence of the role of individual genetic profiles in the selection and effectiveness of pharmacological treatments for T2DM. A roadmap was proposed to achieve pharmacological precision medicine in diabetes. The engineering of genetic variations, differential gene expression, and allelic expression in metformin treatment was explored. The use of insulin analogues for the same purpose was discussed. Lastly, the therapeutic potential of modulating autophagy in DM2 was highlighted, with findings suggesting that genetic relatives influence the body's response. **Conclusion:** Based on the analyzed studies, it is clear that individual genetic profiles play a significant role in the selection and effectiveness of pharmacological treatments for T2DM. Consideration of these genetic genes in clinical practice can lead to personalized and effective treatment, positively therapeutic outcomes and disease management. However, more research and prospective studies are needed to validate these findings and translate them into clinical practice. **Keywords:** diabetes mellitus; treatment; genetic profile.

AP-076 SGLT2 INHIBITORS AS ADJUNCT THERAPY FOR TYPE 1 DIABETES: A SYSTEMATIC REVIEW

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Introduction: Sodium-glucose co-transport-2 (SGLT2) inhibitors reduce the renal glucose reabsorption. Adjunct therapy is another therapy that is given with the primary treatment aiming to maximize its effectiveness against the disease. For Type 1 diabetes mellitus (T1DM), the primary treatment is insulin, which once failing to reach the target glucose status, has poor options to be associated with. Regarding the different antihyperglycemic mechanism of SGLT2 inhibitors, it might emerge as an alternative to be added to insulin as a broader therapeutic solution for T1DM. **Objectives:** To evaluate the effects of SGLT2 inhibitors as adjunct therapy to insulin in T1DM. **Materials and methods:** PubMed, Cochrane Library and Prisma databases were searched for publications between 2015 and 2023 using MeSH terms "SGLT2 inhibitors", "Type 1 diabetes", "Adjunct therapy", combined by the boolean operator "AND". Studies were included if they were randomized clinical trials (RCTs) that assessed separately the efficacy for each specific SGLT2 inhibitor as adjunct therapy to insulin in T1DM. **Results:** From 18 identified publications, 7 met inclusion criteria. The first study compared canagliflozin (CANA) in doses of 100 mg and placebo both associated with insulin, revealing HbA1c Baseline 7.7% and follow-up 7.7% on group control against 7.6% and 7.2% on CANA treatment group (.9313 <.0001 p-value). The dapagliflozin (DAPA) study, compared 10 mg of dapagliflozin and placebo both associated with insulin. The percentage of a day within 70-180 mg/dL [%] of serum glucose was 70.8 (66.6, 73.6) for the DAPA treatment group against 52.3 (42.9, 56.8) for the placebo group ($p < 0.001$). The most recent ones compared sotagliflozin (SOTA), a dual SGLT1 and SGLT2 inhibitor, and placebo. Sotagliflozin 200 and 400 mg featured statistically significant HbA1c reduction within an average 24 weeks, with Change from Baseline, % (p-value) – Placebo: -0.03 ($p = 0.54$); SOTA 200 mg –0.39 ($p < 0.001$); SOTA 400 mg –0.37 ($p < 0.001$). **Conclusion:** Our findings indicate that as an adjunct treatment with insulin, SGLT2 inhibitors are efficacious in improving glycemic control in type 1 diabetes mellitus. **Keywords:** SGLT2 inhibitors; type 1 diabetes; adjunct therapy.

AP-077 LATENT AUTOIMMUNE DIABETES IN ADULTS (LADA): EMPHASIZING THE RELEVANCE OF ANTI-GAD AND C-PEPTIDE TESTS FOR CORRECT DIAGNOSIS – CASE REPORTS

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Case 1: Male, 45-year-old, diagnosed with type 2 diabetes (T2D) for 1 year and a background of aortic dissection and dyslipidemia taking metformin 1,500 mg and glibenclamide 10 mg. Regarding of her age and normal BMI we ordered tests to evaluate her autoimmunity and the results came positive for anti-GAD 212 U/mL (reference value < 10) and C-peptide 2.19 ng/mL (reference value 1.10-4.40). After elucidation of the type of diabetes we suspended glibenclamide and introduced a Dipeptidyl Peptidase IV inhibitor with good glycemic control. **Case 2:** 36-year-old overweight male referred with a 2-year T2D and dyslipidemia taking insulin along with metformin 1,500 mg. Anti-GAD was administered as following: 111 U/dL – (reference value < 10) and C-peptide: 1.00 ng/mL (reference value 1.10-4, 40). But, due to elevated blood glucose we suspended metformin and kept Insulin on with great control. **Case 3:** Female, 34-year-old, diagnosed with T2D and dyslipidemia 1 year ago taking only metformin have presented high levels of anti-GAD (200 U/mL) and C-peptide of 1.93 ng/mL. After initiation of bedtime insulin patient had good response with elevated glycemic levels. Nowadays, Latent Autoimmune Diabetes in adults (LADA) has an estimated prevalence of 40% of the diabetic population, which highlights the relevance of anti-GAD and C-peptide tests as criteria for early diagnosis. These tests are essential in clinical practice especially in adult patients with early-stage diabetes for correct differentiation between LADA and T2D. By adopting these diagnostic criteria healthcare professionals can ensure an accurate diagnosis and establish an appropriate treatment plan, allowing better disease control and clinical outcomes. Critical for preserving pancreatic beta cells and delaying progression to insulin dependence. Therefore, it is essential to include these tests in diagnostic protocols for correct differentiation between the type of diabetes. The goal is to avoid delays in therapeutic intervention and improve the quality of patient's life. We have reported three clinical cases of LADA misdiagnosed as T2D to highlight the importance of including anti-GAD and C-peptide tests in the protocol for diagnosing LADA within the public network. **Keywords:** LADA; anti-GAD; diabetes.

AP-078 EVOLUTION OF AN ATYPICAL FORM LATENT AUTOIMMUNE DIABETES IN ADULTS – LADA CASE REPORT

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Case presentation: J.P.S.A., male, 19 years old, attended on 11/2020 in an endocrinology service to continue treatment. Principal complaint: "I am type 1 diabetic". Reports ants in the urine for 2 months, cops, weight loss of 2 kg. He went to an endocrinologist on **10/2020** and underwent tests: glucose: 319 and glycated Hba1c: 9.8% diagnosed with type 1 diabetes (DM1), NPH insulin prescribed: 8 IU in the morning, 2 IU at night. Father, mother and brother alive without comorbidities. He denies alcoholism and smoking. Physical examination: weight: 52.100 kg, height: 1.76 cm, BMI: 16.8, blood pressure: 90 x 60 mmHg, heart rate: 71 bpm, heart rhythm regulate 2T; respiratory system: no abnormalities. **11/2020:** Tests before starting insulin: glucose: 319 mg/dL, glycated Hg: 9.8%, remaining tests without abnormalities. Capillary blood glucose 3 hours after breakfast: 245 mg/dL. Capillary blood glucose map with an average of 250 during the day. Conduct: NPH insulin adjustment: 12 IU at 8:00 am, 08 IU at 2:00 pm; 06 IU at 22:00 and ultra-fast insulin regimen. **12/2020:** No complaints, using insulin. Tests: glucose: 66 mg/dL, glycated Hg: 7.8%, anti-GAD Ab 327, where we arrived at the diagnosis of LADA: form of diabetes in adult life (up to 12% of cases) that presents slowly progressive autoimmunity. **Discussion:** Diagnosis of LADA: 1) age > 30 years; 2) positive antibodies, the most used being anti-GAD; 3) no need for insulin for at least 6 months after diagnosis. Patient presented, is 18 years old and although some authors report the possibility of LADA occurring in younger adults and rarely in children and adolescents, these do not require insulin at diagnosis, and have milder initial symptoms, the patient in this case, presented acute symptoms already requiring insulin. Authors suggest that, for these acute forms, the patient is the carrier or has a family history of autoimmunity, which does not occur with the patient in question. Finally, the patient is a carrier of anti-GAD thus closing the diagnosis of LADA. **Comments:** Conclude that diseases gain identity from the phenotype, and from the genetic and environmental etiology. Heterogeneous clinical appearance of LADA results from the complex pathogenesis and is also proportional to anti-GAD Ab titers, according to recent studies. Early diagnosis of LADA helps in the immediate choice of therapy, avoiding treatment inertia, and helps in risk stratification for complications. **Keywords:** diabetes mellitus; LADA; anti-GAD Ab.

AP-079 AUTOIMMUNE HEPATITIS IN A PATIENT WITH ACQUIRED GENERALIZED LIPODYSTROPHY ON METRELEPTIN: A CASE REPORT

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Introduction: Acquired generalized lipodystrophy (AGL) is a rare disease, with high morbimortality mainly due to cardiovascular and liver diseases and the use of metreleptin (MTL) improves metabolic parameters, quality of life and increases life expectancy. **Case report:** A 27-year-old man with severe mental retardation, generalized lack of adipose tissue from the age of 5 years, hypertriglyceridemia and hepatic steatosis with elevation of aminotransaminases (<3X upper limit). He also presented acanthosis nigricans, umbilical protrusion, muscular pseudohypertrophy, proteinuria, and eosinophilic esophagitis. At the age of 18, he presented polyuria and polydipsia and was diagnosed with diabetes mellitus (DM), which remained poorly controlled despite metformin and high doses of insulin (>3 IU/kg/day). In the initial investigation, anti-GAD, anti-insulin and anti-ICA autoantibodies were reactive; subsequently, C-peptide was 0.07 ng/mL, confirming type 1A DM. In 2016, he started using MTL, with improvement in hyperglyceridemia, proteinuria and glycemic control with a significant reduction in the total daily dose of insulin. As of 2019, there have been episodes of important and transient elevation of aminotransaminases (>6X upper limit), coinciding with the increase in the dose of MTL. Initially, only low titers of anti-smooth muscle antibody were identified; and subsequently, by liver biopsy, chronic hepatitis in the cirrhotic phase, with intense periportal and parenchymal necroinflammatory activity, with an aspect of autoimmune origin, without steatosis or perisinusoidal fibrosis. Prednisone and azathioprine were then started, but the patient evolved with worsening liver function, clinical decompensation with ascites and urinary infection, and was even prepared for liver transplantation. After suspension of azathioprine and use of diuretics, the patient is clinically compensated, in conservative treatment of cirrhosis. **Discussion:** The increase in aminotransferases were initially attributed to steatohepatitis; however, the presence of anti-smooth muscle and the peaks of aminotransferases coinciding with the increase in MTL doses led to a liver biopsy that showed autoimmune hepatitis. **Conclusion:** AGLs are associated with autoimmune diseases, including hepatitis. Although it is difficult to determine associations in rare diseases, we need to be aware of the possibility of development or progression of autoimmune diseases with the use of MTL for AGL. **Keywords:** lipodystrophy; hepatitis, autoimmune; leptin.

AP-080 FROM CHRONIC KIDNEY DISEASE TO THE DIAGNOSIS OF TYPE I DIABETES MELLITUS

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Female patient, 14 years old, with Hashimoto's disease and family history of Turner Syndrome, admitted to the ward for investigation of renal dysfunction (urea 93 mg/dL and creatinine 3.93 mg/dL) associated with proteinuria in a nephrotic pattern (proteinuria 875.7 mg/24 h), evolving with the need for hemodialysis. Initiated, during hospitalization, pulse therapy with corticosteroids due to suspected diagnosis glomerulopathy, which was later confirmed in a renal biopsy with Immune pauci pattern in immunofluorescence. However, after institution of corticosteroid therapy, the patient presented recurrent episodes of hyperglycemia. At the time, when considering the patient's age, previous existence of an autoimmune disease (Hashimoto's) associated with persistent hyperglycemia above 300 mg/dL, the diagnostic hypothesis of type 1 diabetes mellitus was suggested, confirmed after carrying out the tests (HbA1c 6.1%; Anti-GAD > 2,000; C-peptide 9,3); insulin therapy was started during hospitalization. The patient evolved with improved glycemic control and is being followed up with endocrinology. **Discussion:** Kidney disease is the main cause of mortality in patients with type 1 diabetes. The peak incidence of diabetic nephropathy is usually found 10 to 20 years after the onset of diabetes, it rarely develops before that. However, as reported in this case, although rare, the diagnosis of DM can be made simultaneously with renal dysfunction. According to the main protocols, the screening of complications of type 1 diabetes mellitus should start five years after the diagnosis, but young patients with other autoimmune comorbidities, already presenting some dysfunction such as proteinuria in the case of the patient in question, should receive greater attention for the investigation of complications given the high frequency of premature death in this population. **Keywords:** kidney; diabetes; autoimmune.

AP-081 EFFICACY AND SAFETY OF TIRZEPATIDE VS. INSULIN GLARGINE: SYSTEMATIC REVIEW

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Introduction: Type 2 diabetes mellitus (DM2) is a chronic disease characterized by chronic hyperglycemia and altered metabolism of macronutrients, mainly due to insulin resistance. Treatment must be individualized and include dietary modifications, exercise, and drug therapy to control glucose levels and prevent complications. Among the drug options, tirzepatide, a new glucose-dependent insulinotropic receptor and glucagon-like peptide-1 (GLP-1) agonist, and insulin glargine, a long-acting human insulin analogue, stand out. **Objective:** To evaluate the efficacy and safety of tirzepatide *versus* insulin glargine in adults with T2DM. **Methods:** The review followed the PRISMA guidelines until May 26, 2023 and was performed in PubMed, LILACS, SciELO and the Cochrane Central Register of Controlled Trials using the terms "Tirzepatide" AND "Insulin Glargine" AND "Diabetes Mellitus". Cohort, case-control, cross-sectional, ecological and clinical trials were included. The excluded publications included reviews, commentaries, case reports, editorials, animal studies and unrelated articles. Biases were assessed using the GRADE tool, and data extraction focused on study settings, participant characteristics, and relevant outcomes. **Results:** Of the 45 publications selected, 3 were included in this review. All three studies were phase 3, randomized, double-blind, controlled multicenter trials. The arms included patients receiving tirzepatide (5 mg, 10 mg, 15 mg) and Insulin Glargine. Sample sizes ranged from 457 to 2002. Studies reported decreases in HbA1C levels from 2.11% to 2.24% (2.19 ± 0.06) with 5 mg of tirzepatide, 2.40% to 2.44% (2.42 ± 0.0016) with 10 mg of tirzepatide, 2.34 % to 2.58% (2.47 ± 0.09) with 15 mg of tirzepatide and 0.95% to 1.44% (1.08 ± 0.25) with Insulin Glargine. Studies have shown body weight loss of 5 kg to 7.1 kg (5.83 ± 0.9) with tirzepatide 5 mg, 7 kg to 9.5 kg (8 ± 1.08) with tirzepatide 10 mg, 7.2 kg to 11.7 kg (9.23 ± 1.8) with tirzepatide 15 mg, 1.5 kg to 1.9 kg (1.66 ± 0.16) with Insulin Glargine. Among the studies, those with tirzepatide had fewer adverse effects, most of which were mild, such as nausea and diarrhea. **Conclusion:** Tirzepatide determined a significant decrease in HbA1C compared to Insulin Glargine, in addition to weight loss and a lower incidence of adverse events. **Keywords:** tirzepatide; insulin glargine; diabetes mellitus.

AP-082 INSULIN-DEPENDENT TYPE II DIABETES ALLERGIC TO INSULIN – WHAT NOW?

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Case report: R.R.S., 85 years old, male, type 2 diabetic (T2DM), previous revascularization, was hospitalized with COVID-19, introduced insulin therapy, Neutral Protamine Hagedorn (NPH) and Glulisine. He presented pruritic erythematous rashes on the back, whitish oral areas and peeling in extremities, treated with oral corticosteroids and antihistamines. Eight months later during consultation with the endocrinologist, he reported pharmacodermia confirmed in skin biopsy possibly due to insulin as indicated allergic tests. Before the appointment he had been in an emergency care and had glulisin switched to regular insulin and NPH insulin dose reduced. The endocrinologist recommended discontinuing NPH insulin and corticosteroid therapy. Regular insulin was prescribed in case of blood glucose > 200 mg/dL and Linagliptin were introduced. The blood glucose monitoring improved as well as pruritic rashs. Pioglitazone and Dapagliflozin were prescribed later for glycemic control. Insulin was discontinued, the urticarial eruptions decreased, and patient kept good glycemic control and stable renal function. **Discussion:** The incidence of insulin allergy is < 3%. Short-acting and long-acting insulin analogues have decreased immunogenicity compared to their animal sourced predecessors. Short-acting insulins are less frequently associated with sensitization because rapid absorption is thought to decrease immune response. This sensitization also occurs by additives or materials used to deliver insulin. There are 4 types of allergic reactions, type 1 (presented in this case), IgE mediated, faster and most common, occurs by insulin preservatives. Type II hypersensitivity reactions are not specifically associated with insulin. Type III, antigen- antibody mediated complexes, and type IV, T cells mediated, rare and late. When there is an allergy, antihistamines and/or corticosteroids are indicated. T2DM patients have oral or injectable hypoglycemic agents, such as Liraglutide, as options. If not feasible, changing the insulin may be sufficient, but if immediate reactions occur, desensitization may be considered. For this, the current protocols are: increasing subcutaneous doses slowly, continuous subcutaneous infusions administered by insulin pumps or intravenously. **Final considerations:** Despite of increasingly resembling the endogenous insulin molecule, it still has harmful immunoreactive potential, which makes it even more important to encourage research to manage similar cases. **Keywords:** diabetes; insulin; allergy.

AP-083 INTERFACE BETWEEN PRIMARY CARE AND SPECIALIZED CARE IN STATES OF THE NORTHEAST REGION OF BRAZIL: A LOOK AT THE ENDOCRINOLOGICAL TELEINTERCONSULTATIONS OF DIABETES MELLITUS

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Introduction: Diabetes mellitus (DM) is part of the group of chronic diseases responsible for the main causes of death in the world, causing a great impact on the health system, and must be prevented, diagnosed and treated in Primary Health Care (APS). Good management of the disease can prevent complications and the success of the treatment is closely linked to the knowledge and management of the disease by the doctor in APS and the support of the endocrinologist in secondary care. The access of patients to different health care points is a challenge for the Unified Health System (SUS), since the APS comprises a low resolution capacity with a consequent increase in appointments in specialized outpatient services. The integration of Health Care Networks, with greater links between focal specialists and family and community physicians or general practitioners, make up, in this context, one of the challenges for increasing clinical resolution. **Objective:** To report the incidence of DM cases within endocrinology teleinterconsultations. The project connects teleconsultants (endocrinologists), family health teams and patients from the territories of Paraíba and Pernambuco in the same virtual environment for patient management. **Materials and methods:** Cross-sectional, descriptive study based on the registration of teleinterconsultations in electronic medical records from November 2022 to June 2023. June 2023: 201 teleinterconsultations were recorded. **Results:** 201 teleinterconsultations were carried out, 107 cases on DM, 40 cases on thyroid disease and the remaining cases with complaints within the expertise. We observed that 53% of the served cases correspond to diabetic patients involving questions about diagnosis, treatment management and longitudinal follow-up. **Conclusion:** We can observe the difficulty of APS physicians in carrying out the diagnosis and adjust treatment to diabetic patients. The teleconsultation of endocrinologists allowed the improvement of the clinical outcome for DM, directly impacting care and developing the care repertoire for APS medical professionals. **Keywords:** diabetes mellitus; primary health care; teleinterconsultations.

AP-084 THE IMPACT OF THE COVID-19 PANDEMIC ON HOSPITALIZATIONS DUE TO DIABETES MELLITUS IN BRAZIL

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Introduction: Diabetes mellitus is a prevalent non-communicable chronic disease associated with high morbidity and mortality. It can lead to complications such as renal insufficiency, retinopathy, cardiovascular disease, and lower limb amputation, particularly when not properly treated. The COVID-19 pandemic has imposed a period of social isolation that may have impacted the access to and quality of care for these patients. **Objective:** To identify the relationship between social isolation due to the COVID-19 pandemic and hospitalizations for diabetes mellitus, according to regions in Brazil. **Methods:** This study is an observational, descriptive research using data collected from hospital admissions based on residency available in the Hospital Information System (SIH/SUS) from 2018 to 2022. After data collection according to the ICD-10 chapter for diabetes mellitus in the SIH and population data from the demographic census, the following analyses were performed: hospitalization rate per 10.000 inhabitants and relative frequency according to demographic and socioeconomic variables. **Results:** During the analyzed period, a total of 659.793 admissions for diabetes mellitus were recorded in Brazil, with 239.412 (36,3%) in the Southeast region and 211.099 (32%) in the Northeast region. During the same period, the Southeast region accounted for 40,8% of the costs related to hospital services for diabetes mellitus, with an average expenditure of R$ 40.329.568,09 per year. If we compare hospital expenses for DM-related admissions by region in 2020 and 2022, we observe an increase of 39,5% in the Northern region. Lastly, the analysis of hospitalization rates shows that the Northern and Northeastern regions have the highest rates (8,1 and 7,5, respectively, in 2022). Regarding gender, there are more hospitalizations of males than females, except for 2018 when both had a rate of 6,4. Regarding race, the Northeast region has the highest frequency of hospitalizations for mixed-race individuals (45,1), the Southeast for White individuals (49,9) and Black individuals (62,4). **Conclusion:** It can be concluded that there was a significant increase in the hospitalization rate for diabetes mellitus, especially in Northern, particularly during the critical period of the COVID-19 pandemic. These indicators can be explained by the social conditions and infrastructure of the regions, and it can be inferred that there is an association between the rise in these data and the pandemic. **Keywords:** hospitalizations; pandemic; diabetes mellitus.

AP-085 USE OF CONTRACEPTIVE METHODS IN ADOLESCENTS WITH DIABETES MELLITUS IN A REFERENCE CENTER IN SOUTHERN BRAZIL

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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 CAM (contraceptive methods) 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, 100 were interviewed so far. The mean age was 13.93 ± 2.61 years; 80 (80%) had menarche, whose mean age was 11.79 ± 1.44 years. 19 (19%) had started sexual intercourse, with a mean age at onset of 15.42 ± 2 years. Of the 28 using MAC, 17 received a prescription from a medical professional and 11 had started using MAC without professional evaluation. The MACs used are: combined oral contraceptives 17 (61%); male condom 4 (14%), quarterly injectable progesterone 3 (11%); injectable combined contraceptive 2 (7%); etonogestrel 2 implant (7%). There were no reports of pregnancies among the interviewees. **Conclusion:** Although almost all adolescents with DM who had sexarche were using MAC, only two were using a LARC, which would be the most appropriate due to its high efficacy and safety. Many were using MAC 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; adolescents; diabetes mellitus.

AP-086 DIABULIMIA: CONSEQUENCES OF INADEQUATE TYPE 1 DIABETES CONTROL IN ADOLESCENTS

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Introduction: The recent term defined in The Diagnostic and Statistical Manual of Mental Disorders, Diabulimia, is defined as the way in which individuals with type 1 diabetes mellitus (T1DM) alter their insulin doses on their own with the aim of weight loss. This practice is associated with eating disorders and has become prevalent, especially in the adolescent population, resulting in a rapid onset of complications related to T1DM. **Objective:** To analyze scientific articles on eating disorders associated with inadequate control of T1DM in adolescents. **Methods:** This study carried out a systematic review of the literature based on the PRISMA methodology, using the PubMed and SciELO databases, selecting 08 articles from the last five years, in English and Portuguese. **Results:** Young adults with chronic health conditions related to diet, such as T1DM, are more likely to develop eating disorders, along with a higher tendency to experience depressive and anxiety symptoms when compared to non-diabetic individuals. This is due to typical physiological changes in this age group, increased adipose tissue, and psychosocial factors associated with cultural emphasis on thinness and social stigmas related to not fitting into that standard. Insulin deficiency promotes weight loss through catabolic processes such as lipolysis, gluconeogenesis, and proteolysis. Thus, eating disorders and practices such as reducing or omitting insulin use in individuals with T1DM have become common, contributing not only to psychological disorders but also to the difficult control of this disease, as reducing insulin doses or discontinuing its use does not achieve proper glycemic control. Complications associated with diabulimia include microvascular complications of diabetes, dehydration, nausea, vomiting, and the risk of death, as well as the early onset of chronic complications of T1DM such as retinopathy, nephropathy, and neuropathy. **Conclusion:** Insulin is an anabolic hormone, and its deficiency promotes weight loss through catabolic processes. Diabulimia is often observed in adolescents due to social stigmas associated with weight gain. As a result, the treatment of T1DM becomes challenging, and complications of this disease may appear earlier than usual. **Keywords:** diabulimia; diabetes mellitus; eating disorder.

AP-087 ADEQUACY AND CHOICE OF THE CONTRACEPTIVE METHOD IN WOMEN WITH DIABETES MELLITUS AT A HOSPITAL IN SOUTHERN BRAZIL

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Introduction: Women with diabetes mellitus (DM) should have planned pregnancies, as uncontrolled glycemic levels may be associated with the progression of chronic DM complications and increased risk of fetal death and congenital malformations. The contraceptive methods (MAC) may be contraindicated in patients with long-standing DM and/or vascular complications. **Objective:** To verify which MACs are chosen by patients with DM when those indicated for their clinical condition are offered free of charge. **Material and methods:** Prospective cohort study, with the inclusion of women who participated in a previous study on MAC in patients with DM (07676219.1.0000.5327 Plataforma Brasil). On visit 1, they will receive guidance on all MACs available and the most appropriate for each patient, respecting contraindications. A structured interview will be conducted with detailed demographic questions, reproductive history and medical health. The patient will be free to choose the MAC she wants. If the patient prefers the use of contraceptives (combined or only with injectable progesterone), she will receive a prescription for medication available at the Unified Health System (SUS) pharmacies. In the case of choosing LARC: long acting reversible contraceptives; Cu IUD (copper intrauterine device), LNG-IUD(levonorgestrel intrauterine system) or progestogen implant, the patient will attend visit 2 to perform a procedure related to implantation of the method. All participants will be followed up by telephone for 2 years to assess continuity and satisfaction with the method and occurrence of pregnancy. **Partial results:** In a sample of 27 women between 16 and 45 years old, the mean age was 30.7 + 7.17 years. 23 (85%) of the women declared themselves white. 18 (67%) had a steady partner. 14 (52%) up to 12 years of study.15 (55%) were using contraindicated MAC according to WHO eligibility criteria, 4 (15%) used barrier methods and 8 (30%) had no contraindication to MAC in use. After guidance about MACs, 18 (66%) chose etonogestrel implant,4 (15%) oral progestogen, 2 (7%) LNG-IUD, 1 (4%) Cu-IUD and 1 (4%) combined oral contraceptive. **Conclusion:** The most chosen method was the etonogestrel implant. Most women chose the MAC most recommended for their effectiveness and safety: the LARCs. When these women have access and choose the preferred MAC, opt for a LARC. Based on these results, improvements in access and availability of methods for family planning for women with DM should be instituted. **Keywords:** contraception; diabetes mellitus; family planning.

AP-088 ATHEROSCLEROSIS AND MORTALITY IN BRAZIL FROM 2011 TO 2021 FROM A MACRO-REGIONAL PERSPECTIVE

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Introduction: In Brazil, atherosclerosis is the main cause of cardiovascular diseases. Furthermore, in 1995, 23% of deaths, at all ages, occurred as a result of atherosclerosis. Its major clinical manifestations include ischemic heart disease, ischemic stroke, and peripheral arterial disease. **Objective:** To describe the distribution profile of mortality by atherosclerosis in Brazil from 2011 to 2021 from a macro-regional perspective. **Materials and methods:** This is a retrospective, detailed and descriptive study built on secondary data obtained from the Hospital Information System of the Unified Health System (SIH/SUS). The data was organized in tables and grouped them according to the macro-region, age group, sex, race and schooling. **Results:** From 2011 to 2021, 12,036 deaths were recorded. Incidence rates were much higher in the southeast region with 7,013 (58%) deaths and in the northeast with 2,659 (22%). Additionally, the lowest rates were in 2020 and 2021, 40% below the average of the study period. Seniors aged 60 and over, mainly from 80 and above, lead with 11,063 (91%) of the recorded deaths. No discrepancies were observed related to male 5,497 (46%) and female 6,539 (54%) death rates. The white race was predominant with 7,520 (62%) of the deaths, followed by the brown race with 3,262 (27%). Individuals with less than 7 years of schooling represent 8,260 (68%) of the recorded deaths. Among this group, individuals with 1 to 3 years of schooling lead the death with 3,019 (25%). **Conclusion:** Atherosclerosis related deaths are carried out mainly in the southeastern and northeastern regions, and showed a downward trend in 2020, which may be related to the COVID-19 pandemic. The elderly are the most affected age group. In addition, the majority of deaths were recorded in white population and in individuals with fewer years of schooling, which, observably, are likely more prone to develop atherosclerosis, which may be related to social inequality, which may result in less access to information as well as to quality health services. **Keywords:** epidemiology; atherosclerosis; Brazil.

AP-089 SERIOUS METABOLIC COMPLICATIONS IN A PATIENT WITH FAMILIAL PARTIAL LIPODYSTROPHY TYPE 4: CASE REPORT

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Case presentation: M.M.B.C., female, 44 years old, referred to the Endocrinology outpatient clinic after multiple episodes of acute pancreatitis due to severe hypertriglyceridemia. She had a history of type 2 diabetes mellitus for 5 years, requiring intensive insulin therapy for 1 year (1 U/kg/day), in addition to systemic arterial hypertension and grade I obesity (BMI 31.1 kg/m^2). No family history of hypertriglyceridemia. Physical examination revealed eruptive xanthomas on the knees, elbows, and feet. Admission exams showed triglycerides 6,180 mg/dL. Started fenofibrate, atorvastatin, and omega 3 in high doses. She has difficulty in glycemic control, currently using insulin 1.8 U/kg/day, as well as triglycerides, evolving with a new episode of severe acute pancreatitis in April 2023. Requested genetic test research and evidenced mutation in gene PLIN 15:89.673.236 G>A heterozygosity. **Discussion:** Familial partial lipodystrophy (FPL) type 4 is an extremely rare autosomal dominant inheritance disease, described in less than ten families worldwide. There are 8 subtypes of FPL and the most common are FPL type 2 (mutation in the *LMNA* gene) followed by type 3 (mutation in the *PPARG* gene). LPF4 originates from heterozygous mutations in the *PLIN1* gene, identified on chromosome 15q26.1, which encodes perilipin 1, the most abundant protein that coats the lipid droplets of adipocytes. This is essential for the formation and maturation of droplets, storage of triglycerides, and release of free fatty acids. The defective protein produces coactivation of adipose tissue triglyceride lipase and increased basal lipolysis, resulting in reduced adipocytes and adipose tissue fibrosis. Clinically, it can be evidenced by hyperinsulinemia, hypertriglyceridemia, and hepatic steatosis, in addition to more marked lipodystrophy in the lower limbs and gluteofemoral deposits. It is extremely important to know the various forms of partial lipodystrophies, especially for the differential diagnosis in patients with hypertriglyceridemia and suspected familial hyperchylomicronemia, for therapeutic guidance, because of the new drug possibilities. **Final comments:** This case demonstrates a rare subtype of familial partial lipodystrophy described in the literature, showing that the diagnostic challenge and lack of treatment and early follow-up result in severe and potentially fatal metabolic complications. **Keywords:** lipodystrophy; hypertriglyceridemia; xanthomas.

AP-090 PARTIAL FAMILIAL LIPODYSTROPHY TYPE 3: CASE SERIES REPORT

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Case presentation: Case 1: A 42-year-old woman with hypertension, diabetes on insulin therapy (1.5 IU/kg/day) and metformin, class 1 obesity, presents with xanthomas, acanthosis nigricans, phlebomegaly, muscular hypertrophy, and double chin. **Case 2:** A 47-year-old woman with diabetes on insulin therapy (2.2 IU/kg/day), pioglitazone, metformin, hepatic steatosis, active smoking, serum leptin of 1.6 ng/mL (reference range: 4.7-23.7), presents with xanthomas, phlebomegaly, double chin, muscular hypertrophy, and a history of pancreatitis. **Case 3:** A 48-year-old man with diabetes, hypertension, class 1 obesity, hepatic steatosis, chronic kidney disease (stage 4BA3, urine albumin-to-creatinine ratio: 3,354 mg/g), retinopathy with bilateral amaurosis due to diabetic retinopathy, and a history of pancreatitis. **Case 4:** A 46-year-old woman with hypertension, diabetes, hepatic steatosis, cholelithiasis, hyperuricemia, presents with muscular hypertrophy. All patients had elevated triglyceride levels (ranging from 3,999 to 7,528 mg/dL). Genetic testing revealed heterozygous mutations in case 1 and 3 at chr3:12,433,901 G>A p.Arg425His, in case 2 at chr3:12,417,017 G>T p.Arg378Met/chr3:12,433,901, and in case 4 at chr3:12,406,013 A>AT p.Ser253Valfs*27, all in the PPARG gene, confirming the diagnosis of partial familial lipodystrophy (PFL) type 3. **Discussion:** PFL syndromes are rare disorders with a prevalence of 1:1,000,000, inherited in an autosomal dominant manner. They are characterized by a lack of peripheral adipose tissue and central muscular hypertrophy, difficult-to-control diabetes, and atherogenic dyslipidemia. There are eight subtypes, with type 3 being the second most common. It is caused by mutations in the PPARG gene, which plays a key role in adipocyte differentiation and regulates the expression of numerous genes involved in lipid metabolism, including aP2, acyl-CoA synthetase, and lipoprotein lipase (LPL). PPARG also controls the expression of fatty acid transport protein 1 (FATP-1) and CD36, both involved in lipid uptake by adipocytes and glucose homeostasis. Compared to PFL type 2, type 3 is associated with more severe hypertriglyceridemia and insulin resistance. **Final comments:** The diagnosis and treatment of PFL type 3 are challenging, and it is important to prevent recurrent pancreatitis and the premature development of cardiovascular diseases. Molecular diagnosis may guide the indication of new therapeutic options available for triglyceride reduction. **Keywords:** PPAR gamma; lipodystrophy; hypertriglyceridemia.

AP-091 LOW LIPOPROTEIN(A) LEVELS IN PATIENTS WITH DIABETES AND CORONARY ARTERY DISEASE

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Introduction and objective: Lipoprotein (a) [Lp(a)] is a molecule similar to LDL being formed by the junction of apoB with apolipoprotein A. Lp(a) levels are virtually independent of diet or environmental factors. Around 90% is defined by the patient's genetic heritage. Lp(a) has the potential to cause atherosclerosis by LDL-like mechanisms (vascular wall impairment, oxidation). Studies suggest that Lp(a) may differentially affect cardiovascular risk in diabetic patients and in the general population. The aim of this study was to describe the Lp(a) profile in individuals with diabetes and coronary artery disease. **Materials and methods:** This is a descriptive cross-sectional study carried out in 2 reference centers in the care of patients with diabetes and high cardiovascular risk in Fortaleza-Ceará, Brazil. We evaluated Lp(a) level was and the presence of multivessel coronary artery disease. The statistical analysis of the data was performed with the Microsoft Excel program. **Results:** A sample of 34 patients with type 2 diabetes (T2D) were evaluated, 47% (16) were male and 53% (18) female, with a mean age of 58.3 ± 9.34 years old. The mean time of the T2D diagnosis were 12.5 ± 4.67 years. A1C levels were 8,9 ± 1,8%, HDL-c were 33 ± 11 mg/dL, TG levels 156.5 ± 46 mg/dL and LDL-c levels 123 ± 42 mg/dL. The time since the coronary event was 7.85 ± 6.27 years. The mean age at the first thrombotic event was 51.56 ± 9.311 years old. There was found 44.1% of dyslipidemia before the first thrombotic and 61.7% had multivessel coronary artery disease. Lp(a) median was 23.5 mg/dL (min <3 – max 149). In this study, 70.5% of the evaluated patients had Lp(a) < 50 mg/dL, 20.5% between 50-90 mg/dL, and 8.8% had Lp(a) > 90 mg/dL. **Conclusion:** Most patients with diabetes studied had low levels of Lp(a) even though they were patients at very high cardiovascular risk. More studies need to be carried out, but this finding could suggest that in diabetic individuals, as well as LDL-c, we could have lower cutoff points than in the general population. **Keywords:** Lipoprotein (a); diabetes; atherosclerosis.

AP-092 CYSTIC FIBROSIS AS DIFFERENTIAL ETIOLOGICAL DIAGNOSIS OF HYPERTRIGLYCERIDEMIA: CASE REPORT

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Case presentation: Patient M.T.L., male, 53 years old, referred from Nephrology to Endocrinology outpatient clinic for investigation of severe isolated hypertriglyceridemia. Admission tests showed triglycerides higher than 2,500 mg/dL. The patient had previous G3b chronic kidney disease without a well-defined etiology, was overweight (BMI 27.3 kg/m²) and had hypertension. He also reported a family history of coronary disease in first-degree relatives and was unaware of dyslipidemia. Considering important family history, genetic tests were proposed to investigate the etiology of hypertriglyceridemia. The investigation followed with molecular analysis by Next Generation Sequencing. Heterozygous mutations were identified in CFTR gene (CF transmembrane conductance regulator, OMIM* 602421): variant c.1647T>G and c.1210-11T>G, which are closely related to cystic fibrosis (CF), as described in medical literature. **Discussion:** Hypertriglyceridemia is a disease related most commonly, to obesity, diabetes mellitus, drug intake or alcoholism. When mild to moderate, it typically has polygenic etiology. However, severe elevation, defined by serum triglycerides > 1,000 mL/dL, can be caused by rare recessive monogenic disorders. CF is a multisystemic hereditary disease characterized by exacerbated production of secretions and exocrine pancreatic insufficiency. In the context of increase in CF patients' survival, different complications are observed. One of which is dyslipidemia, especially hypertriglyceridemia. The c.1647T>G variant of the CFTR gene replaces serine amino acid at 549 position with arginine. In heterozygosis, this variant is present in only two out of 141 thousand individuals' population bank and has been previously described in the medical literature associated with CF. The second variant (c.1210-11T>G) constitutes the 5T allele and when associated with the CTFR gene in heterozygosis, can cause idiopathic pancreatitis. In association with the clinical condition, the molecular test reveals a very rare association between hypertriglyceridemia and CF. Although, the patient does not have classic symptoms of CF, the relationship found by genetic test is described in literature with significant evidence. **Final comments:** This case report aims to highlight the importance of considering CF as a differential etiological diagnosis of hypertriglyceridemia. Furthermore, it contributes as a novelty to literature, considering that there are only two other cases described. **Keywords:** hypertriglyceridemia; cystic fibrosis; dyslipidemia.

AP-093 DECREASED APPENDICULAR MUSCLE MASS IS ASSOCIATED WITH THE CHRONIC USE OF STATINS IN PATIENTS WITH HEART FAILURE

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Introduction: Statins are widely used hypolipidemic agents with a substantial effect in reducing cardiovascular outcomes. Muscle symptoms are among the most common side effects associated with statins, including myalgia, cramps, muscle weakness, and even rhabdomyolysis. Heart failure (HF) is a limiting clinical syndrome that is related to skeletal muscle impairment. **Objective:** To evaluate the association between chronic use of statins and changes in muscle parameters in patients with HF. **Methods:** Cross-sectional study involving patients aged 40-64 years with HF, hospitalized due to decompensation. The chronic use of statins was verified by medical records. The muscle parameters evaluated were the SARC-F questionnaire (suggestive of sarcopenia if score ≥ 4), handgrip strength (decreased if <16 kg in women or < 27 kg in men) and appendicular muscle mass (AMM) (decreased if AMM/body mass index [BMI] ratio < 0.512 in women or < 0.789 in men). **Results:** 200 patients were evaluated, 54.5% men. The medians of age, BMI and left ventricular ejection fraction (LVEF) were 57.0 (IQR 51.0-61.0) years, 27.0 (23.9-31.2) kg/m² and 47% (34-59). As for symptomatology, 58.5% had New York Association functional classification (NYHA-FC) III-IV and 41.5% had NYHA-FC I-II. 45% had preserved LVEF (≥50%), 17% mildly reduced LVEF (41-49%) and 38% reduced LVEF (≤40%). Chronic statin use was observed in 66% of the patients. 38% had SARC-F suggestive of sarcopenia, 59.5% had decreased HGS and 23% had low muscle mass. Chronic use of statins was associated with low muscle mass (27.3% *vs.* 14.7%; p = 0.045), but not with low HGS (61.4% *vs.* 55.9%; p = 0.454) and SARC-F suggestive of sarcopenia (42.4% *vs.* 30.9%; p = 0.112). There was no association between decreased muscle mass and NYHA-FC III-IV (52.2% *vs.* 60.4%; p = 0.321) or LVEF classification (19.6% mildly reduced and 43.5% reduced *vs.* 16.2% mildly reduced and 36.4% reduced; p = 0.458). **Conclusions:** Chronic use of statins was associated with decreased muscle mass in middle-aged patients with HF, although there was no association with changes in muscle strength or SARC-F results. **Keywords:** hydroxymethylglutaryl-CoA reductase inhibitors; sarcopenia; heart failure.

AP-094 DIFFERENCES IN THE CONTROL OF DIABETES AND DYSLIPIDEMIA WITH AND WITHOUT METRELEPTIN IN A PATIENT WITH CONGENITAL GENERALIZED LIPODYSTROPHY

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Case presentation: A female, 17 years old, with congenital generalized lipodystrophy (CGL) type 1 diagnosed at 3 years, diabetes mellitus since 8 years, and dyslipidemia, sought outpatient endocrinological care in 2016, on insulin (NPH and regular, 116 U total daily dose). She denied parental consanguinity or cases in the family. She did not have acanthosis nigricans, however, there were hepatomegaly and Bichat's ball atrophy. Blood tests were: fasting plasma glycemia (FPG) 226 mg/dL, glycated hemoglobin (A1c) 6,7%, total cholesterol 227 mg/dL, HDL cholesterol 18 mg/dL and triglycerides (TG) 930 mg/dL. In 2017, still on insulin (280 U daily, NPH and regular), started subcutaneous metreleptin, irregularly, presenting: FPG 112 mg/dL, A1c 6,6%, total cholesterol 125 mg/dL, HDL 18 mg/dL and TG 83 mg/dL. From March 2019 until May 2023, she used metreleptin irregularly due to the pandemic. Glycemia, A1c, lipids, and insulin doses changed significantly depending on if the patient was with or without metreleptin. On metreleptin, A1c, TG, and daily insulin dose were as low as 6,6%, 83 mg/dL, and 62U, respectively. In contrast, without metreleptin, the control was very bad (A1c 10,4%, TG 10,159 mg/dL) despite a very high insulin dose (205 U/day – 4,6 U/kg/day). **Discussion:** CGL has four molecularly distinct forms, with common clinical features such as lack of adipose tissue, insulin resistance, and hypertriglyceridemia. Metreleptin is promised for patients refractory to usual treatment. We report a CGL case that obtained a significant metabolic improvement when on metreleptin, reducing risks associated with hypertriglyceridemia, and improving dyslipidemia and diabetes, despite much lower insulin doses. Final comments: The clinical and laboratory improvements reported here with the use of metreleptin raise the question of whether we should use it for all patients with CGL instead of using it only in cases refractory to usual treatment. **Keywords:** metreleptin; lipodystrophy; diabetes.

AP-095 TWO CASES OF MULTIPLE SYMMETRIC LIPOMATOSIS CAUSED BY MFN2 MUTATION

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Case 1: A 53-year-old man was evaluated in the endocrinology outpatient clinic because of an abnormal adipose tissue that started to grow at the age of 45, intensifying at 51, mainly in the back of the neck (buffalo hump) and also at the shoulders and arms. The patient's medical history was notable for type 2 diabetes mellitus, essential hypertension, dyslipidemia, psoriasis (diagnosed four years prior to the visit), benign prostatic hyperplasia, hyperuricemia, and non-alcoholic fatty liver disease. There was no history of excessive alcohol intake or smoking. We performed genetic testing with the Sanger Principle, using blood for the DNA extraction and the amplification of the *MFN2* gene by polymerase chain reaction. We confirmed a homozygous c.2119C>T variant in the *MFN2* gene. **Case 2:** A 64-year-old woman was evaluated in the endocrinology health consortium because of type 2 diabetes mellitus. During the physical examination, it was observed abnormal adipose tissue that started to grow at the age of 29, intensifying at 40, mainly in the back of the neck (buffalo hump) and also at the shoulders and arms. There was no history of excessive alcohol intake or smoking. There was no consanguinity, and a brother and two nephews had the same phenotype. The genetic investigation confirmed the same mutation of case one (homozygous c.2119 C>T variant in the *MFN2* gene). **Discussion:** Multiple symmetric lipomatosis (MSL) is a rare pathology in which there is a benign deposit of adipose tissue with rapid growth in various parts of the body, but mostly in the cervical region, back, limbs, and face. It is characterized by a higher prevalence in men between 30 and 60 years old. The MSL can be clinically related to hyperuricemia, gout, liver disease, polyneuropathy, diabetes mellitus, glucose intolerance, and mainly chronic alcoholism. The pathophysiology is still unclear in the literature, but it was recently reported to be associated with mutations in the *MFN2* gene. **Final comments:** This report discusses the clinical and diagnosis of MSL, and shows two patients with the same genetic MFN2 mutation related to the disease. **Keywords:** lipomatosis; MFN2; dyslipidemia.

AP-096 CARDIOVASCULAR PROFILE OF THE PATIENT WITH DIABETES ADMITTED TO THE CORONARY UNIT

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Introduction: Diabetes mellitus (DM) is a systemic disease that reflects the decrease in the body's production or response to insulin. Its association with dyslipidemia, high blood pressure, pro-thrombotic and pro-inflammatory states, and increased abdominal fat, in addition to changes in heart cell metabolism, is ordinary. The descontrol of the blood glucose favors the appearance of micro and macrovascular disorders, for almost half of the patients who were hospitalized in Coronary Care Units (CU) have DM as comorbidity, there is a need for cardiovascular risk stratification in these patients during clinical and outpatient follow-up, as well as the administration of cardioprotective drugs. **Objectives:** To assess whether patients admitted to a Coronary Care Unit (CU) are properly stratified for Cardiovascular Risk and are receiving adequate management to control their metabolic changes. **Methods:** A retrospective cross-sectional study, with an analysis of medical records of patients admitted to the Coronary Care Unit (UC) of teaching hospital from January 2019 to August 2021. **Results:** 1,020 medical records were analyzed and 45 patients with DM, mean age of 65.53 years, mostly male (75%). About 8.89% had an annotation of diabetic retinopathy, and 6.67% had cardiovascular autonomic neuropathy, positive proteinuria was present in 15.56% of the patients, and 60,61% of the patients had a dosage of HDL cholesterol < 40 mg/dL. Clinical data related to the time of diagnosis of diabetes, family history of premature coronary artery disease, presence of plaque in the carotid region, coronary calcium score, coronary computed tomography angiography, and investigation of the ankle-brachial index were not found in the assessed charts. In the evaluation of prescriptions for home use, continuous use medications related to the treatment of cardiovascular disease and diabetes were identified. Statin prescription was found in 23 patients (51.11%). There is no significant difference between the Treated and Untreated groups in terms of age, clinical, and laboratory data. Also, the proximity in the LDL value measured in patients who were revascularized and patients with the acute coronary syndrome at admission can be observed. **Conclusion:** Most patients had their cardiovascular risk-stratified, but despite follow-up, patients did not receive adequate treatment. **Keywords:** diabetes mellitus; cardiovascular risk; coronary care units.

AP-097 SEVERE HYPERCHOLESTEROLEMIA SECONDARY TO DRUG-INDUCED LIVER INJURY AND LIPOPROTEIN-X FORMATION

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Case presentation: A 55-year-old man was admitted to the emergency room with severe depression. He received chlorpromazine, imipramine, fluoxetine, escitalopram, olanzapine, and ketamine. After two months of inpatient care, he developed acute cholestatic liver dysfunction: alkaline phosphatase (ALP) 4,600 U/L (range, 65-300); gamma-glutamyltransferase (GGT) 3,317 U/L (range, 7-32); aspartate transaminase (AST) 337 U/L (range, 15-32); alanine transaminase (ALT) 700 U/L (range, 17-31); total bilirubin 24 mg/dL (range, <1.0 mg/dL); albumin 2.8 g/dL (range, 3.5-4.8); INR 1.0; 286,300 platelets/mm^3 (range, 150,000-450,000). It was also noted total cholesterol (TC) levels of 1,363 mg/dL; HDL-cholesterol (HDL) 146 mg/dL; LDL-cholesterol (LDL) 1,186 mg/dL; triglycerides (TG) 156 mg/dL; apolipoprotein B (apoB) 206 mg/dL (range, 46-174). His prior blood lipid levels were TC 199 mg/dL, HDL 38 mg/dL, LDL 124 mg/dL, TG 184 mg/dL, suggesting that his current hypercholesterolemia was related to acute liver disease, likely due to chlorpromazine. Thorough investigation of liver disease was negative, including serologic testing for viral hepatitis, herpes simplex, Epstein-Barr, cytomegalovirus, and toxoplasmosis. Moreover, the patient had normal levels of ferritin, transferrin saturation index, and serum and urinary copper, as well as negative testing for anti-smooth muscle antibodies, anti-LKM1, and anti-mitochondrial antibodies. Liver biopsy was consistent with drug-related hepatopathy. Upon recovery of cholestasis, blood lipids were TC 343 mg/dL, HDL 111 mg/dL, LDL 194 mg/dL, TG 146 mg/dL. **Discussion:** Cholestasis leads to bile accumulation within the liver and, to avoid toxicity, hepatocytes bind bile to farnesoid X receptors (FXR), which inhibits bile synthesis and stimulates its secretion. However, the limited bile production leads to failure in cholesterol excretion and favors the migration of free cholesterol into the blood. The fusion of free cholesterol with phospholipids, albumin, and apolipoprotein-C and E forms, an abnormal lipoprotein that interferes with lipid analysis, called lipoprotein X (Lp-X). The lack of apoB in LpX prevents its clearance by the LDL/ApoB receptor and causes hypercholesterolemia. **Final comments:** Lp-X is an extremely rare cause of severe hyperlipidemia that falsely raises LDL-cholesterol levels. Unlike LDL-induced hyperlipidemia, lipid-lowering agents do not reduce Lp-X. The treatment must focus on the resolution of the cholestatic process. **Keywords:** lipoprotein-X; hypercholesterolemia; cholestasis.

AP-098 SEIPNOPATHY CAUSED BY HETEROZYGOUS MUTATION IN BSCL2 AND EVOLVING WITH SPASTIC PARAPLEGIA

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Case report: Male, 23 years old, with a history of delayed neuropsychomotor development, spastic paralysis, neurogenic bladder, and epilepsy since birth. After evaluation by a neuropediatric, was diagnosed with congenital cerebral palsy. Karyotype examination revealed 46,XY. A gene panel for spastic paraparesis was requested and identified the heterozygous mutation c.325dup (Thr109Asnfs*5) in the *BSCL2* gene. His clinical picture was stable until the age of 19, when the lower limb weakness worsened associated with lower extremity pain, weakness, and involuntary hand movements, besides a significant weight loss. In addition, presented systemic arterial hypertension and resting sinus tachycardia, despite the use of three antiarrhythmics. He was referred to the endocrinology outpatient clinic to evaluate the association of the mutation with generalized congenital lipodystrophy type 2 (CGL2). On physical examination, the patient was in a wheelchair; he did not have a lipodystrophic phenotype and laboratory tests were normal (blood glucose 61 mg/dL, A1c 4.7%, TC 167 mg/dL, HDL 64 mg/dL, TG 60 mg/dL, TGO 27, TGP 17). Whole-body bone densitometry showed 24% total body fat and a low bone mass (Z-score -4.5SD in the total femur). The diagnosis of CGL2 was ruled out, and maintaining the diagnosis of autosomal dominant spastic paraplegia 17 (SPG17). **Discussion:** The patient did not present diabetes, dyslipidemia, or metabolic syndrome, but presented with neurologic disease, sinus arrhythmia, and low bone mass. This case emphasizes the fact that not every patient with a *BSCL2* mutation develops CGL, and seipinopathies are possible diseases that are clinically different from CGL. The patient is followed up in our outpatient clinic and did not present any alterations compatible with CGL2. **Final comments:** The *BSCL2* gene is responsible for encoding the seipin protein, fundamental to the adipogenesis process and it is very expressed in some nervous tissue regions. Heterozygous mutations in this gene cause a spectrum of disorders that include congenital generalized lipodystrophy type 2, distal hereditary motor neuropathy type VA and SPG17, characterized by Silver syndrome. Neurological disorders related to BSCL2 are called seipinopathies, as in this reported case. **Keywords:** BSCL; seipinopathies; paralysis.

AP-099 EFFICACY AND SAFETY OF INCLISIRAN IN PATIENTS WITH HIGH CARDIOVASCULAR RISK: SYSTEMATIC REVIEW

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Introduction: Inclisiran is a new synthetic ribonucleic acid (RNAi) interference therapy for subcutaneous (SC) use in the treatment of hypercholesterolemia. Studies have shown that this drug can be used as an alternative for reducing total cholesterol, LDL cholesterol and triglycerides (TG), as well as adding potential advantages in the treatment of intolerant to statins patients and at high cardiovascular risk. **Objective:** To report the evidence of the use of inclisiran in reducing the rate of lipids in patients with high cardiovascular risk. **Methods:** The systematic review followed PRISMA guidelines and registered in PROSPERO (ID:432496), searched between May 16 and May 26, 2023, in MEDLINE (via PubMed) and Cochrane. The search strategy included the descriptors (inclisiran) AND (high cardiovascular risk), clinical trials and observational studies that investigated the association between the use of inclisiran and the reduction of lipid levels in humans with high cardiovascular risk. Reviews, comments, case reports, editorials, studies with animals or cells and publications not related to the topic were excluded. The assessment of biases was performed using the GRADE tool. Data extraction focused on study settings, participant characteristics, and relevant outcomes. **Results:** Of the 105 publications initially selected, 5 were included in this review. These studies employed open-label studies, phase 2 randomized double-blind controlled trials, and post hoc analysis. Sample sizes ranged from 80 to 3,454 patients. All participants were adults (>18 years old and up to 83 years old), of mixed ethnicity, mostly men and with cardiovascular comorbidities. All those enrolled demonstrated a reduction in LDL levels compared to placebo. The reduction in LDL cholesterol, in relation to the baseline level, ranged from 41.9% to 56.3% (48.63 ± 5.21) after a single dose of inclisiran, over an average period of 180 days. The reduction in TC ranged from 20.8% to 33.3% (27.6 ± 6.3), in TG from 12.1% to 31.3% (17.91 ± 8.98). Two studies showed a reduction in ApoB of 22.9% and 42.6%, with 180 and 510 days, respectively. All studies reported mild adverse effects such as injection site reactions, dizziness and fatigue. **Conclusion:** Compared to placebo, the single application of inclisiran determined an important reduction in LDL levels in patients with high cardiovascular risk, suggesting that this therapy is an effective and safe alternative in dyslipidemic patients. **Keywords:** inclisiran; high cardiovascular risk; dyslipidemia.

AP-100 IMPACT OF DIETARY ADHERENCE IN THE MANAGEMENT OF FAMILIAL CHYLOMICRONEMIA SYNDROME IN EARLY CHILDHOOD

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Introduction: Familial chylomicronemia syndrome (FCS) is a rare genetic dyslipidemia (1-2 cases/million people) presenting persistent chylomicronemia refractory to conventional treatment. Treatment based on a fat-restricted diet and medium-chain triglyceride (MCT) supplements should be used to reduce the risk of pancreatitis in pediatric patients. The study aims to describe the impact of diet adherence on managing SQF in early childhood patients with a confirmed genetic diagnosis. **Methods:** Cross-sectional study in which the triglyceride levels of eight children with SQF treated at a specialized service for primary dyslipidemia from 2007 to 2022 were analyzed. Dispersion curves were created to assess triglyceride levels during follow-up. **Results:** Among the eight children evaluated, six were female, and two were male. The patient in graph 1 is a five-year-old female who received the diagnosis at 0.08 years old due to lipemic serum in the investigation of irritability, strong and inconsolable crying, tense abdomen, vomiting, and yellowish lesions on the face, associated with a triglyceride dosage of 4,400 mg/dL. Initially, she had many transgressions in her diet; however, throughout follow-up, she started to adhere to a restricted diet with less fat. **Conclusions:** In the present study, the challenge of achieving triglyceride levels below 1,000 in children in early childhood was observed, as exemplified in the patient in graph 1. This feat is only achieved when the family decides to follow the diet and adhere to the recommendations of the medical and nutritional team. **Keywords:** familial chylomicronemia syndrome; diet adherence; children.

AP-101 ACUTE PANCREATITIS IN PATIENTS WITH SEVERE HYPERTRIGLYCERIDEMIA GENETICALLY EVALUATED

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Introduction: Severe hypertriglyceridemia (HTG) may result from primary conditions associated with genetic disorders in lipids metabolism or from a multifactorial etiology, and it is associated with increased risk of acute pancreatitis (AP). The aim of this study was to evaluate the prevalence of AP and associated factors in patients with severe HTG genetically evaluated. **Methods:** Cross-sectional study conducted in a reference outpatient clinic in a tertiary hospital between 2020 and 2023. We evaluated 68 patients diagnosed with severe HTG. Data were obtained by reviewing the medical record, including AP history, maximum triglyceride values and the result of a genetic panel for HTG and AP performed by molecular analysis by next-generation sequencing (MENDELICS). Severe HTG was defined as serum triglyceride levels > 885 mg/dL. Serum levels of glycated hemoglobin, total cholesterol, HDL, triglycerides, TSH and creatinine were obtained in all patients. **Results:** We evaluated 68 patients with severe HTG, with a median age of 43 years, 22 with at least one previous AP episode due to HTG. The occurrence of AP episodes was related to the maintenance of persistently increased triglyceride levels, with a higher prevalence in individuals who reached maximum serum triglyceride values above 2,000 mg/dL. The identification of mutation in the LPL gene was related to a higher prevalence of AP, even when compared to other genes that lead to the same genetic diagnosis. We identified 39 patients with positive genetic testing for mutations related to HTG, 16 related to familial hyperchylomicronemia syndrome (FCS), 12 to inherited lipodystrophies and 11 to polygenic etiologies. Twenty-nine patients had a negative genotype. Patients with FCS when compared to the others had earlier detection of HTG, high prevalence and recurrence of AP, and higher serum triglyceride levels during follow-up. The prevalence of excessive alcohol consumption and uncontrolled diabetes, as well as higher body mass index values, was higher in the genotype-negative group. Four patients had no mutations identified despite severe phenotypic manifestations. **Conclusion:** The presence of higher serum triglyceride levels and the detection of LPL mutation in cases of FCS were related to a higher risk of progression to AP. Patients with FCS had a more severe clinical presentation. A high prevalence of secondary factors for elevated serum triglycerides was identified, especially in patients with negative genotype. **Keywords:** pancreatitis; triglycerides; genetics.

AP-102 RECURRENT ACUTE PANCREATITIS DUE TO HYPERTRIGLYCERIDEMIA IN A SECONDARY SERVICE IN RIO GRANDE DO NORTE – CASE REPORT

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Although hypertriglyceridemia is not the most frequent cause of acute pancreatitis (AP), in 1.3%-3.8% of cases, triglyceride values above 1,000 mg/dL are related to a risk of developing AP of about 5%. The clinical picture of AP due to hypertriglyceridemia does not differ from AP due to other causes: severe pain in a band in the upper abdomen radiating to the back and association with episodes of vomiting and nausea. We report the case of a female patient, 33 years old, who was admitted to a secondary service in Rio Grande do Norte, presenting with pain typical of AP associated with nausea, serum amylase of 484 u/L and USG of the upper abdomen with findings that corroborate the picture of AP. Along with this, he had a past history of recurrent pancreatitis, lipemia retinalis and xanthomas. HTG in irregular use of Fenofibrate, due to financial difficulties in accessing the drug; Diabetes using Metformin and insulin. In addition, he had a TG of 878 mg/dL which, although not a severe HTG (>1,000 mg/dL), also had a HGT of 228 mg/dL on admission. It is registered, negative of other comorbidities and drug allergy. Social drinker. Mother and father with dyslipidemia. His condition was classified as severe because the physical examination showed signs of peritoneal irritation (pain on deep palpation) and signs of systemic inflammatory response syndrome (HR: 103 BPM; leukocytosis of 25,730 cells./mm^3), with progressive leukocytosis, suggesting HTG precipitated by an infection, an opinion was requested from general surgery, which, based on the tomographic findings, denied surgical conduct at the time. Therefore, the existence of only one drug class, the fibrates, as a pharmacological treatment of hypertriglyceridemia, associated with its high cost, leads to discontinuation of treatment. Loss of follow-up and non-adherence to medication are common problems in the monitoring of chronic diseases that can lead to an exacerbation of the condition and complications, increasing the length of hospital stay, as well as increasing health costs. In the case of the patient, the refractoriness, even with a hypocaloric and hypoglycemic diet and compensation for diabetes, of numerous hospitalization processes, which impair her quality of life and work capacity, highlight the need for more specific guidelines for PA-HTG and the intensification of studies that investigate the pathophysiological mechanisms. **Keywords:** hypertriglyceridemia; acute pancreatitis; dyslipidemia.

AP-103 THE LONG JOURNEY OF PATIENTS WITH FAMILIAR PARTIAL LIPODYSTROPHY IN NORTHEAST BRAZIL

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Introduction: Familial partial lipodystrophy (FPL) is a rare genetic disorder characterized by partial loss of subcutaneous adipose tissue, resulting in ectopic fat accumulation in organs. This causes severe metabolic complications associated with insulin resistance, such as diabetes, dyslipidemia, metabolic-associated fatty liver disease, cardiovascular and renal diseases. Since the phenotypic expression usually occurs in the 2nd or 3rd decade of life, early detection could result in a more effective approach, avoiding complications. However, data are scarce regarding the journey of these patients from their perception to diagnostic confirmation. **Objectives:** To describe the journey of Brazilian patients with FPL and the prevalence of comorbidities and complications at diagnosis. **Methods:** Cross-sectional study based on data from medical records and the clinical follow-up protocol, of all adult patients with FPL followed at a reference center for lipodystrophies in Brazil. Inclusion criteria: Patients previously diagnosed with FPL based on clinical and genomic features. Exclusion criteria: Patients with acquired or generalized lipodystrophy; patients under 18 years old. **Results:** The sample included 44 patients with FPL with a median age of 49 years (23-68), 39 (88.6%) of whom were women. Most patients (68.2%) were identified by cascade screening (CR) from the 14 (31.8%) index cases (IC). The time elapsed between the self-perception of lipodystrophy and the diagnosis of FPL in the group formed by index cases and in the group formed by patients identified by cascade screening was 11.5 (0-38) and 11.0 years (0- 42), respectively. Age at diagnosis was lower in the IC group – 31.5 (23-55) *versus* 47 years (21-68) in the CR group. There was a high prevalence of complications and comorbidities, with 95.2% of the total number of patients already having diabetes or pre-diabetes 61.9% DHGM, 21.4% nephropathy, 19% heart failure, 16.7% arterial disease coronary artery disease and 9.5% had already had an episode of pancreatitis. **Conclusion:** The long journey of patients until diagnosis, with a high prevalence of comorbidities and complications, highlights the current challenge in the detection and adequate management of this rare disease. The age at diagnosis even of the adult cases identified by RC corroborates the delay in identifying affected patients and their complexity. **Keywords:** health perception; patient journey; familial partial lipodystrophy.

AP-104 SUPPLEMENTATION WITH VITAMIN D3, VITAMIN B12, OMEGA-3 AND PROBIOTICS IN PREGNANCY: SYSTEMATIC REVIEW

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Pregnancy represents a biological moment of increased basal metabolism and micronutrient demand, representing a period of greater vulnerability to nutritional deficiencies. Therefore, the clinical and nutritional status of pregnant women is directly associated with outcomes in pregnancy, childbirth and the newborn. In view of this, predicting risk situations for nutritional deficiencies and providing support for their timely correction can bring important benefits to maternal and fetal health. Faced with the problem, the objective of the study was to summarize the evidence about supplementation of vitamin D3, vitamin B12, omega-3 and probiotics in pregnancy provided in the scientific literature, through the description of the panorama of dietary intake and supplementation, association of sociodemographic variables and its effectiveness in preventing nutritional deficiencies and intertwined outcomes in pregnancy, childbirth and birth. For this, a systematic review of the literature was carried out, from July to August 2022, based on the manual of the Cochrane Database of Systematic Reviews, in the databases available on the journals portal of the Coordination for the Improvement of Higher Education Personnel (Capes) and PubMed, using Descriptors in Health Sciences/Medical Subject Headings Pregnancy/Pregnancy, Pregnant Women/Pregnant Women, Nutritional Supplements/Dietary Supplements, Probiotics/Probiotics and Vitamins/Vitamins, along with their synonyms and Boolean operators AND and OR. The selection of studies was carried out using the Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist. For data extraction, an instrument was created containing information regarding authorship, place, year, type of supplementation, objective, sample and main results of the study, as well as the strength of evidence of the finding. The sample was represented, mostly by primary intervention studies such as Randomized Clinical Trials (53.3%) and researches that dealt with clinical issues of intervention or treatment (60%). In general, the dietary intake of micronutrients during pregnancy was viewed as satisfactory and the prescription and use of supplements was described as safe, well tolerated, effective and beneficial to the mother-child binomial, being generally associated with favorable outcomes. in pregnancy and childbirth, however, conflict as to their association with neonatal health outcomes. **Keywords:** pregnancy; vitamins; nutrition supplements.

AP-105 THE IMPORTANCE OF EARLY SCREENING FOR TURNER SYNDROME

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Introduction: Turner syndrome (TS) is a genetic disease with total or partial loss of an X chromosome, characterized by low size, gonadal dysgenesis and phenotypic findings such as webbed neck, lymphedema of the hands and feet, cardiac and renal malformations. The incidence is 1 in 2,500-3,000 live births, so early diagnosis of TS is essential, as it results in prior identification of malformations and complications that affect the patient's quality of life, self-esteem, and well-being. **Objective:** To report the importance of early screening in Turner syndrome. **Materials and methods:** The work is part of a bibliographical research, with searches carried out in the Virtual Health Library (VHL), using the descriptors: "Turner syndrome" AND "Tracking", with the filters: full text; main subject: Turner syndrome; type of study: screening study; Language: English, Spanish and Portuguese; between 2018 and 2022. LILACS and MEDLINE databases were searched, with the exclusion criteria: paid articles that do not encompass the objective of the present work, totaling 5 articles used. **Results:** Turner Syndrome, one of the most common rare pediatric diseases, affects more females, providing a risk of delays in neurological development and diagnoses of mental disorders. Although psychosocial concerns and neurodevelopmental deficits are prevalent in girls with TS, early identification or support is not prevalent. The clinical presentation of the patient is characterized by: short stature, hypogonadism, endocrine disorders. In this way, measures such as detection of FSH and LH alterations in the stages of development and health information systems, being care resources that can be used to maintain the curation of phenotypes in real time. However, the definitive diagnosis is made through the analysis of the karyotype, which allows the identification of the individual's chromosomal constitution. In order to detect cardiovascular anomalies with risks of aortic dilation, dissection and rupture, which occur in some cases, in addition to symptoms of anxiety and/or depression, attention deficit hyperactivity disorder (ADHD) seen in 25% of patients and difficulty of learning encompassing 75% of girls with TS. **Conclusion:** Thus, the diagnosis of Turner syndrome is essential to prevent mental disorders and predict possible cardiovascular anomalies. **Keywords:** Turner syndrome; tracking; syndrome.

AP-106 THE IMPORTANCE OF FOOD AND NUTRITIONAL SURVEILLANCE FOR VULNERABLE POPULATIONS

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Introduction: Food and Nutritional Surveillance (FNS) plays a crucial role in the health of vulnerable populations. Its relevance and the need for adequate nutritional assessment protocols are highlighted. The intervention was carried out with the team from the *Consultório na Rua* in Taguatinga and aims to be extended to other teams. The protocol encompasses the definition and importance of FNS in Primary Care, anthropometric assessment methods, food consumption recording in E-SUS, individual citizen registration, and challenges in the nutritional assessment of people experiencing homelessness. **Objective:** The population experiencing homelessness is heterogeneous, characterized by extreme poverty, weakened family ties, and lack of conventional housing. In the Federal District, it is estimated that there are three thousand people experiencing homelessness, with over a thousand registered by the team. FNS is a component of health surveillance that describes and predicts trends in the food and nutrition conditions of the population, supporting actions for prevention and addressing these issues. **Methods:** The Food and Nutritional Surveillance System (Sisvan) is the main system for monitoring the food and nutritional status of the population. Data collected in Primary Care must be entered into information systems to identify problems related to food and nutrition. Primary Care includes Family Health Strategy teams, teams for specific populations, and the *Consultório na Rua* (Street Clinic – eCR). They also assist in the development of strategies and policies at all levels of government, providing data to E-SUS. Expected results include raising awareness among professionals about FNS, analyzing the available data in Sisvan, emphasizing the importance of registration in E-SUS, and paying closer attention to vulnerable populations. There is a need to expand training on overweight, obesity, and food insecurity for a larger number of professionals in order to effectively address these public health issues. Reflecting on the quality of food for vulnerable populations and promoting healthy eating as an integral part of the work performed are essential, going beyond routine care. **Conclusion:** It is necessary to have a differentiated approach to the homeless population and recognize that they suffer from nutritional problems that affect the general population but on a larger scale. By doing so, we can achieve equity and provide better care for vulnerable patients. **Keywords:** nutrition for vulnerable groups; primary care; nutrition programs and policies.

AP-107 DELAYED DIAGNOSIS OF CONGENITAL HYPOPITUITARISM: A SYSTEMATIC REVIEW

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Introduction: Congenital hypopituitarism (CH) refers to the deficiency of one or more pituitary hormones resulting from a pituitary malformation during fetal development. CH can be the result of a genetic mutation, a prenatal insult or have an idiopathic origin. This pathology can manifest as an isolated or multiple hormone deficiency, called combined or multiple pituitary hormone deficiency (CPHD, MPHD). The clinical manifestation of CH depends on the patient's age at the time of diagnosis. In adolescents and adults, it is mainly characterized by short stature, retarded sexual characteristics, epilepsy, and intellectual retardation. **Purpose:** To evaluate how the diagnosis of congenital hypopituitarism is performed in adolescents and adults. **Methods and materials:** The study consists of an integrative systematic review. A search was carried out in the Lilacs, PubMed and SciELO databases, using the descriptors "Hypopituitarism", "Congenital" and the boolean operator "AND". Exclusion criteria were: age less than 12 years, inadequate study construction and research prior to 2013. **Results:** Of the 45 articles found, four met the inclusion criteria. In these, short stature and absence of secondary sexual characters are the most common findings in adolescents and adults with CH. The hormone profile is the first complementary diagnostic evaluation to be required, with a general result of hypogonadotropic hypogonadism and deficiency of adenohypophyseal hormones, mainly growth hormone (GH). Next, nuclear magnetic resonance imaging is requested in most studies, revealing hypoplasia of the adenohypophysis and ectopic neurohypophysis, in addition to the absence of a pituitary stalk, configuring the pituitary stalk interruption syndrome (PIS) and the consequent congenital hypopituitarism. With this late diagnosis, hormone replacement treatment of the affected cell lines begins in most of the analyzed patients. **Conclusion:** Late diagnosis of CH leads to impaired development of individuals. The subsequent correction of symptoms is done with hormone replacement, however, some of the consequences of CH are irreversible. Therefore, it is necessary to investigate the signs and symptoms as early as possible, such as the heel prick test as a measure of the metabolic profile, seeking early diagnosis and treatment. **Keywords:** hypopituitarism; congenital; delayed diagnosis.

AP-109 BODY COMPOSITION EVALUATION BY BIOIMPEDANCE OF AN ELDERLY POPULATION FROM A MEDICAL SCHOOL CLINIC AT SALVADOR – BA

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Introduction: Loss of muscle mass and substitution by fat mass is common at elderly, but with the social isolation due COVID-19 and the reduction of physical activity it may be more common to occur. This study aims to determine the body composition of an elderly population at post-COVID period. **Methods:** It's a transversal study that takes place at a medical school clinic from Salvador. The study included elderly patients with 60 years or more. Was excluded from the study patients with pacemaker, those who can't stand at the bioimpedance, those with diagnosis or suspected cancer. The bioimpedance machine was Inbody® 120. We applied a questionary with diagnosis of comorbidities, practice of physical activity, smoking and presence of physical inability. **Results:** Was found 45 patients (28 women – 62,2%) that agreed to participate at study. The mean age was 68,7 years (60-81). Total muscle mass reduction (TMMR) was present at 11 patients (8 women – 28,6% of total women); 6 patients had increased muscle mass (4 women). The most segmentary muscle mass reduction was lower limbs (31 patients). Only 10 patients had total and segmentary muscle mass preserved, with 4 practicing physical activity (40%). The practice of physical activity was 13 (34,6%); with only 1 practicing resistance exercise. The mean minutes/week of physical activity in this group was 120 min/week, with 4 days of activity/week. The mean BMI was 27,2 kg/m² which was near the normal upper limits adjusted by age, but when we analyze the BMI of the TMMR group it was 23,3 kg/m² which was near the normal lower limit. Body fat percentage was 28,2% and visceral fat index was 9,1 among men and 41,3% and 14,1 among women respectively. The most common comorbidities were: systemic hypertension: 27, dyslipidemia: 23 and type 2 diabetes mellitus: 20. 17 patients had past of smoking, but only 1 had active smoking, this patient had segmentary muscle reduction at lower limbs, with increased visceral fat: 20. **Conclusion:** In this study we found a high prevalence of TMMR with higher prevalence of lower limbs SMMR. We had a low practice of physical active, and even among those who practice the frequency and time was lower than recommended. **Keywords:** body composition; elderly; physical activity.

AP-110 BONE MINERAL DENSITY, TRABECULAR BONE SCORE AND MUSCLE STRENGTH IN TRANSGENDER MEN RECEIVING TESTOSTERONE THERAPY VERSUS CISGENDER MEN

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Introduction: Data on body composition, bone mineral density (BMD) and microarchitecture between cis and trans men are scarce. Few studies have reported trabecular bone score (TBS) data for transgender men using testosterone. **Objective:** Compare body composition, grip strength, BMD and TBS between cis and transgender men groups. **Patients and methods:** We studied 19 transgender men and 19 cisgender men (mean age 23.6 ± 3.4 years, p = 0.539) paired by age and body mass index (BMI). They underwent clinical and hormonal evaluation, body composition measurement, and evaluation BMD, the TBS, grip strength, the level of physical activity (IPAQ) and physical performance (SPPB). **Results:** Median serum testosterone levels were similar between the cisgender and transgender groups (638 *vs.* 685 ng/dL; p = 0.863). Mean serum estradiol levels were slightly higher in the transgender men (51.95 ± 44.26 *vs.* 32.26 ± 8.40 pg/mL, p = 0.005), and the median testosterone use duration in the transgender group was 24 months. Total muscle mass (44.09 ± 6.27 *vs.* 55.71 ± 7.28 kg, p < 0.001), and hand grip strength (28.82 ± 5.42 *vs.* 40.34 ± 8.03 kg, p < 0.001) were considerably lower in the transgender men. Total body BMD (1.208 ± 0.132 *vs.* 1.271 ± 0.081 g/cm², p = 0.008) and femoral neck BMD (1.019 ± 0.163 *vs.* 1.137 ± 0.166 g/cm², p = 0.016) were lower in the transgender group. The TBS was similar between groups. There was no difference between time and intensity of physical activity and performance between groups. **Conclusion:** Our data demonstrated that despite similar serum testosterone levels, transgender men undergoing testosterone therapy had lower muscle strength, muscle mass, and total body and femoral neck BMD values than cisgender men. **Keywords:** transgender men; body composition; TBS.

AP-111 THE IMPACTS OF OBESITY ON FEMALE FERTILITY

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Introduction: Obesity is a disease of excess body fat, which increases the risk of several conditions, including type 2 diabetes, dyslipidemia, hypertension, osteoarthritis and infertility. In view of this, weight gain is a risk factor for chronic diseases and reduced fertility, thus impairing reproduction in women and men, leading to infertility and subsequent pregnancy complications. With this, body fat is determined by calculating BMI (body mass index). **Objective:** To investigate the impact of obesity during female fertility. **Materials and methods:** The work sought articles in the Virtual Health Library (VHL) database, using the descriptors: "obesity" AND "female fertility", with the filters: full text; main subject: fertility; language: English, Spanish and Portuguese; in the period 2018-2022. Of the 24 articles found in the MEDLINE and LILACS databases, excluded 19 for incompatibility of the topic or for inaccessibility to the article, being selected 5 scientific articles present. **Results:** Obesity contributes to infertility due to ovulatory dysfunction and in natural fertility cases, a limitation in care occurs for an overweight woman because of the difficulty in visualization in transvaginal ultrasound images of the ovaries. The ovulatory dysfunction is more recurrent in women with obesity, having similarity with polycystic ovary syndrome (PCOS), thus the menstrual cycles in obese women are characterized by: low levels of LH and FSH, longer follicular phase, shorter luteal phase, decreased metabolization of progesterone from phase 1 and reduced amplitude of the LH pulse of the early follicular phase. Thus, BMI determines obesity, when it is greater than or equal to 30 kg/m^2, indicating risks to the fetus in case of fertility, which comprise miscarriage, stillbirth, and premature birth, congenital abnormalities, and adverse fetal programming. In view of this, women with obesity are more susceptible to having reproductive problems, such as menstrual irregularity, declining chances of conception, and placental defects during pregnancy. **Conclusion:** Thus, for a promising outcome, modification of eating habits, more physical activity, pharmacological management, and if necessary, bariatric surgery are critical. Therefore, women of reproductive age who do not adhere to lifestyle modification will experience a deficit in fertility. **Keywords:** obesity; female fertility; feminine.

AP-112 THE CORRELATION OF METABOLIC DISORDERS WITH POLYCYSTIC OVARY SYNDROME

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Introduction: Polycystic ovary syndrome (PCOS) is an endocrine hormonal disorder, considered a disease of the reproductive system, which includes signs and symptoms such as: hirsutism, acne, hyperandrogenism and infertility, being accompanied in some cases by metabolic disorders. PCOS is usually accompanied by metabolic disturbances, especially of carbohydrates and lipids due to their metabolism, so there is a greater risk of metabolic syndrome. **Objective:** To investigate metabolic repercussions in PCOS. **Materials and methods:** The work is part of a bibliographical research, with searches carried out in the databases: LILACS and MEDLINE. Two descriptors were applied: "Polycystic Ovary Syndrome" AND "Metabolic Disorders", with inclusion criteria: full articles in English and Portuguese, between 2018 and 2022. Exclusion criteria are: duplicate articles, paid and that do not encompass the objective of the present work, 6 articles were selected. **Results:** The metabolic syndrome covers some clinical and laboratory abnormalities that are associated with a higher cardiovascular risk, some examples are abdominal obesity, insulin resistance and hyperandrogenism. Obesity is a frequent sign, related to the mechanism of insulin resistance and dyslipidemia. The disorders in insulin metabolism found in PCOS are due to the reduction in secretion, hepatic excretion and alterations in the signaling of insulin receptors. Hyperandrogenism is correlated with ovulatory dysfunction, in which there is the increase in serum levels of androgens. Thus, the early diagnosis of PCOS is extremely important, as it presents metabolic and cardiovascular risks, affecting reproductive capacity, of a regular menstrual cycle and fertility. Thus, a lifestyle change in relation to diet and exercise and a decrease in BMI is considered the first line of treatment, but combined oral contraceptives, metformin, can also be used. **Conclusion:** Therefore, PCOS is considered one of the most common endocrine hormone disorders in women of reproductive age. Thus, the diagnosis of PCOS is essential, as it identifies the reproductive capacity of patients and the metabolic and cardiovascular risks. **Keywords:** polycystic ovary syndrome; metabolic disorders; feminine.

AP-113 GONADAL DYSGENESIS 10, RARE ANOMALY IN HOMOZYGOUS GENE ZSWIM7 – CASE REPORT

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Presentation of the clinical case: Female, 20 years, primary amenorrhea and partial development of secondary sex characteristics. Tanner staging M3P4, typical female external genitalia. Karyotype 46,XX. FSH 53.41 µUI/mL, LH 20.9 mUI/mL, estradiol < 5.0 pg/mL, prolactin 12.31 ng/mL, SHBG 17.2 nmol/L, SDHEA 154 µg/dL, total testosterone levels 16.7 ng/dL, urinary cortisol levels 168.3 µg/24h, TSH 4.10 mUI/mL, free T4 1.3 ng/mL, 7 alpha hydroxylase 63.3 ng/dL. Reduced uterus and non-visualization of the ovaries on ultrasound images. Genome: 1 – Hemizygous variant in the gene *ZSWIM7* (NM_001042697.2), c.231_232del, p.(Cys78Phefs*21), exon 4. This variant affects reading frame starting from aminoacid 78. Frequency in the population 0.04%. Likely pathogenic classification. 2 – Pathogenic copy number variant and heterozygosity located at chromosomal position Seq [GRCh38] del (17) (p12.p11.2) (NC_000017.11: g), (15964859_16499583) del/1x. Frequency in the population 0%. Classification: pathogenic. Variant description: deletion of approximately 534.7 Kb of a copy in the chromosomal region 17p12-17p11.2, involving 8 coding genes protein, among which 7 are related to the OMIM phenotype, highlighting the *ZSWIM7* gene, related to ovarian dysgenesis 10 and primary ovarian insufficiency and autosomal recessive inheritance pattern. **Introduction:** Disorders of sex development involve congenital sex anomalies in chromosomal, gonadal, or anatomical development and may manifest with genital ambiguity, absent, incomplete, or atypical pubertal development, or early gonadal failure and/or infertility. Pathogenic variants in the gene *ZWIM7* (*Zinc Finger SWIM-Type Containing 7*), protein-coding on chromosome 17, are causes of ovarian dysgenesis and primary ovarian insufficiency. **Discussion:** In the literature, there are 2 cases of sisters from Turkey with primary amenorrhea, karyotype 46,XX and a pathogenic nonsense-type variant in the gene *ZSWIM7* (c.173C>G, p. Ser58*), resulting in function loss. Both with ovary absence. **Final comments:** The report adds information about the pathogenic variants of the gene *ZSWIM7*. This is the first case reported in Brazil. The patient started hormonal treatment and showed seric estradiol levels increase as expected. **Keywords:** gonadal dysgenesis 10; amenorrhea; ovary absence.

AP-114 ADVERSE EFFECTS FROM HORMONE TREATMENTS IN TRANSGENDER PEOPLE

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Introduction: Transsexuality is one of the possible gender identifications in which the individual disagrees with the biological sex imposed at birth. In this context, transgender men and women begin to seek bodily changes to adapt the physical body to their well-being. Among the possible interventions, hormone therapy is presented as an alternative treatment in health spaces. **Objective:** To analyze the adverse effects resulting from hormone therapy in transgender people. **Method and materials:** This is a systematic review based on the PRISMA protocol, using the descriptors: "hormone replacement therapy", "adverse effects" and "transgender people", finding 43 articles. After applying the filters: full text; Databases: MEDLINE; English language; in the period from 2019 to 2023, there was a reduction to 25 articles. **Results:** Of these 25 articles found, 5 studies were excluded due to thematic fugue and 10 because they were not available in full, resulting in 10 articles. The adverse effects pointed out in the researched studies vary according to the type of hormone used and the route of application. With regard to feminizing hormones, estradiol can cause nausea, weight gain and more serious side effects such as deep vein thrombosis (DVT), gallstones, infertility and liver failure. With regard to antiandrogens, patients may experience tiredness, hyperkalemia, postural hypotension, diuresis, in addition to hepatotoxicity and meningioma. In turn, masculinizing hormone therapy is based on testosterone. As a side effect, weight gain, androgenic alopecia, sleep apnea, skin problems and polycythemia can be observed. Other effects such as vocal fatigue, irritation due to atrophic vaginitis and infertility are to be expected. **Conclusion:** Hormone therapy, in the context of gender affirmation, allows trans individuals to feel adequate with their bodies, and its side effects must be managed based on the periodic analysis of estradiol and testosterone levels, liver function, urea and electrolytes, in addition to a complete blood test and prophylaxis for DVT and other more serious problems. **Keywords:** hormone replacement therapy; adverse effects; transgender people.

AP-115 THE CREATION AND IMPLEMENTATION OF A MULTIDISCIPLINARY SERVICE FOR TRANSGENDER PEOPLE AT *UNIVERSIDADE DO ESTADO DO RIO DE JANEIRO* (UERJ): *IDENTIDADE*

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Introduction: In response to the significant demand for assistance during social transition and hormonization processes for transgender individuals, the Endocrinology team at UERJ conceived a multidisciplinary service, called *Identidade*, to provide clinical support. *Identidade* aims to offer clinical support to people seeking hormonization while providing training opportunities for new professionals. The ultimate objective is to improve the quality of life and well-being of those served. **Objectives:** The objective of this study is to describe the methodology and implementation of *Identidade*, and its impact on improving the quality of life and well-being of transgender individuals while contributing to the training of new professionals with transgender-specific care skills. **Materials and methods:** Medical literature and Brazilian legal regulations were consulted, and a multidisciplinary team was assembled, including endocrinologists, psychologists, nurses, social workers, psychiatrists, dermatologists, urologists, gynecologists, speech therapists, and attorneys. A transvestite professor specializing in health education was also invited to plan and conduct group training sessions with the participants. **Results:** The multidisciplinary team began seeing patients on May 17, 2022, and over the following year, 186 patients received care, including 91 trans men, 90 trans women, and 5 non-binary individuals. Residents and interns were also given the opportunity to attend *Identidade* and learn about clinical care for transgender individuals. Patients have expressed satisfaction with the care they received, and research will be conducted to measure the impact on the quality of life and well-being of those served. **Conclusion:** The creation of *Identidade* has paved the way for health professionals to provide inclusive care and adapt local care conditions with a new perspective. By offering a multidisciplinary service for transgender individuals, *Identidade* aims to improve the quality of life and well-being of those served while training new professionals with specialized care skills. **Keywords:** transgender; multidisciplinary service; clinical support.

AP-116 CONGENITAL ADRENAL HYPERPLASIA AND ITS RELATIONSHIP WITH AMBIGUOUS GENITALIA: AFTER THE DIAGNOSIS, WHAT WILL BE THE PATH?

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Introduction: Genital ambiguity (GA) is a disorder of sexual development (DSD) that is an abnormality in the process of fetal sexual differentiation, causing discordance between the chromosomal and anatomical sex of the fetus. In this sense, its main etiology is congenital adrenal hyperplasia (CAH), an autosomal recessive disorder caused by a decrease in cortisol. Therefore, it is essential to suspect the diagnosis soon after birth, as the incorrect characterization of gender causes cultural, legal and personal repercussions on the individual's development. **Objective:** To investigate the relationship between CAH and GA and its psychosocial impact on the individuals involved. **Methods:** This is a systematic review that carried out a survey of evidence according to the PRISMA protocol, using the descriptors: "Ambiguous genitalia" AND "Congenital adrenal hyperplasia", with the filters: full text; Databases: MEDLINE and LILACS; Language: English and Portuguese; in the last 05 years. Of the 42 articles found, 31 studies were excluded due to thematic leakage or unavailability in full, constituting a final corpus of 11 articles, with 2 thematic axes being identified: (I) Identification of the etiology of the ambiguous genitalia and (II) Assessment of the patients' psychosocial impact. **Results:** The studies indicated a direct relationship between DSD and CAH, the latter associated with a deficiency in the synthesis of sex hormones. Thus, the post-diagnosis approach emerges as a dichotomy between early and elective genitoplasty. In the analyses, the prevalence of a humanized conduct that allows an informed decision about the surgical intervention and favors the patient's autonomy was verified. However, early genitoplasty stood out as a way to restore functional reproductive and genitourinary anatomy in childhood, reducing psychological and functional impacts around atypical genitalia. **Conclusion:** Given the above, DSD has a great impact on patients' lives. In childhood, it can be difficult for parents and caregivers to deal with GA, and corrective surgeries may be necessary, already in adult life, patients may face challenges regarding gender identity, sexuality and complications such as infertility. Therefore, it is important that patients receive adequate medical and psychological follow-up to deal with the consequences of CAH and ensure a full and healthy life. **Keywords:** adrenal hyperplasia; ambiguous genitalia; disorder of sexual development.

AP-117 SULPIRIDE-INDUCED SEVERE HYPERPROLACTINEMIA: CASE REPORT

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Case presentation: Female, 41 years old, G1P1A0, with amenorrhea and galactorrhea for 5 months. She was using contraceptives containing estradiol + dianogest. There was a report of recent use of sulpiride 50 mg 1 tablet/day, started about 6 months ago for the treatment of anxiety. When carrying out laboratory tests, prolactin of 496.24 ng/mL was evidenced (reference value: 2.8-29.2 g/mL). Normal thyroid function. Non-reagent beta HCG. The case was discussed with a psychiatrist and a decision was made to switch from sulpiride to lurasidone, in addition to requesting a magnetic resonance imaging (MRI) of the pituitary gland. Faced with family problems, the patient only returned to the consultation after 3 months, without MRI and with improvement of the initial complaints. She repeated new prolactin without using sulpiride and the result was 39.35 ng/d. **Discussion:** Several drugs can cause hyperprolactinemia. Antipsychotics are the most common cause of drug-induced hyperprolactinemia. Some of the antipsychotic drugs are known as dopamine D2 receptor antagonists and increase serum prolactin by this mechanism. First-generation antipsychotics are usually associated with more severe hyperprolactinemia (above 2 to 3 times the upper limit). On the other hand, the second-generation or atypical ones have less affinity for the D2R, determining a milder increase in prolactin. Thus, in drug-induced hyperprolactinemia, serum prolactin concentrations are typically in the range of 25 to 100 ng/mL, the exception being the antipsychotic Risperidone, which can reach serum prolactin concentrations of up to 200 ng/mL. In the present study, we saw with sulpiride an increase in prolactin much higher than that described in the literature, reaching levels similar to those found in macroprolactinomas. The cause-effect relationship (sulpiride – severe hyperprolactinemia) was evidenced with the drop in prolactin after discontinuing the medication. The non-complete normalization of prolactin may be due to the use of Lurasidone or the estrogen component of oral contraceptives. **Final comments:** When dealing with patients with hyperprolactinemia, it is always important to rule out the possibility of drug-induced hyperprolactinemia, even with very high serum prolactin values. When possible, withdrawal of the drug can normalize prolactin within two to four days, establishing a cause-effect relationship and avoiding MRI to search for tumor etiology. **Keywords:** hyperprolactinemia; prolactin; sulpiride.

AP-118 NEW TREATMENT FOR EARLY PUBERTY WITH ANALOG FROM SEMESTER GONADOTROPIN-RELEASING HORMONE: A CASE REPORT

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Case presentation: Female patient, 5 years and 9 months old, complaining of "breast enlargement", also referring to the appearance of pubic hair and expressive weight gain beyond the usual. Non-consanguineous parents, the mother measures 162 cm and the father 175 cm. Her mother's menarche occurred at 11 years old and paternal aunt at 9. On physical examination, the patient weighs 23.9 kg, W90, height 116 cm, W75, 50th percentile, BMI 17.7 (Z Score +1). On complementary examination, LH 0.8 IU/L (Immunochemiluminescence), FSH 1.2 IU/L (ICMA), estradiol 23 pg/mL, TSH 1.3 UI/mL, FT4 1.0 ng/dL, IO 7 to 10 m. At USG examination, OD 2 cm^3, OS 2.1 cm^3, uterus 3.1 cm^3. Body/neck ratio 1:1. Endometrial echo present 1.0 mm. On MRI, normal pituitary hypothalamus. The established diagnostic hypothesis was Central Precocious Puberty. A treatment was indicated with Triptorelin 22.5 mg every 168 days. Clinical follow-up was performed at 3 months, 6 months and 1 year. With 1 year after the beginning of the treatment, with 6 years and 9 months, he presented with weight 25.5 kg, height 120 cm, M1 P2, bone age 7 years 10 m. **Discussion:** Puberty is a normal period of hormonal and psychological transition from childhood to adulthood, where linear growth acceleration and the acquisition of reproductive function occur. It is precocious when secondary sexual characteristics appear before 8 years of age in girls and before 9 in boys. Central precocious puberty refers to early activation of the hypothalamic pituitary gonadal axis and occurs in 1 in 5,000-10,000 children. With regard to treatment, GnRH analogues are highly effective in inhibiting the progression of puberty in patients with central precocious puberty, regardless of its cause. Therefore, an important parameter to decide whether to suspend the pubertal block is bone age, if it is greater than or equal to 12 years in girls and greater than or equal to 14 in boys, they do not add gain in final height, at that moment it is important to stop the treatment. **Final considerations:** In view of the clinical case, it was possible to observe breast involution with the treatment, reduction in hormonal values and volumes of the uterus and ovary, but the most important response was the stabilization of bone age, which remained constant in the first year of treatment. With this case report, it is possible to observe the good response to the use of triptorelin 22.5 mg, which will be maintained until the child reaches 12 years of bone age. **Keywords:** early puberty; triptorelin pamoate; endocrinology.

AP-119 A SYSTEMATIC REVIEW OF CUSHING'S SYNDROME EFFECTS ON BOTH MOTHER AND FETUS DURING PREGNANCY

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Introduction: Cushing's syndrome (CS) is an endocrine pathology caused by chronic hypercortisolism. Pregnancy during CS is rare, as this disease generates elevated levels of androgens and cortisol, which lead to infertility. However, although rare, pregnancy can occur in women with CS. The diagnosis of CS during pregnancy is difficult due to overlapping symptoms common to normal pregnancy, such as weight gain, hypertension, increased cortisol, abdominal stretch marks and hyperglycemia. **Purpose:** To analyze the clinical effects of CS on the mother and fetus during pregnancy. **Methods and materials:** A search was carried out in the scientific databases PubMed, SciELO and Lilacs, using the descriptors in English "Cushing's disease" interchangeable with "Cushing's syndrome", combined with "pregnancy" and excluding "pseudocushing". At the end of the analysis, of the 17 studies found in English and Spanish, 9 met the established selection parameters. **Results:** Based on the analyzed scientific studies it was observed that the high level of cortisol brings great harm to the fetus, given that this hormone naturally crosses the placental barrier. Studies report that the effects of hypercortisolism on the baby include premature births (43%-60%), intrauterine growth restriction (21%), stillbirths (6%), miscarriage or intrauterine death (5%) and hypoadrenalism (2%). Several cases of fetal and respiratory discomfort, low birth weight and need for intensive postpartum care were also cataloged. Maternal complications reach 60% of pregnant women with CS, according to the 2021 European guidelines for clinical practice by the Society of Endocrinology. Research shows that the pathologies generated are: hypertension (68%), gestational diabetes (25%-37%), preeclampsia (14%-27%), osteoporosis (5%), psychiatric disorders (4%), heart failure (3%), wound infections (2%), and maternal death (2%). Such mortality can double in cases associated with hypertension and diabetes. **Conclusion:** The consequences of maternal and fetal exposure to hypercortisolism cause high morbidity and mortality, characterizing CS as a high-risk obstetric condition that requires strict surveillance. In view of the outcomes of CS in the mother and fetus, early treatment of the syndrome is recommended, in order to reduce its effects on both individuals. Thus, there is a possibility of CS remission for the mother and a decrease in the fetus's damage caused by prolonged exposure to elevated cortisol. **Keywords:** Cushing's syndrome; pregnancy; hypercortisolism.

AP-120 COMBINED ORAL CONTRACEPTIVE AND ITS RELATIONSHIP WITH VENOUS THROMBOSIS

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Introduction: Combined oral contraceptives are the world's most common method of contraception and are also highly useful in the treatment of gynecological disorders. These drugs cause changes in the homeostatic balance, which are associated with an increase in the risk of venous thromboembolism by two to seven times compared to women who do not use contraceptive methods. **Goal:** Assess the relationship between the use of combined oral contraceptives and the risk of venous thromboembolism in patients who are continuously using these drugs. **Design and methods:** A careful search of the relevant scientific literature was carried out using the academic database (PubMed, BVS) and articles that were published until 2023 with their updates. The research keys applied were: oral contraceptives, venous thrombosis, estrogen, progestogen and deep vein thrombosis. There was no search limitation in other languages, and all articles were reviewed to ensure relevance, reliability, clarity and objectivity for this work; only articles considered satisfactory were selected. **Results:** The risk of thrombosis increases depending on the systemic dose of estrogen used. Some substances like progesterone, when combined with estrogen, in combined oral contraceptives, affect the risk of developing venous thrombosis. Anticoagulation is necessary to protect against future thrombosis, and its duration depends on the choice of hormone therapy. **Conclusion:** Hormonal contraceptives have shown a dose-dependent correlation with the occurrence of venous thrombosis. These outcomes are observed in combined oral contraceptives containing high doses of estrogen. Furthermore, the association with progestogens has been identified as an aggravating factor in the occurrence of VTE. The need for research on the investigation of different percentages of combined contraceptives in relation to thromboembolic events has been demonstrated. It is necessary for women to use COCs based on medical evaluation and be instructed to identify the signs and symptoms of VTE. **Keywords:** oral contraceptives; venous thrombosis; estrogen.

AP-121 ANDROGENIZATION AS AN ISOLATED MANIFESTATION OF ADRENOCORTICAL ADENOMA: A CASE REPORT

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Case presentation: S.C.S., a 63-year-old female, hypertensive and type 2 diabetic, was admitted at endocrinology service with a history of progressively severe pain in the right hypochondrium, accompanied by weight loss, frequent vomiting, dyspnea, and adynamia. Physical examination revealed signs of androgenization, such as severe hirsutism, virilization, significant hair loss, increased libido, and increased muscle mass. A hormonal panel was requested with the following results: FSH: 69.87 mIU/mL; LH: 37.38 mIU/mL; TSH: 2.34 µIU/mL; T4L: 0.91 ng/dL; cortisol: 12.96 µg/dL; Testosterone: 320.75 ng/dL; and estradiol: 58 pg/mL. Total abdominal ultrasound and abdominal CT were performed, revealing a 5.2 x 3.5 cm tumor in the right adrenal gland. The patient underwent right adrenalectomy. The biopsy yielded inconclusive results in both samples, requiring further immunohistochemical analysis with (Ki-67), which favored the diagnosis of adenoma. After surgical correction, there was improvement in laboratory results, as follows: total testosterone: 24.31 ng/dL; DHEA: 1.2 ng/mL; SDHEA: 26 µg/dL; basal cortisol after 1 mg of dexamethasone: 0.7 µg/dL; and aldosterone: 12 ng/dL. There was clinical improvement of androgenization, leading to an asymptomatic state. **Discussion:** The human adrenal cortex can be affected by benign or malignant neoplastic processes. These tumors can develop in both sexes and at any age. However, most of adrenocortical tumors are small and benign. In contrast, adrenocortical malignancies are rare and have an unfavorable prognosis. The incidence of adrenocortical carcinomas is estimated at 1 to 2 cases per 1 million habitants, resulting in 0.2% of cancer-related deaths in the United States. Adrenocortical tumors are usually non-functioning, but they can secrete cortisol, aldosterone, androgens, estrogens, and steroid biosynthesis intermediates, leading to various clinical manifestations such as hyperaldosteronism, Cushing's syndrome, androgenization, feminization, or a combination of these. They are difficult to differentiate with biopsy increasingly requiring immunohistochemistry for diagnostic accuracy. **Final comments:** Virilizing tumors rarely present as adenomas and are more common in the first decade of life. Given the atypical epidemiology and clinical presentation, the importance of anamnesis, physical examination, imaging, and laboratory tests is evident for diagnostic definition and initiation of appropriate early therapy. **Keywords:** hyperandrogenism; adrenocortical adenoma; virilization.

AP-122 OVARIAN LEYDIG CELL TUMOR AS A CAUSE OF HYPERANDROGENISM IN WOMEN: CASE REPORT

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Case report: Female, 43 years old, hypertensive and diabetic. Refers the presence of signs of hyperandrogenism for 10 years. She had hirsutism (Modified Ferriman-Gallwey Scale = 34/36 points), androgenic alopecia, amenorrhea and central obesity. In addition, blood pressure of 140 x 90 mmHg, weight of 105 kg and body mass index (BMI) = 43.9 kg/m². She brought laboratory tests that showed total testosterone of 520 ng/dL, free testosterone of 14.78 ng/dL, SDHEA of 140 mcg/dL, androstenedione of 1.2 ng/mL and LH of 0.2 U/L. A transvaginal ultrasound was requested for ovarian evaluation, which showed ovaries of normal size and morphology. After that, a magnetic resonance imaging (MRI) of the pelvis was requested in an attempt to better evaluate ovarian lesions. Pelvic MRI showed a heterogeneous nodule in the right ovary with a hypersignal area on T2 and hypervascular enhancement measuring approximately 3.3 x 2.2 x 2.1 cm. Faced with the hypothesis of an ovarian tumor, a right salpingo-oophorectomy was performed and the material was sent to pathology. Anatomopathological examination revealed findings consistent with a diagnosis of non-hilar Leydig cell tumor (LCT). Three months after the surgery, the menstrual cycle returned, hirsutism and alopecia improved. New laboratory tests showed testosterone within the normal range for females. **Discussion:** The case presented here describes a non-hilar ovarian TCL in a young woman, which manifested itself through a virilizing syndrome. Ovarian TCL are rare and account for 0.1% of all ovarian tumors. The non-hilar subtype is even rarer. It is a benign and functioning tumor that leads to clinical hyperandrogenism with physical, metabolic and social consequences. The diagnosis is made by combining clinical, laboratory and imaging. Surgery is the definitive treatment, with unilateral salpingo-oophorectomy being the procedure of choice. The improvement of virilization signs and the normalization of testosterone occur in the first postoperative year. **Final comments:** Leydig cell tumors of the ovary are rare neoplasms, but they must be taken into account in the differential diagnosis of hyperandrogenism in women. Clinical suspicion, correct diagnostic investigation and early treatment are essential to minimize the repercussions of hyperandrogenism. **Keywords:** hyperandrogenism; Leydig cell tumors of the ovary; non-hilar Leydig cell tumor.

AP-123 TURNER SYNDROME WITH Y CHROMOSOME AND SPONTANEOUS PUBERTY – WHEN TO PERFORM GONADECTOMY?

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Case presentation: A 10.9-year-old girl was referred to the endocrinologist for complaints of short stature. She presented with spontaneous telarche at age 9 and pubarche between ages 9 and 10. She was born at term, with appropriate weight and length for gestational age and no delays in developmental milestones. On physical examination, her weight was 28 kg (Z: -1.47); height (H), 133.7 cm (Z: -1.3); body mass index, 15.7 kg/m² (Z: -0.8); sitting height (SH): 76.1 cm and the SH-to-H ratio was 0.569 (Z > +2.5). Her dysmorphological examination revealed an ogival palate, tridentate hair implantation, synophrys, and mild cubitus valgus. The pubertal staging was M4P3. Cytogenetic analysis revealed additional material on the short arm of the X chromosome in all metaphases - 46,X,add(X)(p22.3)[20]. Comparative genomic hybridization (180K CGH-array) was performed which revealed a 3 Mb deletion on the short arm of the X chromosome (Xp22.33(11545_2860507)x1), involving the *SHOX* gene, and gain of 20 Mb on the Y chromosome (Yp11.2q12(6180209_26673214)x1), contained sequences from the *TSPY* family. Thus, cytogenomic examination allowed the conclusion that the patient has Turner syndrome associated with a partial X deletion and that the additional one corresponded to Y material. **Discussion:** Turner syndrome (TS) is a rare condition resulting from the partial or complete loss of the second X chromosome, and affects 1 in 2,500 girls born alive. Short stature and pubertal delay due to hypergonadotrophic hypogonadism are the most common manifestations. The karyotype is variable and approximately 55% of girls have non-mosaic 45,X. The prevalence of Y material in patients with TS is poorly known and is estimated to be 5%. Although prophylactic gonadectomy is recommended in girls with TS and Y chromosome material, because of the presumed risk of developing gonadoblastoma, the timing of surgery is controversial because of scant evidence on fertility and hormonal function. **Final comments:** The rate of gonadal malignancy in patients with TS ranges from 3%-8% and usually occurs in the second decade of life. The decision about the timing of gonadectomy should be interdisciplinary and shared with patient and family to consider the risk of malignancy and benefit of preserving fertility and hormonal function. **Keywords:** Turner syndrome; Y chromosome; gonadectomy.

AP-124 MCCUNE-ALBRIGHT SYNDROME AND BREAST CANCER – A RARE ASSOCIATION

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Case report: A 25-year-old female patient diagnosed with McCune-Albright syndrome. The clinical manifestation of the syndrome was observed soon after birth, with telarche and hyperchromic spot in the anterior region of the chest. At 2 months there was breast progression and menarche, besides ovarian cysts that were evidenced by pelvic ultrasonography. Over the years, the patient presented fractures due to polyostotic fibrous dysplasia. Between the ages of 2 and 4, she took leuprorrelin, followed by tamoxifen until the age of 10. In June 2022, a bloody discharge was observed in the right breast, and a lesion measuring 2.6 x 1.4 x 2.0 cm in the lower lateral quadrant of the right breast was identified by ultrasonography, with a BI-RADS 4 classification. The result of the *core biopsy* showed an intermediate-grade intraductal papillary carcinoma associated with microcalcifications. The patient underwent a mastectomy in 2023, and the anatomopathological examination confirmed intraductal papillary carcinoma of intermediate grade associated with microcalcifications, with immunohistochemistry showing 100% estrogen receptor, 50% progesterone receptor, negative HER2 and Ki67 5%. **Discussion:** McCune-Albright syndrome is a rare condition that affects mostly girls and presents a triad of features including polyostotic fibrous dysplasia, hyperpigmentation of the skin (cafe-au-lait spotting), and endocrine hyperfunction. This syndrome is caused by an activating mutation in the alpha subunit of the Gs protein. The main characteristic endocrine manifestation is precocious puberty, the result of the action of estrogen-secreting ovarian cysts. This early exposure to estrogen predisposes to the development of breast cancer. Women who have early menarche have a higher risk of developing this cancer. Studies indicate that girls who have menarche at around 10-11 years of age have a 2-3 times higher risk of developing breast cancer in adulthood compared to those who have it at 14-15 years of age. **Final comments:** In the case of the patient presented, early exposure to estrogen resulted in the development of a breast cancer with estrogen receptor present in 100% of the neoplastic cells. This association is extremely rare, with few cases described in the current literature. **Keywords:** McCune-Albright; breast cancer; papillary carcinoma.

AP-125 COMPLETE ANDROGENIC INSENSITIVITY SYNDROME: A CASE REPORT

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Case presentation: L.A.D., female, 20 years old, seeks help regarding primary amenorrhea. On physical examination, she had typical secondary sexual characteristics: well-developed breasts, vulva presentation and absence of a short vagina. Upon speculum examination and bimanual vaginal examination, he noted the absence of the uterine cervix. On transvaginal ultrasonography, uterus and ovaries were not identified. Upon pelvic magnetic resonance imaging and computed tomography of the total abdomen, both showed an uncharacterized uterus and the presence of male gonads. **Discussion:** androgen insensitivity syndrome (AIS) is a genetic disease related to the X chromosome and affects individuals with a 46, XY karyotype. As they occur at the androgen receptor (AR). In disease, testosterone synthesis is normal, but there is tissue resistance to androgen action. It is considered a rare disease, the rate is 2 to 5 autonomous per 100,000 births. The clinical presentation of AIS varies from a completely male, fertile phenotype, with decreased body hair, oligospermia and/or infertility, to a female phenotype. The syndrome is the most common cause of male pseudohermaphroditism and the third cause of primary amenorrhea. Patients with this disease have female external genitalia, absent or short vagina ending in a blind bottom, internal genitalia without the structures derived from the Wolff and Müller ducts, development of gynecomastia at puberty, and absence of pubic or axillary hair. The testes are located in the abdomen or inguinal canal and less frequently in the labia majora. **Final comments:** Due to the characteristics of the clinical picture, the diagnosis of the case was formed, by the physician, in complete AIS, the rarest form it has. Thus, precisely because it is a rare condition, it is extremely important that women, and especially health professionals, have knowledge about this subject. It is only through this knowledge about the disease that it is possible to arrive at a dignified treatment for the sick, since it is only possible to diagnose and treat a patient correctly when one has knowledge of what should be treated and treated. **Keywords:** androgens; syndrome; insensitivity.

AP-126 GRANULOSA CELL TUMOR: A RARE CAUSE OF FEMALE HYPERANDROGENISM

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Case report: 66 years old, female, evaluated in an endocrinology center due to type 2 diabetes (DM2), verified on physical examination an androgenetic alopecia and male-pattern terminal hair. Laboratory tests showed an increase in free and total testosterone, low follicle stimulating hormone (FSH) and luteinizing hormone (LH) to age, and normal dehydroepiandrosterone sulfate (DHEA-S) and dehydroepiandrosterone (DHEA). Ovaries weren't located in Transvaginal ultrasonography and abdomen and pelvis MRI showed a reduced dimension of the right ovary, as expected for age, without description of left ovary; and an adrenal incidentaloma about 1 cm with adenoma characteristics. Pheochromocytoma, hyperaldosteronism and autonomous cortisol secretion were excluded. She was submitted to bilateral oopherectomy for diagnosis. Ovarian histopathology and immunohistochemistry showed positive inhibin A and histological features consistent with granulosa cell tumor (GCT) of the left ovary. **Discussion:** Postmenopausal hyperandrogenism is caused by relative or absolute excess of androgens from ovaries and/or adrenal glands origin. It is a rare condition and when it develops or progresses, imaging tests to exclude ovarian and adrenals tumors and a hormonal investigation is recommended (FSH, LH, SHBG, DHEAS, estradiol, 17-OHP, inibin B and total testosterone). Testosterone-producing adrenal tumors are usually malignant, aggressive and larger than 4 cm at diagnosis. In the reported case, adrenal origin hyperandrogenism was excluded after measuring DHEA and S-DHEA, both normal. GCT is rare, with an incidence of 1/1,000000 women in the United States, representing 2 to 3% of all ovarian malignancies and with peak incidence between 45 and 55 years. Androgen-secreting GCT are rare, accounting less then 3% of GCT, usually small and not visualized by imaging. **Final considerations:** The reported case brings up for discussion a rare condition with a difficult diagnose, which is a female hyperandrogenism caused by GCT, that leads to increased testosterone and cardiovascular risk, in addition to stigmas of hyperandrogenism. Oophorectomy is acceptable for most patients, and Adjuvant postoperative Chemotherapy may be associated, but the result of this association is unclear. Metabolic impact and its long-term outcomes of ovarian androgen-secreting tumors are unknown, and more studies are needed. **Keywords:** hyperandrogenism; granulosa cell; oopherectomy.

AP-127 PREVALENCE AND CORRELATION OF ANXIETY AND DEPRESSION WITH SUBSTANCE USE AND FAMILY HISTORY OF THESE DISEASES IN A TRANSGENDER POPULATION TREATED AT REFERENCE CENTERS IN THE STATE OF BAHIA: A CROSS-SECTIONAL STUDY

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Introduction: Several studies have shown a higher prevalence of mental disorders and substance use in the transgender population when compared to the cisgender population. This fact may be related to social vulnerability and prejudice to which transgender people are more exposed, leading them to have more negative psychosocial experiences when compared to cisgender individuals. The objective of this study is to determine the prevalence and evaluate the correlation of anxiety and/or depression with substance use and family history of these diseases in transgender people from reference centers in the state of Bahia. **Methods:** data were collected through interviews and completion of attendance forms or retrieved from electronic medical records of patients who sought assistance in reference centers specialized in the transsexualization process, between 2018 and 2022. The data referred to the history of alcoholism, smoking, use of illicit drugs and the previous diagnosis of anxiety and/or depression, in individuals and their families. **Results:** in the analyzed period, data were collected from 186 patients. The prevalence of anxiety and depression was 31.7%, only anxiety 24.2%, only depression 16.1%. Family history of anxiety and depression was positive in 21.7%, family history of only anxiety in 8.2% and only depression in 19.0%. In addition, recurrent alcohol use was observed in 80.3% of patients, smoking in 34.1% and illicit drug use in 30.9%. A previous diagnosis of depression was associated with an increased risk of illicit drug use (OR 1.75 [CI 95%, 1.11-2.77]) and anxiety (OR 2.94 [CI 95%, 1.81-4.76]). A positive family history of anxiety was associated with the presence of both anxiety and depression (OR 3.33 [CI 95% 1.21-9.09]) or anxiety alone (OR 3.33 [CI 95%, 1.22-9.09]). **Conclusions:** A previous diagnosis of depression was associated with a higher risk of illicit drug use and anxiety in transgender patients. In the sample, a positive family history of anxiety was associated with the presence of anxiety and depression, or just anxiety. **Keywords:** depression; anxiety; transgender.

AP-128 EVALUATION OF QUALITY OF LIFE IN TRANSGENDER ADULTS TREATED AT REFERENCE CENTERS IN SALVADOR: A CROSS-SECTIONAL STUDY

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Introduction: Trans population is defined as transgender men, transgender women, and non-binary individuals. This population is exposed to numerous minority stresses such as political and social barriers. Additionally, dissatisfaction with their bodies is associated with a higher incidence of psychiatric disorders and dysphoria. These factors may be related to a lower quality of life, and hormone therapy may be an alternative to improve it through gender congruence in these individuals. **Objective:** The objective of the study is to assess the quality of life and its domains in transgender individuals treated at reference centers in Salvador, as well as their relationships with gender and previous use of hormone therapy. **Materials and methods:** Data about previous hormone therapy and gender identity were collected from electronic medical records of patients treated between October 2018 and 2023 at two reference centers in Salvador. The data on quality of life were collected through the administration of the printed WHOQOL-BREF questionnaire, and then analyzed using the R® program version 4.2.2. In this cross-sectional study, a total of 101 patients completed the WHOQOL-BREF questionnaire, which was divided in 4 domains (physical health, psychological health, social relationships and environment) and was analyzed by linear regression, using predictor variables such as gender, previous use of gender-affirming hormone therapy and age. **Results:** After a detailed analysis, we found a significant reduction in physical domain scores among non-binary individuals ($p < 0.05$), with an average reduction of 23.04% compared to the scores of trans men, and we also observed that older individuals had higher scores in the psychological health domain ($p < 0.05$). We didn't identify significant differences between the scores of hormone-treated and non-hormone-treated populations, or between the scores of trans men and trans women. The lower average in the physical domain of non-binary individuals could indicate greater difficulty in managing and improving dysphoria in this population. **Conclusion:** It is important to note that the lack of a significant difference between hormone-treated and non-hormone-treated individuals doesn't imply a neutral effect of hormone therapy on the quality of life of individuals. Therefore, new longitudinal studies comparing quality of life before and after hormone therapy will be necessary. **Keywords:** transgender; quality of life; WHOQOL-BREF.

AP-129 REANALYSIS OF CARDIOMETABOLIC PROFILE AND LONG-TERM EFFECTS OF GENDER AFFIRMING HORMONE THERAPY IN TRANSGENDER MALES

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Introduction: Gender incongruence (GI) refers to the discordance between the gender assigned at birth and the gender of identification, which can lead to distress and psychosocial impairment. Gender-affirming hormone therapy (GAHT) is a stage in the gender transition process, and its long-term effects, particularly cardiometabolic effects, are still under study. **Objective:** To update cardiometabolic profile data and long-term effects of testosterone use in transgender men (TM) based on a previous study conducted at a reference institute. **Material and methods:** This is a cross-sectional, observational, and retrospective study involving 50 medical records, including anthropometric measurements, laboratory tests, type of testosterone used, metabolic changes, and development of comorbidities during GAHT. Exclusion criteria: patients who lost follow-up for more than 2 years from the current analysis (last consultation in 2020 or before), resulting in a final sample size of 33, reflecting a loss of 44%. **Results:** The mean age was 31 (SD = 7,75) years, and the average duration of GAHT was 73.09 months (SD = 72). Body mass index (BMI) showed a gradual increase from 27.11 kg/m² (SD = 6.4) to 28.94 kg/m² (SD = 5.88). Testosterone levels showed a mean increase from 396.7 to 466.9 ng/dL, while estradiol levels decreased from 48.61 to 35.07 pg/dL. Regarding the type of testosterone used, 45.5% of patients switched from a testosterone esters mixture formula to cypionate, and it was observed that 25.25% of patients were using testosterone undecanoate, which is a long-acting ester. There was a 28.14% increase ($p = 0.004$) in the diagnosis of dyslipidemia and a 4.06% increase ($p = 0.560$) in cases of hypertension. The occurrence of erythrocytosis decreased from 26% to 18.18% ($p = 0.407$). No cases of cancer, stroke, or acute myocardial infarction were observed during the study period. **Conclusion:** GAHT with testosterone, when aimed at achieving reference values for the desired gender's physiological levels, using injectable formulations, particularly long-acting ones, appeared to be safe during the average evaluated period. Despite the increased occurrence of worsened lipid profiles and potential weight gain, factors that may increase the risk of cardiovascular disease, there was no increase in the incidence of major cardiovascular outcomes or cancer in the studied sample of younger patients with less than 10 years of GAHT use. **Keywords:** gender incongruence; transgender men; gender-affirming hormone therapy.

AP-130 THE ASSOCIATION OF MALE HYPOGONADISM IN PATIENTS WITH OBESITY AND CARDIOVASCULAR RISK

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Introduction: Testosterone deficiency is associated with increased cardiovascular risk. A higher prevalence of hypogonadism is observed in male individuals with obesity. **Objective:** To demonstrate literature data revealing an association between hypogonadism and increased cardiovascular events. **Material and methods:** Literature review of studies published in the last 5 years in PubMed. **Results:** Male hypogonadism is defined by decreased sperm production and or testosterone production. Age, obesity, and other factors are associated with the development of this condition. Testosterone deficiency has been shown to be an independent marker for cardiovascular risk. Some studies show that testosterone replacement therapy improves outcome in these patients, but the safety of this therapy has not yet been fully determined. **Conclusion:** Obesity is associated with hypogonadism, and studies show increased cardiovascular risk can be reduced with testosterone replacement therapy. **Keywords:** hypogonadism; cardiovascular risk; testosterone replacement.

AP-131 SHORT STATURE ASSOCIATED WITH CONGENITAL DEAFNESS, AUTISM SPECTRUM DISORDER, THROMBOCYTOPENIA AND COMPOUND HETEROZYGOSIS FOR THE ABCG8 GENE ON EXOMA: CASE REPORT AND LITERATURE REVIEW

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Case report: A.A., 17-year-old boy, referred for re-evaluation of isolated GHD diagnosed in childhood. He had history of preterm birth (AIG) and had been diagnosed with sensorineural congenital deafness (CD) and autism spectrum disorder (ASD), with important dietary restrictions. At 11y, his height was 120 cm (Z-3,5), with Z BMI-3,2, bone age: 6-7 y and IGF-1 < 25 mcg/L. A clonidine test showed GH peak: 6,7 ng/dL and glucagon test (interrupted with 90 min) a GH peak: 2 ng/dL. His sella MRI was normal. He had been treated with hGH from 11 to 15 years old. His puberty was spontaneous at 15 y and he showed no evidence of other pituitary deficits during follow-up. In the last 2y he has been presenting thrombocytopenia, which was extensively investigated with a hematologist. His lipid profile is normal to date. Current IGF-1 (no hGH for 2 years):126 to 183 mcg/L (RV 173-414), and IGFBP3: 4 mcg/L (RV3,3-9,6). His actual height is 160 cm (target height 171 cm). Exome requested by the geneticist identified variants of uncertain significance (VUS) in *TANC2* and *ACSL4* genes, in addition to 2 VUS in *ABCG8* gene in compound heterozygosis. **Discussion:** We present a patient with post-natal proportional short stature and pubertal delay. Despite initially reduced IGF-1 levels, stimulation tests with borderline response and/or inadequate technique and normal MRI prevent definitive conclusions regarding the diagnosis of IGHD. The finding of VUS in compound heterozygosis in *ABCG8* may be related to the diagnosis of sitosterolemia. It is an autossomal recessive disorder characterized by increased plant sterol levels with extreme phenotypic heterogeneity, with some patients been almost totally asymptomatic. The abnormal hematologic findings may be the initial or the only clinical feature of this disorder. Its clinical spectrum is probably not fully appreciated due to underdiagnosis and the fact that the phenotype in infants is likely to be highly dependent on diet. **Final comments:** With the expansion of access to advanced molecular biology techniques for the etiological investigation of neurodevelopmental and growth disorders, the finding of VUS with uncertain association to the clinical presentation will be a situation frequently faced. In this case, we believe that the VUS in *ABCG8* may be pathogenic, given the initial hematological presentation and the fact that the patient has important dietary restrictions that may have masked lipid levels disturbances, as described in the literature. **Keywords:** short stature; autism; sitosterolemia.

AP-132 TESTICULAR REGRESSION SYNDROME DIAGNOSED IN AN ADULT MALE PATIENT REFERRED FOR TALL STATURE EVALUATION

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Case report: A.S.P., male, 19 years old, referred for tall stature Height: 183cm (target height: 173.5 cm), envergadure:190 cm, sitting height/height 0.48. Tanner G1P3. Penis 5cm. Impalpable testes, hypoplasia of the scrotum, no hypospadias, no gynecomastia. His parents were 3rd degree cousins. Low testosterone, FSH 80 mIU/mL, AMH 0.02 ng/mL (VR 2.5-97.5). Spine Z score-3.3. Karyotype 46,XY. US of the scrotum/inguinal region: absence of identifiable testicles and marked reduction in prostatic volume. MRI of the abdomen and pelvis and exploratory laparotomy did not identify testes. The patient started pubertal induction with testosterone cypionate and is in current treatment with testosterone gel. There was an increase in penile size, improvement in body disproportion and increase in bone mass. Testicular prosthesis implantation was offered, but the patient did not want the procedure. **Discussion:** Testicular regression syndrome (TRS) is a rare condition, defined by the complete or partial absence of testicular tissue associated with a 46,XY karyotype. Its prevalence is estimated to be around 0.5-1:20,000 male births, and 1:177 cases of cryptorchidism. Here, we report a case of TRS in which diagnosis was suspected only because of his tall stature with eunuchoid aspect. Although he had history of cryptorchidism since birth, the presence of pubic hair may has lead to delay in the identification of congenital hypergonadotrophic hypogonadism. AMH was very low and radiological exploration did not show the testicles, which was confirmed by a negative laparoscopy. The phenotype of this syndrome is variable depending on when gonadal regression occurs in utero. In this case, the normal male phenotype suggests that gonadal regression occurred late in the fetal life. Although the etiology of RTS is not fully understood, several hypotheses have been raised, such as vascular thrombosis, testicular torsion in the fetal or perinatal period or genetic factors. However, it is still a very challenging diagnosis, with many other determining factors not yet identified. **Final comments:** This case illustrates important delay in RST diagnosis, with substantial repercussions in secondary sexual differentiation, bone mass and social life. The presence of bilateral impalpable testes since birth should has led to immediate differential diagnostic investigation, which may has allowed timely pubertal induction and adequate psychological support to this young male patient. **Keywords:** hypogonadism; testicular regression syndrome; cryptorchidism.

AP-133 CHERUBISM IN AN ADOLESCENT WITH ACTIVE BONE LESIONS: CASE REPORT

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Case report: Male, 17 years old, referred for facial bone deformity. He reported progressive increase of volume of the left mandible since his 8 y. It was painless and there were no associated symptoms. CT showed multilocular radiolucent lesions in mandible bilaterally. He has limited family history, since resided in the unit for sheltering minors. Two brothers aged 5 and 7 was unaffected. Physical examination was normal except for the presence of the deformity. Laboratory tests revealed elevated alkaline phosphatase with normal calcium and reduced 25OH-vitamin D. The biopsy of the lesion described replacement of bone tissue by hyperplastic fibrous tissue with multinucleated giant cells, which, in conjunction with clinical data, defined the diagnosis of cherubism I grade. An initial clinical treatment with calcitonin was offered. **Discussion:** Cherubism is a benign fibro-osseous disorder classically characterized by bilateral painless swelling that affects mainly the jaw. The lesion has a peak growth at about 2 to 7 years of age and a gradual spontaneous regression is expected at the end of adolescence. It is frequently transmitted as an autosomal dominant pattern, although some sporadic cases exist. Gain of function mutations in the *SH3BP2* gene, leading to parathyroid hormone receptor signaling and Msx-1 activation, have been identified. The histology of the lesions is not diagnostic, and can mimic central giant cell lesions such as those described in Noonan syndrome. Other fibro-osseous lesions such as brown tumor of hyperparathyroidism, and fibrous dysplasia of the jaw may be included in the differential diagnosis. Although protocols for the treatment are not yet totally defined, some therapeutic options have been proposed and discussed for cases in which spontaneous resolution is not observed. Those approaches include plastic surgeries, bone resections and calcitonin. Conventional conservative approaches like intralesional steroid injections, and systemic calcitonin therapy, such prescribed in this case, have been advocated, and favorable results have been achieved. **Final comments:** In this case, we present a condition little known by endocrinologists, which makes a differential diagnosis with important endocrine causes of bone deformities, such as hyperparathyroidism and fibrous bone dysplasia of McCune-Albright syndrome. **Keywords:** fibro-osseous disorder; deformity; brown tumor.

AP-134 DIABETES RELATED TO CYSTIC FIBROSIS IN A PRE-SCHOLAR: A CASE REPORT OF AN ATYPICAL PRESENTATION

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Case report: 5 years and 3 months old male, weighting 16.6 kg (p3) and 109 cm (p50) of height, diagnosed with cystic fibrosis (CF) through neonatal screening, with acute onset of polydipsia, polyphagia, polyuria and weight loss. Report of several hospitalizations in the last year, mostly for respiratory conditions and one for hypoglycemia. Two brothers with CF, one of whom died in infancy. A diagnosis of diabetes mellitus (DM) was made based on altered fasting glucose and 6.9% glycated hemoglobin with negative autoantibodies (anti-GAD, anti-insulin, anti-IA2, anti-ZNT8). Initiated glargine (1 UI/day or 0.06 UI/kg/day) and ultra-rapid (according to correction) insulins; in previous home use of pancreatin and inhalation with dornase alfa. Since then, he maintains good glycemic control, without significant hypoglycemia. **Discussion:** CF is a common autosomal recessive disease that affects multiple organs (including the pancreas) and occurs due to a defect in the gene (CFTR) that encodes the transmembrane conductance regulatory protein. This causes a predisposition to the development of bronchiectasis and frequent pulmonary infections, as well as exocrine and endocrine pancreatic insufficiency, all of which were seen in the reported case. CF-Related Diabetes (CFRD) combines the pathophysiology of DM1 and DM2, with decreased insulin secretion and increased resistance to this substance. However, CFRD is more common in adult patients, specially with decompensated/advanced CF (according to the demographics of the CF Foundation's 2019 annual report, there is a prevalence of 6.5% in children under 18 years of age, but in 50% of adults). Risk factors for developing CFRD include female gender, liver dysfunction, family history of diabetes, and impaired lung function (this being the only factor presented by our patient). The fact that the main autoantibodies for DM1 are negative leads to the corroboration of the diagnosis of CFRD in a young patient with a short time of CF diagnosis, instead of DM1 concomitant with CF. **Final comments:** CFRD is more common in adult women with advanced CF. Treatment should be directed towards the underlying disease and use insulin therapy, with the aim of reducing morbidity and mortality and improving quality of life. This clinical case brings the example of a male child with CFRD, with only one risk factor for the development of the disease. More studies are needed in the literature to determine whether there is a need for screening in these patients. **Keywords:** cystic fibrosis; pre-scholar; cystic fibrosis related diabetes.

AP-135 CLINICAL MANIFESTATION AND MANAGEMENT OF NON-KETOTIC HYPERGLYCINEMIA: CASE REPORT

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Nonketotic hyperglycinemia is a rare autosomal recessive metabolic disorder of the glycine cleavage enzymatic system in the liver and brain, coursing with severe neurological disorders and can be potentially fatal. Prevalence estimated at 1:250,000. Objective: to report a case of an uncommon disease, whose patient presented clinical manifestations that started in the neonatal period, but with diagnosis at 5 months old. Full-term newborn, with no complications at delivery and uneventful prenatal care, presented weak sucking and hypotonia since birth. He was admitted with 7 days old in the neonatal ICU (NICU) due to severe respiratory distress, myoclonus and seizures. After control, he was discharged from the NICU with 43 days old for follow-up and diagnostic investigation. At 83 days old, the minor was hospitalized again for having a difficult-to-control seizure crisis, respiratory failure and coma. During this hospitalization, elevation of glycine in the cerebrospinal fluid, hyperglycinemia and hyperglycinuria, in addition to normal serum pH, was detected. The child received sodium benzoate, L-carnitine, anticonvulsants and a nutritional regimen with a caloric quota considering the standard for patients with neuropathy (ASPEN, 2002) with protein control at 5% of the total caloric quota, allowing the child to return to life familiar. We report, therefore, a case of a rare disease, whose early diagnosis may provide an answer that allows a better quality of life for the patient with the disease. It urges to draw attention to the suspicion of the disease in the neonatal period.
Keywords: nonketotic hyperglycinemia; metabolic disorder; glycine.

AP-136 PAPILLORENAL SYNDROME WITH SHORT STATURE: A CASE REPORT AND LITERATURE REVIEW

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Case report: F.L.A., male, 10-years-old, referred to endocrinology evaluation due to proportional short stature (SS) [116 cm percentile (p) < 3; SD-4], and low weight (20.3 kg, p < 3). Born at 39 weeks with adequate weight for gestational age and had growth velocity (GV) deceleration since 6 months. Screening for thyroid disorders, growth hormone deficiency and celiac disease was normal. Report of renal hyperechogenicity since birth, loss of corticomedullary differentiation and reduced renal volume. Optic nerve coloboma and absence epilepsy diagnosed at 4 years old. Dimercaptosuccinic acid scintigraphy showed low absolute renal function on the left and right kidney [(22.6% and 24.9%, respectively) (RV = 30% +/- 3)] and, in urinary tract ultrasound, bilateral renal cortical cysts (<0,5 cm). Enalapril 5 mg/day was prescribed due to pre systemic arterial hypertension and proteinuria (665 mg/g). A genetic evaluation was advised given renal and ophthalmological findings and severe SS. Exome revealed PAX2 pathogenic variant c.77_78insG (p.Val26Glyfs*28), in heterozygosis, confirming papillorenal syndrome (PRS) diagnosis. Karyotype and microarray had normal results. At age 11, growth hormone therapy was started, with height of 122cm (SD-4), Tanner 1 and bone age of 8 years. In the first year of treatment, he grew 9cm; in the second, 7 cm. Currently, the patient is 14 years old, developing pubertal signs. He remained normotensive during follow-up and had an estimated glomerular filtration rate ranging from 70 to 80 mL/min/1.73 m^2 and the last proteinuria was 28.4 mg/g. **Discussion:** The PAX2 gene is linked with 2 phenotypes: PRS and focal segmental glomerulosclerosis type 7. In PRS, besides the renal findings (hypoplasia, cysts and insufficiency), there are ophthalmological findings, such as optic nerve coloboma or glioma, and, more rarely, epilepsy, Arnold-Chiari I and laxity ligament. The variant of this case is related to the both phenotypes, but it fits as PRS, due to coloboma and epilepsy. It is possible that the SS of this patient, observed since the first year of life, with no other identified cause, is related to PRS, with at least 1 other case described in the literature with severe renal complications. **Final comments:** This case represents a rare syndrome, in which SS is rarely reported, with favorable response to hormone replacement. However, it remains uncertain if the cause of the severe SS is related to renal impairment, to the syndrome itself or both conditions.
Keywords: short stature; papillorenal syndrome; PAX2 gene.

AP-137 VASOPRESSIN AS A POTENTIAL BIOMARKER FOR EARLY DIAGNOSIS OF AUTISM SPECTRUM DISORDER

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Introduction: Autism spectrum disorder (ASD) is a neurodevelopmental condition impacting social interaction skills. Early ASD diagnosis is challenging due to subjective and delayed behavioral signs. Recent research reveals a connection between reduced levels of vasopressin (AVP), also known as antidiuretic hormone, and ASD. The findings highlight significantly lower AVP levels in individuals with ASD compared to unaffected children. This discovery supports the potential of AVP as a valuable screening tool for autism identification. **Objectives:** The primary aim of this study is to investigate the potential utility of vasopressin as a biomarker for the early diagnosis of autism in newborns. **Methods:** This systematic review follows PRISMA and uses PubMed. The search used "autism" and "diagnosis," and "vasopressin" resulting in 61 initial results. After applying filters like "5 years" and "free full text," 13 articles were obtained. Of these, 3 were excluded due to irrelevance, and 10 were analyzed. **Results:** Studies revealed lower Vasopressin levels in cerebrospinal fluid (CSF) in children with ASD when compared to unaffected children. This supports the idea that reduced Vasopressin levels are linked to ASD diagnosis, making it a potential biomarker even in early infancy. Early ASD diagnosis is crucial for better outcomes. Furthermore, there is a correlation between Vasopressin levels in the CSF and the severity of social limitations in individuals with ASD. **Final considerations:** In this perspective, we recognize vasopressin as a promising biomarker for the early diagnosis of ASD, including in newborns. **Keywords:** autism diagnosis; vasopressin; biomarker.

AP-138 HIGH OBESITY PREVALENCE IN A COHORT OF GIRLS WITH CENTRAL PRECOCIOUS PUBERTY FOLLOWED IN A REFERENCE CENTER IN THE BRAZILIAN NORTHEAST: A CURRENT CONCERN

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Introduction: Childhood obesity is a major public health problem worldwide. The association between high body mass index (BMI) and earlier timing of pubertal development in girls is well established. The impact of the childhood obesity epidemic on the activation of the gonadotropic axis is a current concern. **Objectives:** To calculate the proportion of overweight and obesity in a cohort of girls with central precocious puberty (CPP) and to describe the clinical, laboratory and radiological data at the time of diagnosis of CPP. **Materials and methods:** Retrospective study of the medical records of 44 girls diagnosed with CPP followed up at an endocrinology service in the state of Ceará. Clinical, laboratory and radiological data were analyzed and patients were classified as eutrophic, overweight or obese according to the 2007 World Health Organization guidelines. Standard deviation (Z-score) of BMI > -2 and ≤ +1 was categorized as eutrophy, > +1 and ≤ +2 as overweight and > +2 and ≤ +3 as obesity. **Results:** Excess weight was observed in 72.7% of the patients, 31.8% of which were overweight and 40.9% obese. The median BMI Z-score was +1.76, ranging from –1.62 to +3.23. The median age of onset of puberty was 6 years (ranged from 3 to 8 years) and 77.2% of patients had thelarche as the first sign of pubertal development. At baseline, the median age was 7 years and 5 months, 72.7% had Tanner stage 3 or 4 for breast development, and the median bone age advanced over chronological age by 2 years. Baseline puberal LH levels were identified in 65% of the patients, with a median of 0.57 IU/L. Brain MRI was performed in 34% of the girls, with no evidence of central nervous system abnormalities. Most patients (95%) underwent pubertal blockade with a GnRH agonist. **Conclusion:** We found a high prevalence of obesity in our sample of girls with CPP. Childhood obesity is a risk factor for precocious puberty and both conditions are related to unfavorable metabolic outcomes in adulthood, such as metabolic syndrome and type 2 diabetes mellitus. Thus, effective strategies are needed around the globe to prevent excess weight gain in children. **Keywords:** central precocious puberty; childhood obesity; pubertal development.

AP-139 CENTRAL PRECOCIOUS PUBERTY AND ANGELMAN SYNDROME: A RARE ASSOCIATION

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Case presentation: We report a female child who was born via cesarean section, at term, with a birth weight of 3,500 g and length of 49 cm, without intercurrences. She experienced breastfeeding difficulties and developed seizures within the first month of life. She exhibited significant neuropsychomotor delay, absence of speech and inappropriate laughter. At the age of 2, she was referred to a neurology center and Angelman Syndrome (AS) was the main hypothesis. Molecular tests were performed and confirmed the AS diagnosis: karyotype 46,XX,del(15)(q11.2q13) and MS-MLPA showed a deletion of the chromosomal segment 15q11-q13. Since then, she receives treatment with anticonvulsants, physiotherapy and speech therapy. At 7 years and 8 months, she was evaluated at an endocrinology center with a history of thelarche at 7 years, pubarche at 7 years and 3 months and menarche at 7 years and 6 months. Pubertal Tanner staging was 4 for breast and pubic hair. Exams revealed basal LH of 3.85 mIU/mL, bone age of 10 years and magnetic resonance imaging of the brain with a slight thinning of the corpus callosum (nonspecific appearance), which can be seen in AS. The patient was treated with a GnRH analogue for 18 months and injectable medroxyprogesterone after. The seizures improved during pubertal block. **Discussion:** AS is a rare genetic disease, characterized by severe cognitive impairment, delay in all motor development milestones, inability to speak, ataxic gait, seizures and inappropriate laughter. Typical face includes microcephaly, prognathism, wide mouth, thin upper lip, protruding tongue, and widely spaced teeth. The definitive diagnosis requires molecular testing. The main genetic mechanism in AS is the loss of function of the maternal *UBE3A* allele, located in the 15q11-13 region. The age of pubertal onset in AS is usually normal. Age at menarche and fertility are also described as normal. So far, only one case of precocious puberty in a girl with AS has been described. In 2004, a girl with AS and isolated precocious thelarche was reported. **Final comments:** Idiopathic central precocious puberty (CPP) is usually described as an isolated condition. However, recent studies have highlighted that CPP can be associated with syndromes. Interestingly, CPP has been associated with AS in rare cases, and we still need to elucidate if there is a genetic cause in this association. **Keywords:** central precocious puberty; genetics; Angelman syndrome.

AP-140 FAMILIAL CHYLOMICRONEMIA SYNDROME: A CASE REPORT

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Case presentation: A 2-month-old infant was taken to a hematologist to investigate possible anemia due to paleness. However, a complete blood count could not be performed due to highly dense blood. It was suspected of familial chylomicronemia syndrome and acute pancreatitis as a complication, based on high levels of triglycerides, cholesterol, amylase, and lipase, along with abdominal distension, irritability and diarrhea. The child was in overall regular condition and exclusively breastfed. Initial measures included the introduction of antibiotics, hydration, and suspension of breastfeeding. Subsequently, a diet containing medium-chain triglycerides was introduced, but there was no significant reduction in triglycerides and cholesterol. Therefore, therapy with bezafibrate was started, which led to a decrease in triglycerides and lipids. Irritability and somnolency were reduced, and there was overall clinical improvement. Regarding triglyceride levels, the initial value found was 4,360 mg/dL, ranging from 2,325 mg/dL to 2,168 mg/dL, with the highest value obtained being 7057 mg/dL and the lowest 617 mg/dL. The patient was discharged on the 20th day with dietary instructions and bezafibrate. Currently, she is 3 years old, attends school, remains on bezafibrate with partially controlled lipid profile, normal blood coloration and following-up with specialists. **Discussion:** Familial chylomicronemia syndrome (FCS) is a rare genetic disorder with a frequency of 1 case per 1.000.000, causing severe hypertriglyceridemia with triglyceride levels 10 to 100 times higher than those of healthy individuals. It is caused by defects in lipoprotein lipase and can lead to severe episodes of acute pancreatitis. Diagnosis is based on high triglyceride levels, exclusion of other causes, and clinical evaluation. The child described in the case exhibited signs consistent with FCS, such as paleness, abdominal distension, irritability, and diarrhea, and laboratory tests revealed high triglyceride levels and changes in blood color. Treatment involves a low-fat diet, carbohydrate restriction, and sometimes medication. Thus, FCS should be considered in patients with suggestive clinical symptoms and elevated triglyceride levels, after excluding other secondary causes. **Final considerations:** This is a case of FCS in a pediatric patient, allowing for discussion of the diagnosis, clinical manifestations, treatment and progression of an child with FCS. **Keywords:** familial chylomicronemia syndrome; triglyceride levels; acute pancreatitis.

AP-141 CASE REPORT OF MALE PRECOCIOUS PUBERTY IN A TWO-YEAR-OLD CHILD

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Puberty is a period of biopsychophysiological transitions between 8 and 14 years old, being considered early if it occurs before the age of 8 in girls and before the age of 9 in boys, which can lead to various harmful effects. In this sense, this condition can be caused by hormone exposure, glandular dysfunctions, or hypothalamic tumors called hypothalamic hamartomas. This study describes the case of a patient with precocious puberty caused by a hypothalamic hamartoma. **Objective:** To report a rare case of male precocious puberty in a 2-year-old child with a hypothalamic hamartoma. **Methods:** A medical record review was conducted for the patient who sought consultation at a specialized endocrinology service between 2013 and 2023. **Case report:** A 12-year-old male patient presented with pubic hair and voice deepening since the age of 1 year and 11 months. Physical and laboratory examinations revealed early sexual development, accelerated bone age, and deregulated hormone levels. Magnetic resonance imaging identified the presence of an inoperable hypothalamic hamartoma according to neurosurgical evaluations. Pubertal blockade, treatment, and psychological follow-up were performed, resulting in satisfactory final height and no major emotional disturbances. **Discussion:** A comprehensive approach with detailed investigation, additional tests, and personalized decisions is necessary to evaluate and treat precocious puberty. The objective is to ensure proper growth of the child and reduce the emotional and social impact of precocious puberty. **Keywords:** puberty; hypothalamic hamartoma; precocious puberty.

AP-142 LACK OF GROWTH DUE TO HASHIMOTO'S HYPOTHYROIDISM AND AUTOIMMUNE PREDISPOSITION TO CELIAC DISEASE

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Introduction: Autoimmune hypothyroidism is the most common cause of goiter and acquired hypothyroidism in children and adolescents. Celiac disease (CD) is an autoimmune enteropathy characterized by gluten intolerance and consequent inflammation of the mucosa of the small intestine, crypt hyperplasia, and villous atrophy. Clinical manifestations of CD vary from diarrhea, abdominal distension, arthralgia, delayed puberty and growth, to oligosymptomatic forms. The prevalence of short stature (SS) secondary to CD is 10%-47.5%. **Case report:** S.M.S., female, 11 years old, referred for evaluation of growth absence in the last year, without other signs and symptoms. Uncomplicated gestation and delivery, term, weighing 3,400 g and 50 cm in height. Pubarche and thelarche occurred at 10 years old, and menarche is denied. Firstborn of non-consanguineous parents, and her father died of intestinal carcinoma at the age of 51. Physical examination (SEP/2018): Well-nourished, flushed, and hydrated. Height (H): 134 cm (height-Z: -1.25), below the 10th percentile; weight (W): 28 kg (weight-Z: -0.87), M2P2. Target height: 151 ± 6 cm. (JAN/2019): IGF-1: 280 (56-670 ng/mL), TSH: 8.35 (0.6-5.4 mU/L), free T4: 0.97 (1.0-1.7 ng/dL), estradiol: 10 (0.6-2.7 pg/mL), LH: 2.58 (<0.3 IU/L), FSH: 4.25 (>4.1 IU/mL), anti-peroxidase antibody: 114.4 (<34 IU/mL), anti-TG: 5.15 (<115 IU/mL), anti-transglutaminase IgA antibody: 62 (positive >30 IU/mL), karyotype requested but not performed. Bone age of 10 years. Complete blood count, glucose, vitamin D, liver and kidney function; normal. Started on levothyroxine 50 mcg. Follow-up in MAR/2019: H: 140 cm (height-Z: -0.82), W: 31 kg (weight-Z: -0.75), growth rate of 6 cm/year in 6 months. MAR/2019: TSH: 4.1 mU/L and free T4: 1.06 ng/dL, positive anti-endomysial antibody. Thyroid ultrasound: homogeneous, no nodules, volume of 3 mL. AUG/2021: late follow-up due to COVID-19 pandemic. Menarche at 12 years old. Regular use of levothyroxine 50 mcg, diet without complete gluten exclusion. H: 152 cm (height-Z: -1.19), reaching genetic target, W: 40 kg (weight-Z: -1.17). **Discussion:** Thyroid hormones have a permissive effect on GH synthesis and release, and CD can cause SS due to GH resistance and nutritional deficit. Both conditions are prevalent causes of SS in the pediatric population, far exceeding GH deficiency. Thus, this case report emphasizes the importance of actively investigating hypothyroidism and CD in every child with SS or reduced growth velocity. **Keywords:** hypothyroidism; celiac disease; short stature.

AP-143 BREASTFEEDING ASSOCIATED WITH OBESITY IN INFANTS: A CASE REPORT

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Case report: An 8-month-old male patient undergoing growth and development evaluation. The mother reports excessive weight gain during an exclusive breastfeeding diet. The child was born with 3,360 grams and was 51.5 centimeters, classified as adequate for gestational age of 40 weeks; however, at 22 days of life, the newborn was already 5,000 grams and 56 centimeters of stature. At 7 months, a new diet with fruits purée was introduced, but the mother reports suspending it due to rapid weight gain. As for family history, the mother had already undergone bariatric surgery. The infant did not show delays in neuropsychomotor development, had an atypical facies and no signs of hypotonia. At the appointment, the indirect weight was 17.5 kilograms. Stridor and inspiratory rhonchi were auscultated. Laboratory tests were performed, which showed HbA1c of 6%, TSH of 3 mU/L, and free T4 within reference values (0.7 to 1.8 ng/dL). It was instructed: iron and vitamin D supplementation; food reintroduction with fruit purée and soup; breastfeeding reduction to only twice a day; genetic panel to diagnose possible monogenic obesity; and repeat thyroid function tests to rule out possible Euthyroid Sick Syndrome since the infant had flu-like symptoms on the first test day. **Discussion:** Obesity has an increasing prevalence in the world, which is worrisome because it is associated with higher risks of developing chronic diseases such as diabetes, dyslipidemias, hypertension, and cardiovascular diseases. Obese children and adolescents are at greater risk of persisting overweight. Nutritional experiences in the first months influence diseases in later life, which is called metabolic programming. Breastfeeding is the first nutritional experience of the newborn, it exerts a protective effect against obesity, which has been observed in several age groups; however, this subject is still controversial. Despite the numerous benefits already studied on breastfeeding, when it is offered in excess, it can cause metabolic problems and overweight in children. **Final remarks:** In every pediatric consultation, it is important to emphasize the benefits of breastfeeding, as it reduces the risk of obesity by up to 22%. However, the above case presents an exception to this epidemiology, as the patient still relies on breast milk as the main source of energy. Due to the lack of literature on the association between childhood obesity and excessive breastfeeding, further studies on this topic are needed. **Keywords:** breastfeeding; obesity in infants; management of obesity.

AP-144 CONGENITAL ADRENAL HYPERPLASIA: THE IMPORTANCE OF NEONATAL SCREENING FOR EARLY DIAGNOSIS

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Introduction: Congenital adrenal hyperplasia (CAH) is an autosomal recessive disorder characterized by defects in the enzymes involved in cortisol biosynthesis, resulting in the accumulation of intermediate products and excessive androgen synthesis. These alterations manifest prenatally and are represented by ambiguous external genitalia, which can be associated with errors in female sex determination at birth, early pseudo-puberty, dehydration, cardiac arrhythmias, and even death. **Objective:** To analyze scientific articles on the consequences of CAH and the importance of neonatal screening for early diagnosis. **Methods:** An integrative review was conducted using the MEDLINE, PubMed, LILACS, and BVS databases for the past 5 years, in English and Portuguese. The search was performed using the keywords “neonatal screening” and “congenital adrenal hyperplasia.” Full-text articles were included, focusing on populations ranging from early childhood to adolescence. **Results:** 21-hydroxylase deficiency (21-OHD) is the most common form of CAH, and the clinical spectrum is wide, including virilization of external genitalia, rapid somatic growth, accelerated skeletal maturation, clitoromegaly, early pubarche and adrenarche, resulting in pseudopuberty and impaired stature. Males may develop alopecia, and females may experience menstrual irregularities or polycystic ovary syndrome. Neonatal screening, typically performed between 8-14 days of life, allows for early diagnosis of the disease, prevents and/or attenuates the severity of salt-losing crises, and avoids long-term complications, especially those related to neonatal hyponatremia, such as cognitive deficits and mental retardation. It is essential to consider the possibility of false negatives, prematurity, and low birth weight, as they are the main causes of false results in neonatal screening. Treatment involves addressing the deficiencies in glucocorticoids and mineralocorticoids and managing the symptoms of hyperandrogenemia. **Conclusion:** Congenital adrenal hyperplasia is a disease with a broad clinical spectrum and is responsible for consequences ranging from abnormal pubertal development to death. Neonatal screening plays a crucial role in early diagnosis of this disease, contributing to more effective treatment and reducing the manifestations of CAH. **Keywords:** congenital adrenal hyperplasia; neonatal screening; diagnosis.

AP-145 FAHR'S SYNDROME SECONDARY TO POST-SURGICAL HYPOPARATHYROIDISM WITH 20 YEARS OF DIAGNOSIS DELAY

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Case report: E.K., female, 57 years old, hospitalized for recurrent and progressive involuntary movements and cramps. She had history of radical thyroidectomy over 20 years ago, evolving with frequent tetany crises, which were managed in emergency units without ambulatorial follow-up. In the last 4 years she had developed tremors, motor lentification and memory loss, and was diagnosed with Parkinson's disease, but there was no improvement of symptoms despite treatment. At the admission, she presented CaT: 5.7 mg/dL (VR 8.6-10), P: 7.1 mg/dL (VR 2.5-4.5) and PTH: 4 pg/dL (VR 15-65). A brain CT scan showed extended vascular calcifications with linear distribution deep in the cerebral hemispheres and in the cerebellum. The established treatment included high doses of calcitriol and calcium carbonate, resulting in clinical and laboratory improvement, however without completely neurological disorders' remission. **Discussion:** This case illustrates significant and irreversible complications of post-surgical hypoparathyroidism (HP) unrecognized for years. Fahr's syndrome is characterized by bilateral calcification of the motor parts of the encephalon, including basal ganglia, thalamus, dentate nucleus, cerebral cortex and cerebellum. It's a rare disorder (prevalence < 1/1.000.000) that can be hereditary or acquired. Symptoms include extra-pyramidal and cerebellar disorders, cognitive and psychiatric changes and seizures. Its occurrence in HP ranged from 12% to 74%. In this context, the etiopathogenesis of the syndrome has been associated with the long-term duration of hyperphosphatemia, a result of the disease itself and of the inappropriate treatment. Appropriated treatment can prevent calcification and its neurophysiological consequences. **Final comments:** The interface with neurological symptoms in this case accentuates the need for an expanded understanding of metabolic pathologies and their manifestations. The poor knowledge of the clinical presentation of hypoparathyroidism resulted in the extension of the crises suffered by the patient, applying incorrect approaches to the root cause. **Keywords:** hypoparathyroidism; neurological; calcifications.

AP-146 PRIMARY HYPERPARATHYROIDISM DUE TO INTRATHYROIDAL ADENOMA IN A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS: A CASE REPORT

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Case presentation: A 41-year-old female patient with a recent diagnosis of primary hyperparathyroidism (total calcium 14.6, PTH 243.8) was admitted for investigation of constitutional symptoms (fever + lymphadenopathy + weight loss) and was diagnosed with systemic lupus erythematosus (SLE) (positive nuclear pattern on ANA, titer ≥ 1/640, Anti-Sm: 2.6 (reference range < 1.0), and anti-DNA: 1/640) with cutaneous, joint, and hematological involvement. During the hospitalization, she developed hypercalcemia again (corrected total calcium 12.8 (reference range 8.4-10.2); PTH 160.1), which was controlled with pamidronate. Parathyroid scintigraphy revealed signs of parathyroid adenoma/hyperplasia in the lower pole of the right thyroid lobe. Thyroid ultrasound showed a heterogeneous, solid, oval-shaped nodular image with regular margins in the lower margin of the right lobe measuring 2.5 x 0.98 x 1.7 cm. Fine-needle aspiration biopsy (FNAB) resulted in Bethesda II, and PTH measurement in the aspirate was not possible. Thyroid function was normal. She underwent right partial thyroidectomy during surgery, and the histopathological examination revealed an intrathyroidal parathyroid adenoma. **Discussion:** The association of SLE with primary hyperparathyroidism is very rare, with few cases reported in the literature. Intrathyroidal parathyroid adenoma is an ectopic variant and a rare cause of primary hyperparathyroidism. Localization studies may not accurately identify the location of the adenoma, which can be mistaken for a thyroid nodule. FNAB of a parathyroid adenoma can present cytology very similar to that of thyroid aspirate, as was the case in this situation. **Final considerations:** SLE is a rare cause of hypercalcemia, and the pathogenesis may involve the presence of stimulatory autoantibodies to the PTH receptor or excessive production of PTHrp due to lymphadenopathy, both leading to reduced PTH levels. In the described case, the elevation of PTH in the presence of hypercalcemia confirms the diagnosis of primary hyperparathyroidism. In intrathyroidal adenomas, the combination of complementary exams (ultrasound + sestamibi scintigraphy) increases accuracy in localization. Measuring PTH in the FNAB aspirate can determine the location of the adenoma. In this case, the surgeon suspected an intrathyroidal location and chose to perform right lobectomy with intraoperative PTH measurement, which decreased by 80%, confirming the removal of the parathyroid adenoma. **Keywords:** hyperparathyroidism; lupus; adenoma.

AP-147 MULTIPLE FRAGILITY FRACTURES IN A YOUNG MAN AFTER BARIATRIC SURGERY

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Case presentation: J.R.C., male, 42 years old, presented low back pain that started 1 year ago when a fragility fracture in the lumbar spine (L3) was diagnosed, treated with analgesics and rest, without further investigations. 3 months ago, his pain worsened, with paresthesia and synesthesia in the lower limbs and a 5 cm reduction in his final height. He denies trauma or falls. History of gastric bypass 7 years ago with poor adherence to treatment in the postoperative period, denying vitamin or protein supplementation. Alcoholism started at age 16, which worsened in intensity after bariatric surgery and chronic use and in supraphysiological doses of glucocorticoids due to asthma. He denies smoking or symptoms of hypogonadism. No history of fractures in the family. Laboratory tests showed hypovitaminosis and low calciuria, with no other alterations. Lumbar spine tomography described fracture with partial collapse of the vertebral body of L1 with a 50% reduction in height and fracture with partial collapse of the vertebral bodies of T12, L2, L3, L4 and L5, with a reduction of 30%. Evidence of low bone mass for age (Z-Score: -3.1) by bone densitometry and bone scintigraphy showed osteogenic reaction in vertebrae, probably due to a reactional process. After ruling out other secondary etiologies, the patient was instructed to begin vitamin, calcium and teriparatide replacement. **Discussion:** Obesity is a risk factor for deficiency of micro and macronutrients, especially vitamin D, calcium and proteins. Bariatric surgery can exacerbate this phenomenon, and nutrient deficiency after the procedure is related to reduced dietary intake, malabsorption, and inadequate supplementation. Meta-analyses demonstrate that bariatric surgery promotes a 29% risk of bone fractures. Also, when comparing the surgical techniques, it was observed that patients undergoing Roux-en-Y gastric bypass have a 70% greater risk of suffering a major osteoporotic fracture. This correlates with the fact that malabsorptive surgical procedures promote increased loss of bone turnover. **Final comments:** The report demonstrated the relevance of the correlation between malabsorptive surgery and the risk of osteoporotic fracture, especially when associated with other risk factors, such as glucocorticoid use and alcoholism. Thus, highlighting the importance of maintaining adequate vitamin and calcium supplementation and reducing other risk factors such as alcoholism and medication in this group of patients. **Keywords:** bariatric surgery; fractures; osteoporosis.

AP-148 OSTEONECROSIS OF THE MANDIBLE RELATED TO THE USE OF DENTAL PROSTHESIS – CASE REPORT

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Drug-related osteonecrosis of the jaw (MRONJ) is one of the complications caused by antiresorptive drugs. It is defined as the presence of necrotic bone exposed or perceptible on probing in the maxillofacial region, for more than 8 weeks, without a history of head and neck radiotherapy or maxillary metastatic disease. Our case report illustrates the occurrence of MRONJ related to the presence of an ill-fitting prosthesis. Patient L.L.B., female, 76 years old, diagnosed with osteoporosis in 2003, history of treatment with bisphosphonates (alendronate 70 mg/week) for 12 years. Evolved in 2015 with reduced bone mass (DXA 2015 BMD L1-L4 0.819 g/cm² T-score -3.0; femur neck 0.749 g/cm² T-score -2.1; total femur 0.748 g/cm² T-score -2.1) and treatment was changed to raloxifene. She progressed with bone mass gain in the first three years of use, but in the 4th year she presented reduction in BMD (DXA 2019 BMD L1-L4 0.826 g/cm² T-score -2.9; femur neck 0.722 g/cm² T-score -2,3, total femur 0.750 g/cm² T-score -2.0). It was decided to change therapy to denosumab, coursing with improvement in bone mass (DXA 2020 BMD L1-L4 0.868 g/cm² T-score -2.6; femur neck 0.713 g/cm² T-score -2.3, total femur 0.778 g/cm² T-score -1.8). After the 3rd year (6 doses), the patient evolved with spontaneous gingival erosion with bone exposure in the upper left gingiva, associated with local pain, without improvement for more than 2 months. She had previously used a dental prosthesis without reporting recent replacement or having performed invasive dental procedures. No history of radiotherapy or metastatic disease in the jaws. Analgesic was prescribed, mouthwash with chlorhexidine gluconate 0.12% and referred to the maxillofacial specialist. She underwent 40 sessions of hyperbaric oxygen therapy, without improvement. She underwent surgical treatment, osteotomy of the maxilla, to remove bone sequestration, with resolution of the complication. The pathogenesis of MRONJ remains poorly understood, but several mechanisms are discussed, including excessive suppression of bone turnover, local infection, inhibition of angiogenesis, soft tissue toxicity, and immune dysfunction. Risk factors include the use of glucocorticoids, maxillary or mandibular bone surgery, poor oral hygiene, chronic inflammation, diabetes mellitus, ill-fitting dentures, as well as other drugs, including antiangiogenic agents. MRONJ is a rare adverse reaction, but it is important to identify patients at potential risk of the disease. **Keywords:** osteonecrosis of the jaw; osteoporosis; antiresorptive drugs.

AP-149 EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH OSTEOPOROTIC FRACTURES FOLLOWED UP AT A REFERENCE OUTPATIENT CENTER FOR BONE METABOLISM IN BAHIA

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Introduction: Osteoporotic fractures are those that occur due to a fall from standing height or less, after low-impact trauma. It is estimated that approximately 50% of women and 20% of men aged 50 years or older will suffer an osteoporotic fracture in their lifetime. Fractures can result in limited ambulation, depression, loss of autonomy and chronic pain. Hip and spine fractures are associated with a 10 to 20 percent increased mortality rate. **Objectives:** This study aimed to analyze the epidemiological profile of patients who had osteoporotic fractures followed at the reference outpatient clinic for bone metabolism in Salvador, Bahia. **Patients and methods:** Data were retrospectively collected from physical records of 24 patients who were diagnosed with osteoporotic fractures. Aspects such as age, body weight, vitamin D supplementation, baseline bone densitometry (BMD), family history of osteoporotic fractures and other possible risk factors for fractures were analyzed. **Results:** It was found among the 24 patients that 18 (75%) suffered spinal fractures and 6 (25%) non-vertebral fractures (femur and wrist). All patients were female, aged over 60 years (50% between 70 and 80 years). The initial BMD T-score ranged from 0.1 to -5.4 for the lumbar spine (66% with a value ≤ -3.0) and from -0.3 to -3.5 for the femoral neck (50% with value between -1.5 to -2.4). Three patients (12.5%) had a positive family history of osteoporotic fracture in a first degree relative; 12 (50%) were not on regular vitamin D supplementation; 16 (66%) had a body weight less than 58 kg (39-55 kg), while 25% were obese (body mass index > 30 kg/m²); 7 (29%) had type 2 diabetes mellitus; 11 (45.8%) had thyroid hormone disorder (previous hyperthyroidism or hypothyroidism with levothyroxine replacement). Other factors such as smoking, chronic use of corticoids or inflammatory diseases were ruled out. Only one patient had early menopause history. Another two patients had malignancy history (breast and stomach cancer). **Conclusion:** From this research, it was possible to identify the profile of elderly patients who suffered osteoporotic fractures, with classic characteristics, but also different from those found in literature, and may serve to guide preventive actions in this target population. **Keywords:** osteoporotic fractures; risk factors; epidemiology.

AP-150 ALLOGENES LIVE DONOR PARATHYROID TRANSPLANTATION (TAPTDV) FOR THE TREATMENT OF PERSISTENT POST-SURGICAL HYPOPARATHYROIDISM: A SUCCESSFUL BRAZILIAN EXPERIENCE REPORT

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Introduction: Hypoparathyroidism is caused by low levels of parathyroid hormone (PTH). It results in hypocalcemia, hyperphosphatemia and impaired quality of life. Persistent postsurgical hypoparathyroidism (PHPT) occurs after surgeries in the anterior cervical region. Pharmacotherapy is limited and parathyroid transplantation is an option for severe cases. There are few studies conducted in the world, and none in Brazil. **Objective:** To describe the experience in allogeneic parathyroid transplantation from a living donor (TAPTdv) at CH-UFC/EBSERH. **Methods:** Prospective study of the effectiveness of TAPTdv in restoring Ca metabolism in patients with PHPT, carried out at the Endocrinology/Diabetes, Head-Neck and Renal Transplantation Services of CH-UFC/EBSERH. Patients with severe hypocalcemia, need for high doses of Ca/calcitriol, or significant reduction in quality of life were included, excluding those < 18 years or positive serology, according to the kidney transplantation protocol. Donors had chronic renal failure and indication for subtotal parathyroidectomy due to secondary hyperparathyroidism. ABO compatible donors and recipients. HLA typing and cross-matching were performed in 2 cases. Immunosuppression consisted of 3 days of methylprednisolone plus 7 days of prednisone. The implant was placed under the fascia of the brachioradialis muscle of the non-dominant arm. **Result:** 3 transplants so far. 1st case: female, 36 years old, with PHPT (papillary thyroid CA-CPT) since 2016. Serum Ca: 6.0-8.0 mg/dL/undetectable PTH. Donor: 47 years old, male. Post-transplant: PTH remained undetectable. Serum Ca: 8.0-10.2 mg/dL. Ca supplementation halved at 1 month and calcitriol discontinued at 6 months. Follow-up: 1 year. 2nd case: female, 40 years old, with PHPT (CPT) since 2008. Bariatric surgery in 2017. Serum Ca: 6.0-7.0 mg/dL/PTH: 7.0-15 pg/mL. Donor: 35 years old, female. HLA: 2 matches (*loci* B and DQB1). Negative cross match. Post-transplantation: PTH 3.8-6.8 pg/mL. Serum Ca: 7.3-8.9 mg/dL. Suspension of intravenous Ca infusion. Follow-up: 6 months. 3rd case: female, 42 years old, with PHPT (CPT) since 2014. Serum Ca: 6.0-8.0 mg/dL/undetectable PTH. Donor: 28 years old, male. HLA: 3 matches (*loci* A, B and DRB1). Post-transplantation: PTH 18pg/mL. Serum Ca: 8.8 mg/dL. Follow-up: 1 week. **Conclusion:** TAPTdv was effective at short intervals in restoring calcium metabolism, reducing Ca/calcitriol supplementation and improving quality of life in patients with PHPT. **Keywords:** hypocalcemia; persistent post-surgical hypoparathyroidism; parathyroid transplant.

AP-151 HYPOPHOSPHATEMIC RICKETS, 18 YEARS OF FOLLOW-UP: CASE REPORT AND LITERATURE REVIEW

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Case report: Female patient, 2 years old (yo), required medical attention due to knee pain, difficulty in walking and falls. Born full-term with adequate weight for gestational age. On physical examination: weight 11 kg [percentile (p) 3-15], height 78 cm (p < 3), target height 157 cm (p 15-50), bilateral genu varum and march deviation to the right. Serum laboratory tests results: phosphorus (Ps) 3.3 mg/dL (RR 3.6-6.5); alkaline phosphatase (ALP) 422 U/L (RR < 280); parathyroid hormone (PTH) 83 pg/mL (RR 7-53); 1,25-dihydroxy vitamin D 20 pg/mL (RR 31-87); total calcium (Ca), total CO2 and creatinine (Cr) within normal limits (WNL). The renal threshold phosphate concentration (TmPO4/GFR) was 2.9 mg/dL (RR 3.6-7.6); pH and other electrolytes WNL. Hormonal screening for short stature WNL. Lower limb X-ray: varus deformity, diffuse metaphyseal widening. Due to the hypothesis of hypophosphatemic rickets, treatment was initiated with calcitriol 0.04 mcg/kg/day and sodium phosphate 70 mg/kg/day. After 3 months of: Ps 3.6 mg/dL and ALP 353 U/L. In the following months, there was improvement in march stability, less frequent falls and pain, as well as stable levels of serum and urinary Ps, Ca, PTH, and 1,25-dihydroxy vitamin D, with a slight reduction in ALP. Serial ultrasound examinations of the urinary tract WNL. Tonal audiometry revealed hearing loss in the left ear. Menarche at 12 yo. At 14 yo, bilateral total knee arthroplasty was performed. Currently, 20 yo, the patient measures 150 cm (p < 3). No fractures occurred during the follow-up period. Analysis of the PHEX gene mutation is ongoing. **Discussion:** Hereditary hypophosphatemic rickets is a chronic osteometabolic disease. The most common form is X-linked (XLHR), whose mutation is in the X-linked phosphate-regulating gene (PHEX) – with prevalence of 1 in 20,000 births. The laboratory criteria are similar among the forms of hereditary rickets, while the clinical presentation of XLHR tends to have a milder clinical and radiological findings, as noted in this case. The patient didn't develop severe deformities or fractures throughout the treatment and achieved a height close to the familial target. **Final considerations:** In the presented case, the combination of early pharmacological and orthopedic treatment contributed to minimizing bone deformities and preventing fractures. Thus, this case report provides an ideal management model, overcoming treatment challenges and offering genetic counseling when possible. **Keywords:** hereditary hypophosphatemic rickets; X-linked hypophosphatemic rickets; chronic osteometabolic disease.

AP-152 CASE REPORT OF A PATIENT WITH FAMILIAL TUMORAL CALCINOSIS

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Hyperphosphatemic familial tumoral calcinosis (HFTC) is a rare genetic disorder characterized by a relative deficiency of or resistance to fibroblast growth factor (FGF23), the phosphate-regulating hormone. Clinical diagnosis of HFTC is established by the presence of ectopic calcifications and/or characteristic laboratory findings of hyperphosphatemia in the setting of inappropriately increased renal tubular reabsorption of phosphorus (TRP), elevated or inappropriately normal 1,25-dihydroxyvitamin D3 (1,25D) levels, and elevated C-terminal FGF23 fragments. We describe a case of a 15-year-old girl with a history of hypochromic macules with onset at 5 years of age. At 9 years of age, a hardened, rapidly growing, painful nodule appeared in the left elbow that restricted movement of the joint, which was removed. At the age of 14, a new lesion appeared on the right elbow, with the same characteristics, which was also removed. Recently, calcification appeared in the hip. After its removal, painful plaques appeared on the medial and posterior face of the thighs, ascending to the groin and flanks, and the patient is currently unable to walk or extend her knees. She is confined to bed due to pain and joint stiffness in her lower limbs. She denies a similar history in the family. Laboratory tests on admission were as follows: serum phosphorus 8.0 mg/dL (4.0-7.0), PTH 12.1 pg/mL (15-68.3), 25OHD 26.4 ng/mL (30-60), TmP/GFR 6.99 mg/100 mL (2.97-4.45), with preserved renal function. DNA sequencing determined she was a homozygous for mutation in *GALNT3*. Treatment with sevelamer, acetazolamide and a phosphorus-restricted diet decreased serum phosphate. The patient initially had difficulty controlling phosphorus, worsening of calcifications and infection of the lesions. She showed gradual improvement in phosphataemia with medication adjustment. **Keywords:** familial tumoral calcinosis; GALNT3; hyperphosphatemia.

AP-153 TRANSIENT IATROGENIC HYPOPARATHYROIDISM AND THE IMPORTANCE OF CONTINUED FOLLOW-UP – A CASE REPORT

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Clinical case: Female patient, 44 years old, seeks the service for routine follow-up, reporting complaints of alopecia, lower limb myalgia, tremors and arthralgia. History of hypothyroidism due to Hashimoto since 2003 (anti-TPO = 1/400). She underwent total thyroidectomy in 2009 due to diffuse goiter, presenting a thyroid with regular contours and slightly heterogeneous texture, without nodules on ultrasound, with a total volume of 22 cm^3. She denies having performed FNA (fine needle aspiration puncture). The anatomopathological result was the absence of malignancy in the histological sections. She inadvertently stopped using levothyroxine and, two months after surgery, developed fatigue, generalized swelling, and disabling cramps. She looked for an endocrinologist who prescribed calcitriol, calcium carbonate and, again, levothyroxine. She used the medications for seven years, with calcitriol and calcium suspended four years ago. Currently, she takes levothyroxine 125 mcg and 500 mg/day of calcium, the latter on her own. The patient remained symptom-free of hypocalcemia and was using appropriate levothyroxine. **Discussion:** Patient had diffuse thyroid goiter due to Hashimoto's thyroiditis without the initial need to perform FNA or thyroidectomy due to the absence of nodules seen on ultrasound. After surgery, without the use of medication, she had symptoms of hypothyroidism and hypocalcemia, being diagnosed and treated as hypoparathyroidism due to total thyroidectomy. Hypoparathyroidism courses with parathyroid hormone (PTH) deficiency, arising from autoimmune causes or manipulation of the parathyroid glands, generating symptoms related to the patient's clinical condition. In this case, the dysfunction is due to the surgical procedure, causing transient iatrogenic hypoparathyroidism, which ceases within six months. The lack of follow-up led the patient to use calcium and calcitriol replacement for a few years, which might have been withdrawn early. **Final comments:** In this case, even without FNA evaluation of the thyroid, the patient was submitted early to a total thyroidectomy, evolving with decompensation of hypothyroidism and the appearance of transient hypoparathyroidism, treated for many years as permanent hypoparathyroidism. The importance of the differential diagnosis of thyroid diseases is evident, in order to avoid the occurrence of secondary damage to patients, as well as to ensure follow-up with an endocrinologist. **Keywords:** hypoparathyroidism; thyroidectomy; hypothyroidism.

AP-154 ATYPICAL PARATHYROID ADENOMA AS CAUSE OF EARLY SEVERE OSTEOPOROSIS AND CHRONIC KIDNEY DISEASE

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Case report: Female, 38 years old, with chronic kidney disease (CKD) on dialysis for 2 years, reports muscle weakness for 6 months. She sought the endocrinology service because severe hyperparathyroidism (calcium 14.4 mg/dL; phosphorus 6.2 mg/dL; PTH 1,481 pg/mL). Radiological exams showed lytic lesions in the skull ("salt and pepper") and severe osteoporosis (Z-score lumbar: -3.8). Nephrological investigation indicated primary hyperparathyroidism (PHTP) as a probable cause of chronic renal failure. The patient was submitted to parathyroidectomy and thyroidectomy, the anatomopathological exam showed hyperplastic follicular thyroid nodules and parathyroid neoplasia with moderate nuclear atypia. Immunohistochemistry concluded left atypical parathyroid adenoma (APA). Replacement of calcium carbonate, calcitriol and levothyroxine were prescribed. **Discussion:** Parathyroid adenomas (PA) are more common between 50 and 70 years old, and cause approximately 80% of cases of PHPT, that causes calcium absorption increase in the gut and inhibiting phosphate reabsorption in the distal tubules of nephron. The main complications of PHPT are osteoporosis, renal lithiasis and cognitive dysfunctions. On the other hand, malignant parathyroid tumors are rare. Parathyroid carcinoma (PC) are more aggressive, with a higher frequency of severe renal and skeletal involvement. Thus, although the clinical case looks like a PC case, the immunohistochemistry diagnosis did not confirm malignancy. The APA is a tumor that can transit between the characteristics of the adenoma and the carcinoma, being a diagnosis of exclusion, because it presents differences in the clinical repercussion, histology and immunohistochemistry when compared to the typical one, however it does not have criteria of malignancy. Despite menopause and hormonal influence, women do not appear to be more predisposed to the development of APA, as occurs in typical adenoma. In addition, the recurrence of the disease is described as possible, requiring further studies that address the issue. **Final comments:** APA can mimic a PC condition, and future research is needed to better characterize the presentation of this type of tumor, which is poor described and debated in the literature, and its malignant potential is still uncertain. **Keywords:** parathyroid glands; adenoma; osteoporosis.

AP-155 FAHR'S SYNDROME IN A YOUNG ADULT: CASE REPORT

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Case presentation: A 27-year-old male patient, with mood swings, mild hearing loss, fatigue, paresthesia, and cramps for the past 4 months. He has had seizures in the past, controlled with carbamazepine 400 mg/day. Laboratory tests showed: corrected calcium: 6.9 mg/dL; ionic calcium: 0.92 mg/dL; PTH: 6.5 pg/mL; phosphorus: 6.8 mg/dL; TSH: 0.98 mIU/L; FT4: 1.02 ng/dL; Ur: 31 mg/dL; Cr: 1.0 mg/dL. A CT scan of the brain and MRI of the brain showed evidence of involvement of the bilateral and symmetrical basal ganglia, with areas of hyposignal in the frontal and parietal subcortical regions, as well as in the cerebellar hemispheres, suggesting calcium deposition. Fahr's syndrome (FS) was then diagnosed. After establishing a multidisciplinary approach and clinical treatment of hypoparathyroidism and correction of hypocalcemia (calcium carbonate and calcitriol), he evolved with good control of calcium levels and without new episodes of seizures. **Discussion:** FS is a rare autosomal dominant disease, with a prevalence < 1/1,000,000, in which bilateral and symmetric idiopathic calcification of the basal ganglia occurs. Clinical manifestations are heterogeneous, from asymptomatic or oligosymptomatic cases or association with other symptoms, such as headache, vertigo, behavioral and mood changes, cognitive impairment, movement disorders, pyramidal signs and seizures. Laboratory tests show chronic hypocalcemia. Computed tomography of the skull represents an imaging method that allows easy recognition, with high sensitivity, through the identification of extensive hyperdense deposits in the basal nuclei, dentate nuclei of the cerebellum and other regions of the brain, which allows diagnosis and treatment precocious. Treatment is based on correcting phosphocalcic metabolism and should be aimed at controlling symptoms, functional recovery, improving quality of life, preventing complications and, when possible, disease progression. **Final comments:** This report illustrates a case of FS, a rare and sometimes treatable entity. Treatment includes symptomatic support, but there is no specific treatment limiting the progression of calcification in the basal ganglia. Thus, an early treatment can prevent the occurrence of calcification and the consequent neurophysiological disorders. **Keywords:** hypocalcemia; hypoparathyroidism; basal ganglia.

AP-156 ATYPICAL MANIFESTATION OF PARATHYROID ADENOMA: A CASE REPORT

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Case presentation: Female patient, 81 years old, history of weight loss of 20 kg in the last 12 months, a large palpable neck mass, proximal muscle weakness, drowsiness and acute kidney injury. Laboratory findings with high serum levels of calcium (corrected calcium: 17.04 mg/dL) and parathyroid hormone (PTH: 1,926 pg/mL). Ultrasonography of the cervical region identified the presence of a nodule measuring 8 cm in the largest diameter, located posteriorly to the thyroid. Scintigraphy with sestamibi verified focal increase uptake in the nodule topography. A CT scan showed multiple areas of bone alterations suggestive of osteopenia. The patient then underwent parathyroidectomy. The anatomopathological study verified irregular formation compatible with hyperplasia of parafollicular cells with a compact nodular area of 1.5 cm compatible with parathyroid adenoma, ruling out the initial hypothesis of carcinoma. With diagnostic confirmation, there was no need for additional surgical reapproach. After two months, the patient is asymptomatic, with normal levels of calcium and PTH under outpatient follow-up. **Discussion:** Very high levels of calcium and PTH may suggest the possibility of parathyroid carcinoma. The differential diagnosis with adenoma is fundamental for choosing the surgery extension. We report a case of primary hyperparathyroidism with atypical clinical and laboratory manifestations, raising the hypothesis of malignancy during the investigation. It is clear the importance of further studies to improve the accuracy of clinical diagnosis, allowing definitions of optimized clinical and surgical conducts. **Keywords:** hyperparathyroidism; parathyroid adenoma; parathyroid carcinoma.

AP-157 LOW BONE MINERAL DENSITY IN A YOUNG PATIENT WITH DM1 – CASE REPORT

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In type 1 diabetes, low levels of insulin and insulin-like growth factor 1 can impair osteoblastic function, with reduced bone formation and bone resorption. Several studies show lower bone mineral density in patients with type 1 diabetes. In addition, diabetic children end up having a lower peak bone mass, which leads to the onset of osteopenia or osteoporosis at an earlier age. Despite the increased risk of fractures, the assessment of bone disease in diabetic patients follows the same recommendations as for non-diabetic patients. Our case report illustrates the occurrence of low bone mass in a young male patient with DM1 associated with gastrointestinal disease. Patient, L.B.F., male, 22 years old, diagnosed with type 1 diabetes mellitus in 2009, at 8 years old and celiac disease at 11 years old. In 2014, he developed low bone mass for age (2014 DXA: total femur BMD 0.878 Z score: -2.1), and cholecalciferol and calcium carbonate replacement was initiated. Despite a gluten-free diet, regular use of insulin therapy with good glycemic control, adequate levels of vitamin D, PTH and calcium, the patient evolved with worsening bone mineral density: DXA 2016: BMD L1-L4 0.724 Z score:-2.7; total femur 0.989 Z score -2.7; DXA 2019: BMD L1-L4 0.815 Z score:-4.6; total femur 0.782 Z score -2.8; DXA 2022: BMD L1-L4 0.837 Z score:-3.9; total femur 0.768 Z score -3.3. The mechanism for reduced bone turnover in type 1 diabetics is probably multifactorial, the accumulation of advanced glycation end products in collagen as a result of hyperglycemia may also contribute to reduced bone formation. Bone loss is also common in celiac disease and much of it is related to secondary hyperparathyroidism, probably due to vitamin D deficiency. Patients with advanced disease may have bone pain, pseudofractures, or deformities. Although low bone mineral density is known to be known in diabetics and patients with malabsorption diseases, such as celiac disease, this pathology is rarely screened in this group of patients. Thus, it becomes important to diagnose and identify patients at potential risk of the disease. **Keywords:** low bone mass; celiac disease; type 1 diabetics.

AP-158 MULTIPLE VERTEBRAL FRACTURES AFTER BARIATRIC SURGERY AND GLUCOCORTICOIDS USE DUE TO LUMBAR CHRONIC PAIN

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Case presentation: Male, 45 years old, underwent Roux-en-Y gastric bypass in 2020. He had lost 70 kg during the first 6 months after the surgery. In 2021, he had an undiagnosed Genant 2 vertebral fracture (T7) that resulted in a refractory back pain. He looked for an orthopedic doctor who just prescribed glucocorticoids to relieve the back pain. He had taken betamethasone 10 mg/week and prednisone 20-40 mg/day for over a year. After 11 months, he had multiple vertebral fractures, requiring a vertebroplasty with bone cement. Three months later he had other fragility fracture in femur neck. On physical examination he had thin skin and telangiectasias, and proximal weakness in lower members. Normal protein electrophoresis; creatinine = 0.5 mg/dL; cortisol: 0.5 mg/dL; ACTH = 5 pg/mL; 25-OH vitamin D = 15 ng/mL; FT4 = 0.76 ng/dL; TSH = 1.6 µIU/mL; total testosterone = 572 ng/mL; PTH = 94 pg/mL; urine calcium 24 h: 79 mg/24 hours; corrected serum calcium = 8.7 mg/dL; CTX: 690 ng/mL; P1NP = 67 µg/L. Spine MRI had showed multiple vertebral fractures at T8, T9, T11, L1 and L2. Dual-energy X-ray absorptiometry: BMD/Z-score L2-L3 (0.820/-3.3); femoral neck (0.659/-2.6). Romosozumab 210 mg/month for 12 months, prednisone 5 mg/day (in reduction) and vitamin D 50,000 UI/week were prescribed. **Discussion:** The scientific literature supports negative osteometabolic consequences after bariatric surgery, such as BMD decrease and parathyroid hormone increase. The pathophysiology involves mechanical load decrease, malabsorption of calcium and vitamin D. Besides that, there is change in the release of sex hormones and gut peptides. Furthermore, the patient had taken glucocorticosteroid for a long time, another fracture risk factor, which increases the risk of secondary osteoporosis by 30% to 50%, independently. Because the patient had a very high fracture risk, we decided to indicate romosozumab, a monoclonal anti-body against esclerostin, since many studies have showed that initial therapy with osteoanabolic drugs followed by the anti-resorptive therapy provides greater BMD gain, especially in the hip, which results in greater anti-fracture efficacy. **Final considerations:** This case highlights the importance of early diagnosis of fracture in the post bariatric follow up, and how short can be the time between the surgery and the first fracture. Thus, after bariatric surgery, careful follow-up is necessary in order to mitigate the fracture risk in that population. **Keywords:** bariatric surgery; osteoporosis; glucocorticoid.

AP-161 CLINICAL, DENSITOMETRIC AND METABOLIC DESCRIPTION OF PATIENTS WITH OSTEOGENESIS IMPERFECTA IN A TERTIARY SERVICE

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Introduction: Osteogenesis imperfecta (OI) is a heterogeneous group of hereditary connective tissue diseases whose pathophysiology is predominantly related to bone collagen defects, resulting in bone fragility and deformities. **Objective:** To evaluate the clinical, laboratory and densitometric alterations of patients with OI in a tertiary endocrinology service. **Methods:** Descriptive cross-sectional study of the patients' population with type III OI, with medical evaluation, review of medical records, biochemical and radiographic analysis, and bone densitometry. Data processed on the Excel platform and expressed as median (minimum-maximum) or mean ± SD. **Results:** A total of 14 individuals were analyzed, 57% female, age 33.2 y (8.4 to 60.1 y), only one child. The first fracture occurred at 16 m (0-108 m) and the most frequent bone site was the femur (64%). Within first 2 years of life, 42% of individuals had more than 10 fractures. In their lifetime, 3/14 (21.4%) suffered < 10 fractures, 4/14 (28.5%) between 10 and 50 fractures, 4/14 (28.5%) between 50 and 100 fractures, and 3/14 (21.4%) more than 100 fractures. The functional assessment revealed that 8/14 (57.1%) are wheelchair users, but 11/14 (78.5%) were able to perform self-care without assistance. On physical examination, median height was 130 cm (100 to 152 cm), corresponding to -6.2 SD (0.6 to -10.3) in adult males and 121 cm (90 to 152 cm), -6.7 SD (-1.7 to -11.0) in adult women; the BMI was 24 kg/m² (21.3 to 37.3 kg/m²) in men and 31.5 kg/m² (23.9 to 50 kg/m²) in women. Kyphosis and/or scoliosis were present in 6/14 (42%) of patients and bluish sclera in 9/14 (64.2%). Family history of OI was present in 7/14 (50%). Concerning to treatment, 9/14 (64%) received pamidronate in childhood and adolescence and 1/14 (7.1%) received alendronate, resulting in a reduction in the frequency of fractures in 100% of cases. In adult life, 10/14 (71.4%) required treatment, mostly with oral bisphosphonates. Laboratory evaluation revealed normal calcium, phosphorus, PTH and 25OHD, hypercalciuria in 3/14 (21.4%), normal metabolic evaluation. Bone densitometry revealed low bone mass in 10/11 (90%) individuals, with Z-score -2.7 ± 1.8 in the spine. **Conclusion:** OI manifested early and severely and treatment with pamidronate in childhood did not prevent short stature and spine deformities. We observed a great need for treatment in adult life, despite the young age. **Keywords:** *osteogenesis imperfecta*; fractures; collagen.

AP-162 DIFFICULT MANAGEMENT HYPOPARATHYROIDISM IN A PATIENT WITH HISTORY OF GASTRIC BYPASS

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Case presentation: Female, 53 years old, admitted to the hospital service reporting asthenia, cramps and paresthesias in the extremities, in addition to Chevostek and Trousseau signs. Serum calcium (Ca^{2+}) of 5.8 mg/dL. History of total thyroidectomy in November 2022 due to nontoxic multinodular goiter, gastric bypass 20 years ago and hypertension. The patient was using levothyroxine 100 mcg/day and calcium carbonate (7.5 g Ca^{2+}/day). Previously, she was hospitalized in intensive care in December 2022 due to worsening symptoms, including QT interval enlargement. She showed clinical improvement with venous calcium replacement, but there was recurrence of symptoms when oral replacement was performed at home. In the current hospitalization, venous replacement with calcium gluconate, magnesium and oral calcitriol was performed. After improvement of symptoms, with calcium at normal levels, venous replacement was suspended and high doses of calcium carbonate were introduced, reaching 10 g/day of elemental calcium, with a rapid decrease in calcemia in 2-3 days. The calcium salt was changed to malate citrate, at a dose of 3 g Ca^{2+}/day, with stabilization of serum calcium levels and subsequent dose reduction. She was discharged from the hospital, asymptomatic, with Ca^{2+} of 8.5 mg/dL, parathyroid hormone 4,6 mg/dL, and phosphorus of 5.2 mg/dL, being prescribed calcium citrate (2.5 g Ca^{2+}/day), calcitriol 1mcg/day and multivitamin. **Discussion:** In conventional gastric bypass, approximately 2 meters of small intestine are excluded from transit, causing micronutrient malabsorption, including calcium. In PTH sufficiency there would be regulation of calcemia, however, in the patient in this case there was a loss of this mechanism. For compensation, calcitriol and a better absorption calcium salt were supplemented. Citrate is proven to be efficient in promoting regular ionic dissociation with absorption by the remaining intestine, unlike carbonate, which proved to be ineffective. **Final comments:** The history of gastric bypass must be taken into account in thyroid surgeries, although there are no reports in the literature. As it is a malabsorptive surgery, there is the possibility that this particularity imposes on the patient, in the case of post-surgical hypoparathyroidism, a situation of hypocalcemia that is difficult to manage and can lead to death if not identified and properly corrected. **Keywords:** hypoparathyroidism; gastric bypass; parathyroid hormone; calcemia.

AP-163 CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF PATIENTS WITH PAGET'S DISEASE TREATED WITH ZOLEDRONIC ACID AT A REFERENCE CENTER FOR ENDOCRINOLOGY IN BAHIA

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Introduction: Paget's disease of bone is a pathology whose epidemiology varies greatly geographically, being more common in England, the United States, Australia and New Zealand, with prevalence rates between 0.7% and 4.6%. In South America, it is a rare disorder, with Brazil and Argentina accounting for more than half of the cases. There are few epidemiological data on Paget's disease in Brazil. A study carried out in Recife found a mean age of 69.53 years (53-90), which is consistent with data reported from studies in other countries, which demonstrate an increase in prevalence after 45 years, doubling every decade after age 50. Another result found compatible with international data is the male predilection, in a ratio of 3:1 in the Brazilian study. As for the clinical characteristics, the most affected bones are the skull, pelvis, vertebrae, femur and tibia. The most frequent manifestation is pain, which may be associated with other bone alterations such as osteoarthritis in the joints adjacent to the affected bones, followed by bone deformity and hearing loss. Another study also carried out in Recife evaluated the concomitant occurrence of osteoporosis, which occurred in only 4.6% of the included patients. **Methods:** This is a cross-sectional retrospective study that evaluated the clinical and epidemiological characteristics of patients with Paget's disease who had received treatment with zoledronic acid (which is currently the first-line treatment for this pathology) at our center, through the collection of data from medical records and medication request protocols. **Results:** We evaluated 13 patients, with a mean age of 68.38 years (43-87). There was a predominance of males (61.5% *vs.* 38.5%). 7 patients had polyostotic disease and 6 monostotic, with involvement of the pelvis (9), femur (4), skull (4), tibia (2), vertebrae (2), costal arch(1) and shoulder (1). Only one patient was asymptomatic. Pain at the affected site was present in all the others, and hearing impairment in 6 (46%). 7 patients had a bone densitometry record, of which 2 had osteoporosis and 1 osteopenia. **Final comments:** The profile of patients and clinical presentation in our study was similar to that found in other national and international studies. **Keywords:** Paget disease; bone alterations; osteoporosis.

AP-164 THE EXPERIENCE OF A SUS REFERENCE SERVICE IN ENDOCRINOLOGY IN THE USE OF ZOLEDRONIC ACID FOR BONE PAGET'S DISEASE

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Introduction: Paget's disease is a change in bone metabolism that results in disorganized and weakened bone tissue. The clinic consists of bone pain, fractures, skeletal deformities and secondary arthritis, and, when not treated, can lead to a series of complications. Bisphosphonates are currently the first therapeutic choice for Paget's disease. In 2020, zoledronic acid was incorporated into the SUS therapeutic arsenal for patients with active Paget's disease, since, in addition to proving to be the most effective bisphosphonate for reducing alkaline phosphatase (although there is still no unequivocal evidence of its superiority in improving clinical outcomes or reduction of complications), leads to prolonged remission, promoting a convenient dosage that favors adherence, and is an adequate option for patients who are not candidates for the use of oral bisphosphonates. **Methods:** This is a cross-sectional and retrospective study, which evaluated the response to treatment with zoledronic acid through serum levels of alkaline phosphatase, as guided by the clinical protocol of therapeutic guidelines. We obtained the data by collecting medical records of consultations before and after drug administration or through data provided in the drug release request processes by the SUS. **Results and discussion:** Six patients were included, with a mean age of 66.5 years (53-75), four males and two females. All had at least one imaging test (scintigraphy or MRI) with findings compatible with Paget's disease. In all cases alkaline phosphatase was elevated before treatment (ranging from 1.38 to 6.1 times the upper limit of normality). After zoledronic acid, all patients evolved with normalization of alkaline phosphatase, which is compatible with data in the literature, although one patient had a new increase after forty-one months of follow-up. Reports of pain improvement varied, which is also in line with studies developed for the bisphosphonate class, but it is worth noting that the presence of other bone alterations such as osteoarthritis was quite common and may have influenced the evaluation of the clinical response. **Final comments:** Our experience is in agreement with the data that support the use of zoledronic acid as the first choice for Paget's disease, due to its efficacy and convenient dosage. **Keywords:** Paget's disease; zoledronic acid; bone metabolism.

AP-165 PYCNODYSOSTOSIS IN A MIDDLE-AGED WOMAN WITH MULTIPLE FRACTURES: A CASE REPORT

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Introduction: Pycnodysostosis is a rare autosomal recessive genetic disease, resulting from a mutation in the CTSK gene, which encodes the cathepsin K enzyme, essential for osteoclastic activity. It is characterized by the presence of osteosclerosis, bone fragility, short stature and craniofacial alterations. **Case presentation:** A 53-year-old woman was referred by an orthopedist to the endocrinology clinic for investigation of osteometabolic disease. She had a history of multiple fractures (14 reported), either spontaneous or from low-energy trauma, since she was 5 years old. Sites already fractured: femur, tibia, clavicle and ribs. Stiffness of bone tissue observed in orthopedic surgeries to correct fractures. Healthy parents without consanguineous relationship and only one healthy brother. On physical examination, the patient had limited mobility in the left lower limb, with deformity in the left tibia, brachydactyly, dysplastic nails and short stature (147 cm, below the family pattern). Radiographic examinations demonstrated increased bone density. Genetic panel demonstrated mutations in trans of the CTSK gene: NM_000396.4:c.721C>T p.(Arg241*) and NM_000296.4:c.667G>C p.(Gly223Arg). **Discussion:** The clinical picture and mutations in the CTSK gene are compatible with the diagnosis of pycnodysostosis. The variant NM_000396.4:c.721C>T p.(Arg241*) is classified as pathogenic, already described in individuals and families with pycnodysostosis. The variant NM_000296.4:c.667G>C p.(Gly223Arg) has not been previously described in population databases, being classified as potentially deleterious in computational models of pathogenicity prediction. **Final comments:** We describe a case of pycnodysostosis diagnosed in a middle-aged woman with a history of multiple fractures and a genetic panel demonstrating a trans mutation in the CTSK gene, with one of the variants never before described. **Keywords:** pycnodysostosis; spontaneous fractures; rare diseases.

AP-166 CLINICAL AND EPIDEMIOLOGICAL PROFILE OF ELDERLY PATIENTS RECEIVING CARE AT A REFERRAL HOSPITAL WHO HAVE EXPERIENCED SAME-LEVEL FALL-RELATED FRACTURES

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Aging leads to morphological, functional, and biochemical changes in the elderly, resulting in gait alterations, visual difficulties, and reduced muscular strength. These factors increase the risk of unintentional falls, which can lead to injuries, fractures, and death. This study aimed to investigate the clinical and epidemiological characteristics of older adults who experienced same-level falls, comparing those with fractures to a non-fractured control group. A prospective observational cross-sectional study was conducted with 100 patients from a reputable teaching hospital. These patients had experienced unintentional same-level falls within the past year and were equally divided into the fractured and non-fractured control groups. The study included various assessments, such as collecting demographic data, performing anthropometric measurements (weight, height, BMI calculation, neck, waist, and calf circumference), and conducting the palm grip strength test using a hydraulic dynamometer. Questionnaires were administered to assess fall risk, fracture risk using the FRAX tool, and osteoporosis risk using the IOF's One-Minute Osteoporosis Risk Test. Continuous medication use information was also collected. The results showed significant differences between the fractured and control groups regarding the risk of hip fractures and major fractures assessed by the FRAX tool. However, the IOF One-Minute Osteoporosis Risk Test was not effective in distinguishing patients from both groups. Sarcopenia assessment revealed smaller calf circumference measurements and significantly lower palm grip strength in the fractured group. Waist circumference values also showed statistical significance. No significant differences were found in responses to the falls questionnaire or the use of medications associated with osteoporosis and falls. In conclusion, the FRAX tool was valuable in identifying the risk of fractures over a 10-year period and differentiating the fractured group from the control group. Although the IOF One-Minute Osteoporosis Risk Test did not effectively differentiate patients, it played a crucial role in identifying a higher risk of osteoporosis in the fractured group and a lower risk in the control group. Anthropometric tests, such as calf and waist circumference measurements, along with the palm grip strength test, were useful in distinguishing the groups under study. **Keywords:** bone fracture; sarcopenia; osteoporosis.

AP-167 EXUBERANT BROWN TUMOR ON THE FACE AS A MANIFESTATION OF HYPERPARATHYROIDISM SECONDARY TO CHRONIC KIDNEY DISEASE: CASE REPORT

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Case presentation: A 32-year-old female patient, hypertensive and with chronic kidney disease (CKD) on renal replacement therapy for 9 years, attended the Endocrinology outpatient clinic to investigate bone pain and bulging in the facial region. She mentions that the pain came on 9 years ago, progressively and intermittently. Three years ago, she developed a bulging face associated with worsening bone pain. On physical examination, there was an increase in maxillomandibular volume bilaterally, more prominently on the left. CT of the facial sinuses showed an expansive solid exophytic formation in the anterior cortex of the left maxilla, measuring 4.2 x 3.7 x 2.5 cm suggestive of a brown tumor (BT), as well as diffusely heterogeneous bone texture of all the structures of the cranial vault and facial bones, suggesting the possibility of hyperparathyroidism (HPT). Laboratory tests showed parathyroid hormone (PTH) 4,129.3 pg/mL, alkaline phosphatase 1,543 U/L, calcium 9.7 mg/dL and phosphorus 4.2 mg/dL. Scintigraphy with venous infusion of 99mTc-MIBI was also performed, which showed an area of abnormal tracer retention in the projection of the right superior parathyroid gland and several other areas of increased uptake on the face, shoulder and chest, suggestive of BT. **Discussion:** HPT is an endocrine disorder characterized by elevated PTH secretion. In secondary HPT, PTH secretion occurs in response to low serum levels of calcium and vitamin D in patients with CKD, with BT being one of the possible manifestations. BT consists of a benign focal lytic bone lesion. In recent years, thanks to more frequent early detection of HPT, BTs have become rare, with a global prevalence of approximately 0.1% and an incidence of up to 4.5% in primary HPT and 1.5% in secondary HPT. Lesions can affect any skeletal structure and can be solitary or multiple, but are most commonly located along the long bones, pelvis, ribs, and collarbones. Involvement of the facial region is uncommon, being found in only 4.5% of cases. **Conclusion:** BT is a rare manifestation of secondary HPT, especially when it occurs with facial involvement. HPT control is the therapy of choice. In primary and secondary HPT due to CKD, regression after parathyroidectomy is well documented. Thus, it is necessary to be aware of this manifestation, since BT can simulate bone neoplasia, which could subject the patient to unnecessary procedures and delay adequate treatment. **Keywords:** brown tumor; secondary hyperparathyroidism; chronic kidney disease.

AP-168 SEVERE LATE-DIAGNOSED IDIOPATHIC HYPOPARATHYROIDISM: A CASE REPORT

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Case presentation: J.A.G.M., a 31-year-old male, with a history of progressive muscle weakness, associated with pain in the lower limbs and lower back, paresthesias, brittle nails and teeth. He reported tonic-clonic seizure episodes since the age of 8, diagnosed as epileptic. Since then, he had been using oral anticonvulsants without improvement. Physical examination revealed dyslalia, parkinsonian gait, brittle nails, dental defects, and negative Chvostek's sign. A cranial computed tomography (CT) and brain magnetic resonance imaging (MRI) were requested. Results showed bilateral periventricular calcifications in the basal ganglia. Laboratory tests revealed a calcium level of 6.5 mg/dL, 25-hydroxyvitamin D level of 35.5 ng/mL, and parathyroid hormone (PTH) level of 2 pg/mL. The urine analysis showed calcium oxalate crystals, and ultrasound revealed a 4.1 mm left kidney stone. Thus, the diagnosis of primary hypoparathyroidism was made, and treatment with calcium citrate 1 g/day and calcitriol 0.5 mcg/day was prescribed. After 30 days, laboratory tests were repeated, yielding the following results: alkaline phosphatase 121 U/L, calcium 4.9 mg/dL, albumin 3.8 mg/dL, and 25-hydroxyvitamin D level of 49 ng/mL. The calcitriol dosage was adjusted to 1.5 mcg/day, and the calcium citrate dosage was increased to 2 g/day, resulting in significant improvement of symptoms and laboratory findings. **Discussion:** Idiopathic hypoparathyroidism is a rare disease with an imprecise prevalence, characterized by the triad of hypocalcemia, hyperphosphatemia, and low PTH concentration. Symptoms may include fatigue, paresthesias, spasms, dysarthria, and seizures, as well as dermatological changes, extrapyramidal symptoms, depression, irritability, and anxiety. However, the initial manifestations are usually nonspecific and variable, leading to frequent diagnostic errors. Imaging studies such as cranial CT and brain MRI assist in the differential diagnosis. The standard therapy is oral calcium replacement, along with variable and individualized vitamin D supplementation, using teriparatide (rhPTH) for resistant cases. **Final comments:** This case of late-diagnosed hypoparathyroidism has significant importance to clinical practice. It highlights the major role of clinical and osteometabolic investigation for early diagnosis and initiation of appropriate therapy, thereby avoiding potential permanent complications **Keywords:** hypoparathyroidism; PTH; calcium.

AP-169 OSTEOPOROSIS WITH VERY HIGH RISK OF FRACTURE SECONDARY TO UNILATERAL PHEOCHROMOCYTOMA: A CASE REPORT

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We present the case of a 72-year-old woman with a history of a mass in the left hypochondrium, diagnosed at age 68, associated with intermittent headache, low back pain and edema of the lower limbs. She denied prolonged use of corticosteroids, had menopause at 50 years of age, had not undergone hormone replacement therapy, had no previous typical fractures or had a family history of osteoporosis, but reported a history of smoking for 12 years, in abstemious 22 years ago. When seeking medical attention for the condition, she was diagnosed with systemic arterial hypertension (SAH), diabetes mellitus (DM) and osteoporosis with a very high risk of fracture (T-score-5.2; Z-score -3.2), when he started using risedronate and calcium and vitamin D supplementation, in addition to medication for other comorbidities. Due to economic limitations, it was not possible to perform treatment with anabolic drugs. Other causes for secondary osteoporosis were ruled out: immunofixation showing absence of monoclonal protein, anti-transglutaminase 2 U/mL (<20 U/mL), serum IgA levels 242 mg/dL (70-400 mg/dL) and cortisol 11,83 mcg/dL. The investigation of the abdominal mass showed pheochromocytoma on the left, which was then submitted to unilateral adrenalectomy, with improvement of complaints, in addition to remission of SAH and DM; in addition, there was an improvement in bone mass in the lumbar spine, and worsening in the regions of the femoral neck and total femur on densitometry performed seven months after surgery. In the follow-up, the patient presented new densitometry worsening despite the use of densitometry and the absence of evidence of tumor recurrence. Furthermore, a radiograph of the dorsal column performed two years after the surgery showed osteoporotic fractures in the thoracic vertebrae. Trabecular bone loss related to catecholamine-producing neuroendocrine tumors is a known cause of secondary osteoporosis, regardless of age and gender, and is associated with a higher risk of vertebral fractures, which strengthens the hypothesis of pheochromocytoma as a cause of osteoporosis in this reported case. It is also known that when treating the underlying cause, osteoporosis is potentially reversed, although in elderly patients the improvement in BMD may not be satisfactory, as seen, for this reason we continue to investigate. And it is worth mentioning that early detection and surgical treatment can be used as a tool to prevent bone mass loss in these cases.
Keywords: osteoporosis secondary; pheochromocytoma; vertebral fracture.

AP-170 MORTALITY IN BRAZIL DUE TO OSTEOPOROSIS AMONG WOMEN FROM 2010 TO 2021

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Introduction: Osteoporosis is a metabolic disease that is manifested by a decrease in bone strength and an increase in fractures. It is a disease that affects more women and causes several health problems, but today there are many ways to manage it. Despite this, the number of people affected by this disease is still high and has a significant percentage of deaths among women in Brazil. **Objective:** To describe the distribution profile of mortality, in Brazil, due to osteoporosis among women from 2010 to 2021. **Materials and methods:** This is an observational, descriptive and retrospective study, built from the Mortality Information System (SIM/SUS). For data analysis, they were organized into tables, and the variables observed were age, sex, and state. **Results:** From 2010 to 2021, there were 2,629 deaths in Brazil due to osteoporosis among women. Within these statistics, we have the Southeast region with the highest number of deaths from osteoporosis, accounting for 1,313 (49.49%) of registered deaths, followed by the Northeast region with 623 (23.69%). Regarding gender, we have a higher prevalence in females, representing 2,629 (78.52%) of deaths in this period, against 719 (21.48%) deaths in males. With regard to the age group, we have a clear differentiation between the affected ages, with the highest prevalence being women aged 80 years or older, representing 1,953 (74.28%) of the registered deaths. **Conclusion:** Based on the results presented on mortality from osteoporosis among women between 2010 and 2021, we observed the highest prevalence among the female population, representing 78.52% of cases. This reflects the bigger vulnerability of women to this metabolic disorder that is justified by several physiological factors, but which is still a neglected disease, which is reflected in the high mortality rates in Brazil.
Keywords: osteoporosis; mortality; women.

AP-171 BROWN TUMOR DUE TO PRIMARY HYPERPARATHYROIDISM: A CASE REPORT

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Case report: A 54-year-old female patient presented with lumbar pain. Lumbar spine magnetic resonance imaging revealed a hypointense expansile lesion in the L4 vertebral body and vertebral fracture, suggesting secondary neoplasm. Laboratory evaluation showed elevated parathyroid hormone (PTH) levels (1,126 pg/mL), hypercalcemia (14 mg/dL), and a phosphorus level of 4.3 mg/dL. Bone biopsy demonstrated a proliferation rich in giant cells, with immunohistochemistry supporting a diagnosis of giant cell tumor or brown tumor. Parathyroid scintigraphy confirmed an adenoma/hyperplasia in the right inferior parathyroid. The patient had a history of recurrent nephrolithiasis. Right parathyroidectomy was performed, resulting in postoperative hungry bone syndrome. Treatment with calcitriol and calcium carbonate was initiated, leading to improved hypocalcemia, significant relief of lumbalgia, and subsequent normalization of PTH levels with resolution of hypocalcemia. **Discussion:** The presented case highlights the association between primary hyperparathyroidism and the development of secondary brown tumors. Primary hyperparathyroidism, characterized by increased parathyroid hormone production, leads to alterations in calcium and phosphate homeostasis, causing hypercalcemia and subsequent bone resorption. Brown tumors are rare osteolytic lesions resulting from accelerated bone resorption. They can mimic primary bone neoplasms, as observed in this case. Accurate diagnosis requires histopathological examination, with immunohistochemistry aiding in distinguishing brown tumors from other giant cell lesions. The treatment approach for primary hyperparathyroidism involves parathyroidectomy, as performed in this case. However, the rapid correction of hypercalcemia can result in hungry bone syndrome, characterized by excessive bone remineralization and hypocalcemia. Calcitriol and calcium supplementation are crucial to managing postoperative hypocalcemia. **Conclusion:** This case illustrates a rare manifestation of primary hyperparathyroidism, with the development of a brown tumor in the lumbar spine. The diagnosis was confirmed by histopathology and immunohistochemistry. Parathyroidectomy and subsequent treatment with calcitriol and calcium carbonate successfully resolved the hypercalcemia, relieved the lumbalgia, and normalized PTH levels. Knowledge of such complications is essential for early detection, prompt treatment, and proper patient management. **Keywords:** primary hyperparathyroidism; bone neoplasms; metabolic bone diseases.

AP-172 DIAPHRAGMATIC PARALYSIS IN A PATIENT WITH UNTREATED CHRONIC HYPOPARATHYROIDISM

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Case presentation: Woman, 67 years old, with hypothyroidism after total thyroidectomy for thyroid cancer 20 years ago, developed ventilatory-dependent pain and acute dyspnea that progressed to respiratory failure and required mechanical ventilation. In laboratory tests, hypocalcemia (5.0 mg/dL), hyperphosphatemia (7.2 mg/dL), low PTH (4.8 pg/mL) with normal vitamin D levels (39.8 ng/mL) were observed. On physical examination, presence of Chevostek's sign and home use of levothyroxine 100 mcg/day only. Imaging exams were performed: CT scan of the skull showing foci of gross calcifications in the basal nuclei, thalamus, corona radiata and dentate nucleus bilaterally and symmetrically, without mass effect, suggestive of Fahr's disease; renal and urinary tract ultrasonography without nephrolithiasis. Intravenous calcium gluconate replacement was initiated at first, followed by oral calcium carbonate and calcitriol, with a gradual increase in serum calcium levels, with patient discharge (serum calcium 8.4 mg/dL). **Discussion:** Vitamin D and parathyroid hormone (PTH) are the main regulators of serum calcium. When PTH secretion or action is insufficient, it is characterized as hypoparathyroidism and hypocalcemia develops. This has a wide spectrum of clinical manifestations from few or no symptoms, if mild; seizures, refractory heart failure, or laryngospasm if severe. Hypoparathyroidism has as its main etiology the postoperative period of cervical surgeries, reported in the case above, with clinical presentation of respiratory failure due to diaphragmatic paralysis resulting from hypocalcemia. The diagnosis is made by low or inadequately normal PTH and hyperphosphatemia. Our patient had laboratory criteria for hypoparathyroidism. Calcifications in the basal ganglia, characteristic of Fahr's disease, suggested an untreated chronic disease. Treatment was performed with venous calcium replacement, followed by oral supplementation of calcium and calcitriol and hospital discharge after a few days with normalization of calcium. **Final comments:** The postoperative period of cervical approaches is the main cause of hypoparathyroidism. This causes hypocalcemia, with variable manifestations, including diaphragmatic paralysis and Fahr's disease (when there is calcium deposit in the basal ganglia). Proper diagnosis and treatment improve signs and symptoms and reduce morbidity and mortality. **Keywords:** hypoparathyroidism; Fahr's disease; PTH.

AP-173 DIAGNOSTIC CHALLENGES IN HYPOPHOSPHATEMIC RICKETS: A CASE REPORT OF HEREDITARY TYROSINEMIA TYPE I

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Case presentation: A 20-year-old man presented with progressive lower limb pain started at the age of 16 and a fragility fracture of the right proximal femur. At the age of 19, he sustained additional low-trauma fractures of the left proximal femur and wrist. He was wheelchair-bound and significantly underweight, but did not present with bone deformities, short stature, or dental abnormalities. Initial workup revealed hypophosphatemia (1.8 mg/dL) with normal levels of serum calcium, PTH, 25OHD, renal and liver functions, and calciuria. The tubular reabsorption of phosphate (TRP) and the TmP/GFR were low at 82% and 1.49 mg/dL, respectively, confirming hypophosphatemia caused by increased urinary phosphate excretion. Serum 1,25(OH)2D was inappropriately normal. Alkaline phosphatase and bone turnover markers were extremely elevated. DXA revealed very low Z-scores at all sites, and a TBS of 1.140. Relevant findings such as glucosuria, mild proteinuria, and hypouricemia indicated the presence of renal tubulopathy. A genetic panel was performed for hypophosphatemic rickets (HR), and a pathogenic variant in homozygosity was identified in the *FAH* gene, confirming the diagnosis of tyrosinemia type 1 (HT1). **Discussion:** HT1 is a rare autosomal recessive disease caused by a deficiency of fumarylacetoacetate hydrolase, the last enzyme of the tyrosine catabolic pathway. This leads to the accumulation of fumarylacetoacetate, and succinylacetone (SA), causing hepatic, renal, and neurological toxicity. The acute form of the disease is characterized by an early onset of severe liver failure, usually before the age of 6 months. The chronic form is less common and can present later in life with renal disease and cirrhosis. Diagnosis is made through specific neonatal screening (not routinely performed in Brazil), measurement of SA levels in urine or blood, and genetic testing. Treatment is based on reducing phenylalanine/tyrosine in the diet and pharmacological therapy with nitisinone, which inhibits tyrosine degradation, reducing its toxic metabolites. Phosphorus supplementation and calcitriol are essential for improving HR. **Final comments:** This case highlights the diagnostic challenges faced in a patient with HT1 presenting with features of HR. Urinary sediment abnormalities indicated renal tubulopathy, which could be inherited or acquired. In this case, the genetic testing was crucial for the diagnosis, enabling appropriate treatment, prognosis, and genetic counseling. **Keywords:** tyrosinemia type 1 (HT1); hypophosphatemic rickets; renal proximal tubulopathy.

AP-175 CLINICAL AND LABORATORY PRESENTATION OF PATIENTS WITH PRIMARY HYPERPARATHYROIDISM IN A REFERENCE HOSPITAL OF THE FEDERAL DISTRICT

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Introduction: Primary hyperparathyroidism (PHP) is the most common cause of hypercalcemia diagnosed on an outpatient basis, with a wide variety of clinical presentations. In general, patients are oligosymptomatic, presenting with mild hypercalcemia. However, severe and multisymptomatic conditions are also seen. The only definitive treatment is surgery, but some patients may be managed clinically. **Objectives:** To describe the clinical, epidemiological and laboratory profile of patients with primary hyperparathyroidism in a reference service in bone metabolism. **Methods:** Collection of data from medical records of patients in follow up at the Endocrinology outpatient clinic of a tertiary service in the Federal District. **Results:** Hypercalcemic PHP was seen in 90.6% of patients, normocalcemic PHP in 5.7% and PHP with abnormally normal PTH in 3.8%. Among the 53 patients, 88.7% were female. The mean age at diagnosis was 59.9 years. Severe hypercalcemia was present in 13.2%. Out of 49 patients that had bone mineral density analysis, 53.1% had osteoporosis, 26.5% osteopenia, 4.1% low bone mass and 16.3% normal bone mass. Nephrolithiasis or nephrocalcinosis were observed in 52.1% of the patients with available renal ultrasound data (n = 48). Parathyroidectomy was indicated in 54.7% cases (n = 29). Post-operative hypercalcemia was seen in 31.3% of the patients. Significant correlations with calcium levels were: phosphorus (negative), 25- hydroxyvitamin D (negative), PTH (positive), calciuria (positive). Risk factors for severe hypercalcemia were male gender ($p = 0.004$), younger age at diagnosis ($p = 0.003$), and higher PTH levels ($p < 0.001$). **Conclusions:** Our results support that PHP is still a mostly symptomatic condition in some places, as in the Brazilian Federal District, which may be related to delayed diagnosis of the condition. As a referral center in locorregional bone metabolism, the clinical presentation of this cohort was characterized by a higher prevalence of severe hypercalcemia, nephrolithiasis, osteoporosis, and post-surgical hypercalcemia in our cohort. **Keywords:** hyperparathyroidism; hypercalcemia; parathyroidectomy.

AP-176 SEVERE HYPERCALCEMIA SECONDARY TO GRANULOMATOUS REACTION TO POLYMETHYLMETHACRYLATE: A CASE REPORT

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Case presentation: A 62-year-old female with a past history of renal lithiasis and a recent diagnosis of papillary thyroid cancer and Graves' hyperthyroidism was admitted to the hospital with thyrotoxicosis associated with acute cystitis, anemia, and acute kidney injury. Her laboratory tests showed total calcium 16.1 mg/mL (range, 8.5-10.5), PTH 9.4 pg/mL (range, 15-68.3), 25-OH-vitamin D 57 ng/mL (range, 30-60), 1,25-dihydroxyvitamin D 184 pg/mL (range, 19.9-79.3). She received antibiotics, methimazole, intravenous hydration and zoledronic acid. A thorough investigation for hypercalcemia of malignancy was negative, including CT scans of chest and abdomen, transvaginal ultrasound, upper digestive endoscopy, colonoscopy, protein electrophoresis, immunofixation of serum proteins, mammography, and bone radiography. During inpatient care, a chart review showed that the patient had received injections of polymethylmethacrylate (PMMA) in bilateral gluteal regions 13 years ago. Tomography of pelvis and thighs demonstrated infiltration of an amorphous material in the gluteus maximus. She was treated with prednisone and total calcium levels reduced to 9.7 mg/mL. **Discussion:** Although PMMA injections are only FDA-approved for procedures around the mouth, they are frequently used in other parts of the body. After years, a granulomatous reaction may occur, usually associated with extrarenal CYP27B1 hyperactivity in activated macrophages of the granuloma, leading to increased calcitriol production and severe hypercalcemia. Laboratory tests show suppressed parathyroid hormone and elevated calcitriol levels. Patients usually present with nonspecific symptoms such as fatigue, weakness, dehydration, nausea, abdominal pain, and constipation. Kidney failure is the most common complication. Diagnosis is confirmed by biopsy of the affected skin or lymph node, revealing a granulomatous foreign body reaction. Treatment consists of corticosteroids and bisphosphonates or denosumab. **Final comments:** Among the causes of hypercalcemia, granulomatous reactions to PMMA injections should be considered as differential diagnosis, especially in women who have already undergone a previous procedure. **Keywords:** hypercalcemia; polymethylmethacrylate; granuloma.

AP-177 TREATING PRIMARY HYPERPARATHYROIDISM CLINICALLY: A CASE REPORT

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Clinical case: A 72 years old male with previous idiopathic pulmonary fibrosis, with oxygen requirements at home, coronary artery disease, past myocardial revascularization, dyslipidemia and osteoporosis, attended the emergency department, in September 2018, with nausea and vomiting. Lab tests showed total serum calcium of 13.2 mg/dL. He was hospitalized for diagnostic evaluation and treatment for severe hypercalcemia was initiated. Other tests showed normal calciuria (0.66 mg/kg/24 h), parathyroid hormone (PTH) of 243.9 pg/mL and Sestamibi imaging compatible with hyperplasia/adenoma of the lower right parathyroid, confirming primary hyperparathyroidism (PHTP). Discussion was carried out with head neck surgeons and anesthesiologists. Considering all comorbidities, surgical treatment was discouraged. Therefore, calcimimetic agents (cinacalcet) 30 mg/day were initiated, bisphosphonates were replaced by denosumab and diuretics (furosemide 40 mg/day) were maintained. After 15 days of hospital discharge, total serum calcium was 10.6 mg/dL and the patient was asymptomatic. A clinical follow-up of 3 years showed stable calcium levels and no fracture reports. In 2021, he passed away of complications from an infectious disease. **Discussion:** Primary parathyroid hormone hypersecretion is the most common cause of hypercalcemia in outpatients. The first line treatment for this pathology is surgery (parathyroidectomy), which is indicated when age is less than 50; total calcium is 1.0 mg/dL the upper limit of normal range; creatinine clearance decreases more than 30% compared to same age; calciuria is greater than 4,0 mg/kg//24 hours or osteoporosis is stablished in bone densitometry. Clinical treatment is reserved for few cases, when surgical risks contraindicate Parathyroidectomy. In this context, the use of calcimimetic agents is an option for symptomatic cases or when severe hypercalcemia is stablished. In the presence of osteoporosis, bisphosphonates are the first line treatment. However, in this case, denosumab was chosen due to previous use of ibandronate® for a long and unknown period. **Conclusion:** Calcimimetic agents are a choice for PHTP when multiple comorbidities contraindicate surgical procedures. This case report well illustrate a long term evolution of a patient with severe hypercalcemia and multiple cardiovascular outcomes. **Keywords:** hyperparathyroidism; calcimimetic agents; hypercalcemia.

AP-178 FAHR SYNDROME: CASE REPORTS IN OUTPATIENT FOLLOW-UP IN A TERTIARY HOSPITAL

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Case presentation: We present two cases of Fahr's syndrome on regular follow-up at the endocrinology outpatient clinic of Hospital de Base do Distrito Federal (HBDF). Case 1: A 40-year-old female was diagnosed with Fahr's syndrome approximately 12 years ago, due to epilepsy, pseudohypoparathyroidism and cognitive deficit. Her laboratory tests at diagnosis showed PTH 218 pg/mL (range, 15-68.3), ionized calcium 0,85 mmol/L (range 1.11-1.4 mmol/L). A magnetic resonance imaging (MRI) of the brain showed symmetrical calcifications in basal ganglia, dentate nuclei of cerebellum, and pulvinar thalami. Case 2: A 55-year-old female was diagnosed with Fahr's syndrome more than 10 years ago, presenting with hypoparathyroidism, cognitive impairment and cataracts in both eyes. Her laboratory tests at diagnosis showed PTH < 3.0 pg/mL (range, 15-68.3), calcium 7.1 mg/mL (range, 8.5-10.5). **Discussion:** Fahr's syndrome is characterized by symmetrical bilateral calcification of areas related to movement such as the basal ganglia and thalamus, and is generally related to hypoparathyroidism. It has a prevalence of 1:1,000,000. The abnormal calcium deposition is thought to be due to abnormal brain calcium metabolism or metastatic deposition due to local alteration of blood-brain barrier. The detection in laboratory tests of hypocalcemia and hyperphosphatemia, in the presence of normal renal function, associated with inadequate PTH values close the diagnosis. The main symptoms are extrapyramidal and cerebellar disorders, impaired cognition, epileptic seizures and psychiatric disorders. Imaging tests, such as cranial computed tomography (CT) scan may confirm diagnosis. There is no specific treatment for progression of calcification, but the identification of etiology prompts symptomatic treatment and normalization of calcium levels. **Final comments:** Proper management of hypoparathyroidism is paramount to maintain normal levels of calcium and phosphorus. Early treatment may prevent neurological calcifications and the development of psychiatric disorders. **Keywords:** pseudohypoparathyroidism; hypoparathyroidism; hypocalcemia.

AP-179 PARATHYROID CARCINOMA WITH ADVANCED BONE DISEASE ASSOCIATED WITH IMPORTANT POSTOPERATIVE HYPOCALCEMIA

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Case presentation: A 33-year-old female patient presented three years ago asthenia, bone pain, humeral fracture, nephrolithiasis and weight loss of 20 kg. Scoliosis and cervical and lumbar disc herniations follow-up with Orthopedics. Cervical magnetic resonance was requested, which found a nodule in the right inferior parathyroid, measuring 4.0 x 3.0 cm, and she was referred to head and neck surgery. Complementary laboratory identified parathyroid hormone (PTH) 1,239 pg/mL, ionic calcium (IC) 1.49 mmol/L, phosphate (P) 2.3 mg/dL and alcaline phosphatase 1,153 U/L, raising the hypothesis of primary hyperparathyroidism. Bone scintigraphy with 99mTc MDP showed intense uptake in this gland, in addition to a diffuse increase in osteogenic activity, with hypocalcemia as a postoperative complication. The anatomopathological result was compatible with well-differentiated parathyroid carcinoma, with the presence of invasion of the tumor capsule and also lymphovascular. Immunohistochemistry (IHC) added description of foci of cellular atypia and oncocytic component, in addition to positivity for AE1/AE3 antibodies (CK-PAN), CD34 and negativity for TTF-1. During the outpatient follow-up, despite clinical improvement, the patient presented hypocalcemia (IC 1.0 mmol/L) and hyperphosphatemia (P 3.7 mg/dL), requiring replacement of calcium carbonate, calcitriol and supplementation with vitamin D3. **Discussion:** Parathyroid carcinoma is a rare cause of primary hyperparathyroidism. Some features increase the likelihood of parathyroid cancer: neck mass, bone and kidney disease, marked hypercalcemia, and very high serum concentrations of parathyroid hormone. Surgery is the mainstay of initial therapy for parathyroid carcinoma, and preoperative and postoperative management aims to avoid complications such as hypocalcemia, recurrent laryngeal nerve injury, and hungry bone syndrome. **Final comments:** Most parathyroid carcinomas are clinically functioning, with patients exhibiting significant symptomatic hypercalcemia at diagnosis. As the clinical features are similar, it can be difficult to differentiate from benign causes of primary hyperparathyroidism before surgery. Due to the high possibility of disease persistence or recurrence, follow-up should be regular. **Keywords:** Parathyroid carcinoma; primary hyperparathyroidism; bone disease.

AP-180 STUDY OF VITAMIN D BINDING PROTEIN (DPB) GENETIC VARIANTS AND CORRELATIONS WITH PRIMARY HYPERPARATHYROIDISM (PHPT)

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Introduction: The parathyroids are target organs of vitamin D actions and its deficiency results in increased PTH secretion and glandular hyperplasia, which could induce PHPT genesis. The majority of circulating vitamin D is binding to DPB, a protein encoded by Gc gene, whose rs7041/rs4588 polymorphisms result in three variants (Gc1f, Gc1s and Gc2) and six phenotypes, which modify DPB affinity for vitamin D metabolites. **Objective:** Compare the DPB polymorphisms distribution between patients with PHPT and paired controls, and to assess correlations with clinical presentation of the disease. **Methods:** One hundred and eighty-eight patients with PHPT (PHPTG) and 188 paired non-PHPT subjects (CG) were evaluated in this preliminary analysis. Genotyping was performed by real-time PCR allelic discrimination assay. Clinical and laboratorial data were obtained by reviewing medical records and statistical significance defined if $p < 0.05$. **Results:** The majority were women (89.9%), Caucasian (65.4%), with a mean age of 68.6 ± 10.7 years. The groups were similar for sex, ethnicity, and age. PHPTG had higher medians of calcium and PTH at the diagnosis, compared to CG (11.1 *vs.* 9.5; 130.5 *vs.* 47, respectively). Osteoporosis prevalence in PHPTG was 51.6% and nephrolithiasis 44.4%. The most common DPB phenotypes in this population were Gc1f-1s (26.6%) and Gc1s-2 (24.7%). A different rs4588 polymorphism genotypes distribution was observed (AA, CA e CC: 5.8%; 31.4% and 62.8% in CG *vs.* 9.0%; 42.6% and 48.4% in PHPTG; $p = 0.019$), in which there was a higher prevalence of the A allele in PHPTG (OR 1.80 CI 95% 1.19-2.69; $p = 0.005$). A different prevalence distribution was also observed for DPB isoforms (Gc1f, Gc1s and Gc2: 62.8%; 31.4%; 5.8% in CG *vs.* 48.4%; 42.6%; 9.0% in PHPTG; $p = 0.019$). Considering the low prevalence of Gc2, when evaluating only the isoforms Gc1s *vs.* Gc1f, there was a higher number of individuals with Gc1s in PHPTG compared to CG (OR 1.76; CI 95% 1.14-2.68; $p = 0.010$). No association between rs7041 polymorphism ($p = 0.220$)/DPB phenotypes ($p = 0.126$) and PHPT was observed nor between osteoporosis, nephrolithiasis, calcium and PTH levels with DPB polymorphisms/isoforms. **Conclusion:** This preliminary analysis suggests a different rs4588 polymorphism DPB genotypes and DPB isoforms distribution in PHPT patients compared to paired controls. These findings indicate a possible role of vitamin D metabolic pathway in the PHPT genesis. **Keywords:** hyperparathyroidism; vitamin D; genetic polymorphism.

AP-181 GIANT PARATHYROID CARCINOMA: A CASE REPORT

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Case presentation: Parathyroid carcinoma (PC) is a rare endocrine malignant tumor. Most patients present hyperparathyroidism and altered serum calcium levels. We report a case of a 67-year-old male patient with bilateral femoral neck fracture, arrythmia and debilitated general condition with giant PC and primary hyperparathyroidism (PHPT). Blood tests revealed anemia, thrombocytosis, hyponatremia, along with significant increase in parathyroid hormone value. The kidney function was altered in addition to pyocituria. Furthermore, low transferrin saturation index, decreased serum iron levels, elevated levels of ferritin and increase of serum calcium were found. Alkaline phosphatase, uric acid, phosphorus and proteins levels were within the standards, as well as the levels of glycemia and glycated hemoglobin. The preoperative echocardiogram revealed type 1 diastolic dysfunction and mild aortic insufficiency. Hyperfunctioning left inferior parathyroid was demonstrated by scintigraphy. The patient needed erythropoietin therapy before surgery. He was submitted to a left lower parathyroid nodule resection whose histopathology findings that fit the criteria of 2022 WHO classification for parathyroid carcinoma: epithelial neoplasm with cytoarchitectural atypia; capsule infiltration, approximately 10% areas of necrosis; neoplasm measuring 4.8 cm in the longest axis; dystrophic calcification and presence of lymphatic and blood vascular infiltrates. During the postoperative period, the patient presented normal value of parathyroid hormone, however, his bad general condition led to the worsening of anemia, persisted renal dysfunction and infectious condition which resulted in his death. **Discussion:** Parathyroid carcinoma is a rare endocrine neoplasm, accounting less than 1% of all parathyroid neoplasms. It is even rarer for the PC to cause primary hyperparathyroidism, characterized by an excessive secretion of parathyroid hormone and hypercalcemia. Consider this diagnosis is of extreme importance, as the tumor is associated with a poor prognosis, leading to death most cases, with an overall survival rate of 78%-85% within 5 years after diagnosis. **Final considerations:** We reported a case of left lower parathyroid carcinoma associated with primary hyperparathyroidism that despite of surgery resection evolved to death according to literature bad prognosis. **Keywords:** parathyroid carcinoma; parathyroidectomy; primary hyperparathyroidism.

AP-182 EXPERIENCE WITH BONE-FORMING AGENTS IN PATIENTS WITH OSTEOPOROSIS AND VERY HIGH FRACTURE RISK IN A TERTIARY CARE SERVICE

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Introduction: Osteoporosis is a systemic skeletal disease characterized by bone fragility and increased risk of fracture. Patients should be stratified according to the fracture risk, and bone-forming agents are indicated for those at very high risk. **Objective:** To describe clinical and densitometric aspects of patients with osteoporosis treated with bone-forming agents and to evaluate the efficacy of this treatment. **Methods:** Retrospective analysis of medical records of patients under follow-up at the metabolic bone diseases clinic in a tertiary health care service. Results are expressed in median (P25-P75). **Results:** We evaluated 18 patients (16 women), with median age at diagnosis of osteoporosis 58 yr (45-64 yr). Seven patients (39%) had this diagnosis before the age of 50. Secondary causes were identified in 14 (78%), and glucocorticoid use was the most frequent of them. Sixteen patients (89%) had prevalent fractures; 7 (44%) had multiple fractures. The most frequent bone site was the spine, diagnosed in 10 (62%) patients, followed by the wrist in 3 (9%), femur in 2 (13%) and humerus in 2 (13%). Prior to the use of bone-forming agents, 17 patients received antiresorptive drugs (oral bisphosphonates) for 7 yr (4 to 9 yr), and one patient was treatment-naive. Fifteen patients (83%) were treated with Teriparatide and 3 (17%) were treated with Romosozumabe. At the start of this treatment, the median age was 68 yr (53-71 yr) and the bone densitometry revealed T-scores in the spine, neck and total femur, respectively, -4.3 (-4.8 to -3.3), -2.8 (-3.2 to -1.8) and -2.4 (-2.9 to -1.9). Twelve patients completed the anabolic treatment. At the end of this treatment, the variation of bone mineral density was 14.8% (4.3 to 20%) in the spine (p = 0.004, effect size 1.13), 2.0% (-5.5 to 8.8%) in the femoral neck and 3.0% (-2.0 to 8.7%) in the total femur. There was a T-score increase of 0.6 (0 to 2.6) in the spine (p = 0.003, effect size 1.14), 0.1 (-0.8 to 0.6) in the femoral neck and -0.1 (-0.4 to 0.4) in the total femur. After the start of anabolic treatment, no new fractures occurred. **Conclusion:** According to the literature, treatment sequences beginning with anabolic agents in patients with osteoporosis and very high risk of fractures provide larger bone mass gains. In this study, we observed a significant gain in bone mineral density and T-score in the spine with bone-forming treatment even after previous therapy with oral bisphosphonates for a period of 7 years. **Keywords:** osteoporosis; bone-forming agents; anabolic agents.

AP-183 EVALUATION OF CHANGES IN PROPERTIES AND FUNCTIONS OF THE HEART IN PATIENTS WITH HYPERPARATHYROIDISM SECONDARY TO END-STAGE CHRONIC KIDNEY DISEASE

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Introduction: Secondary hyperparathyroidism is a frequent complication in patients with chronic kidney disease on hemodialysis therapy. There is evidence that in SHPT, elevation of PTH is associated with increased cardiovascular mortality regardless of cardiovascular risk factors. **Objective:** Evaluate changes in the structural and functional properties of the heart in patients with hyperparathyroidism secondary to end-stage kidney disease by Speckel tracking echocardiography. **Patients and methods:** We carried out a cross-sectional, observational study, including 100 patients with SHPT and CKD on hemodialysis therapy, using Speckel tracking echocardiography as a tool to perform correlations between PTH levels and structural and functional changes in the heart. Aspects related to quality of life and their correlations with SHPT were also evaluated. **Results:** Ninety-four patients with SHPT at CKD ranging in age from 22 to 74 years (M = 45.5; SD = 11.7; SE = 1.21) were studied, and 56.3% were male, brown (58.5%), and mean duration of HD of 52.7 months (SD = 48.8; SE = 5.04). The mean PTH was 710.2 (ranging from 34 to 4574; SD = 781.1; SE = 80.5). The sample was divided into G1-PTH < 300 pg/mL and G2-PTH > 300 pg/mL. SAH (72.3%) and DM (19.1%) were the leading etiological causes of terminal CKD. Hemoglobin (r = - 0.307 and P = 0.003), Urea pre-HD (r = - 0.204 P = 0.043), and FAL (P = 0.00) showed significant correlation with overall and subgroup levels of PTH. The GLS average was higher in the G1 group. The G1 group had the highest GWE (P = 0.02). The mitral E wave significantly associated with overall PTH (r = 0.222 and P = 0.032). In subgroup G2, septal I waves (r = 0.328, P = 0.018) and lateral I waves (r = 300 and P = 0.03) showed significant positive correlations with PTH. The tricuspid valve was more morphologically altered in G2 (P = 0.001). Heart valve calcifications showed an essential correlation in G2 (P = 0.002). The LV geometry was regularly more frequent in G1. Concentric remodeling, concentric and eccentric hypertrophy appeared more frequently in Group 2. GLS was lower in patients with remodeling, eccentric and concentric LVH than in patients with regular geometry. Myocardial work (GWI) was higher in groups with eccentric and concentric hypertrophy. Constructive work (GWC) was higher in the group with traditional geometry. **Conclusion:** Patients with hyperparathyroidism secondary to CKD on HD therapy showed important structural and functional changes in the heart. **Keywords:** secondary hyperparathyroidism; chronic kidney disease; myocardial work.

AP-184 RENAL FAILURE ASSOCIATED WITH VITAMIN D INTOXICATION: A CASE REPORT

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Case presentation: Male, 72 years old, with diabetes mellitus (DM) for 15 years, sought care due to bad glycemic control. He was using glimepiride 4 mg per day, metformin 2,550 mg per day and vitamin D3 (VD) 7,000 IU per day. He has been using VD at this dosage for 10 months, following the advice of another physician, and had brought exams from 4 months ago, with a creatinine of 1.34 mg/dL. The VD was suspended and, upon returning, the exams indicated VD levels > 100 ng/mL, compatible with VD intoxication (VDI), ionic calcium 5 mg/dL, parathyroid hormone 35.37 pg/mL, HbA1C 7.2%, creatinine 2.19 mg/dL and urea 95 mg/dL, configuring grade 4 renal failure (CKD-EPI 33 mL/min). Renal adjustment of DM treatment was performed and VD suspension was maintained. After 6 months of follow-up, there was a drop in VD levels to 59 ng/mL, without significant improvement in renal function. He was diagnosed with chronic kidney disease (CKD) and it was started insulin glargine with suspension of oral antidiabetics. **Discussion:** VD plays a fundamental role in bone metabolism and body calcium levels, and its deficiency is common in the elderly. Although uncommon, VDI usually occurs due to iatrogenic causes or accidental overdose, either due to the ease of obtaining the supplement by the patient, or due to improper prescription by medical professionals. As a result of overdose, the patient may develop acute renal failure, hypercalcemia and exacerbation of CKD. Chronic intoxication by VD, similar to the presented case, can occur with daily administration from 4,000 IU/day for extended periods, keeping the VD above 100 ng/dL. VDI can be expressed in different ways, from asymptomatic cases to severe and life-threatening conditions. Clinical manifestations are usually associated with hypercalcemia, generating multiple system involvement. Thus, monitoring and correcting the iatrogenic cause becomes essential for maintaining the patient1s health. **Final comments:** Although not common, IVD has a great potential for compromising health, especially in elderly people with previous renal dysfunction. Therefore, care to prevent and treat VDI is crucial, since undue or excessive VD supplementation has been a growing problem, and it is up to medical professionals to ensure clear information and safe conduct for their patients. **Keywords:** renal failure; vitamin D; intoxication.

AP-185 PRIMARY HYPERPARATHYROIDISM IN A YOUNG PATIENT ASSOCIATED WITH BROWN TUMORS: A CASE REPORT

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Female patient, 22 years old, active smoker without previous comorbidities, was admitted to the Orthopedics service of a tertiary hospital due to a subtrochanteric fracture of the left femur after a fall from the stairs. History of 7 days of fracture of the right clavicle, weakness in the lower limbs, unintentional weight loss, constipation and polydipsia with increased diuresis. Upon admission, laboratory testing was requested to investigate the pathological fracture, confirming the presence of primary hyperparathyroidism as described below: PTH 2,369 pg/mL (15-65); calcium 13.3 mg/dL – albumin-adjusted calcium 14.1 mg/dL (8.6-10.2); phosphorus 1.6 mg/dL (2.5-4.5); magnesium 1.4 mg/dL (1.6-2.6); alkaline phosphatase 920 U/L (40-150); vitamin D 7.5 ng/mL. Preserved kidney function. Imaging tests showed a heterogeneous lesion in the left parathyroid region, measuring 5.0 x 3.0 x 1.8 cm, widespread presence of multiple osteolytic lesions and brown tumors, drawing attention to two bone lesions located in the mandible, discreetly trabeculated, insufflative, measuring 3.7 x 2.0 cm and 2.4 x 1.9 cm. In addition, bone mass was evaluated by HR-pQCT, revealing alterations in the cortical and trabecular compartments. Cinacalcet 30 mg daily was started preoperatively in order to reduce the calcium levels. The patient underwent subtotal parathyroidectomy, with excision of the upper left parathyroid, associated with ipsilateral hemithyroidectomy and osteosynthesis of the proximal femur, without complications. Calcium remained stable at around 9.0 mg/dL, and the patient was discharged using calcium carbonate 2 g daily, cholecalciferol 8,000 UI daily, calcitriol 0.25 mcg 12/12 h with progressive improvement. We present the case of a young patient, at an unusual age of presentation for primary hyperparathyroidism, with an exuberant clinical picture including brown tumors, pathological fractures with marked reduction in bone mass and bilateral nephrolithiasis. In light of this case, it is important to consider relevant differential diagnoses such as parathyroid carcinoma and genetic forms of primary hyperthyroidism, such as hyperparathyroidism-jaw tumor syndrome. Given the presence of multiple predictors for the occurrence of bone hunger syndrome, carrying out measures such as early initiation of calcium and calcitriol supplementation, as well as the preoperative use of cinacalcet, are seen in the literature as a tool to minimize the risk of its occurrence. **Keywords:** hyperparathyroidism; hypercalcemia; parathyroid cancer.

AP-186 CASE REPORT: CHALLENGING PRE-OPERATIVE IDENTIFICATION OF PARATHYROID ADENOMA IN A YOUNG PATIENT WITH HYPERCALCEMIC PRIMARY HYPERPARATHYROIDISM

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Case presentation: A 37 years old female patient presented with elevated parathyroid hormone (PTH) accompanied by hypercalcemia and bilateral renal microlithiasis. She was asymptomatic and had no history of fractures. Family history was negative for primary hyperparathyroidism. Serum PTH levels was 117 pg/mL, total and ionic calcium levels were 9.5 mg/dL and 1.48 mmol/L, respectively. Urinary calcium was 339 mg/24 h and serum levels 25OH vitamin D 43.7 ng/mL. Urotomography showed multiple renal calculi of up to 6 mm and bone mass assessed by densitometry was normal. Parathyroid scintigraphy showed a discrete nodular area of persistent uptake in the posterior region of the upper left pole; however, no corresponding structural lesion was found on ultrasound or 4D tomography. SPECT CT scan showed a slight contrast enhancement in the lower right lobe associated with a small nodular image of 0.4 x 0.6 cm in the same topography. The patient was referred for surgical treatment with intraoperative PTH measurement, which became normal after removal of the right inferior parathyroid. The anatomopathological examination revealed a small parathyroid adenoma. Serum levels of calcium and PTH became normal after surgical treatment. Gene sequencing was performed to search for the main mutations related to primary hyperparathyroidism, which turned out to be negative. **Discussion:** The identification of small parathyroid adenomas can be challenging and, in some occasions, more sensitive imaging methods can be used in an attempt to identify the lesion preoperatively. **Final comments:** In this case, as it is a young patient slightly hypercalcemic with nephrolithiasis, preoperative identification of the lesion provided a possibility for a curative treatment with a less traumatic and more assertive surgical approach. **Keywords:** primary hyperparathyroidism; imaging methods; SPEC CT scan.

AP-187 FAHR SYNDROME: A CASE REPORT HIGHLIGHTING THE IMPACT OF UNTREATED HYPOPARATHYROIDISM

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We present the case of a 78-year-old female patient, with a history of hypothyroidism following total thyroidectomy due to papillary thyroid carcinoma, associated with hypoparathyroidism without adequate treatment and follow-up since the age of 18. Additionally, she has a history of recurrent nephrolithiasis. The patient was admitted with urolithiasis and acute renal failure due to obstruction, pending evaluation by the urology department. Subsequently, she experienced a tonic-clonic seizure. A cranial computed tomography revealed extensive coarse calcifications in the brain parenchyma involving the dentate nuclei in the cerebellum and basal ganglia, consistent with Fahr syndrome. Laboratory tests confirmed severe hypocalcemia with total calcium of 4.9 mg/dL (8.5-10.0 mg/dL) and hyperphosphatemia with serum phosphorus of 7.1 mg/dL (2.5-4.9 mg/dL), corroborating the diagnosis of untreated hypoparathyroidism as the underlying cause of the syndrome. **Discussion:** Studies carried out recently to assess the prevalence of symptoms and complications of hypoparathyroidism concluded that the most prevalent complication was cataract, present in 17% of individuals. The other prevalences found were: nephrocalcinosis or nephrolithiasis in 15%; renal failure in 12%; infections and seizures in 11%; depression in 9%; and coronary disease and arrhythmias in 7%. Fahr's syndrome is characterized by bilateral symmetrical calcification of areas of the brain that control movements including basal ganglia, thalamus, dentate nucleus, cerebral cortex, cerebellum, subcortical white matter, and hippocampus. It is a rare inherited or sporadic neurological disorder with a prevalence of less than 1/1.000.000. Mechanism of brain calcification in hypoparathyroidism has been linked to long duration of hyperphosphatemia and high calcium-phosphate product, resulting from the disease itself and from long-term treatment with activated vitamin D and calcium. Especially in hypoparathyroidism, an early treatment and control of calcium and phosphorus levels can prevent calcifications and neurological disorders. **Conclusion:** This case report highlights the importance of regular follow-up and treatment for hypoparathyroidism and hypocalcemia to avoid calcifications including rare neurological manifestations such as Fahr's syndrome. **Keywords:** Fahr syndrome; hypoparathyroidism; hypocalcemia.

AP-188 HYPERCALCEMIA DUE TO INJECTABLES FOR AESTHETIC PURPOSES: AN ALERT FOR THIS DIFFERENTIAL DIAGNOSIS

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L.A.M., 40 years old, male, with nephrolithiasis, referred to the Emergency Room due to skin lesions with phlogistic signs on the anterior chest and hip, and a 1 week history of reported fever. Laboratory testing revealed renal dysfunction and hypercalcemia. Upon admission, he mentioned application of anabolic steroids and cosmetic injectables for bodybuilding at the sites of injuries. Upon physical examination: hyperemic and suppurated masses in the pectoral and gluteus muscles bilaterally with discharge of calcified material. Laboratory exam: Cr 4.8; Ur 88; K 3.3; Ionized Ca 1.84; P 4.3; PTH 19.4; Vit D 16. CT of chest, abdomen and pelvis: Multiple bilateral breast and gluteal calcifications. Signs of nephrolithiasis and nephrocalcinosis. Admitted under the hypothesis of hypercalcemia secondary to the production of 1,25-OH-vitD by granulomas. Treated with IV hydration and corticosteroid. Bisphosphonate was proscribed due to impaired kidney function. Evaluated by plastic surgery, whom considered unfeasible the removal of the granulomas due to the extension of the lesions. Evolved with stabilization of renal function and improvement of hypercalcemia. Discharge after 14 days with posterior follow-up, waiting for dosing of 1,25-OH-vitD and ACE. Among the causes of hypercalcemia, hyperparathyroidism and malignancy account for 90% of cases. The remaining cases correspond to rare etiologies, among them, cosmetic injectables leading to formation of granulomas. Cosmetic injection can trigger granuloma formation in 0.02% to 1% of applications. Macrophage activation induced by this process can activate 1-alpha hydroxylase, converting 25-hydroxyvitamin D into its active form, 1-25 hydroxyvitamin D. As a result, there is increased intestinal calcium absorption and bone resorption, causing hypercalcemia. For diagnosis, it is necessary to establish PTH-independent hypercalcemia, with increased levels of 1.25-hydroxyvitamin D. Imaging tests may reveal granulomas. However, it is necessary to rule out calcitriol formation due to Sarcoidosis, with a normal chest CT and normal ACE levels. In this scenario, the treatment of hypercalcemia involves hydration and corticosteroids that inhibit the production of calcitriol by activated mononuclear cells. In severe hypercalcemia, administration of bisphosphonates or denosumab may be necessary. Therapeutic alternatives are ketoconazole, due to its anti-1-alpha hydroxylase effect, and hydroxychloroquine, due to its immunomodulatory action. **Keywords:** hypercalcemia; granulomas; anabolic injectables.

AP-189 PREVENTIVE TREATMENT OF BONE FRACTURES WITH HORMONAL REPLACEMENT THERAPY IN WOMEN AT RISK FOR OSTEOPOROSIS

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Introduction: Osteoporosis is a condition defined by the loss of bone mineral density. There are risk factors for the development of this problem, one of which is menopause, due to the reduction of hormone levels in women, especially estrogen, which is directly related to bone mineralization, generating an imbalance between bone formation and reabsorption. Under this bias, preventive estrogen hormone replacement therapy (HRT) is one of the strategies to reduce the incidence of osteoporosis in postmenopausal women (OPM). **Objectives:** To evaluate the effectiveness of hormone replacement therapy in women at risk of osteoporosis. **Methods:** This is a systematic review based on the PRISMA methodology carried out on the PubMed platform, the descriptors “hormone replacement therapy”, “postmenopausal women”, “prevention of osteoporosis” and “estrogens” are recommended combined with the operator “AND” associated with a 5-year filter. **Results:** In the end, 4 articles were included. It is estimated that about one in three women will experience an osteoporosis-related fracture after menopause. Estrogen depletion due to menopause has been shown to increase osteoclast precursor cells, decrease osteoclast differentiation by modulating RANKL/OPG into mononuclear osteoclast precursors, and delay osteoclast apoptosis. In early menopausal women treated with estradiol or norethindrone acetate, microspectroscopy analysis of paired iliac crest biopsies from 10 of them revealed that HRT affected the compositional properties of newly formed bone. In this regard, evidence supports consideration of HRT as a means of achieving bone protection and fracture prevention in the context of a primary indication for the treatment of menopausal symptoms, in newly postmenopausal women at low risk of adverse events. although HRT is no longer universally recommended as a first-line treatment option in women at risk of fracture, it should be considered as a true preventive therapy to maintain bone mass. **Conclusion:** HRT plays a clear role in the treatment of menopausal symptoms and, for many menopausal women, HRT initiated at or shortly after menopause, before the age of 60, can be considered as an option, for maintenance of bone health. **Keywords:** bone mass; estrogen; menopause.

AP-190 ROMOSOZUMAB IN OSTEOPOROSIS AND CHRONIC KIDNEY DISEASE: A SYSTEMATIC REVIEW OF EFFICACY AND SAFETY

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Romosozumab has shown efficacy in osteoporosis treatment. However, clinical trials have excluded patients with reduced kidney function, despite these patients being at increased risk of fractures. We aimed to assess the efficacy and safety of romosozumab in patients with both osteoporosis and chronic kidney disease (CKD). Following PRISMA guidelines, we conducted a systematic review of MEDLINE and Cochrane Central Register of Controlled Trials using "Romosozumab" and "Chronic Kidney Disease," "Renal Function," "Renal Dialysis," or "Hemodialysis" as keywords. We included cohort and case-control studies, as well as clinical trials, that investigated the use of Romosozumab in patients with both osteoporosis and CKD. We excluded reviews, comments, case reports, animal or cell studies, and unrelated articles. We assessed bias using the GRADE tool and extracted data on study settings, participant characteristics, Romosozumab use, and relevant outcomes. Our findings were synthesized narratively, highlighting similarities, differences, and areas of uncertainty. Out of 31 publications initially identified, we included 4 studies that met our inclusion criteria. These studies were published between 2021 and 2022 and had durations ranging from 85 days to 24 months. The studies included a total of 365 patients, with ages ranging from 43 to 90 years. The studies assessed metabolic turnover and mineral metabolism characteristics to evaluate bone health and renal function. The dosage of romosozumab was a single subcutaneous injection of 210 mg. The studies demonstrated an increase in bone mineral density, except for one study that reported no significant effect. Moreover, two studies provided evidence supporting the safety of romosozumab use in patients with CKD. However, adverse effects such as hypocalcemia, hypercalcemia, urticaria, injection site reactions, and new cardiovascular events were observed during treatment. Our review suggests that romosozumab treatment in patients with CKD and osteoporosis is relatively safe and effective. However, attention should be given to outcomes such as hypocalcemia and hypercalcemia. Further research is needed to better understand the efficacy and long-term safety of romosozumab in this patient population. **Keywords:** chronic kidney disease; osteoporosis; monoclonal antibody.

AP-191 ASSESSMENT OF BODY COMPOSITION AND BONE MINERAL DENSITY IN YOUNG ADULTS COLLEGE STUDENTS

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Introduction: Body composition is an anthropometric measure of bone mineral density (BMD) and is related to development from adolescence to young age. The peak of bone mass acquisition is reached in young adults, between 20 and 24 years of age, and may vary due to genetic factors, sex and lean and fat mass composition. **Objective:** To assess body composition and bone mineral density in young university students of both sexes. **Patients and methods:** A cross-sectional observational study was carried out in the last two years, including 76 young adult university students, 42 of them female, and 36 males, with evaluation of body composition and bone mineral density by DXA (dual X-ray absorptiometry). **Results:** The authors found that 65% of the sample had an adequate weight, which corresponds to 79% in the female group and 50% in the male group. Overweight was observed in 39% of the males and 12% of the females. Obesity was found in 5% of the total sample. The average body mass index (BMI) among males was 25.05 kg/m² (SD = 3.4), and among females it was 22.3 kg/m² (SD = 3.0), with statistically significant variation between genders (p = 0.0003). The average body total fat mass in women was 21.0 kg (SD = 7.0), while in men it was 18.2 kg (SD = 9.2), but the variation was not statistically significant (p = 0.1331). Total lean mass in males was 56.6 kg (SD = 7.0) and in females was 35.8 kg (SD = 4.7), with a statistically significant difference (p = 0.00001). The average BMD in the lumbar spine in males was 1,116 g/cm² (SD = 220), and in females, 1,200 g/cm² (SD = 129), with a statistically significant difference between genders (p = 0.0410). The average bone mineral density in the femoral neck for males was 1,076 g/cm² (SD = 216), and for females, 1,014 g/cm² (SD = 140). The average BMD in the total femur for males was 1,042 g/cm² (SD = 207), and for females, 1,004 g/cm² (SD = 129). There was no statistically significant difference between the last two groups (p = 0.1313 and p = 0.3183, respectively). **Conclusion:** The variables BMI, lean mass and BMD in the lumbar spine, showed statistical difference between genders. The body total fat mass variable did not present a statistically significant variation in the studied group, possibly since the percentage of overweight among men was 39%, which is much higher than that found in women (12%). There was also no significant difference in femoral neck and total neck BMD between groups. **Keywords:** body weight; bone mineral density; X-ray absorptiometry.

AP-192 ASSOCIATION BETWEEN BODY COMPOSITION ASSESSED BY DXA AND ANTHROPOMETRIC MEASUREMENTS IN YOUNG ADULT COLLEGE STUDENTS

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Introduction: The assessment of body composition through DXA (dual X-ray absorptiometry) is a diagnostic imaging test used to accurately assess fat mass, muscle mass, and bone mass. Anthropometric measurements of circumferences can be used as an auxiliary method to verify the distribution of body fat. **Objective:** To evaluate the association between body composition assessed by DXA and anthropometric measurements in young university students of both genders. **Patients and methods:** A cross-sectional observational study was carried out in the last two years, including 76 young adult university students, 42 of them female, and 36 males, with evaluation of body composition by DXA (dual X-ray absorptiometry) and anthropometric measures of waist, hip, neck, arm and calf. **Results:** The authors found that 65% of the sample had an adequate weight, 24% were overweight and 5% obese, while 5% of the total sample was under weight. The average body mass index (BMI) among males was 25.05 (SD = 3.4), and among females it was 22.3 (SD = 3.0), with statistically significant variation between genders (p = 0.0003). The average body total fat mass in women was 21.0 kg (SD = 7.0), while in men it was 18.2 kg (SD = 9.2), but the variation was not statistically significant (p = 0.1331). Total lean mass in males was 56.6 kg (SD = 7.0) and in females was 35.8 kg (SD = 4.7), with a statistically significant difference (p = 0.00001). The average waist circumference was 86.6 cm in men (SD = 8.9) and 74.4 cm (SD = 9.9) in women, with a statistically significant difference between groups (p = 0.00001). The average arm circumference was 31.5 cm in men (SD = 6.4) and 24.5 cm (SD = 7.3) in women, with a statistically significant difference between groups (p = 0.00001). only 6% of the sample had arm circumference below the cutoff point (25.3 cm for men and 23.2 cm for women). The average arm circumference was 36.9 cm in men (SD = 4.7) and 34.9 cm (SD = 2.8) in women, without a statistically significant difference between groups (p = 0.0934). only 3% of the sample (2 women) had a calf circumference below the cut-off point (31 cm). in the sample, there was a statistically significant difference when making the correlation between waist circumference *vs.* BMI (R = 0.85/p = 0.0254), hip circumference *vs.* BMI (R = 0.90/p = 0.0013), calf circumference *vs.* BMI (R = 0.97/p = 0.0001), arm circumference *vs.* BMI (R = 0.83/p = 0.0714). **Keywords:** body weight; dual X-ray absorptiometry; body composition.

AP-193 LIPONEUROCYTOMA: DIFFERENTIAL DIAGNOSIS OF CRANIOPHARYNGIOMA

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Case presentation: Patient, male, 19 years old, reports onset of holocranial headache, of moderate intensity, oppressive character and gradual intensity associated with diplopia. Upon admission, the patient underwent a magnetic resonance imaging (MRI) of the skull, which showed an expansive solid-cystic lesion measuring 5 x 4 x 3 cm with foci of intralesional calcification located in the third ventricle, determining obstructive hydrocephalus, admitting the differential diagnosis of craniopharyngioma. After neurosurgery evaluation, the patient underwent craniotomy with third ventriculostomy, total tumor resection and external ventricular shunt. According to pathology evaluation, the specimen size corresponded to 4.0 x 3.0 x 0.7 cm and histological type was suspicious for clear cell variant ependymoma. The immunohistochemical profile together with the morphological findings were consistent with low-grade neuroglial neoplasm with associated lipid component and the immunophenotypic findings with intraventricular liponeurocytoma, WHO grade II. Two months after the surgical procedure, the patient returned to the Neuroendocrinology outpatient clinic, asymptomatic and with imaging examination showing post-surgical alterations, with no evidence of tumor remnants. **Discussion:** Liponeurocytoma was first described in 1978 by Bechtel et al. initially as a "lipomatous medulloblastoma". It is a rare, benign tumor of the central nervous system, World Health Organization (WHO) grade II, which develops mainly in adult patients, in the cerebellum or, more rarely, in the intraventricular region, mainly in the lateral region. Generally, the clinical presentation correlates with tumor size and location. Liponeurocytomas usually appear as a solid mass on CT or MRI and the presence of fat is very characteristic and helps to make the differential diagnosis. Calcification is not observed in most cases. The primary treatment of choice for a liponeurocytoma is surgery, but there is controversy about postoperative treatment. **Final comments:** Liponeurocytoma is a rare tumor, with variable clinical presentation and with a higher incidence observed among young adults. We emphasize the importance of an experienced team in the management of sellar lesions, where the contact of the neurosurgeon, endocrinologist, radiologist and pathologist allows for a more assertive diagnosis and the best therapeutic decision. **Keywords:** neuroendocrinology; neurocytoma; craniopharyngioma.

AP-194 NEUROLOGIC SYMPTOMS IN ELDERLY WOMEN AS PRESENTATION OF SHEEHAN SYNDROME UNDIAGNOSED FOR DECADES: REPORT OF 2 CASES

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Cases presentation: Case 1: M.L.A.S., female, 73 years-old, with many admissions because of seizures in the last 10 years, despite current use of antiepileptic drugs in the last 2y. Recently, she has been diagnosed with hyponatremia because of SIHAD, and has been treated with protein supplements and hydric restriction. She has a history of subtotal hysterectomy 40 years ago, after excessive bleeding postpartum. Since then, she related progressive nauseas and asthenia. Her laboratory exams showed deficiency of ACTH, TSH, PRL, GH, LH and FSH, with partially empty sella on MRI. **Case 2:** D.R.S., 73 years-old, admitted due to symptomatic hyponatremia. She has a history of excessive bleeding in her last partum, more than 30 years ago. Since then, she had been presenting severe depression with various treatment attempts with no success. In the last 5y, she had had many hospitalizations because of hyponatremia. Her laboratory exams showed deficiency of ACTH, TSH, PRL, GH, LH and FSH with partially empty sella on MRI. In both cases, they had improved after initiating hormonal replacement, with complete resolution of the symptoms and serum sodium, with no need for hydric restriction. **Discussion:** Sheehan syndrome (SH) is one of the causes of acquired hypopituitarism still prevalent in underdeveloped countries, due to poor obstetric care. It occurs by pituitary necrosis postpartum, with or without excessive uterus bleeding. Screen exams result in pituitary gland reduced or absent. In those cases, despite the history of excessive bleeding after postpartum, which should had alerted for the possibility of this diagnosis, the diagnosis of adrenal insufficiency was only considered after many hospitalizations due to hyponatremia, followed by discharge without definitive etiologic diagnosis. The long standing symptoms were underestimated or wrongly seen as secondary to epilepsy/depression, resulting in ineffective treatment, besides excessive and unnecessary suffering for these elderly women. **Final comments:** It is important that physicians of all medical areas be aware of the possibility of SH diagnosis, especially in women with a past of excessive bleeding postpartum. The nonespecificity of the symptoms related to central hypothyroidism, hypogonadism and hypocortisolism in these cases resulted in delayed diagnosis for a long period, exposing these women to acute complications with elevated morbimortality, such as adrenal crisis with hypotension and severe hyponatremia. **Keywords:** hypopituitarism; hyponatremia; adrenal insufficiency.

AP-195 PROFILE OF PATIENTS UNDERGOING NEUROENDOCRINOLOGICAL SURGERY IN THE WEST REGION OF SANTA CATARINA

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Introduction: Pituitary pathologies that require surgical excision pre and postoperative follow-up are essential to verify the surgical result, pathological evolution and possible functional sequelae of the gland. **Objectives:** Analyze the profile of patients undergoing surgical resection of pathologies in the pituitary region. **Methods:** Cross-sectional study covering all medical records of patients who underwent neuroendocrinological surgery in the west of Santa Catarina from 2014 to the first quarter of 2023. The profile of patients (age and gender), year of the surgery and characteristics of the pathology - anatomopathological (AP) and immunohistochemical markers (IHC) were compiled. **Results:** The period included 74 pituitary surgeries, 7 of which in patients with recurrent pathology. There was exclusion of 7 medical records due to lack of data and 6 deaths, so 61 cases were considered for analysis. The year 2020 had the highest number of surgeries (13), followed by 2021 (10). As for the diagnosis, 12 patients had a sellar/parasellar tumor (without AP or non-pituitary tumors in the sellar region) and 49 had pituitary adenomas, 3 of which were functioning (2 acromegaly and 1 prolactinoma) and 46 non-producing adenomas (18 without IHC, 10 silent plurihormonals, 6 silent lactotrophs, 4 silent gonadotrophs, 3 silent corticotrophs, 4 null cell and 1 pituitary apoplexy). The most prevalent age group was between 40 and 50 years (24.59%) and females represented the majority (45, 73.77%). The IHC was found in 34 (55.74%) medical records, with the most common activity markers being KI-67 (79%) and CK8/18 (44%). **Conclusion:** The studied population was composed mainly of women between 40 and 50 years old, mostly with pituitary adenomas, with a high prevalence of the KI-67 marker. There was evidenced a lack of description of the AP, IHC and functional assessment both before and after the excision in several medical records. This study was pioneer in defining the profile of these patients and contributed to the adequacy of the service. **Keywords:** neuroendocrinology; pituitary surgery; pituitary pathologies.

AP-196 PITUITARY APOPLEXY: A CASE REPORT

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Case report: A 52-year-woman with a history of hypertension, type 2 diabetes mellitus, obesity and intraductal breast carcinoma presented to the emergency department with headache, vomiting, paresthesia in hemiface and eye pain on the right side for 12 hours. On examination, she had mydriasis, palpebral ptosis and extraocular motricity paralysis on right side. Brain computed tomography and magnetic resonance imaging showed an expansive sellar lesion with hemorrhagic focus compressing the optic chiasm. Pituitary apoplexy (PA) diagnosis was considered, and intravenous corticosteroid therapy was initiated. Transcranial resection of the pituitary tumor with drainage of the apoplexy was done, as preferred by the neurosurgeon. Anatomopathological showed coagulative necrosis. Postoperatively exams showed panhypopituitarism. She was discharged on the 33rd day of hospitalization, with the neuro-ophthalmological alterations present at the beginning and panhypopituitarism. **Discussion:** PA is an uncommon but potentially fatal endocrine and neurosurgical emergency due to an acute infarction or hemorrhage in the pituitary gland. Most cases occur spontaneously, in asymptomatic patients, usually with undiagnosed pituitary adenomas. It is manifested by a sudden-onset headache associated with neuro-ophthalmological symptoms, such as cranial nerve palsy and an altered level of consciousness. It often courses with panhypopituitarism. Factors triggering included hypertension, anticoagulation and others. Clinical and brain imaging with pituitary hemorrhage or infarction makes the diagnosis. Common differential diagnoses are aneurysmal subarachnoid hemorrhage and bacterial meningitis. The main histological finding is hemorrhagic necrosis. Acute management consists of hemodynamic stabilization and administration of corticosteroids. No scientific evidence indicates conservative or surgical management and the indication is individualized. Transsphenoidal approach is preferred. The visual result is usually good and the endocrinological result is unfavorable, despite the chosen treatment. **Conclusion:** PA is a rare clinical syndrome that requires early diagnosis. Immediate treatment with corticotherapy and hemodynamic stabilization is necessary. The surgical indication is still controversial. Visual changes usually improve, but hypopituitarism is common in most cases. Annual follow-up with a multidisciplinary team is necessary to control possible complications. **Keywords:** pituitary apoplexy; pituitary gland; neuroendocrinology.

AP-197 MULTIPLE ENDOCRINE NEOPLASIA TYPE 1: INDOLENCE IN THE ONSET OF THE SECOND TUMOR?

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Case presentation: A 45-year-old female patient diagnosed with a microprolactinoma at the age of 17, irregularly used bromocriptine, leading to tumor growth (1.5 x 1.2 cm). At the age of 28, she underwent transsphenoidal surgery, and the histopathological findings were consistent with a pituitary adenoma. Three years after the surgery, a magnetic resonance imaging (MRI) of the sella turcica revealed a 1.0 x 0.5 cm heterogeneous-enhancing image with elevated prolactin levels, amenorrhea and galactorrhea. She started irregular use of cabergoline, which led to further tumor growth. Fourteen years after the pituitary surgery, she began experiencing diarrhea, abdominal pain, and a colonoscopy revealed nodular lymphoid hyperplasia in the ileum. An abdominal MRI in 2022 showed a nodular lesion measuring 2.2 cm in the pancreatic tail, and an upper gastrointestinal endoscopy showed mild hemorrhagic pangastritis, duodenal ulcer, and a scar from a previous duodenal ulcer. She underwent distal pancreatectomy, retroperitoneal lymphadenectomy and splenectomy, the histopathological examination suggested an epithelioid neoplasm consistent with a neuroendocrine tumor. Immunohistochemistry showed positivity for PAN-CKAE1/AE3, synaptophysin, chromogranin A, and NSE, in accordance with a grade I neuroendocrine tumor. Gastrin levels measured after surgery were 594 (reference range < 115). Serum calcium and PTH levels were normal. **Discussion:** Multiple endocrine neoplasia type 1 (MEN1) is a rare autosomal dominant syndrome characterized by two or more endocrinopathies: primary hyperparathyroidism, pituitary adenomas, and duodenopancreatic neuroendocrine tumors (NET), occurring in approximately 95%, 30%-40%, and 40%-70% of patients, respectively. Over 50% of NET are gastrinomas, associated with Zollinger-Ellison syndrome, and are rarely found in the pancreas. Surgical treatment is indicated for non-metastatic pancreatic tumors. Approximately 60% of pituitary tumors secrete prolactin, with around 5% being non-functioning, and they may be the first manifestation of MEN1 in 15% of cases. These tumors appear to be more aggressive and less responsive to surgical and medical treatments. **Final comments:** MEN1 increases the risk of premature death from malignancies. Genetic testing reduces morbidity and mortality, benefiting the clinical management of the patient and their relatives. The patient is awaiting the genetic test. **Keywords:** neuroendocrine tumor; prolactinoma; men.

AP-198 PROSTATIC PARAGANGLIOMA AS A DIFFERENTIAL DIAGNOSIS OF PROSTATE NEOPLASMS: A CASE REPORT

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Case presentation: A 66-year-old male presented to a urologist in January 2022 due to weak urinary stream and urinary retention. No comorbidities, family history, hypertension, or palpitation were reported. The rectal examination revealed irregularity of the anterior wall. A measurement of serum prostate-specific antigen (PSA) levels and a transrectal ultrasound (TRUS) were assessed: total PSA 4.7 ng/dL; free PSA 0.51 ng/dL; TRUS: prostate with heterogeneous texture, estimated weight of 120 g. Then, a performed transrectal prostate biopsy reported a poorly differentiated malignant neoplasm, with no immunohistochemistry (IHC) available. In July 2022, the patient underwent transvesical open prostatectomy: IHC revealed a poorly differentiated paraganglioma (PGL) with a Grading of Adrenal Pheochromocytoma and PGL (GAPP) score of 7, positive for CD56, chromogranin, and synaptophysin, with a mitotic index of 8 in 10 high-power fields (HPF) and Ki-67 expression in 30% of the cells. A contrast-enhanced whole-body computed tomography revealed conglomerate retroperitoneal lymph nodes with a maximum axis up to 2.6 cm. The patient visited our Endocrinology Clinic for the first time in March 2023, maintaining weak urinary stream and urinary retention, with no other complaints reported. A follow-up visit in April included a 24-hour urine metanephrine test, which showed normetanephrines at 1,142.8 µg [Reference Range (RR) 44 to 450 µg] and metanephrines at 38.6 mg (RR 26 to 230 µg). The patient also brought a meta-iodobenzylguanidine (MIBG) scintigraphy report, which showed uptake only in the prostate region, ruling out metastases or other tumors. Currently, the patient awaits adrenal genetic panel results and is scheduled for a surgical reapproach. **Discussion:** PGL are rare neuroendocrine catecholamine-producing tumors that originate from the extra-adrenal autonomic paraganglia. At cellular level, they are indistinguishable from pheochromocytomas (PCC). The worldwide incidence of PCC/PGL is 8 cases per 1 million people. Any site containing paraganglionic tissue may be involved, and prostatic PGL is particularly even rarer, with only 11 reported cases in medical literature. Up to 50% of PGL can be associated with hereditary diseases. **Final comments:** Prostatic PGL is an unusual pathology which should be considered in the differential diagnosis of prostate tumors. Given the scarcity of documented cases, it is difficult to establish the prognosis for affected patients. **Keywords:** extra-adrenal paraganglioma; prostatic neoplasms; diagnosis, differential.

AP-199 COLLISION TUMOR: A RARE ASSOCIATION BETWEEN MENINGIOMA AND GH-PRODUCING PITUITARY ADENOMA – CASE REPORT

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Case presentation: A 40-year-old woman sought medical attention for recently diagnosed uncontrolled diabetes mellitus. She also reported a holocranial headache associated with recent-onset bitemporal hemianopsia. On physical examination, she presented with acromegalic facies characterized by frontal bossing, enlarged nose and lips, deepening of nasolabial folds, macroglossia, and prognathism. She also had enlarged extremities, dactylitis, thickened skin, and a large goiter. Laboratory tests revealed serum IGF-1 levels of 924 ng/mL (reference range: 76-277 ng/mL) and basal serum GH levels of 100 ng/mL. An MRI of the sella turcica revealed two distinct yet contiguous lesions. One lesion was solid, intrasellar with supra- and infrasellar extension, measuring 3.0 x 4.5 x 3.3 cm, enhancing with contrast, with heterogeneous hypointensity on T2-weighted imaging, consistent with a pituitary macroadenoma. The second lesion was solid, extra-axial, in the midline of the posterior aspect of the anterior cranial fossa, measuring 2.6 x 1.8 x 3.4 cm, with a broad-based dural attachment and a dural tail, highly suggestive of a meningioma. Transsphenoidal surgical treatment with expanded endonasal approach was indicated for both lesions, and preoperative somatostatin analog therapy was initiated. **Discussion:** Patients with acromegaly have an increased risk of developing meningiomas compared to the general population. Studies suggest that GH and IGF-1 may influence meningioma oncogenesis, as do common somatic and germline genetic mutations related to pituitary tumor pathogenesis. **Final comments:** The concurrent presence of a meningioma should be considered in patients with acromegaly due to its increased prevalence. Preoperative diagnosis of meningioma is crucial as it influences the choice of surgical approach. Furthermore, postoperative analysis of meningioma tissue can help demonstrate the influence of excess GH/IGF-1 in its pathogenesis. **Keywords:** collision tumor; meningioma; GH-producing pituitary adenoma.

AP-200 THYMIC NEUROENDOCRINE TUMOR IN PATIENT WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 – CHALLENGES IN DIAGNOSIS

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Multiple endocrine neoplasia type 1 (MEN 1) is an autosomal dominant disease with a high degree of penetrance that predisposes to the development of endocrine and non-endocrine tumors, including the rare thymic neuroendocrine tumor (TNET). We present the case of a 37-year-old man with regular follow up at the Endocrinology Clinic of a University Hospital in Rio de Janeiro since the diagnosis of MEN 1 made through the detection of a pathogenic "non-sense" germline variant mutation in heterozygosity in exon 8 of the MEN1 gene (c.1177C>T;p.Q393*). The screening was performed because his mother was the index case of MEN 1 in the family. Since the diagnosis, the patient has been under active surveillance and has developed primary hyperparathyroidism. While awaiting parathyroidectomy, he presented two masses in the left anterior cervical base area, difficult to delimit on physical examination because of significant pain on palpation. Computed Tomography of the chest and neck revealed a large right cervical adenopathy, bilateral cervical lymphadenopathy and an intramediastinal mass in right side of the heart. Contrast-enhanced imaging confirmed the mass in the mediastinum and compression of the left brachiocephalic vein and superior vena cava, as well as intercostal lymphadenopathy and sclerotic lesions in vertebral bodies suggestive of metastasis. The findings suggested a mediastinal tumor with lymph node involvement, leading to the hypothesis of a thymic origin tumor and, considering the comorbidity, a neuroendocrine tumor. Magnetic resonance imaging, somatostatin analog scintigraphy, and PET-CT were performed and reinforced the hypothesis of a mediastinal tumor with lymph node and bone dissemination. Histological evaluation of the primary lesion indicated neuroendocrine carcinoma compatible with thymic carcinoid tumor. In agreement with the oncology team, chemotherapy with Capecitabine was started immediately. TNETs are often diagnosed incidentally at advanced stages since symptomatology usually results from local mass effect. TNETs are correlated with MEN 1 but behave differently in individuals with the syndrome, as ectopic hormone production by the tumor frequently occurs in sporadic cases although it is rare in MEN 1. Due to the association and diagnostic challenge, it is recommended that MEN 1 patients who require parathyroidectomy undergo thymectomy during the same surgical procedure, if they have a thymus. **Keywords:** multiple endocrine neoplasia type 1; thymus neoplasms; mediastinal tumor.

AP-201 THE PERSPECTIVES OF NEUROENDOCRINOLOGY: RELATION BETWEEN THE GLUCAGON-LIKE PEPTIDE-1 AGONIST (GLP-1 AGONIST) AND ALZHEIMER'S DISEASE

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Introduction: The Alzheimer's disease (AD) is a degenerative disease, defined by the accumulation of senile plaques, neurofibrillary tangles, accompanied by progressive cognitive impairment and memory loss, still incurable. At the moment, it was observe a correlation between AD and type 2 diabetes mellitus, defining this relation, in the last years, as type 3 diabetes mellitus, beeing characterized by the inflammatory process generated by the accumulation of neuro toxins due to insulin resistance in the central nervous system (CNS). **Objective:** Investigate the relation of the agonist glucagon-like peptide-1 (GLP-1) in AD. **Materials and methods:** This is a systematic review that carried out a survey of evidence according to the PRISMA protocol, using the descriptors: "diabetes mellitus" AND "Alzheimer's Disease" AND "glp-1", finding 85 articles. After application of the filters: complete text; data base: MEDLINE; language: English; in the period of 2019 until 2023, reducing to 25 articles. **Results:** These 25 founding articles, 4 were excluded for thematic fugue and 11 for not being available in full, constituting a final corpus of 10 articles, being identified two principal subjects: (I) neuroprotector effect of GLP-1 agonist in patients with AD and (II) the relation of insulin resistance in the CNS and AD. The GLP-1 is a type of incretin secreted, mainly, by the intestinal L cells. The hormone can bind to glucagon-like peptide-1 receptor (GLP-1R) and cause the stabilization of plasma glucose a through the balance of insulin and glucagon. The GLP-1R its part of the G protein-coupled receptor, expressed in several organs, especially in the brain. That way, the link between theGLP-1 agonist and GLP-1R in the brain triggers a neuroprotective, therefore, causing a cognitive enhancement, neuroplasticity, antioxidant effects, reducing neuroinflammation. Furthermore, prevents amyloid-beta protein deposition and Tau protein hyperphosphorylation. **Conclusion:** The therapy with GLP-1 agonist presents as a promising drug, with good tolerability in the treatment of others conditions besides diabetes mellitus. Therefore, having a potential preventive/therapeutic agent against the early accumulate of the first neuropathological features of AD. That way, its necessary further studies in the area for a better understanding of its action in neurodegenerative diseases. **Keywords:** Alzheimer's disease; glucagon-like peptide-1 agonist; diabetes mellitus.

AP-202 IS THE PROLACTIN VALUE ABOVE WHICH THE HOOK EFFECT MAY BE INDUCED IN THE ROCHE ELECYS PROLACTIN ASSAY CONSISTENT WITH THE PACKAGE INSERT?

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Introduction: In the diagnostic approach of hyperprolactinemia, the hook effect can be a potential confounding problem that deserves special attention. It is characterized by the finding of falsely low levels of serum prolactin (PRL) when two site immunoassays are used in diagnosis in patients with very high PRL levels. The hook effect should be excluded in patients with pituitary macroadenoma and PRL levels < 250 ng/mL. Generally, the serum PRL values above which the hook effect may be induced are given in the package inserts of the immunoassay kits, and it depends on each particular assay. The Roche Elecsys Prolactin II package insert says that no hook effect was observed at prolactin concentration up to 12,690 ng/mL. **Objective:** The objective of this study was to evaluate if the hook effect in PRL measurements in Elecsys Prolactin II is consistent with the value described in the package insert, 12,690 ng/mL. **Methods:** We analyzed blood samples requesting serum PRL levels from patients admitted to a private reference clinical laboratory in Brazil, from 01/01/2016 to 12/31/2021. Anonymized data on laboratory tests was available from a database of the local Laboratory Information System. All the patients included in our study had PRL levels above 1,000 ng/mL (ECLIA, Roche). We evaluated the first result obtained by the equipment for each patient and verified if they were above 470 ng/mL, indicating dilution, not experiencing hook effect. **Results:** 701 patients were evaluated, 370 (53%) men, 331 (47%) women; mean age 39 (14 to 88) yrs. They were divided in six groups according PRL levels: 1,000 to 2,000 ng/mL – 316 (45,1%); 2,001 to 3,000 ng/mL – 124 (17,7%); 3,001 to 4,000 ng/mL – 72 (10,3%); 4,001 to 5,000 ng/mL – 167 (23,8%); 5,001 to 10,000 ng/mL – 17 (2,4%) and 10,001 to 16,968 ng/mL – 5 (0,7%) patients. All the patients had the first result above 470 ng/mL, with serial dilutions until the final result. **Conclusion:** The search for the hook effect is recommended for patients who have pituitary macroadenomas and apparently normal or mildly elevated prolactin levels. In this study we did not find hook effect in patients with prolactin levels up to 12,690 ng/mL, confirming what is reported in the Elecsys Prolactin II package insert. **Keywords:** prolactin; assay; hook effect.

AP-203 CUSHING'S SYNDROME SECONDARY TO THYMIC NEUROENDOCRINE TUMOR: A CASE REPORT

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Case presentation: A 45-year-old woman presents with a viral infection that was treated with prednisone and evolved with edema, low diuresis and epigastric pain. After three months, showed increased blood pressure (BP) and abdominal distention, associated with central weight gain, weakness, general tremors, difficult gait, and several hospital incomings, where high BP, hyperglycemia and hypokalemia were detected. At physical examination, moon face, hair loss and skin stains were noticed. Patient was on antihypertensive drugs, without improvement of the symptoms. Additional exams revealed urinary cortisol levels of 1398.6 mcg/dL, adrenocorticotropic hormone (ACTH) 179.8 pg/mL, urinary cortisone 734.3 mcg/dL, potassium 2.97 mEq/L. Abdomen and hypophysis nuclear magnetic resonance were normal. Thoracic computerized tomography revealed a great mass at the mediastinum, confirmed by echocardiography and thoracic x-ray. Therefore, the patient was diagnosed with Cushing's syndrome (CS) secondary to ACTH secreting tumor of the thymus. A mediastinal tumor resection was performed with local lymphadenectomy, and extraction of a 9,5 x 9,5 cm mass. Microscopy confirmed a thymus round cell neoplasm, without node involvement. Immunohistochemical profile was positive for chromogranin, synaptophysin, CD 56, Cytokeratin (AE1/AE3), results compatible with atypical thymic carcinoid tumor. **Discussion:** ACTH-dependent CS is commonly associated with pituitary corticotroph adenoma, but can also result from ectopic tumors, with a ratio of 7:1. These tumors occur mostly in the lung, and only 1% can be found at the thymus, Thymic neuroendocrine carcinomas account for 2% of all carcinoids and they are classified as typical and atypical, the latter one is more aggressive. The majority of them are asymptomatic and the gold standard treatment is surgery. In this report, a case of symptomatic CS is presented caused by an ectopic tumor at the thymus, a rare form of the disease. To confirm the diagnosis, it is necessary to exclude other possible situs and perform immunohistochemical analysis, exactly as done, and it was found a result similar to the literature. **Final comments:** Although rare, ectopic CS must be investigated, when ACTH levels are high in patients with clinical hypercortisolism to speed up diagnosis and anticipate treatment. **Keywords:** Cushing's syndrome; neuroendocrine carcinoma; hydrocortisone.

AP-204 ACTIVE SURVEILLANCE AND THE ROLE OF EXPECTANT MANAGEMENT IN MULTIPLE ENDOCRINE NEOPLASIA TYPE 1: CASE REPORT

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Multiple endocrine neoplasia type 1 (MEN1) is autosomal dominant disease with a high degree of penetrance, which predisposes to the presence of endocrine and non-endocrine tumors: primary hyperparathyroidism, pituitary and pancreatic neuroendocrine tumors. A 72-year-old woman, index case, was diagnosed with prolactinoma in 1996 and hyperparathyroidism, adrenal mass and pancreatic nodule in 2006, identified by abdominal computed tomography (CT). She underwent adrenalectomy (non-functioning adenoma) in 2007 and parathyroidectomy in 2008. Due to the absence of associated symptoms, it was decided to carry out active surveillance of the pancreatic lesion through periodic imaging. Non sense pathogenic germline variant in heterozygosity was detected in exon 8 of the MEN1 gene (c.1177C>T;Q393*). In 2019, the pancreatic lesion grew reaching dimensions greater than 3.0cm. Therefore, a surgical approach was indicated. Episodes of symptomatic hypoglycemia confirmed by low serum glucose started appear in May/22. Due to the COVID 19 pandemic, the surgery was postponed to be performed at an opportune time. Due to location of the lesions (main and satellite), it was performed a corpocaudal pancreatectomy and splenectomy in January 2023. In the immediate postoperative period, no new episodes of hypoglycemia were observed, suggesting a successful therapy. On the eleventh postoperative day, the patient evolved with necrohemorrhagic pancreatitis, requiring surgical reapproach with necrosectomy and washing of the abdominal cavity presenting good clinical and surgical response to the interventions. She was discharged from the hospital in February on basal insulin. Pathological and immunohistochemical analysis confirmed the diagnosis of low-grade insulinoma (Ki 67 < 3%) with free surgical margins, with no need for adjuvant therapy. It is important to reinforce the role of expectant management in these cases, since this guarantees, as in our case, not subjecting the patient, at an early stage, to major surgery with considerable transient or permanent complications, such as pancreatectomy and diabetes. We emphasize the importance of the clinical diagnosis of the syndrome, and the performance of the genetic test that must be carried out as soon as available, but not delaying the active surveillance, culminating in satisfactory results for the patient. **Keywords:** MEN 1; insulinoma; hypoglycemia.

AP-205 PANHYPOPITUITARISM BY PITUITARY INFILTRATION DUE TO HEMOCHROMATOSIS: A CASE REPORT

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Case report: A 38-year-old man with a confirmed diagnosis of hemochromatosis due to a homozygous mutation for C282Y. At the time of diagnosis, he had Ferritin levels of 3962 ng/mL and Transferrin saturation of 80%. He also had diabetes mellitus, dilated cardiomyopathy with reduced ejection fraction (EF), chronic liver disease, and arthritis associated with the underlying condition. He was referred to the endocrinology outpatient clinic due to complaints of erectile dysfunction and was subsequently diagnosed with hypogonadotropic hypogonadism (total testosterone 11.1 ng/dL – normal range: 262 to 1600; FSH: 0.12 mIU/mL; LH: 0.62 mIU/mL), as well as secondary hypothyroidism (TSH 0.920 – normal range: 0.4 to 5.3; Free T4 0.83 – normal range: 0.89-1.76). Other evaluations of the pituitary reserve were within normal limits. A pituitary sella MRI showed a decrease in signal intensity on T2-weighted sequences, which was considered iron deposition due to the underlying condition. Based on these findings, replacement therapy with levothyroxine and testosterone cypionate was initiated. Follow-up examinations showed reasonable hormonal control, hematological levels, and cardiovascular improvement, with the recovery of the ejection fraction using targeted therapy for heart failure. **Discussion:** Panhypopituitarism is characterized by insufficient hormonal production by the anterior pituitary gland, which can occur due to damage to the gland itself or to higher regions of the brain, specifically the hypothalamus. Clinical manifestations vary depending on which hormones are primarily affected by the disease. In the context of hemochromatosis, a hereditary condition associated with homozygosity for the C282Y variant in the HFE gene, increased intestinal iron absorption leads to systemic iron overload and subsequent iron deposition in tissues. Hypopituitarism, including hypogonadism and secondary hypothyroidism, can arise due to iron deposition in the pituitary gland, affecting gonadotrophs and thyrotrophs. Overall, hypogonadotropic hypogonadism is more prevalent than secondary hypothyroidism. **Conclusion:** The association of hormonal deficiencies in hemochromatosis is uncommon. Discussion and dissemination of information and clinical practices are essential for guiding proper management. Through this, we can achieve a better quality of life for patients. **Keywords:** panhypopituitarism; hemochromatosis; hypogonadism.

AP-206 METABOLIC PROFILE AND FAT DISTRIBUTION EVALUATED BY DXA IN PATIENTS WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1

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Introduction: Multiple endocrine neoplasia type 1 (MEN1) is an autosomal dominant genetic disease of high penetrance characterized by the appearance of tumors of the endocrine system and others. The classic triad is: primary hyperparathyroidism (tPHP), pituitary tumor (PT) and gastroenteropancreatic neuroendocrine tumor (GEP-NET), but there are other types of associated tumors: skin tumors, adrenocortical adenoma and carcinoma, breast cancer. Obesity and metabolic syndrome (MetS) are associated with higher risk for many types of tumors and may be a risk factor for tumorigenesis in MEN1 patients. **Objective:** To describe the metabolic profile and fat distribution of a population of patients with MEN1 treated at a tertiary center. **Patients and methods:** Patients with 18 years or more treated at a reference endocrinology center with a clinical, laboratory and/or genetic diagnosis of MEN1 were included. Laboratory tests were collected to assess the lipid and glycemic profile and C-reactive protein (CRP). Anthropometric assessment to establish measurements of waist circumference (WC), body mass index (BMI). Fat distribution was evaluated by dual x-ray absorptiometry (DXA) to obtain measurements of body fat (BF) percentage and visceral adipose tissue (VAT) in g. Tumor data were obtained through analysis of medical records. The diagnosis of MetS followed the updated NCEP-ATP III criteria (2005). **Results:** A total of 99 patients diagnosed with MEN1 signed consent, but 81 were included because they completed all phases of the research. 17 never had GEP-NET, 10 never had PT and 1 never had PHPt. 54 were female, the mean age was 44 ± 13 years. MetS was present in 23. Mean BMI was 29 ± 7 kg/m^2. Mean WC was 98 ± 17 cm. Mean BF was 40% ± 9. Mean VAT was 1.046 ± 676 g. There was a positive association of 0.795 between VAT and WC, and 0.515 between WC and CRP. **Conclusion:** The prevalence of MetS was 28%, close to the Brazilian rate of 29.3%. PT and GEP-NET had higher prevalence compared to international data. BF and WC were high in this population. Assessment of body fat by WC and VAT showed a good correlation with each other. WC showed good correlation with CRP and possible inflammatory state. **Keywords:** multiple endocrine neoplasia type 1; obesity; visceral adipose tissue.

AP-207 PITUITARY TUMORS PROFILE IN PATIENTS WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 AT A TERTIARY CENTER

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Introduction: Multiple endocrine neoplasia type 1 (MEN1) is an autosomal dominant genetic disease that is it is classically characterized by the appearance of tumors from a triad: primary hyperparathyroidism (PHPt), pituitary tumor (PT) and gastroenteropancreatic neuroendocrine tumor (GEP-NET). PT are most often prolactinomas and non-functioning adenomas. MEN1 patients had PT that are larger and more aggressive than those in non-MEN patients. **Objective:** To describe pituitary tumors in a population treated at a tertiary center in terms of frequency, clinical presentation, size and secretion. **Patients and methods:** Patients with 18 years or more followed at a tertiary center with MEN1 clinical, laboratory and/or genetic diagnosis were included. Patients without a pituitary image evaluation were excluded. Informed consent was obtained and data were obtained through analysis of medical records. **Results:** Of a total of 83 MEN1 with 18 years or more, 73 were included and 10 patients were excluded because they never had a pituitary image evaluation. The mean age was 45 ± 13 years. 47 (67%) were female. 10 patients (14%) never had PT. Considering only the patients with PT: 25 (40%) had a tumor of 1cm in size or larger (macroadenoma); the mean of the largest dimension of each tumor was 1.19 ± 0.87 cm; 9 patients (14%) went for PT surgery once and 1 (1,6%) patient twice; 62 (93%) had PHPt, 50 (79%) had GEP-NET; 39 patients (62%) had prolactinoma, 17 (27%) had nonfunctioning adenomas, 2 (3,2%) had Cushing's disease (CD), 2 had combined GH and prolactin secretion, 1 (1,6%)had acromegaly, 1 had FSHoma and 1 were not investigated for secretion yet. **Conclusion:** Most patients (86%) had PT and most of them were classified as microadenomas. Surgery was needed only in 16% with PT. Most of PT were prolactinomas, followed by nonfunctioning adenomas. The second most common secretion was GH, more often in co-secretion with prolactin. Rare CDs and functioning FSHoma were also found. **Keywords:** multiple endocrine neoplasia type 1; pituitary tumor; prolactinoma.

AP-208 GIGANTISM AS THE FIRST MANIFESTATION OF MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 (MEN-1)

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Case presentation: A 22-year-old male was admitted with headache, nausea, vomiting and bitemporal hemianopsy. Brain MRI revealed a 3.7 x 2.3 x 3.5 cm pituitary adenoma (PA). The patient reported increased linear growth since 14 years old (height was 215 cm on admission). On laboratory investigation: GH 29.1 (≤5 ng/mL), IGF-1 1,364 (247.3-481.7 ng/mL), diluted prolactin (PRL) ≥200 ng/mL, LH 1.7 (1.5-9.3 mUI/mL), FSH 2.3 (0.7-11.1 miu/mL), total testosterone (TT) 125.6 (245-1,600 ng/dL), TSH 1.91 (0.4-4.0 miu/mL), FT4 0.86 (0.8-1.9 ng/dL) and basal cortisol 11.9 (5-25 µg/dL). Primary hyperparathyroidism (PHPT) was diagnosed. A CT scan showed a 10.3 x 9.6 x 9.3 cm pancreatic lesion. Transsphenoidal surgical resection, total parathyroidectomy with parathyroid tissue autotransplantation and modified Whipple procedure were performed. IHC showed low-grade neuroendocrine pancreatic tumor (PNET). Patient resumed clinical follow-up only in 2022, when he was hospitalized for spontaneous pneumothorax and chronic diarrhea. New laboratory investigation follows: GH 0.07 (<3 ng/mL), IGF-1 137 (71.2-234 ng/mL), PRL 657 (2.5-17 ng/mL), LH 1.0 (0.8-7.6 miu/mL), FSH 1.0 (0.7-11.1 miu/mL), TT 66.2 (262-1,593 ng/dL), thyro- and corticotrophic axis were normal. Pituitary MRI: 2.2 x 1.5 x 1.2 cm PA and a cystic lesion measuring 2.2 x 1.6 x 1.5 cm. PHPT persisted due to extranumerary parathyroid. Abdominal MRI: 6.0 x 5.5 cm nodule in the pancreatic tail and another in the liver measuring 2.1 x 2.0 cm. Gastrin and 5-HIAA were normal and he denied symptoms of gastrinoma or insulinoma. A somatostatin analog was prescribed due to secretory diarrhea which resolved. PRL levels normalized with cabergoline. **Discussion:** We report a case in which PA was the first clinical manifestation of MEN-1. This occurs in 13% of the cases. PA are more prevalent in females and around the age of 40 years. In most series, only 25% of cases were diagnosed before 26 years of age. Prolactinoma is the most common among functioning tumors. GH-secreting tumors represent 6.5%-9%. Initial hyperPRL could be attributed to mass effect or cosecrection. Persistent hyperPRL after GH control suggested a second PA, also reported in MEN-1. **Conclusion:** Individuals under 18 years and macroadenomas under 30 years must be screened for a genetic syndrome. PHPT screening contributed to correct diagnosis and detection of PNET. **Keywords:** multiple endocrine neoplasia; gigantism; prolactinoma.

AP-209 PERSISTENT AND ASYMPTOMATIC HYPERPROLACTINEMIA IN A PATIENT WITHOUT RESIDUAL TUMOR: CASE REPORT

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Case presentation: Male, 25 years old, with initial care in 2013 for visual loss on the left and asymptomatic hyperprolactinemia (437.7 ng/mL). History of transsphenoidal surgery in the same year for resection of macroprolactinoma with compression of optic chiasm (initially 3.1 x 2.2 x 2.6 cm). After surgery, he maintained a residual lesion of 1.0 x 0.6 x 0.6 cm, with resolution of visual complaint and no signs of hypopituitarism. Started cabergoline 1.5 mg/week, with dose progression up to 5 mg/week due to maintenance of hyperprolactinemia (>200 ng/mL). The possibility of macroprolactin was suggested, which was ruled out after laboratory examination. At follow-up, there was a progressive reduction of the pituitary lesion, with total regression in 2021, after 8 years of drug treatment, but with maintenance of hyperprolactinemia (>200 ng/mL) without associated symptoms or other laboratory changes (testosterone 522 ng/dL). Control echocardiography was performed, with absence of valve involvement related to the chronic use of cabergoline. The patient remains on dopamine agonist (cabergoline 5 mg/week), without complaints and without recurrence of the pituitary lesion for at least 2 years, but maintains increased serum prolactin levels (>200 ng/mL). **Discussion:** Hyperprolactinemia in men is defined as a serum value above 20 ng/mL. It may present clinically as hypogonadotropic hypogonadism (reduced libido, infertility, gynecomastia, or rarely galactorrhea), with symptoms that are usually proportional to prolactin levels, which did not occur in the case described, whose patient was always asymptomatic and with normal testosterone. One possibility would be the presence of macroprolactin, which has been ruled out. In addition, in this report, there was dissociation of tumor size with a drop in prolactin, because despite the use of cabergoline in progressive doses (with dosage up to 5 mg/week) and the disappearance on magnetic resonance imaging of the pituitary lesion, the patient maintained asymptomatic hyperprolactinemia. **Final comments:** The case reported shows an unusual situation of dissociation between prolactin levels, symptoms and size of the pituitary tumor. There is no justification in the literature for these findings nor ideal or adjuvant therapy. **Keywords:** hyperprolactinemia; hypogonadism; pituitary tumor.

AP-210 PITUITARY HYPERPLASIA ASSOCIATED WITH PRIMARY HYPOTHYROIDISM – CASE REPORT

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Introduction: Low levels of thyroid hormones result in the loss of negative feedback, leading to excessive secretion of thyrotropin-releasing hormone (TRH) by the hypothalamus and thyroid-stimulating hormone (TSH) by the pituitary gland. This continuous secretion, in an attempt to compensate for hormonal deficiency, can lead to abnormal pituitary growth and hyperplasia. **Case presentation:** A 37-year-old woman with a previous history of invasive ductal carcinoma of the left breast (CT2N0M0) was referred for endocrinological evaluation due to fatigue, weight gain, and a TSH level of 150 mIU/mL. Oncology screening requested a brain magnetic resonance imaging (MRI) scan, which revealed an expansive lesion in the sella turcica and suprasellar cistern measuring 12.5 x 10 x 15 mm with signs of hemorrhagic content and compression of the optic chiasm, suggestive of a pituitary adenoma, but metastasis to this region was also considered. Subsequent tests confirmed the diagnosis of primary hypothyroidism (HP) due to autoimmune disease. Clinical evaluation and the characteristics of the pituitary lesion indicated the possibility of pituitary hyperplasia due to HP. Therefore, a decision was made for conservative management and initiation of Levothyroxine 75 mcg/day with subsequent titration. A follow-up MRI was scheduled after 3 months, which showed evidence of progressive reduction in the lesion size to 8.5 x 10 x 15 mm. Due to the area of hemorrhage, a slower regression of the hyperplasia was observed. In the latest endocrinological evaluation, the patient presented with a TSH level of 0.52 mIU/mL and a free T4 level of 1.48 ng/dL and an extra reduction of pituitary image, reaffirming the hypothesis of pituitary hyperplasia and emphasizing that conservative treatment was the best option. **Discussion:** Despite recent advances in image, distinguishing between hyperplasia and pituitary adenoma can be challenging. However, as the treatments are significantly different, accurate identification is extremely important. The case brings a challenge differential diagnosis because the patient has a history of oncology disease and the image presents signs of apoplexy. **Conclusion:** The importance of endocrinological evaluation for sellar masses becomes evident, as it ensures accurate interpretation to avoid iatrogenic complications from ambiguous imaging findings. **Keywords:** pituitary hyperplasia; primary hypothyroidism; levothyroxine.

AP-211 PITUITARY METASTASIS FROM RENAL CARCINOMA: A CASE REPORT

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Case presentation: A 65-year-old male patient with panhypopituitarism presented with a sellar mass (SM) measuring 1.4 x 1.2 x 1.3 cm on magnetic resonance imaging (MRI). Due to elevated prolactin levels (130 ng/mL) without visual complaints or visual field changes, a clinical treatment approach was chosen using cabergoline plus replacement therapy with levothyroxine, testosterone, and prednisone. The patient's past medical history included surgeries for renal carcinoma (RC) ten years ago and a parietal meningioma five years ago. After three months of treatment, prolactin levels decreased (1.0 ng/mL), but the patient developed visual disturbances and significant headaches. Repeat MRI showed growth of SM, measuring 2.5 x 1.8 x 1.7 cm. Given the lack of tumor response to medical treatment, transsphenoidal surgery was performed. Intraoperatively, the lesion was bloody, fibrous, and adhered to the surrounding structures, making complete resection challenging. Biopsy results were consistent with a pituitary adenoma, and the patient's symptoms improved after surgery. However, three months later, the patient presented with more pronounced visual disturbances, and MRI revealed a lesion measuring 3.1 cm in its greatest extent. A second surgery was performed using an expanded endonasal approach, revealing a fibroelastic, bloody lesion without clear tissue planes, resulting in partial resection. The histopathological revealed clear cells arranged in a glandular pattern, which, in combination with the patient's history and the surgical appearance of the lesion, led to the diagnosis of metastatic renal carcinoma. The patient is currently undergoing chemotherapy and radiation therapy. **Discussion:** Sellar lesions are present in up to 20% of imaging studies or autopsies, with pituitary adenoma being the most common cause (91%). Pituitary metastasis (PM) are rare (<1%) when compared to other sellar lesions, with 23% originate from the kidneys. However, SM in patients with neoplasms indicate metastatic spread in over 65% of cases. The most common symptoms are headache (58%), fatigue (50%), and visual field changes (42%). The diagnosis occurs on average 95 months after the initial cancer diagnosis, and the patient with the longest survival lived for 33 years after the PM diagnosis. **Final comments:** Despite their rarity, it is important to consider PM as a differential diagnosis of SM, especially in patients with a history of malignancies, as timely diagnosis can improve survival. **Keywords:** pituitary metastasis; renal carcinoma; differential diagnosis.

AP-212 HYPONATREMIA AND PERICARDIAL EFFUSION AS MANIFESTATIONS OF ACQUIRED PANHYPOPITUITARISM: CASE REPORT

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Case presentation: A 60-year-old male patient, was brought to hospital care due to a history of disorientation and altered level of consciousness, leading to admission for further investigation. The patient reported having atrial fibrillation and pericardial effusion requiring pericardiocentesis three months prior. He also presented with fatigue, insomnia, emotional lability, and asthenia. Admission exams revealed severe hyponatremia, with a serum sodium level of 119 mg/dL. Additionally, thyroid function tests showed a TSH level of 4.0 mg/dL and a free T4 level of 0.39 mg/dL, suggestive of central hypothyroidism. Morning cortisol and serum total testosterone levels were measured, resulting in 2.4 ug/dL and 23.8 mg/dL, respectively. Subsequently, a MRI of the brain was performed, revealing a significantly reduced pituitary gland volume, with a suggestion of suprasellar cistern insinuation into the sella turcica, confirming an empty sella turcica syndrome. After initiating replacement therapy with levothyroxine 100 mcg/day, prednisone 7.5 mg/day, and testosterone, the patient experienced significant improvement in symptoms and general laboratory tests. Hypothyroidism was presumed to be the cause of the pericardial effusion. **Discussion:** Hypopituitarism refers to partial or complete deficiency of one or more pituitary hormones. It can be congenital or acquired as a result of diseases affecting the pituitary, parassellar structures, or hypothalamus. Symptoms vary depending on which cellular groups are affected. A detailed medical history, along with targeted clinical, laboratory, and imaging examinations, contribute to the diagnosis and likely etiology. Treatment depends on correcting the underlying cause. In cases where the causes cannot be corrected, hormone replacement therapy becomes necessary. **Final remarks:** The importance of valuing patients' clinical complaints becomes evident in this case, as there were several nonspecific long-standing complaints that ultimately led to major complications such as significant pericardial effusion and severe hyponatremia. Therefore, it is crucial to investigate hypothyroidism in patients who present with pericardial effusion without a defined cause. By implementing hormonal treatment to correct underlying disorders, aggressive measures like pericardiocentesis can be avoided. Additionally, the investigation of non-responsive sodium disorders should be considered, raising the possibility of central causes. **Keywords:** panhypopituitarism; hyponatremia; pericardial effusion.

AP-213 PROFILE OF ADRENAL LESIONS AND ASSOCIATION WITH METABOLIC SYNDROME IN A GROUP OF PATIENTS WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1

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Introduction: Multiple endocrine neoplasia type 1 (NEM-1) is an autosomal dominant inherited syndrome caused by germline mutations that predispose to the development of endocrine and non-endocrine tumors. Despite the known association between the presence of adrenal tumors and the syndrome, few studies in the literature describe the characteristics of these tumors and the metabolic profile of affected individuals. **Objective:** Describe the characteristics related to adrenal involvement and the metabolic profile of patients diagnosed with NEM-1. **Methods:** Cross-sectional study conducted, after approval in Ethics Committee, from the application of questionnaires, performance of laboratory tests and collection of secondary data from medical records of 98 patients diagnosed with multiple endocrine neoplasia type 1 followed in the neuroendocrinology service in a tertiary hospital. **Results:** Of the 98 patients registered in the database used, 65 underwent research for adrenal lesions and metabolic syndrome. Adrenal involvement was identified in 44.6% of cases (29/65), with bilateral tumor involvement and lesion > 40 mm in 24.1% and 6.8% of cases, respectively. Among the affected individuals, 100% had a diagnosis of primary hyperparathyroidism (PPHp), 72.4% had a pituitary tumor, and 68.9% had an enteropancreatic neuroendocrine tumor. 48.2 % (14/29) of patients with an adrenal lesion had the classic triad of NEM-1-related tumors. It was also found that 33.8% (22/65) of all patients analyzed and 37.9% (11/29) of individuals with adrenal lesions have a diagnosis for metabolic syndrome according to the criteria adopted by the American Heart Association. Analyzing the prevalence of adrenal lesions according to Body Mass Index, we observed that 44.8% (13/29) of patients with adrenal alterations were classified as obese (BMI > 30). **Conclusion:** A high prevalence of individuals affected by adrenal tumors and with bilateral lesions was observed when compared to other studies. On the other hand, individuals diagnosed with metabolic syndrome and obesity (according to BMI) represented a large proportion of individuals with adrenal tumors, which may indicate an association between these factors and the presence of lesions. Thus, further studies need to be conducted to detail a possible relationship between these factors. **Keywords:** multiple endocrine neoplasia type 1; adrenal lesions; metabolic syndrome.

AP-214 PITUITARY HYPERPLASIA MIMICKING ADENOMA IN A PATIENT WITH LONGSTANDING DECOMPENSATED PRIMARY HYPOTHYROIDISM: CASE REPORT

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Case report: Woman, 24 years old, seeks endocrinology in 2019 due to fatigue, hair loss, brittle nails and weight gain. He was on levothyroxine (LT4) 25 mcg/day. Tests with TSH > 150 mU/L and FT4: 0.16 ng/dL. Non-contrast-enhanced cranial tomography performed after a seizure showed an expansive pituitary formation of 1.7 x 1.5 cm. Adjusted dose of LT4 but patient evolved with irregular use of the medication. The following year, underwent magnetic resonance imaging (MRI) of sella turcica that suggested pituitary adenoma of 1.7 x 1.6 x 1.6 cm; in addition to prolactin > 200 ng/mL, TSH > 500 mIU/L, FT4 < 0.4 ng/dL; anti-TPO: 134 U/mL. The patient continued to undergo irregular treatment with LT4 100 mcg/day and cabergoline 1 mg/week, discontinuing treatment on her own. She evolved with drowsiness, paresthesias, myopathy with increased CPK, skin dryness, bradycardia, hypotension, general swelling, and galactorrhea, and was admitted to the Hospital where Puran T4 100 mcg/day and hydrocortisone were restarted. A new MRI was performed, which showed only pituitary hyperplasia. Normal visual campimetry. In laboratory tests, prolactin 243 ng/mL, TSH > 75 mIU/L and FT4: 0.38 ng/dL. After clinical stabilization was performed and after improvement, she was discharged for outpatient follow-up, with prescription of LT4 100 mcg/day. **Discussion:** Hyperprolactinemia is found in up to 40% of patients with primary hypothyroidism. In general, this is a slight elevation of prolactin levels, which normalize with levothyroxine replacement. However, in this case, there was a pronounced increase in prolactin secondary to hypothyroidism, since in the last MRI only pituitary hyperplasia and not adenoma was evidenced, as had been suggested in the first imaging studies. In the case reported, the early performance of imaging was a confounding factor, initially thinking that the patient had all 2 conditions (hypothyroidism and macroprolactinoma). Pituitary hyperplasia can be reversed with treatment of hypothyroidism, as well as normalization of prolactin levels. **Final comments:** Although poorly described, decompensated hypothyroidism may present with pronounced elevations of prolactin. Despite the possibility of coexistence of primary hypothyroidism and pituitary adenoma, this condition is rare and should be considered when prolactin levels remain elevated after normalization of thyroid function with the use of LT4. **Keywords:** pituitary hyperplasia; pituitary adenoma; hypothyroidism.

AP-215 THIRD CRANIAL NERVE PALSY AND ACUTE HYPOPITUITARISM SECONDARY TO PITUITARY MACROADENOMA APOPLEXY: CASE REPORT

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Case presentation: Male, 66 years old, admitted complaining of uncontrollable vomiting. On the third day of hospitalization, he developed right palpebral ptosis, diplopia and difficulty in moving his eyes. On examination, extraocular movements with limitation of adduction, infraversion and supraversion, right ptosis, pupil with regular border and photoreagent. Pituitary magnetic resonance imaging (MRI) showed pituitary macroadenoma measuring 2.5 x 2.2 x 1.8 cm with intralesional hemorrhagic infarction (apoplexy). Laboratory tests revealed: basal cortisol 1.6 mcg/mL, testosterone 7 ng/mL, LH 0.4 mIU/mL, TSH 1.99 IU/mL, free tetraiodothyronine (T4 L) 0.56 ng/mL, IGF-1 28 ng/mL, prolactin 1.7 ng/mL. Visual campimetry with predominantly superior temporal quadrantanthopsia in both eyes. After clinical compensation and appropriate hormone replacement, the patient was referred for surgical treatment. After transsphenoidal surgery, he evolved with regression of the 3rd nerve paralysis, in addition to reversal of hypogonadism (testosterone 397 ng/mL). He persisted with the use of prednisone 5 mg/day and levothyroxine 50 mcg/day until further tests were performed. **Discussion:** Sudden pituitary hemorrhage is called pituitary apoplexy. It manifests as a sudden, severe headache that may be accompanied by diplopia, loss of vision, or hypopituitarism. All pituitary hormone deficiencies can occur. Surgical decompression is performed in cases of severe or progressive impairment of vision or neurological symptoms, as described in this case. Hypopituitarism and visual changes may improve after surgical decompression. The patient in question had reversal of hypogonadism after surgical treatment and regression of visual complaints. He is being evaluated for future withdrawal of prednisone and levothyroxine. It is likely that the uncontrollable vomiting was a manifestation of adrenal insufficiency. **Final comments:** In patients with sudden ocular and neurological symptoms such as severe and excruciating headache, palpebral ptosis and diplopia, pituitary apoplexy should be a differential diagnosis given the morbidity that this condition causes. If it is not promptly diagnosed and treated, the patient may have important hormonal deficiencies that lead to the risk of death, such as adrenal insufficiency. **Keywords:** palsy; apoplexy; hypopituitarism.

AP-216 DOUBLE MUTATION FOR MULTIPLE ENDOCRINE NEOPLASIA ASSOCIATED WITH CONGENITAL ADRENAL HYPERPLASIA: CASE REPORT

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Introduction: Multiple endocrine neoplasms (MEN) are complex, autosomal dominant genetic syndromes. MEN1 is caused by a mutation in the MEN1 gene, having both endocrine and non-endocrine tumors. MEN2 is caused by a defect in the RET gene, forming tumors in specific tissues. CAH is a recessive genetic syndrome with enzymatic deficiencies in the synthesis of adrenal steroids. **Objective:** To report a case of double mutation for MEN associated with non-classical CAH. **Material and methods:** Female, nulliparous, referred to endocrinology in 2018, aged 33, with total testosterone: 78.4 ng/dL (14-76), free testosterone: 2.22 ng/dL (0.18-1.68), SDHEA: 361 ug/dL (45-270). She had menstrual irregularity and a family history of MEN2a. On examination, hisurtism in the chin and thigh roots, acne, androgenic alopecia, weight: 72.25 kg, BMI: 29.7, trichoepitheliomas and neurofibromas throughout the body. Abdominal CT: nodular image in the right adrenal, soft tissue density (1.9 x 3.1 cm), absolute whashout: 54.1% and relative: 29.9%, 17-α-OH-progesterone: 286 ng/dL, cortrosin (17-α-OH-progesterone) test: 1767 ng/dL, positive RET gene screening, calcitonin: < 2 pg/mL, screening for CMT, Cushing's syndrome, PAH and PHEO, including a screening scintigraphy of PHEO with MIBG, all normal. In 2021, he presented MRI of the sella turcica: elongated, median and paramedian formation on the left (1.0 x 0.5 cm), suggestive of pituitary adenoma, directing the investigation to MEN1: PTH: 447 pg/mL (11-67), CA: 10.16 mg/dL (8.8-11), IGF-1: 215 ng/mL (107-246), GH: 0.06 mcg/L, prolactin: 19.4 ng/mL, basal cortisol: 8.5 mcg/dL, MEN 1 gene research: positive with pathogenic variant IVS3 + G > T, non-obstructive bilateral renal microlithiasis on abdominal CT (2020) and normal BMD. Thyroid USG (2021): hypoechoic, oval, homogeneous nodule adjacent to the lower pole of the right thyroid lobe (2.2 x 1.5 x 0.8 cm), suggesting parathyroid hyperplasia/adenoma. Parathyroid scintigraphy: focal increased uptake in the projection of the lower portion of the right lobe. We opted for watchful waiting due to a non-hormone producing adrenal lesion, stable in the last two imaging tests and indication of prophylactic total thyroidectomy due to a positive RET gene and family history of aggressive CMT and pHPT approach. **Discussion and conclusion:** This case illustrates the association of three rare genetic syndromes with distinct clinical manifestations that pose challenges for the adequate and individualized management of the patient. **Keywords:** multiple endocrine neoplasia type 1; multiple endocrine neoplasia type 2; congenital adrenal hyperplasia.

AP-217 NO EVIDENCE OF PITUITARY MACROADENOMA ON IMAGING AFTER EIGHT YEARS OF USING A SOMATOSTATIN ANALOGUE FOR THE TREATMENT OF ACROMEGALY

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Case presentation: Female, 63 years old, admitted to the hospital in September 2014, with a report that 8 years ago she noticed an increase in the extremities and enlargement of the face. Diagnosis of systemic arterial hypertension (SAH) at age 58. During hospitalization, she was diagnosed with diabetes mellitus (DM). Hypothesis of acromegaly confirmed by measurement of growth hormone (GH): 57 ng/mL, insulin-like growth factor (IGF-1): 1,000 ng/mL. Magnetic resonance imaging (MRI) of the sella turcica showed an image suggestive of pituitary macroadenoma (1.8 x 1.0 x 1.9 cm). Patient refused surgical procedure and started somatostatin analogue (AS) – lanreotride 120 mg/1 once a month. As there was no significant reduction in GH and IGF-1 levels, it was associated with cabergoline 1.5 mg/week. Later, lanreotride was replaced by octreotide 30 mg/month due to availability of the medication. A new MRI was performed in 2021 with evidence of reduction of the macroadenoma to 1.2 x 0.6 cm. Presented a reduction of more than 50% in the IGF-1 values obtained at diagnosis (September 2021: IGF-1 = 413 ng/mL). In December 2022, she underwent a new MRI that did not show a pituitary lesion. In April 2023, a new reduction (but not normalization) of IGF-1 levels (376 ng/mL) was evidenced. The patient continues to use AS and has clinical manifestations of acromegaly under control. **Discussion:** Acromegaly is a systemic disease due to excessive production of GH and IGF-1 in adults. Pituitary adenomas account for 98% of the etiology of the disease. Transsphenoidal surgery is the therapy of choice, due to the probability of cure, which can reach approximately 50% for macroadenomas. Drug treatment can be started in cases where the adenoma is not completely resectable, the surgical prognosis is poor, or the surgery is refused. Some studies have shown a 20%-50% reduction in adenoma size in 30% of patients. In the present case, there was a total reduction of the macroadenoma with the use of AS over 08 years, a result not described in the literature. Despite the lack of evidence of a tumor on MRI, the patient persisted with a slight increase in IGF-1, and it was decided to maintain the AS. **Final comments:** The lack of tumor evidence on MRI after treatment with AS shows that this can be a successful treatment option for acromegaly, with results that can be similar to surgical treatment. **Keywords:** acromegaly; pituitary macroadenoma; somatostatin analogue.

AP-218 DEVELOPMENT OF PITUITARY APOPLEXY DURING CORONAVIRUS INFECTION IN A PATIENT WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE I: CASE REPORT

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Case presentation: Male, 53 years old, hypertensive and diabetic, diagnosed with acromegaly three years ago and multinodular goiter on thyroid ultrasound. Six months ago, he developed hypercalcemia (14.2 mg/dL) and PTH of 218 pg/mL, confirming primary hyperparathyroidism (PHTP); performed parathyroid scintigraphy with Sestamibi, with increased uptake in the upper left pole of the thyroid and in the projection of the anterior mediastinum, possibly corresponding to the ectopic parathyroid. A total thyroidectomy and parathyroidectomy were performed. After that, there was the appearance of cough without sputum, low fever and nasal congestion, configuring a mild flu syndrome in the patient, and an antigen test for Coronavirus (COVID-19) was requested, which was positive. During the condition, a convergent strabismus to the right and persistent headache appeared, and a pituitary magnetic resonance imaging was requested, which showed pituitary apoplexy (PA). A transsphenoidal surgery was then performed to access the pituitary gland, which was uneventful. **Discussion:** Multiple endocrine neoplasia type 1 (MEN-1) is characterized as an autosomal dominant genetic disorder, in which at least two of these glands are affected: anterior pituitary, parathyroid and enteropancreatic tissue. Among them, the most frequent endocrinopathy is PHPT, which is present in more than 90% of cases, and the presence of ectopic glands is rare. In addition, PA is rare and possibly fatal, coursing with pituitary hemorrhage; although the involvement of the central nervous system during SARS-CoV-2 infection has been documented, even leading to intracranial hemorrhagic complications, the association between COVID-19 infection and PA does not yet have decisive aspects, and may be an occasional finding. Generally, the presence of previous pituitary adenomas predisposes to the occurrence of pituitary bleeding, denoting great importance in diagnosing them. **Final comments:** In face of the rarity of the occurrence of PA during COVID-19 in a patient with MEN-1, it is of great value to have a description of the case, once the consequences of the disease can evolve to death. That said, attention should be paid to early diagnosis and prompt intervention. Therefore, it is important to pay attention to possible endocrine and neurological complications during the COVID-19 infection that may arise in the patient. **Keywords:** hypophysis; apoplexy; COVID-19.

AP-219 ERDHEIM-CHESTER DISEASE: A CASE REPORT

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Case presentation: A 53-year-old male, with a history of paresthesia in the right hemiface, recent memory loss, daily headache, and divergent strabismus in the right eye since 2021. He progressed with abnormal gait and worsening of facial paresthesia and visual acuity. In April 2022, a sinus biopsy was done and was suggestive of Erdheim-Chester disease (ECD) on immunohistochemistry. A BRAF V600E? mutation was present. After starting chemotherapy, an endocrinological evaluation was requested due to worsening of asthenia and lab tests that showed TSH 0.37 mcUI/mL (range, 0.35-4.94), FT4 0.58 ng/dL (range 0.7-1.48), cortisol 0.3 microg/dL (range, 6.0 a 18.4), LH 14.9 UI/L (up to 10,0), FSH 8.48 UI/L (up to 10,0), testosterone 58 ng/dL (VR 240 a 816), PTH 13 pg/mL (range, 15.0-68.3) with corrected calcium of 8.0 (VR 8.5-10.5). Thus, he was diagnosed with panhypopituitarism, with adrenal insufficiency, central hypothyroidism, secondary hypoparathyroidism, and hypogonadotropic hypogonadism. In September 2022, an MRI showed a cystic image measuring approximately 3.8 x 3.5 mm in the left anterolateral portion of the pituitary. The patient was treated with corticosteroids, calcium and calcitriol, levothyroxine and injectable testosterone, with partial improvement of symptoms**. Discussion:** ECD is a rare histiocytic disease. Approximately 1,000 cases have been reported in the literature, with a mean age of diagnosis at 53-years-old, predominantly affecting males. It is characterized by xanthogranulomatous infiltration of various tissues with a wide range of manifestations, including bone pain, cardiovascular involvement, exophthalmos, central diabetes insipidus (the most common endocrine manifestation), xanthelasma, interstitial lung disease, renal failure, central nervous system involvement, bilateral adrenal enlargement and testicular involvement. Endocrinopathies occur mainly due to histiocytic involvement of the hypothalamus, infundibular stalk and pituitary gland. Symptomatic individuals are treated with targeted therapies, such as BRAF V600E inhibitors and MEK inhibitors. Interferon alpha is a reasonable alternative treatment in resource limited areas. **Final comments:** The endocrinological involvement of ECD occurs in approximately 22% of the cases. It is extremely important to evaluate the pituitary axis, since the symptoms related to other systems may hide pituitary diseases. **Keywords:** Erdheim-Chester disease; hypopituitarism; pituitary diseases.

AP-220 CUSHING SYNDROME – HIGH DOSE DEXAMETHASONE SUPPRESSION TEST HELPS IN DIAGNOSIS?

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A.P.F.J., 45 years, female, hospitalized in HC/UFMG due to correction of a spontaneous unstable T12 fracture. History of diabetes, hypertension, amenorrhea and proximal muscular weakness. Moonface, acneic and thin skin, edema, diffuse bruises, muscular atrophy and weight loss were observed. Laboratorial findings suggested ACTH dependent Cushing syndrome (CS), harsh hypokalemic alkalosis. Persistent hypokalemia and consumptive condition suggested an ACTH secreting ectopic tumor. Functional tests showed a 15% cortisol suppression after dexamethasone 8 mg and a desmopressin stimulation test with basal cortisol of 31.3 mcg/dL, ΔACTH of 905 pg/mL (1,124% increase). Sella Turcica MRI showed a 7 x 6 mm pituitary tumor. Other image-based screenings were negative. The patient presented intestinal perforation of a diverticulum in the splenic angle, requiring surgical approach, confirming the severity of the case. As petrosal sinus sampling (IPSS) was not available on our public healthcare system, and after extensive discussion with the patient/family, adenomectomia was chosen. Anatomopathological and immunohistochemical findings were compatible with an ACTH secreting pituitary microadenoma. Cushing disease (CD) is a challenge in face of the high prevalence of pituitary incidental lesions on MRI and the low specificity and sensitivity of functional tests. In cortisol suppression test, reductions greater than 50% of the basal value are suggestive for CD. Some references defend that its usage on differential diagnosis is controversial and outdated. In this case, it did not help. Desmopressin does not stimulate ACTH and cortisol levels in most healthy individuals who do not harbor ACTH-secreting corticotroph tumors. An increase of 30% to 50% on ACTH and of 20% on cortisol levels suggest CNS tumor's origin, but almost 30% of ectopic tumors can also respond, making its specificity questionable. Furthermore, hypokalemic alkalosis is found in 10% of CS patients and in 74% to 90% of ACTH dependent CS and is related to severe hypercortisolism. However, these tests have imperfect specificity and clinical judgment added to the known prevalence of the disease became important. Endogenous CS is a rare condition with high morbidity and mortality. Unspecific signs and symptoms, variable phenotype and test limitations contribute in delaying the diagnosis. In addition, more sophisticated exams such as inferior IPSS and PET-Ga88 are still less available, making diagnosis even more challenging. **Keywords:** ACTH; Cushing syndrome; high dose dexamethasone suppression test.

AP-221 HEMANGIOBLASTOMA SELLAR: CASE REPORT

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Case presentation: Patient, male, 29 years old, previously healthy, reports onset of visual acuity change in the right temporal field about 4 years ago, without association with other symptoms, such as diplopia or headache, however, he only sought the emergency medical care 3 years ago when he had a tonic-clonic convulsive crisis. During the investigation, a cranial tomography (CT) was performed, which showed an expansive sellar formation measuring approximately 4.1 x 3.9 cm. To complement the investigation of the suprasellar tumor, tests of the hypothalamic-pituitary axis were requested, with no evidence of hypopituitarism. Due to alteration of the visual field and persistence of seizures, the patient underwent transcranial surgery in July 2022. According to the pathology evaluation, the specimen was compatible with epithelioid neoplasia with microscopic findings compatible with hemangioblastoma, due to the presence of endothelial cells and pericytes, in dense stroma of small vascular channels and another of neoplastic cells in the interstitium (stromal cells) lipidized. Three months after surgery, the patient was reassessed at the outpatient clinic and laboratory tests identified a thyrotrophic axis deficiency and hypogonadotropic hypogonadism, and hormone replacement therapy was initiated. In addition, complementary tests were requested to investigate the association with Von-Hippel Lindau disease. **Discussion:** Hemangioblastomas (HBL) are benign, highly vascularized tumors that most commonly arise in the posterior fossa, but can also be found in the spinal cord and retina. They may be sporadic or associated with Von-Hippel Lindau syndrome. However, hemangioblastomas originating in the sellar or suprasellar region are rare, especially in cases without association with VHL disease. The exam of choice for a diagnostic study is MRI, but the diagnosis is made through histopathology, in which the presence of vacuolated stromal cells with an exuberant capillary network is commonly observed. Regarding treatment, surgical resection is the first line of treatment for hemangioblastomas. **Final comments:** Suprasellar hemangioblastomas are rare and have a nonspecific presentation, which makes preoperative diagnosis challenging. Thus, the importance of correlation with the diagnosis of HBL in cases of highly vascularized suprasellar lesions should be noted. **Keywords:** neuroendocrinology; hemangioblastoma; von Hippel-Lindau disease.

AP-222 THYMOMA TYPE A AS A CAUSE OF ECTOPIC ACTH SECRETION

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Case presentation: Male patient, 19 years old, presented six months ago with lower limb edema, moon face, increased abdominal fat, proximal muscle weakness, broad purple striae on the abdomen and trunk and the appearance of ecchymosis. He was admitted to a tertiary hospital for an etiological investigation of Cushing' syndrome. He had external exams that showed urinary cortisol above that detectable by the method (>60.00 mcg/dL), significant elevation of ACTH (221.4 pg/mL) and severe hypokalemia 1.4 mmol/L. The patient had also been submitted to a high-dose dexamethasone suppression test, maintaining high serum cortisol (99.5 mcg/dL). The investigation continued with magnetic resonance imaging of the sella turcica, which showed no lesions. Chest tomography showed the presence of a mediastinal mass with multiple paratracheal lymph node enlargement. Biopsy and immunohistochemistry of the mediastinal lymph node were performed, with a report suggestive of type A thymoma. Neoadjuvant therapy with carboplatin and paclitaxel was chosen, and an attempt was made to clinically control the hypercortisolism with the administration of ketoconazole. **Discussion:** Thymomas are rare malignant neoplasms located in the anterior region of the mediastinum. The ectopic ACTH secretion syndrome (EAS) may be one of its paraneoplastic manifestations, with an incidence not well established in the literature. EAS corresponds to 5%-10% of the cases of ACTH-dependent Cushing's syndrome and patients usually present with a more severe hypercortisolism condition, due to the high levels of circulating ACTH, also presenting with more severe hypokalemia. On account of the greater clinical severity, it is essential to hastily diagnose the lesion producing ectopic ACTH secretion in order to establish the appropriate treatment. **Final comments:** Thymoma is a rare cause of EAS and its treatment is individualized, depending on the extent of the disease and the clinical status of the patient. Surgery is the choice, but preoperative evaluations are needed to determine potential extent and resectability. In case of metastatic disease, systemic therapy, radiotherapy or chemoradiotherapy may be indicated. While definitive treatment has not been established, control of hypercortisolism can be attempted through pharmacological therapy. **Keywords:** thymoma; ectopic ACTH secretion syndrome; Cushing's syndrome.

AP-223 CONSEQUENCES OF DELAYED DIAGNOSIS AND TREATMENT OF MACROPROLACTINOMA – CASE REPORT

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Case presentation: A 21-year-old Bolivian woman, medical student, presented herself with primary amenorrhea and progressive visual loss for the last three years. She was admitted to the endocrinology department of our hospital with a medical history of investigation of those symptoms in Bolivia. On radiological investigation, a head CT from April 2022 revealed a 40 x 34 x 32 mm solid-cystic tumor, with approximate volume of 22 mL in the site of the pituitary gland. As following assessment, they performed a transsphenoidal biopsy, whose histopathological examination revealed a pituitary adenoma. No laboratorial investigation was made. In this point, it was said to her that it was a benign lesion and no other additional treatment was necessary. About one year later, she realized that the visual loss was increasing, and came to Brazil to receive medical assistance, due to financial costs of carrying out this treatment in Bolivia. Laboratorial analysis was performed to determine tumor secretivity and also campimetry and a MRI of sella turcica were requested. We found a prolactin of 508,14 ng/ml and no other laboratorial abnormalities. She was not able to perform campimetry because of extensive loss of visual acuity, being considered legally blind. MRI showed the tumor compressing optic chiasm. We started treatment with cabergoline 0,5 mg daily, and the patient was referred to neurosurgery. After that, she had a slight improvement in visual field. **Discussion:** Prolactinomas are generally benign prolactin-secreting tumors and account for 40%-66% of all pituitary adenomas. The vast majority are microadenomas (diameter < 1cm) and suppress the hypothalamic-pituitary gonadal hormonal axis, while 10% are macroadenomas (≥1cm) and may cause additional mass effects due to size. Age prevalence varies widely, but they are commonly found in women during childbearing years, in part due to development of menstrual irregularities. Despite their benign nature, if diagnosis is delayed, serious consequences can affect these patients. It is well known the effectiveness of DAs on prolactinomas, reducing tumor size and improving visual prognosis of patients who underwent this disease. **Final comments:** This case report shows the importance of early diagnosis and appropriate treatment of pituitary tumors. If our patient had received the diagnosis of prolactinoma three years ago when symptoms appeared and had taken dopaminergic agonists, her journey could have been different. **Keywords:** prolactinoma; delayed diagnosis; pituitary adenoma.

AP-224 HYPOPHYSITIS, A RARE DISEASE: REPORT OF FOUR CASES

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Case presentation: We report four patients with age at diagnosis ranging from 3 to 17 years, presenting with diabetes insipidus as the first manifestation. Patient 1: male, 15 years old, presented with polyuria and decreased libido. Exams: LH: 0.44 mUI/mL; FSH: 0.39 mUI/mL; testosterone < 10 ng/dL and MRI of the sella turcica showing formation of undefined contour in infundibulum measuring 1.2 x 0.9 x 0.7 cm. Patient 2: male, was diagnosed with Langerhans' cell histiocytosis through histopathological examination of palate lesion. At 3 years of age, he presented diabetes insipidus and GH deficiency (clonidine stimulation test: baseline: 2.4 mcg/L; 30 min: 1.2 mcg/L; 60 min: 2.2 mcg/L; 90 min: 1.8 mcg/L). MRI showed reduced pituitary dimensions. Patient 3: male, 17 years old, presented with acute disabling headache with polyuria. Exams showed panhypopituitarism TSH: 0.28 µUI/mL, free T4: 0.39 ng/mL, FSH: 0.42 mUI/mL, LH < 0.20 mUi/mL, testosterone: 7 ng/dL, ACTH: 5.0 pg/mL, basal cortisol: 1.3 mcg/dL and IGF-1:150 ng/mL. MRI showed enlarged pituitary measuring 2.0 x 1.4 cm and pituitary rod thickening, compatible with infundibulum-hypophysitis. Patient 4: 17 years old, female, presented amenorrhea and polyuria. Exams: FSH: 0.28 mUI/mL, LH: 0.23 mUI/mL and E2: 15 pg/mL. The initial 1.4 x 0.9 cm lesion in infundibular region disappeared on subsequent MRI. **Discussion:** Hypophysitis is a rare inflammation of the pituitary gland, leading to hypopituitarism. Etiologically, it can be primary or secondary to sellar and parasellar lesions, medications and systemic diseases. As for the primary causes the lymphocytic variant being the most common, accounting for about 68%. Patients 1, 3 and 4 reported here were left with a presumptive diagnosis of lymphocytic hypophysitis, considering the impossibility of histopathological diagnosis and good clinical evolution with conservative treatment. Among the secondary causes is Langerhans cell histiocytosis, which is a neoplastic disorder with an incidence of 1 to 2 cases per million. The radiological findings of hypophysitis are variable, the most common being pituitary enlargement and pituitary rod thickening. Treatment is symptomatic relief of the mass effect and replacement of hormonal deficits. The second line of treatment considers the use of immunosuppressants or radiation therapy. **Final Comment:** Hypophysitis is a rare and underdiagnosed condition. It is important to exclude differential diagnosis and early treatment aiming to reduce disability and morbidity of the disease. **Keywords:** hypophysitis; diabetes insipidus; hypopituitarism.

AP-225 SEVERE HYPERCORTISOLISM ASSOCIATED TO A HIDDEN ECTOPIC ACTH PRODUCTION: A CASE REPORT

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Clinical case: A 51-year-old man, recently diagnosed with DM, hypertension and dyslipidemia, complained of edema in the lower limbs associated with severe proximal muscle weakness starting four weeks before the first evaluation. Laboratory propedeutics revealed severe hypokalemia with potassium of 2.0 mmol/L (VR: 3.5-5.1), plasma free cortisol of 80.7 mg/dL (LR: 3.7-19.4) and ACTH 259 pg/mL (LR: <46). Hypercortisolism was confirmed during hospitalization, when investigation for Cushing's syndrome was performed and showed urinary cortisol/24 hours of 346 mcg (VR: 4.3-176), SDHEA 270 mcg/dL (VR: 80-560), nighttime serum cortisol of 19.0 mg/dL and baseline ACTH of 186 pg/mL, confirming ACTH-dependent hypercortisolism. Patient interceded with sepsis due to a bacterial pneumonia. The hypokalemia was refractory to oral and venous potassium replacement, and was associated with metabolic alkalosis and hypomagnesemia. MRI of the sella turcica showed no pituitary adenoma, and initial images of the neck, chest, and abdomen showed no lesions suggestive of neoplasms. The main diagnostic hypothesis was ectopic ACTH syndrome (EACS), without identification of the producing tumor. Ketoconazole was titrated to a dose of 1,200 mg/day and after resolution of the infectious condition, bilateral adrenalectomy was performed. In twelve months of follow up, new image screening was performed including PET- DOTATATE, and the source of ACTH's production remains hidden. **Discussion:** Cushing's syndrome is a rare entity with high morbidity and mortality. Among the ACTH-dependent causes, SAE accounts for 10%-20% of cases and is associated with a variety of extra pituitary tumors. Not rarely, the tumor responsible for SAE may remain occult or manifest itself years after diagnosis. The syndrome is slightly more common in males, cortisol levels are usually higher than in Cushing's disease, and hypokalemia is present in at least 70% of cases. **Conclusion:** This case report shows the importance of recognizing ectopic ACTH secretion in a patient with severe hypercortisolism, and exposes the difficulties in diagnosis, detection of the ectopic producing focus, and management of this pathology. In cases of SAE without identification of the tumor, long-term follow-up is essential. **Keywords:** hypercortisolism; ectopic ACTH; hypokalemia.

AP-226 SCREENING FOR VON-HIPPEL LINDAU SYNDROME (VHL): CLINIC AND GENETIC ASPECTS IN INDIVIDUALS AT RISK

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Introduction: VHL is an autosomal dominant inherited syndrome caused by germline mutations in the *VHL* gene, which contains 3 exons, with the highest frequency observed in exons 1 and 2. Cerebellar hemangioblastomas, pheochromocytoma, and renal tumors are the neoplasms that make up the syndrome. Screening for mutations in individuals at risk provides an early diagnosis for the offspring. **Objective:** This study aims to describe the clinical aspects and genetic findings of individuals screened for VHL mutation who had a family history and/or clinical suspicion. **Methods:** Cross-sectional study, approved by the CEP. Included were individuals with pheochromocytoma (PHE) with a lesion ≥ 5 cm, PHE in young people, individuals with clinical manifestations of VHL, and their first-degree relatives. A clinical questionnaire was prepared, and genetic sequencing was performed using the Sanger technique. **Results:** 14 individuals were evaluated [04 FEO, 08 Family 1 (F1) and Family 02 (F2)], 8 women with a mean age of 32.4 years (ranging from 19 to 67 years) with genetic testing, and 10 (71.4%) were positive for mutation. Among these individuals, all have mutations in *exon 2* of the *VHL* gene (mutation at position 650 T>G and deletion at position 235). Among the patients who were positive (F1), 07 are siblings, have no clinical diagnosis, and are descendants of an individual (the index case) with hemangioblastomas and renal tumors who had a second mutation, located in *exon 1* of the *VHL* gene (G>R at position 437). Among these F1 relatives, only 4 of the 7 descendants of the index case in question have the alteration in *exon 1*. Another 2 F2 participants are siblings, both of whom had clinically suggestive VHL, one of them being positive for the mutation in *exon 2* (mutation at position 650 T>G and deletion at position 235), cerebellar hemangioblastoma, and tumors in the pituitary gland, adrenal gland, and pancreas, while the second is awaiting sequencing results and underwent surgery to remove 2 cerebellar hemangiomas. Among the 4 individuals with FEO, only 01 (a female, 67 years old) had the same mutation in *exon 2*. **Conclusion:** Our findings reinforce the importance of genetic screening for endocrine tumor-associated syndromes in our setting. We identified similar mutations in *exon 2* in individuals belonging to 2 distinct families. The same mutation was found in a patient with apparently isolated FEO when considering screening for larger lesions. **Keywords:** von-Hippel Lindau syndrome; genetic sequencing; familiar screening.

AP-227 SCREENING FOR NEUROENDOCRINE TUMORS (NETS) IN RELATIVES OF PATIENTS WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 (MEN-1)

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Introduction: MEN-1 is an autosomal dominant pattern syndrome, in which mutations in the MEN1 gene propitiate the appearance of tumors in endocrine and non-endocrine glands. Thus, it is essential that relatives of individuals diagnosed with MEN-1 understand the clinical manifestations of this condition, aiming at early diagnosis. **Objective:** To demonstrate the main signs and symptoms related to neuroendocrine tumors in MEN-1 in relatives of patients affected by this syndrome. **Methods:** Cross-sectional study conducted after the approval of the ethics committee in 2022, with 86 relatives of patients followed by MEN-1 in a neuroendocrinology service of a tertiary hospital through genetic testing, collection of secondary data from medical records and questionnaire about the existence of signs and symptoms related to MEN-1. **Results:** In a group of 86 relatives of patients with MEN-1, 85 were eligible, 56 were women and 29 were men. From this population, 78 individuals were submitted to genetic tests, of which 75 presented mutations indicative of MEN-1 and 3 are awaiting results. Furthermore, from the analyzed group, 7 individuals had already had surgeries for the removal of NETs in pancreas, pituitary gland, mediastinum, and spleen. It is noteworthy that many individuals in the group analyzed have signs and symptoms indicative of NETs in the gastrointestinal tract or pituitary gland, in addition to those indicative of hyperparathyroidism. Of the clinical manifestations presented by the patients suggestive of NETs in the gastrointestinal tract, 17.6% presented with heartburn, 10.5% with upper digestive hemorrhage, 45.9% with epigastralgia, and 22.4% with chronic diarrhea. Of the signs and symptoms related to NETs in the pituitary gland, 50.6% had headache, 18.9% visual field alterations, 29.4% galactorrhea, 5.9% foveal loss, 4.7% clinically suggestive of acromegaly. Furthermore, of the clinical manifestations pointing to primary hyperparathyroidism, 54.1% presented urolithiasis, 8.2% polyuria, 36.5% osteoporosis, and 15.3% fragility fractures. **Conclusion:** Through an adequate anamnesis, it was possible to attest to the clinical signs and symptoms related to MEN-1 in the relatives of patients with the syndrome, mainly represented by headache, urolithiasis, and epigastralgia, symptoms that are often neglected by these individuals, which reinforces the importance of clinical screening to promote early diagnosis and genetic sequencing for the detection of mutations. **Keywords:** neuroendocrine tumors; clinical manifestations; genetic tests.

AP-228 PATTERN OF TUMORS IN PATIENTS WITH CLINICAL DIAGNOSIS OF MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 (MEN-1)

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Introduction: MEN-1 is a genetic condition of autosomal dominant inheritance caused by germline mutations in the MEN1 gene that lead to the appearance of endocrine and non-endocrine tumors. Thus, it is essential to understand the relationship of the tumors that manifest in patients based on the type of mutation they have. **Objective:** To relate the pattern of tumors in patients with MEN-1 to the respective mutation carried. **Methods:** After ethics committee approval in 2022, a cross-sectional study was conducted with a group of 94 patients over 18 years old with a clinical diagnosis of MEN-1 in a neuroendocrinology outpatient clinic in a tertiary care hospital, who underwent genetic study and subsequent rechecking of their respective tests. In addition, we used secondary data collection in medical records and adequate anamnesis in the search for signs and symptoms. **Results:** Of the 94 patients registered in the database, 72 were suitable for the study. Of these 72 individuals, 27 (37.5%) are male, while 45 (62.5%) are female, aged between 19 and 75 years. Of the study population, 59 (81.9%) individuals have a mutation in exon 3 for the MEN1 gene, while 13 (18.1%) the mutation was not identified by the Sanger technique. Of the patients with exon 3 mutation, 52 (88.1%) had parathyroid tumor, 23 (39%) for pancreas, 33 (55.9%) for pituitary and 10 16.9%) for adrenal. Of the 13 patients with unknown mutation, 11 (84.6%) had parathyroid tumor, 4 (30.8%) pancreas tumor, 9 (69.2%) pituitary tumor and 1 (7.7%) adrenal tumor. **Conclusion:** The importance of an adequate anamnesis emphasizing the clinical signs and symptoms to patients with MEN-1 is indisputable; however, screening by genetic testing not only allows the identification of which exon of the MEN1 gene had the mutation, but also helps in the early prevention and treatment of its morbidities. **Keywords:** genetic condition; tumors; mutation.

AP-229 KALLMANN SYNDROME IN THE THIRD DECADE OF LIFE: CASE REPORT

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A 28-year-old male patient consulted an endocrinologist for testosterone replacement due to hypogonadotropic hypogonadism (HH). At the age of 17 due to short stature, he underwent GH replacement for 2 years with an increase in height of 17 cm (from 1.55 m to 1.72 m). At the age of 21, he began the investigation of hypogonadism due to a high-pitched voice, lack of hair growth and development of the genitals and confirmed the diagnosis (total testosterone 35.5 ng/dL; FSH < 0.3 mUI/mL; LH 4.6 mUI/mL; TSH 1.51 µUI/mL; cortisol 10.7 µg/dL; GH 2.75 mcg/L; IGF1 357 ng/mL; karyotype 46XY; scrotum ultrasound with small testicles, spermogram: azoospermia). He remained unaccompanied until he was 28 years old and during the current anamnesis, a condition of anosmia was evidenced with a history of several consultations with an otorhinolaryngologist due to this complaint. The endocrinologist, faced with this condition, requested MRI of the olfactory bulbs and sella turcica, which showed hypoplasia of the first pair of cranial nerves (olfactory). Current exams: FSH 1.39 mUI/mL; LH 1.10 mIU/mL; total testosterone 13.18 ng/dL; SHBG 53.8 nmol/L. The main hypothesis is Kallmann syndrome (KS). Patient currently awaits results of current laboratory tests to start testosterone replacement. KS is a genetic condition, X-linked or autosomal dominant, limited to males, which is characterized by an abnormality in the migration of the neurons that produce GnRH and of the neurons that form the olfactory nerves, resulting in impaired secretion of gonadotropin by the hypothalamus associated with anosmia or hyposmia. The clinical picture is translated by HH, leading to gametogenic and sexual steroid failure, with incomplete pubertal maturation as in the case of the patient. Generally, the other pituitary hormones are unchanged and, in most cases, exogenous administration of GnRH increases FSH and LH. Regarding anosmia, one should first exclude airflow obstructions or inflammatory processes, requiring imaging tests to rule out masses in the hypothalamic-pituitary region, as well as to show abnormalities of the olfactory apparatus through brain magnetic resonance imaging. Early diagnosis allows multidisciplinary clinical follow-up, which is essential to minimize possible physical and psychosocial effects of KS. Adequate hormone replacement and supportive measures for anosmia are essential to avoid long-term complications, both in terms of anosmia and loss of bone mass and infertility. **Keywords:** Kallmann; anosmia; hypogonadotropic hypogonadism.

AP-230 USE OF ARIPIPRAZOLE IN PSYCHOSIS CAUSED BY CABERGOLINE IN PATIENTS WITH GIANT PROLACTINOMA

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Case presentation: A 29-years-old man has been under endocrinology follow-up since the age of 22 for a giant prolactinoma (initial lesion size: 8.1 x 6.0 x 12 cm and initial prolactin (PRL): >300,000 ng/mL). Six years after the diagnosis, while on cabergoline (maximum dose 3.5 mg/week), he started experiencing episodes of panic attacks lasting seconds to minutes, which resolved without medication. Initially, the episodes were sporadic, but they started occurring daily, significantly impacting his quality of life. As the lesion had decreased in size and PRL levels were declining (PRL after dilution: 7,220 ng/mL), the cabergoline (CAB) dose was gradually reduced to 1 mg/week (at that time, PRL post-dilution: 9,500 ng/mL). However, the patient's symptoms persisted. As the patient was already under psychiatric care, considering the persistence of the condition, it was decided to initiate therapy with aripiprazole 2.5 mg/day. Since then, the patient has progressed without new crises, and PRL levels have remained stable. **Discussion:** The side effects of dopamine agonists related to mood disorders (psychosis, anxiety, depression) are rare, but an association between CAB and impulse control disorder has been identified. Psychiatric symptoms should be actively assessed before and during treatment. Aripiprazole is a partial agonist of the D2 receptor and has a neutral effect on PRL levels, and it may even lead to a reduction in PRL levels. It has been the antipsychotic of choice for managing psychotropic-induced hyperprolactinemia and has been used as monotherapy for managing microprolactinomas in patients with dopaminergic agonist-related psychosis. In the present case, since it involves a giant prolactinoma, maintaining CAB therapy was necessary, and aripiprazole has proven to be a safe antipsychotic therapy without impairing tumor progression. **Considerations:** Prolactinoma coinciding with psychosis presents a therapeutic challenge. Aripiprazole does not alter prolactin levels and helps to control the psychosis. **Keywords:** prolactinoma; psychosis; aripiprazole.

AP-231 FAHR SYNDROME, A CASE REPORT

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Case presentation: A 76-year-old female patient went to the Hospital Emergency Room complaining of a secretive cough for 3 days and a single seizure. On admission, she had dysarthria and reduced strength globally, worse in the left side. She reported arterial hypertension, using losartan 100 mg/day, in addition to carbamazepine 600 mg/day, but family members did not know the time of use and consulted with a neurologist. With the hypothesis of stroke, she performed a non-contrast-enhanced CT of the head, which did not show active and/or acute bleeding, but rather gross calcifications in the cerebellar dentate nuclei, basal nuclei and coronal radiata bilaterally, suggesting Fahr's syndrome. During the hospitalization period, the patient maintained a disorientation and overall reduction in strength, with no new episodes of seizures. On her 9th day of hospitalization, she presented clinical worsening with lowered level of consciousness and growth in urine culture of *Acinobacter baumani* Complex sensitive to piperacillin + tazobactam, which was started. Skin lesions with reddish, scaly plaques also appeared on the face, abdomen and back of the thighs, diagnosed as carbamazepine-induced pharmacodermia. On the 12th day, the evolution worsened, with septic shock, requiring transfer to the Intensive Care Unit. Where, despite the measures implemented, she evolved to death. **Discussion:** The neurodegenerative pathology described in the clinical case is rare, with a prevalence of 1/1,000,000. It may or may not be related to a hereditary factor. The most common cause being secondary to post-surgical hypoparathyroidism. It is evidenced in cranial imaging exams by bilateral and symmetric calcium deposits/calcifications in the basal ganglia and other brain areas. Just like the ones the patient had. Clinically, it can start between the ages of 20 and 60 years, causing movement disorders and, sometimes, cognitive impairment, parkinsonism, epileptic seizures and psychiatric disorders. There is no specific treatment that limits progression, therefore symptomatic support is adopted, with possible identification of reversible underlying causes. The prognosis is reserved, evolving to fatality in most cases. **Final comments:** In view of the few reported cases of this pathology, even considering the etiology of this case, it demonstrates the importance of this report. In addition to the relevance of considering it as a differential diagnosis, given its limited treatment and reserved prognosis. **Keywords:** Fahr's syndrome; neurodegenerative pathology; brain calcifications.

AP-232 AUTOIMMUNE THYROID DISEASE OVERLAPPING WITH A THYROTROPINOMA

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Case report: Female, started follow-up with endocrinology at 17 years old due to primary amenorrhea caused by hypogonadotropic hypogonadism associated with a 4.1 x 3.8 x 3.2 cm pituitary lesion, bitemporal hemianopsia, and hyperprolactinemia (110 ng/mL). She was on levothyroxine 50 mcg and had TSH 30.88 mIU/mL and free T4 0.79 ng/mL (normal 0.54-1.24 ng/mL). Thyroid FNA showed lymphocytic thyroiditis. The presentation was interpreted as primary hypothyroidism associated with pseudoprolactinoma, and after resection, immunohistochemistry of the lesion was consistent with a pituitary adenoma producing TSH and prolactin. After resection, there was a small decrease in TSH levels (22.8 mIU/mL), with free T4 of 1.57 ng/mL and total T3 of 142 ng/dL (normal: 60.0-215.0 ng/dL) on levothyroxine 75 mcg. Follow-up pituitary MRI showed a residual lesion measuring 1.6 x 0.9 cm. Nine years after surgical resection, she exhibited elevated thyroid hormone levels, with free T4 of 1.47 ng/mL (normal: 0.5-1.8), total T3 of 423 ng/mL (normal: 70-215), and TRAb 2.48 ng/dL (Reactive > 1.75), without TSH suppression (1.463 mIU/mL – normal: 0.3-4.5). The most recent MRI did not show an increase in the lesion compared to the first postoperative year. The hypothesis was raised that the initial hypothyroidism had been caused by blocking antibodies, and that there was currently a recurrence of thyroiditis due to activating TRAb, as well as a possible hormonal recurrence of the thyrotropinoma. Therapy was initiated with methimazole and octreotide, resulting in decreased TRAb levels and normalization of thyroid function. **Discussion:** TSH elevation can occur in both primary hypothyroidism of autoimmune etiology and thyrotropinomas, with primary hypothyroidism being the most common. Autoantibodies can be stimulatory or blocking. Blocking TRAbs (antibodies against the TSH receptor) are seen in less than 10% of cases of Hashimoto's thyroiditis and, more rarely, in Graves' disease. A shift in the predominant type of TRAb can occur, leading them to evolve from hypothyroidism to hyperthyroidism. The present case drew attention to the concurrent recurrence of thyrotropinoma because there was no TSH suppression during hyperthyroidism. **Conclusion:** We presented a case of thyroid autoimmunity overlapping with a thyrotropinoma to emphasize to specialists that a high level of suspicion is crucial for obtaining this diagnosis. **Keywords:** TSH receptor blocking antibodies; thyrotropinoma; autoimmune thyroid disease.

AP-233 ASSESSMENT OF PHYSICAL PERFORMANCE IN PATIENTS WITH ACROMEGALY

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Introduction: Patients with acromegaly exhibit changes in body composition, characterized by increased skeletal muscle mass and reduced body fat. It is believed that growth hormone (GH) exerts its action on skeletal muscle directly and indirectly through IGF-I. However, the impact of GH on muscle strength and performance remains uncertain. It is speculated that, despite GH-induced hypertrophy, prolonged exposure to excessive hormone levels may lead to damage to type 1 muscle fibers and result in a decline in their endurance. This suggests that there may be alterations in physical performance due to compromised strength and skeletal muscle function, which may not necessarily correlate with overall lean body mass. **Objective:** To evaluate the physical performance of patients with acromegaly. **Patients and methods:** Cross-sectional and observational study with 51 patients under clinical follow-up in a reference service in southern Brazil, after approval by the hospital's ethics committee (Assent 4.973.254). Patients were submitted to a physical evaluation to measure strength through the handgrip and sit-to-stand tests. Dual-energy X-ray absorptiometry (DXA) was used to quantify muscle mass. Physical performance was measured by Gait Speed, the Short Physical Performance Battery (SPPB), and the Timed-Up and Go (TUG) tests. **Results:** Out of the 51 patients, 47.05% were female, with a mean age of 55.82 years ± 11.59. Nearly 64.7% of the total sample demonstrated either remission or reasonable control of acromegaly. The sit-to-stand test was altered in 49.01% of the patients. There were performance changes in the gait speed test in 29.41% (15) and the SPPB test in 31.37% (17), but it was not significant in the TUG test, indicating a statistically significant correlation between alterations in the sit-to-stand test with the gait speed test and with the SPPB test (Fischer's exact test, p-value < 0.000). **Conclusion:** Despite the expected increase in lean body mass in acromegaly, these patients may present impairment in their physical performance that does not reflect adequate muscle function. **Keywords:** acromegaly; physical performance; sit-to-stand test.

AP-234 CORRELATION BETWEEN NUTRIENT INTAKE AND ASSESSMENT OF MUSCULAR STRENGTH AND PHYSICAL PERFORMANCE IN PATIENTS WITH ACROMEGALY

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Introduction: Acromegaly is a chronic, rare, and progressive disease caused by a pituitary adenoma that secretes growth hormone (GH), resulting in elevated serum GH levels and contributing to increased insulin-like growth factor 1 (IGF-1). These patients exhibit reduced body fat and increased skeletal muscle mass but present weakness in proximal muscles. Certain nutrients play a crucial role in muscle mass and strength development, and explore the relationship between nutrient intake and physical strength is important in the context of this disease. **Objective:** To evaluate the correlation between nutrient intake in patients with acromegaly and changes in physical performance tests. **Methods:** This study was conducted as an observational, cross-sectional study involving 34 patients with acromegaly, including 21 females and 13 males. Among them, 30 patients were Caucasian (88.2%), and 4 were black (11.8%). The patients were evaluated at an outpatient service in Curitiba. Dietary patterns were assessed using a validated Food Frequency Questionnaire (FFQ). Additionally, physical performance was measured using hand grip strength (HGS), gait speed test (GST), and the Short Physical Performance Battery (SPPB) to observe muscle strength alterations. Spearman's correlation test was employed to assess statistical significance. **Results:** Among the 34 patients, 61.8% were females and 38.2% were males, with a mean age of 54.5 ± 12.37. Correlation analysis between physical tests and nutrient intake revealed a positive correlation between HGS and lipid intake ($p = 0.03$), potassium intake ($p = 0.03$), and vitamin C intake ($p = 0.02$). GST showed a positive correlation with protein intake ($p = 0.02$) and iron intake ($p = 0.02$). Finally, when evaluating SPPB, a significant correlation was found with protein intake ($p = 0.02$), indicating that lower physical performance was associated with poorer intake of the aforementioned nutrients. **Conclusion:** The nutrients investigated in this study play a crucial role in muscle mass development and, consequently, physical performance. The present study demonstrated that lower intake of proteins, iron, potassium, vitamin C, and lipids was associated with poorer performance in HGS, SPPB, and gait speed tests. Acromegaly can significantly impact muscular functionality, therefore, paying attention to nutrient intake in correlation with physical performance can enhance strength and physical performance in these patients. **Keywords:** acromegaly; muscle mass; physical strength.

AP-235 CORRELATION BETWEEN NUTRIENT INTAKE AND BONE QUALITY IN PATIENTS WITH ACROMEGALY

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Introduction: Acromegaly is a rare chronic disease caused by a pituitary adenoma that secretes growth hormone (GH), resulting in elevated serum GH levels and favoring the increase of insulin-like growth factor 1 (IGF-1). These patients exhibit alterations in body structure, including changes in fat mass, muscle mass, and bone mass. Patients with acromegaly present reduced trabecular bone score (TBS) and may also experience alterations in bone mineral density (BMD). Certain nutrients play a crucial role in bone health, and exploring their relationship is important in the context of this disease. **Objective:** To evaluate the correlation between nutrient intake in patients with acromegaly and bone quality. **Methods:** This study was conducted as an observational, cross-sectional study involving 34 patients with acromegaly, including 21 females and 13 males. Among them, 30 patients were Caucasian (88.2%), and 4 were Black (11.8%). Dietary patterns were assessed using a validated Food Frequency Questionnaire (FFQ). Additionally, bone mineral density (BMD) was evaluated using dual-energy X-ray absorptiometry (DXA), and TBS calculation was performed. Spearman's correlation test was employed to assess statistical significance. **Results:** Among the 34 patients, 61.8% were females and 38.2% were males, with a mean age of 54.5 ± 12.37. When correlating TBS, a positive correlation was found with vitamin C intake ($p = 0.02$). When evaluating BMD, the total femur, femoral neck, and spine showed a positive correlation with the micronutrient potassium. In other words, lower BMD at these sites was associated with lower potassium intake. **Conclusion:** Studies have shown that adequate vitamin C intake is associated with lower bone loss, and potassium is a micronutrient of great importance in bone formation. The present analysis demonstrated that lower intake of vitamin C and potassium was associated with poorer bone quality in patients with acromegaly. Acromegaly can contribute to an imbalance in bone mass, and therefore, consuming the appropriate nutrients could promote quality of life and delay the onset of comorbidities associated with the disease. **Keywords:** acromegaly; bone mass; mineral bone density.

AP-236 PITUITARY CARCINOMA – CASE REPORT

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Case presentation: Male, 33 years old, with a prolactinoma diagnosed in 2020 with prolactin level at diagnosis of 2,478 ng/mL. He presented resistance to the dopaminergic agonist observed by the tumor growth despite the regular use of cabergoline in adequate doses. Magnetic resonance imaging evidences a 38.9 x 27.7 x 26.4 mm (CC x LL x AP) lesion. He then underwent transsphenoidal surgery, with only partial resection of the lesion due to adherence in the upper portion of the tumor. Immunohistochemical analysis confirmed positivity for Prolactin and demonstrated a KI67 of 30%. Due to the presence of tumor remnants in the sellar region, 30 sessions of 1.8 Gy of radiotherapy were performed in August 2021, with almost total regression of the tumor volume. After radiotherapy, prolactin levels remained high, and the dose of Cabergoline was adjusted to a dose of 2.0 mg/day. In December 2022, an MRI was performed, which revealed areas of contrast impregnation in the cervical, thoracic and lumbar spine, suggesting metastatic implants, confirmed by the presence of tumor cells in the CSF and by pathology and biopsy of a spinal cord lesion compatible with a pituitary adenoma. In March 2023, he underwent neuraxial radiotherapy followed by chemotherapy with temozolamide (TMZ) 200 mg/m^2 5 days a month with an initial forecast of 6 cycles. **Discussion:** Pituitary carcinomas are rare and differ from pituitary adenomas only by the presence of distant metastases. In the case presented, we observed a tumor with invasive characteristics and high Ki67. Although most prolactinomas are benign tumors with excellent response to pharmacological treatment with cabergoline, they are also the most common form of presentation of pituitary carcinomas. The lack of clinical response to pharmacological treatment, high Ki67 and invasive pattern were warning factors for this diagnosis in the case presented. Because it is a rare disease, we have little data on the therapeutic sequence, which consensually has radiotherapy and temozolamide as the first line. **Final comments:** Pituitary carcinoma is a rare disease with few studies determining the best therapy, however temozolamide presents itself as the first line of chemotherapy treatment for the situation. However, if there is no satisfactory response to its use, alternative therapeutic strategies become necessary. In this context, immune checkpoint inhibitors have emerged as a promising second-line therapeutic option. **Keywords:** pituitary carcinomas; temozolamide; prolactinomas.

AP-237 FUNCTIONING GONADOTROPINOMA IN MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 – A CASE REPORT

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Case presentation: A 33-year-old female patient, diagnosed with multiple endocrine neoplasia type 1 (MEN-1), as she had a history of primary hyperparathyroidism in 2015 (PTH: 123.2 pg/mL, total Ca: 12 mg/dL; phosphorus: 2.1 mg/dL) and pancreatic gastrinoma in 2019, treated with surgeries of total parathyroidectomy with implant in forearm associated with thymectomy and gastroduodenopancreatectomy, and positive family history. She began in 2020 a picture of reduced visual field associated with abnormal uterine bleeding, with hypermenorrhea and menstrual irregularity. On investigation, FSH was dosed: 24.7 mUI/mL (1.79-5.12); LH: 1.19 mUI/mL (1.2-12.8); glycoprotein hormones alpha subunit: 2.56 (RV: <0.6). With the hypothesis of gonadotrophinoma, it was decided for a new hormonal evaluation after administration of a GNRH analog, presenting FSH: 34.9 mUI/mL (2.5-10.2); LH: 0.53 mUI/mL, estradiol: 223.3 pg/mL (19.5-144.2). Transvaginal ultrasonography was performed, which showed uterus of normal volume and ovaries of increased dimensions bilaterally (right ovary: 22.4 cm^3 and left ovary: 35.8 cm^3). Due to the possibility of pituitary tumors, a magnetic resonance imaging of the sella turcica was performed, revealing a pituitary macroadenoma with a lesion measuring 4.0 x 2.6 x 2.6 cm, extending to the right cavernous sinus and involving the ipsilateral internal carotid artery, with a compressive effect on the optic chiasm. The patient was referred for transsphenoidal surgery, the histopathology showed pituitary adenoma and immunohistochemistry revealed positive result for synaptophysin and FSH. **Discussion:** Functioning gonadotrophic adenomas are rare tumors, because most gonadotrophic tumors are clinically silent. Gonadotrophic tumors are poorly differentiated and produce and secrete hormones inefficiently, but in exceptional cases cause clinical syndromes due to hypersecretion of intact gonadotrophins. The clinical spectrum of endocrine dysfunction includes a syndrome of ovarian hyperstimulation in women at menacme, testicular enlargement in men, and isosexual precocious puberty in children. **Final comments:** In the case described, the patient presented symptoms of FSH excess, with increased ovarian volume and hypermenorrhea. This case is relevant to alert the possibility of functioning gonadotrophinomas, even if in the context of MEN-1, in the differential diagnosis of women with abnormal uterine bleeding. **Keywords:** functioning gonadotrophinoma; multiple endocrine neoplasia type 1; abnormal uterine bleeding.

AP-238 ASSESSMENT RISK OF FRACTURE IN ACROMEGALY

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Introduction: Acromegaly is a chronic, progressive condition characterized by elevated levels of growth hormone (GH) and insulin-like growth factor 1 (IGF-1). Prolonged exposure to excessive GH and IGF-1 has been linked to the development of comorbidities, decreased quality of life, and increased mortality rates. While these hormones have positive effects on bone health under normal circumstances, their excess presence leads to alterations in bone microarchitecture and remodeling, resulting in increased fragility and a higher risk of fractures, particularly vertebral fractures, which are estimated in 60% of patients with active acromegaly. **Objective:** To analyze the risk of fractures in patients with acromegaly in a reference service. **Patients and methods:** Cross-sectional and observational study, evaluating 51 patients with acromegaly undergoing clinical follow-up at a reference service in southern Brazil, after approval by the hospital's ethics committee (Assent 4.973.254). Patients were submitted to questionnaires to collect clinical information and about quality of life. Then, bone densitometry (DXA), trabecular bone score (TBS), analysis of vertebral fracture presence (VFA), and fracture risk estimates (FRAX) were evaluated. **Results:** The results refer to a descriptive analysis of a study sample including data from 41 patients, 54,91% of whom were female, mean age 55.8 ± 11.6 years, mean time to diagnosis 11,07 ± 8.54 years, with 64.7% with well-controlled disease. Of this sample, 19.6% (n = 10) had previous fractures, and FRAX corrected by TBS demonstrated a high risk of major fracture in 17,01% of patients. It was observed 58,55% (n = 24) of patients with normal bone densitometry. However, by the TBS analysis, 60,97% (n = 25) had some degree of bone microarchitecture degradation. **Conclusions:** The analysis of this sample corroborates evidence present in the literature of changes in bone microarchitecture in patients with acromegaly, adjusted by the use of TBS, despite normal bone densitometry. However, FRAX corrected by TBS did not show the same correlation, and one of the explanations was the average age of the patients, which is considered young (67% under 60 years old). More data, which are ongoing, are needed for adequate statistical analysis on the prevalence and risk of fractures in patients with acromegaly. **Keywords:** acromegaly; risk of fracture; TBS.

AP-239 THE INFLUENCE OF VITAMIN D DEFICIENCY ON THE DEVELOPMENT OF ANXIETY DISORDERS

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Introduction: Generalized anxiety disorder is a common mental health disorder, especially among young women. Studies have suggested that vitamin D deficiency may be associated with the development of anxiety disorders. However, few studies have investigated the relationship between dietary intake of vitamin D and generalized anxiety. **Objective:** The aim of this study was to examine the associations between dietary intake of vitamin D and the development of generalized anxiety disorders. Patients: The sample for this study consisted of patients aged between 12 and 70 years with generalized anxiety disorder. **Methods:** The MeSH terms "Vitamin D" AND "Anxiety Disorder" were used to search the databases (PubMed, Scopus, and Web of Science), resulting in a total of 351 results after removing duplicates. The articles were imported into RAYYAN and selected using a triple-blind method, with discrepancies being discussed and analyzed. In the end, systematic reviews, clinical trials, and cohort studies produced in the last 20 years were included, resulting in a total of 10 studies. **Results:** After analyzing the data, it was found that 40% of the studies, mostly high-quality and systematic studies, indicated that supplementation with vitamin D, preferably through dietary intake, combined with anxiety disorder treatment, showed improvement after 4 weeks, with a reduction in Odds Ratio (OR = 1.52) to (OR = 0.97) after 6 months of treatment. However, the majority of studies (60%), although not of high quality and organization, indicated that vitamin D supplementation alone did not have an effect even after 3 months of intake. **Conclusion:** Therefore, we can conclude that the study did not confirm the positive influence of vitamin D supplementation on generalized anxiety disorders, except when combined with other factors such as therapy and physical exercise. Thus, further high-quality and systematic research is needed with more in-depth investigation to obtain specific and high-quality statistical data. **Keywords:** vitamin D; anxiety disorder; vitamin D levels.

AP-240 CHILDHOOD OBESITY AND ITS CONSEQUENCES: A CASE REPORT

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Obesity is a non-transmissible chronic disease with a great impact on society due to its high morbidity and mortality, including in children and adolescents. Childhood obesity follows the global panorama of a worldwide epidemic, in view of the increase in cases observed in recent decades. Therefore, it is important to understand the genesis of obesity in childhood, including the severe forms of the disease, since many factors may be associated with this pathology, including genetic alterations. The present study reported the clinical case of an adolescent patient with severe and progressive obesity and resistance to leptin. The information was transferred through review of the medical record, interview with the patient and photographic record. The patient is being followed up from 3 to 15 years of age, requiring multidisciplinary care and all available resources for the treatment of obesity. Despite the use of several drugs (orlistat, fluoxetine, bupropion, topiramate and sibutramine) there was progression of obesity and the appearance of secondary diseases (SAH, dyslipidemia, NASH and diabetes mellitus). He currently weighs 282.8 kg, height: 170 cm and BMI: 98.7 kg/m^2 and is awaiting bariatric surgery. It is concluded that the reported patient has a severe form of obesity, of a genetic nature, with rapid and progressive evolution, since the age of three months, with no success in the multiple therapies instituted, due to the strong leptin resistance. In addition, being overweight predisposed the patient to other diseases concomitant with obesity, reinforcing the fact that obesity is a serious public health problem. **Keywords:** child obesity; obesity; teenagers.

AP-241 INFLUENCE OF OBESITY ON ENDOCRINE METABOLISM

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Introduction: The complex metabolic disorder classified as obesity is a recurrent theme in current literature, because the study of its epidemiology has demonstrated an increase in its prevalence in all social strata. The progress and consequences of obesity on the health of the metabolism are widely modifiable and depend on genetic, epigenetic and environmental factors. In this context, obesity tends to cause changes in the endocrinological profile of patients diagnosed with this pathology. **Objectives:** To review and synthesize recent academic studies that find the effects of obesity on the metabolic health of obese patients. **Methods:** Analysis of studies published between the years of 2013 and 2023, given that the research aimed to select publications of scientific relevance in the current academic scenario. The articles were selected from two databases for scientific articles: Lilacs (via BVS) and Medline (via PubMed). Furthermore, the search strategy was defined according to the Medical Subject Headings (MeSH).Subsequently, the references were imported into EndNote X7 (online version) and transported to Rayyan, to remove duplicate articles and promote systematic further analysis. **Results:** Current experimental and clinical evidence suggests the presence of an underlying pathophysiological link between obesity and irregular endocrine metabolism, usually present in patients diagnosed with the mentioned disorder. Neurohumoral, metabolic, hemodynamic and psychiatric alterations are described as factors correlated to obesity that provide the appearance of metabolic disturbances in the system that encompasses the pituitary control, mainly over the pancreatic and thyroid endocrine glands. **Conclusion:** It is evidenced that obesity represents a risk factor for the lack of control of functions related to endocrine secretions. The long-term effects of modifications in the nutritional profile of obese patients with metabolic alterations caused by this pathology, despite presenting a clear positive relationship, require further research to prove the extent of its benefit. **Keywords:** obesity; methabolical alterations; endocrine health.

AP-242 INSULINOMA AND OBESITY: A CASE REPORT

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Case presentation: N.N.S., woman, 70 years old, morbidly obese, who started episodes characterized as lipothymia, palpitations, mental confusion, dysarthria, sweating and irritability two years ago. The symptoms were initially weekly and improved after drinking "sugar water to calm down". There was a weight gain of 20 kg in this period. Due to the recurrence of these episodes, the patient sought medical attention, presenting hypoglycemia with glucose levels around 30 mg/dL. An abdominal CT scan was requested, which showed an expansive formation of lobulated contours with accentuated contrast enhancement, measuring approximately 3.5 x 3.4 cm in the uncinate process of the pancreas. A surgeon evaluated and forwarded to the endocrinologist aiming 10% weight loose before performing the surgery to excise the tumor. At the first appointment, the patient weighed 125 kg, body mass index (BMI) 52.7 kg/m², fasting blood glucose 40 mg/dL, postprandial blood glucose 38 mg/dL, C-peptide 8.74 (VR 1.1- 4.4), HbA1c 3.3% and serum insulin 54.71 (VR 2.9-24.9). Due to increasingly severe hypoglycemia, the endocrinology team decided to hospitalize the patient, initiating the use of octreotide for glycemic control. During this period, the patient was unable to reach the weight goal and reached 135 kg. Finally, surgery was performed with enucleation of the pancreatic tumor with anatomopathological result confirming pancreatic neuroendocrine neoplasia (NET G1). The patient evolved in the postoperative period with weight loss of 29,5 kg in 7 months, even with inadequate diet and physical activity. **Discussion:** Obesity is a chronic, multifactorial disease that represents a burden for the public health system because of its association with significant morbidity and mortality. Insulinoma is a neuroendocrine tumor of the pancreas that produces autologous insulin secretion and a rare condition that can lead to weight gain and consequently obesity. Sustained secretion of this anabolic hormone causes lipogenesis and inhibits lipolysis in adipose tissue. Such conditions can trigger high caloric intake, an increase in abdominal circumference, excess visceral fat and increased BMI. **Final considerations:** Definitive treatment of insulinoma with consequent decrease in exposure to high insulin levels probably contributed to these patients weight loss. **Keywords:** obesity; insulinoma; weight.

AP-243 ANALYSIS OF THE EPIDEMIOLOGICAL PROFILE OF OBESITY IN BRAZIL FROM 2010 TO 2023

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Introduction: Obesity is defined as excess fat mass, where the body mass index is > 30 kg/m². It is a very prevalent condition in Brazil and has several negative repercussions for those affected and for the health system. Thus, it is essential that there is a deepening of studies on this topic, in order to better understand it. **Objectives:** To describe the epidemiological profile of obesity in adults in Brazil from 2010 to 2023. **Methods:** Cross-sectional, descriptive and quantitative study. The numbers of hospitalizations and obesity mortality rates in Brazil from January 2010 to March 2023 were collected through the SUS Hospital Information System (SIH/SUS) hosted at Datasus. **Results and discussion:** Regarding gender, there is a higher number of hospitalizations of women (114,554) compared to men (17,023), who die more due to the condition, since they have a 0.56 mortality rate due to obesity against 0.17 of women. Regarding race, it is possible to notice that whites have the highest number of hospitalizations due to obesity, but the lowest mortality rate (0.18). Furthermore, blacks had 5,207 hospitalizations with 0.21 mortality and browns 27,847 hospitalizations with 0.31 mortality. With regard to regions, there are 131,577 hospitalizations registered in the country, with a predominance in the South, with 46.4% of hospitalizations, followed by the Southeast with 40.75%, Northeast with 8.67%, Midwest with 3.2% and North with 0.98%. However, when analyzing the mortality rates by region, a different pattern is observed, with the highest rate belonging to the Midwest region (0.45), followed by the North region (0.39), Southeast (0.25), South (0.18) and Northeast (0.15). Furthermore, when analyzing hospitalizations by age group, adults predominate (94.75%), followed by the elderly (4.3%), adolescents (0.92%) and children (0.02%). As for lethality rates, the elderly predominate (0.95), followed by adolescents (0.24), adults (0.18) and children, which represent a negligible value. **Conclusion:** Therefore, it is observed that obesity is a prevalent disease in all regions of Brazil and that affects both genders, different races and age groups. However, it is clear that mortality is higher in men, in the elderly and in the Midwest region. Thus, understanding the epidemiological profile of obesity is essential to plan measures for intervention, control and management of obesity. **Keywords:** obesity; morbimortality; Brazil.

AP-244 IONS OF BARIATRIC SURGERY IN MALE HYPERANDROGENISM: CASE REPORT

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Case presentation: A 53-year-old man with obesity since adolescence underwent bariatric surgery in March/2021, when he weighed 183 kg, height 1.80 m and body mass index (BMI) = 56.48 kg/m², classifying himself as a carrier of grade III obesity, in addition to hypertension and type 2 diabetes mellitus. After the intervention, with the excellent clinical evolution, the comorbidities were reversed, allowing the patient to reach 83 kg (BMI = 25.61 kg/m²). In March 2023, he attended the consultation for laboratory follow-up, presenting tests with the following values: total testosterone: 1,029 ng/dL, free testosterone: 12.44 ng/dL; SHBG: 84.8 mcg/dL, blood glucose: 93 mg/dL; TSH:1.23 ng/dL; free T4: 1.23 ng/dL and PCR < 6 mg/L. The analysis showed elevated testosterone, not presented prior to bariatric surgery. This premise was in line with the clinical manifestations of the patient, who claimed increased body hair, sexual performance, skin oiliness and physical strength 1 year after surgery. Finally, values related to levels of thyroid hormones and C-reactive protein were normal, subverting the possibility of hyperthyroidism and systemic inflammation. **Discussion:** The case presented here describes an increase in testosterone in an adult man as an effect of bariatric surgery. This condition can be explained by the rapid weight loss induced by the procedure, which reduces resistance to leptin and insulin in the hypothalamus and stimulates the release of gonadotropin-releasing hormone (GnRH) and luteinizing hormone (LH). This provokes the excitation of the Leyding cells and the consequent secretion of testosterone, whose increase is seen in the clinical and laboratory parameters presented by the patient. However, even if the association of high levels of the hormone with the short-term improvement of the metabolic and sexual profile is valid, the continuation of this situation can induce not only the rebound effect, that is, metabolic worsening, excessive hairiness and sexual impotence, as well as the development of prostatic neoplasms. **Final comments:** Testosterone level should be an important parameter to be evaluated in the follow-up of post-bariatric men. Therefore, early clinical and laboratory investigation will allow the minimization of the repercussions of hyperandrogenism as well as possible differential diagnoses. **Keywords:** testosterone; bariatric surgery; hyperandrogenism.

AP-245 PREVALENCE OF OBESITY IN CHILDREN BETWEEN 6 AND 23 MONTHS AND FOOD CONSUMPTION, IN THE NORTHEAST REGION

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Introduction: Obesity is a systemic inflammatory disease that results in increased cardiovascular risk. It is noted that the consumption of foods rich in carbohydrates and lipids, such as ultra-processed foods, increases total body mass. It is therefore valid to compare obesity among children aged 6-23 months, as it is a phase of dietary transition, in which there is an increase in the consumption of ultra-processed foods at the time in which exclusive breastfeeding is recommended. **Objective:** To analyze the prevalence of obesity in children aged 6-23 months who consume ultra-processed foods compared to those who are breastfed. **Materials and methods:** An observed ecological epidemiological study based on data collected and analyzed on the nutritional status and food consumption of children aged 6-23 months in the Northeast between 2018 and 2022 in the Food and Nutritional Surveillance System (Sisvan), in April 2023. **Results:** Cases of obesity ranged in absolute numbers from 58,996 in 2018 to 56,994 children in 2022, which highlighted a drop in the growth rate of 3.4%. Concurrently, the consumption of ultra-processed foods decreased, ranging from 46.9% to 29.4% between 2018 and 2021, and was only 2.67% in 2022. As well as the number of breastfeeding children, it also suffered a drop, ranging from 55.4% to 56.8% between 2018 and 2020, 38.4% in 2021 and 3.4% in 2022. The growth rate decreased by 89.9% and 89.1% compared to consumption of ultra-processed foods and breastfeeding, respectively. It is worth noting that Sisvan's coverage of data on nutritional status was greater than data on food in the same period. **Conclusion:** There is a high prevalence of childhood obesity despite the reduction in the consumption of ultra-processed foods, and this is accompanied by a reduction in breastfeeding in children aged 6-23 months. Thus, the results infer that breastfeeding would be a protective factor for obesity; and the consumption of ultra-processed foods, a risk factor. However, both data on food consumption are disproportionately reduced in 2022. Thus, in order to minimize obesity in this population, more effective health promotion measures are needed to encourage breastfeeding and the consumption of fresh or minimally processed foods by this age group. **Keywords:** childhood obesity; ultra-processed foods; breastfeeding.

AP-246 BARDET-BIEDL SYNDROME: REPORT OF FOUR CASES

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Case report: Family 1: From Jaboatão dos Guararapes/PE. **Case 1:** A 34-year-old man with progressive weight gain and poorly controlled diabetes. He has polydactyly in his feet and right hand. In early childhood, he was diagnosed with retinitis pigmentosa and, by the age of 17, he experienced total visual loss. The patient also presented with cognitive deficit and chronic kidney disease under conservative treatment. He has grade I obesity (BMI = 33 kg/m^2), predominantly truncal fat distribution, acanthosis nigricans in the cervical and axillary regions, cervical acrochordons and hypogenitalism. **Case 2:** A 38-year-old man, brother of the patient in case 1, diagnosed with retinitis pigmentosa in childhood, which progressed to total visual loss at the age of 16. He also had polydactyly at birth, development delay, learning difficulties and obesity. At the age of 30, due to a diagnosis of end-stage chronic kidney disease, he underwent a kidney transplant. There was development of diabetes after transplantation. In both cases, a multigene panel allowed the identification of a homozygous pathogenic variant in the BBS1 gene. **Family 2:** from Pesqueira-PE. **Case 3:** A 25-year-old man, son of consanguineous parents, diagnosed with retinitis pigmentosa since the age of 6, along with severe hearing impairment. He has a history of poor school performance, short stature, obesity, dental malformations and syndactyly in hands and feet. Awaiting genetic testing. **Case 4:** A 24-year-old man, brother of the patient in case 3, referred to our service at the age of 5 due to a clinical presentation similar to that of his brother (obesity, retinitis pigmentosa, hearing impairment, cognitive deficit, obesity, syndactyly and dental malformations). Awaiting genetic testing. **Discussion and final commentaries:** The authors describe two families with cases of late diagnosis of Bardet-Biedl syndrome in first-degree relatives. Bardet-Biedl syndrome is a rare, autosomal recessive, multisystemic genetic disorder originating from primary cilia dysfunction. It is characterized by retinitis pigmentosa, polydactyly, obesity, cognitive deficit and renal and genital anomalies. The most frequent mutation associated with the syndrome (23.2% of cases) is in the BBS1 gene. The rarity of the syndrome, as well as its slowly progressive course, poses a significant challenge for early diagnosis. Late detection can result in higher rates of morbidity and mortality. **Keywords:** Bardet-Biedl; retinitis pigmentosa; obesity.

AP-247 EPIDEMIOLOGICAL COMPARISON AMONG MACROREGIONS, GENDERS, AND AGE GROUPS REGARDING THE EVOLUTION OF OBESITY-RELATED HOSPITALIZATIONS IN BRAZIL FROM 2012 TO 2022

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Introduction: Obesity can be found throughout society and has become increasingly prevalent in the general population. Thus, it is important to understand pathology and the way it appears in society. **Objective:** Understanding how hospitalizations for obesity have been related to the Brazilian population from 2012 to 2022 and how the COVID-19 pandemic has influenced the data. **Methods:** This is an ecological study obtained through secondary data from the Hospital Information System of the Unified Health System (SIH/SUS). This information was compiled in tables and grouped by macroregion, gender, age, and year. **Results:** Regarding the macroregions, in the first period from 2012 to 2019, pre-pandemic, it was observed that there were increases in the number of hospitalizations in almost all regions, with the South having the worst prognosis by going from 3,613 (41.9%) hospitalizations to 9,539 (57.9%) and the North having the best prognosis by going from 130 (1.5%) hospitalizations to 84 (0.5%). Furthermore, during the pandemic period from 2020 to 2022, there was a sharp initial decrease in hospitalizations when comparing the year 2019 to 2020. However, when analyzing the subsequent years, there were significant increases, with the South showing a different trend as it initially continued to decrease from 2020 (2,149) to 2021 (1,118). As a result, in 2022 the total number of hospitalizations (8,351) approaches those found in 2012 (8,615). In terms of gender comparison, the male population is the most affected throughout the analyzed period, with an average of 85% of hospitalizations. However, both genders experienced very similar reductions due to the pandemic when evaluating the years 2019 and 2020, with a reduction of approximately 70% in male cases and 68% in female cases. Finally, the different age groups followed the same patterns throughout the decade, and the most affected period is between the ages of 30 and 50. **Conclusion:** The growth in the number of hospitalizations due to obesity in recent years and the development of the problem throughout the country are evident, as well as the increased risk that men have been experiencing compared to women. In addition, the significant reduction in the number of hospitalizations in all regions during the COVID-19 pandemic, probably due to social distancing measures, had a temporary and ineffective effect in reducing the problem, with the numbers at the end of 2022 showing a rapid return to previous patterns. **Keywords:** epidemiology; obesity; Brazil.

AP-248 TREATMENT OF BINGE EATING DISORDER IN PATIENTS WITH OBESITY USING TOPIRAMATE VERSUS PHENTERMINE-TOPIRAMATE: A SYSTEMATIC REVIEW

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Introduction: Binge eating disorder (BED) is a condition characterized by one or more episodes of binge eating per week for at least 3 months. BED is frequently associated with obesity, and the care of these individuals involves multidisciplinary intervention and pharmacologic treatments. The combination of phentermine-topiramate (PT) is approved by the Food and Drug Administration (FDA) since 2012 for the treatment of obesity, and topiramate alone (TA) is prescribed off-label for reducing food impulsivity, acting on weight loss. The PT combination surpasses the adverse effects of TA at high doses, but PT is not available in Brazil. **Objectives:** To evaluate the efficacy of topiramate alone *versus* phentermine-topiramate in the treatment of binge eating disorder in patients with obesity. **Methods:** A systematic review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines with the following Health Sciences Descriptors: "Topiramate" and "Obesity" and "Binge-Eating Disorder" in the EBSCOhost, Virtual Health Library, IEEE Xplore, and PubMed databases on May 25, 2023. The inclusion criteria were: publications between 2018-2023 and full-text availability. Duplicated publications and literature reviews were excluded. **Results:** Initially, 67 studies were screened, and after using established criteria, 4 studies were included. They consisted of one non-controlled open clinical trial (10 participants) and 3 double-blind, randomized controlled trials (RCTs) with sample sizes of 22, 61, and 30 individuals. Three of these studies investigated the PT combination to reduce the side effects of TA, such as cognitive dysfunction, paresthesia and altered taste perception. A mean weight loss of 5 kg was observed in 12 weeks of treatment with PT. One RCT (n = 61) used TA, achieving a mean weight loss of 5.9 kg in 14 weeks and a 47% reduction in the mean number of binge eating episodes. The main limitations were no observation of BED remission period, follow-up of less than 12 months and the absence of a determination of the dose-response relationship in the population. **Conclusion:** The PT combination plays an important role in the treatment of BED in patients with obesity. Since there is no approval for the use of TA by the FDA or its inclusion in the Brazilian label for this purpose, studies on this treatment modality are scarce. Therefore, more studies are needed to understand the long term benefit of these drugs.
Keywords: topiramate; obesity; binge-eating disorder.

AP-249 SECONDARY HYPERPARATHYROIDISM AFTER BARIATRIC SURGERY AND ASSOCIATED CLINICAL FACTORS

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Introduction: Bariatric surgery (BS) can lead to secondary hyperparathyroidism (SHPT), bone loss and an increased risk of fractures. The mechanisms involved in the development of SHPT after bariatric surgery, besides malabsorption, are unknown. **Objective and methods:** To determine the relationship between low muscle mass, metabolic and bone parameters, and SHPT after Roux-en-Y gastric bypass (RYGB) and sleeve gastrectomy (SG), in a cross sectional study, we analyzed laboratorial parameters, bone mass and body composition by dual-energy X-ray absorptiometry in 103 patients (90% female, 51% RYGB, age 41.8 ± 6.7 years) after surgery, according the presence of SHPT. **Results:** The SHPT prevalence was 26% (RYGB>SG, p = 0.01). The PTH mean in the SHPT (+) group was 93.4 ± 38.4 pg/mL. SHPT (+) group had a longer surgery time (6.3 ± 4.4 *vs.* 3.8 ± 3.3 years, p = 0.001), higher BMI (34.1 ± 4.3 *vs.* 30.5 ± 5.39 kg/m^2, p = 0.002), and abdominal circumference (99.9 ± 13.3 *vs.* 94.0 ± 12.3 cm, p = 0.038). The serum calcium mean was lower in the SHPT (+) group than SHPT (-) group (8.8 ± 1.1 *vs.* 9.2 ± 0.5 mg/dL, p = 0.016). Despite the SHPT (+) group showed higher levels of alkaline phosphatase (AP) (8.8 ± 1.1 *vs.* 9.2 ± 0.5 UI/mL, p = 0.016) and CTX (0.620 ± 0.26 *vs.* 0.480 ± 0.23 ng/mL, p = 0.042), there is no difference between the groups in the bone mass density (BMD) in all sites. After multivariate linear regression analysis, SHPT was independently associated with: RYGB surgery, surgery time, BMI, CTX and lower serum calcium levels. The RYGB surgery implied an increase of approximately 2.9 times in the chance of SHPT occurrence, compared to SG. **Conclusion:** SHPT after bariatric surgery was associated with RYGB surgery, longer surgery time, BMI and bone biomarkers. This found can help to plan strategies to prevent that condition after surgery.
Keywords: bariatric surgery; low muscle mass; secondary hyperparathyroidism.

AP-250 REDUCTION OF THE ANTI-EDEMATOGENIC EFFECT OF NIMESULID VERIFIED IN THE DESCENDANTS OF OBESE WISTAR FEMALE RATS

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Introduction: The type of diet consumed during pregnancy and early life increases the susceptibility to the development of the metabolic syndrome and, consequently, may result in changes in pharmacological efficacy during adult life. **Objective:** To evaluate the inflammatory response of an obesogenic diet and the anti-inflammatory effect of nimesulide in the offspring of Wistar female rats fed a westernized diet (WD). **Methods:** Sixteen male rats, descended from mothers fed a standard laboratory diet (SD) or westernized diet (WD) during pregnancy and lactation, were randomly divided into two groups (n = 8/each) after weaning and evaluated until the 60 days of age: i) SDn – standard group treated with nimesulide (5 mg/kg, i.p.); ii) WDn – westernized group treated with nimesulide (5 mg/kg, i.p.). In this experiment, the paw edema model was used, where the animals received carrageenan (0.1 mL of 1%) in the subplantar region of the left hind paw to evaluate the acute inflammatory response in the offspring and the anti-inflammatory effect of nimesulide. In the groups, the levels of IL-6, TNF-α and myeloperoxidase in the tissue of the plantar region of the paws of the rats were quantified. **Results:** The anti-edematogenic activity of nimesulide in the SDn group was observed at 120, 180 and 240 min; while in the WDn group this effect was observed only in the 120 min interval after subplantar injection of carrageenan. The levels of IL-6, TNF-α and myeloperoxide were significantly higher in animals from the WDn group when compared to the SDn group. **Conclusion:** The results suggest that the inflammatory response was more severe in the animals in the WD group, while exhibiting a reduction in the anti-inflammatory effect of nimesulide. **Keywords:** nonsteroidal anti-inflammatory; obesity; westernized diet.

AP-251 EVALUATION OF THE MEDICAL APPROACH TO THE DIAGNOSIS AND INDICATION OF CLINICAL AND SURGICAL TREATMENT FOR OBESITY

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The clinical treatment of obesity is based on the use of drugs such as liraglutide, orlistat and sibutramine when there is a failure to lose weight with non-pharmacological treatment. Surgical treatment may be indicated for people with a BMI above 35 kg/m² who have comorbidities such as diabetes and arterial hypertension, or patients with a BMI greater than 40 kg/m² who are not successful in losing weight after two years of drug treatment. To evaluate the medical professional's approach to the diagnosis of obesity and available treatments. Prospective study with application of the questionnaire via Google Forms on online platforms for medical professionals, covering questions about the medical approach to the obese patient. The questionnaire was answered by 154 medical professionals, with a mean age of 46.34 ± 13.14 years (24-74 years) and mean time of professional activity 21.37 ± 13.24 years. Most of the sample consisted of physicians with more than 20 years of professional experience (55.84%, n = 86).In the clinical interview, 52.31% (n = 79) of the interviewed physicians performed the assessment of the maximum weight acquired during the patient's life. The habit of calculating the BMI was declared by 53.25% (n = 82) of the interviewees. However, professionals from clinical specialties are more in the habit of calculating BMI than professionals from surgical specialties (p = 0.002). BMI reassessment in the clinical follow-up of obese patients is performed by 51.3% (n = 79) of the sample. There is a significant relationship between BMI reassessment and the type of specialty (p = 0.00006). Professionals in clinical specialties are more in the habit of reassessing BMI than professionals in surgical specialties. The measurement of waist circumference is performed by only 21.43% (n = 33) of respondents. Professionals in clinical specialties are more in the habit of measuring waist circumference than professionals in surgical specialties (p = 0.002). In assessing the recommendation of surgical treatment for obesity, 61.04% (n = 94) of respondents recommend this treatment modality. The prescription of anti-obesity drugs and surgical treatment in BMI ≥ 35 was low. Even though the majority questioned the practice of physical activities, clinical data on maximum weight throughout life and eating habits have been little explored by physicians in the clinical interview. WC measurement is not common practice in the evaluation and half of the sample calculates the patients' BMI. **Keywords:** obesity; body mass index; bariatric gastroplasty.

AP-252 EVALUATION OF BODY MASS INDEX AND ABDOMINAL CIRCUMFERENCE OF MEDICAL STUDENTS BEFORE AND AFTER 1 YEAR OF ENROLLMENT

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Introduction: The incidence of overweight and obesity has been increasing in recent decades, affecting individuals at an increasingly younger age. Some factors correlated to weight gain are stress, lack of exercise, and diets rich in highly processed foods. All these characteristics are common in the routine of medical students. The American study "Freshman15", Freshman being a reference to freshmen and 15 to the weight gain in pounds found in this population (15 pounds = 6.8 kg) during the first year of higher education. **Objective:** To evaluate the evolution of weight, abdominal circumference (AC) and body mass index (BMI) during the first year of medical school. **Methods:** This was a prospective cohort study, including both genders. We measured weight (kg), height (cm) to calculate BMI (kg/m²) and WC (cm) with anthropometric scales. To measure the AC, we used a tape measure, measuring with the student in orthostatic position on the midline between the last rib and the anterosuperior iliac crest. Besides anthropometry, the participants were asked about physical activity. Data were collected for the first 20 days and the last 20 days of school that school year. **Results:** Of the 34 students initially selected, 11 were excluded (03 for ending their college attachment and 08 for not presenting at the second weigh-in). We obtained a final (n) of 23 students. The mean age was 21 ± 2.5 years. We evidenced a weight gain of 1.14 ± 4.79 kg, where one participant gained 20.1 kg and another lost 3.5 kg. We observed that the BMI increased by +0.79 ± 1.65 kg/m² and the AC increased by +1.06 ± 3.78 cm. Fifteen students who were sedentary gained 1.6 kg, about 5.75 times more weight than the group that practiced regular physical activity (at least 150 minutes per week), which increased by 0.28 kg. **Conclusion:** The increase in weight, WC and BMI in: 1.14 kg, 1.06 cm and 0.79 kg/m², respectively, in this population; provided a "Freshman 1.14" effect, and sedentarism was an important factor for this increase. **Keywords:** obesity; abdominal circumference; medical students.

AP-253 UPDATES OF THE PHARMACOTHERAPY OF OBESITY IN BRAZIL: A SYSTEMATIC REVIEW ON THE NEWNESS OF SEMAGLUTIDE

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Introduction: Pharmacological management of obesity may be indicated in the absence of response in weight loss with non-pharmacological treatment – with optimized measures of lifestyle changes and psychosocial follow-up, in patients with BMI ≥ 30 kg/m² or BMI ≥ 25 or 27 kg/m², in the presence of comorbidities. Among medications authorized by Anvisa for this purpose, on this year, the Semaglutide stands out, a long-acting glucagon-like peptide-1 (GLP-1) receptor agonist, which acts of glucagon, increasing insulin production in response to food intake, thus reducing the rate of emptying and increasing satiety, was initially used in the treatment of diabetes mellitus (DM), but has been shown to be effective in weight loss involving patients with and without type 2 DM. this year, the newness of semaglutide is related to the possibility of oral intake. It is known, however, that weight loss is directly linked to medication dosage, as well as better caloric intake and less preference for unhealthy foods in the patient's life choices. **Objective:** To analyze the updates on the effects of this drug on weight loss **Methods:** It was conducted a systematic review following PRISMA's guideline, using as database PubMed, UpToDate and The Lancet, to identify relevant documents using the Medical Subject Heading (MeSH) terms and keywords related to obesity or fat, drug therapy and those related to Anvisa approved meds, in Brazil. A total of 267 articles were found, of which 15 systematic reviews/meta-analyses (period 2013-2023), were read to support this study. **Results:** In line with the STEP (Semaglutide Treatment Effect in People with obesity) program, which proved the possibility to obtain a loss of 15% weight compared to placebo, in addition to lifestyle changes involving physical activity and diet. It was seen, even though the suspension of medication has been related to the possibility of gaining weight. Among the other drugs previously authorized by Anvisa up to the present moment, such as orlistat, sibutramine, topiramate, naltrexone, semaglutide proved to be more effective in weight loss within the group of GLP-1 analogues (being superior to Liraglutide and Exenatide). **Conclusion:** Additional studies may help to consolidate evidence of the benefits arising from the association of the Semaglutide in the management of obese patients, with regard to weight loss and consequent contribution to the control of comorbidities often associated with such chronic condition. **Keywords:** obesity; drug therapy; Brazilian Health Surveillance Agency.

AP-254 BARIATRIC SURGERY BY VIDEOLAPAROSCOPY PERFORMED IN THE BRAZILIAN PUBLIC HEALTH SYSTEM IN THE PERIOD FROM 2018 TO 2022

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Introduction: Obesity is considered a serious public health problem, with an increasing prevalence. Laparoscopic bariatric surgery, when recommended, has been considered an option in the treatment of severe or complex obesity, and since 2017, it has been included among the procedures covered by the Unified Health System (SUS). **Objective:** To analyze the number of laparoscopic bariatric surgeries performed by the SUS from 2018 to 2022. **Methods:** This is a descriptive epidemiological study, whose data were obtained from the SUS Hospital Information System, made available by the Department of Informatics of the Unified Health System. Data were collected from the "Health Care" section, by place of residence, Region/Units of the Federation, selecting the bariatric surgery procedure by video laparoscopy, analyzing the variables: number of hospitalizations, average length of stay, total cost of expenses and number of deaths, with the support of the Microsoft Office Excel 2021® application, analyzed using simple descriptive statistics. **Results:** From 2018 to 2022, 4,583 patients underwent laparoscopic bariatric surgery in the SUS, with a total of 1,726 (38.03%) in the Northeast region, 1,372 (30.23%) in the Southeast, 1,080 (23.79%) in the South, 306 (6.74%) in the Midwest and 99 (2.18%) in the North. It was found that the average length of stay after the surgical procedure was performed was 2.9 days, emphasizing the northeast region with the highest length of stay (3.8) and the south region with the shortest length of stay (2.2) days. Evaluating the total expenditures by the SUS, it was noticed that the northeast region had the highest cost when compared to the north region, which had the lowest expenditure on surgical procedures. Regarding the number of deaths, a total of 4 deaths were recorded. **Conclusion:** Given the analysis, the study showed that there has been a high growth in the performance of bariatric surgeries by video laparoscopy in the SUS, given its direct relationship with the increase in obesity. The regional distribution of the procedure is uneven, which may reflect the lack of investment in some locations. Laparoscopic bariatric surgery, when properly performed, can be considered an effective method for the treatment of obesity. **Keywords:** obesity; bariatric surgery; *Sistema Único de Saúde*.

AP-255 EFFECT OF BARIATRIC SURGERY ON PLASMA NEOPTERIN LEVELS, ANTHROPOMETRIC AND METABOLIC PARAMETERS IN INDIVIDUALS WITH OBESITY

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Introduction: Obesity is associated with a persistent low-grade inflammatory state, with increased production of various markers. Neopterin, a soluble pteridine produced by activation of innate immunity, has been used as a sensitive marker of inflammation. However, there is little information on its relationship with obesity and post-bariatric surgery weight loss. **Objectives:** To evaluate the evolutionary value of serum neopterin and other classical inflammatory markers in individuals undergoing bariatric surgery. **Methods:** Longitudinal study that followed individuals with grade 3 or grade 2 obesity with associated comorbidities undergoing bariatric surgery at the University Hospital of the Federal University of Santa Catarina from February 2021 to November 2022. Anthropometric and biochemical data were analyzed and compared in the preoperative period (analysis 1) and after 12 months (analysis 2) of the surgical procedure. **Results:** Forty-seven individuals were included in the final sample of analysis 1, with a mean age of 46.2 ± 10.0 years, 78.7% of whom were female, and a median body mass index (BMI) of 44.4 ± 6.2 kg/m². In this sample, the median serum neopterin level was 7.6 ± 5.7 nmol/L. In analysis 2, 20 individuals were evaluated 12 months after surgery. In this group, there was a statistically significant reduction in neopterin levels (5.2 ± 1.2 *vs.* 1.2 ± 0.6 nmol/L, p = 0.044), C-reactive protein (CRP) (11.3 ± 10.7 *vs.* 1.1 ± 0.7 mg/L, p = 0.01), BMI (44.8 ± 4.4 *vs.* 30.6 ± 3.9 kg/m², <0.01), and homeostasis model assessment of insulin resistance (HOMA-IR) (5.6 ± 6.4 *vs.* 1.1 ± 0.5, p < 0.01). There was no difference in erythrocyte sedimentation rate (ESR) levels. Also, a positive and statistically significant correlation was identified between the variation in BMI and the variation in neopterin at the end of the first year (r = 0.455, p = 0.044), and no correlation was identified with variations in CRP and ESR. **Conclusion:** The results demonstrate a reduction in inflammatory markers associated with weight loss in individuals with obesity and a positive correlation between the variation in weight loss and the reduction in serum neopterin values. Thus, the potential future use of this marker in monitoring the regression of the inflammatory process in patients with obesity and undergoing bariatric surgery is highlighted. **Keywords:** obesity; bariatric surgery; neopterin.

AP-256 GLUCAGON-LIKE PEPTIDE-1 FOR TREATING POST BARIATRIC SURGERY WEIGHT REGAIN: A SYSTEMATIC REVIEW

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Introduction: Metabolic and bariatric surgery is an effective treatment for obesity; however, weight regain following bariatric surgery happens in up to one-third of patients. The efficacy of glucagon-like peptide-1 receptor agonists (GLP1-RA) in the treatment of type 2 diabetes and obesity is well established, but their significance in the treatment of weight return following bariatric surgery remains to be defined. **Methods:** PubMed and Cochrane database were searched for randomized controlled trials and observational studies that evaluate the effect of glucagon-like peptide-1 (GLP-1) for treatment of weight regain after bariatric surgery and reported the outcomes of (1) body mass index (BMI); (2) weight loss. **Results:** We included 2 observational studies with 257 patients, of whom 227 (88.3) underwent GLP-1 treatment. Treatment of weight recurrence with GLP-1 seems to be effective in both studies, with a 9.5% reduction in weight after treatment. One of the studies compare the use of semaglutide 1.0 mg weekly with liraglutide 3.0 mg daily, showing a mean weight change of -12.92% *versus* -8.77% in the semaglutide and liraglutide groups **Conclusion:** These findings suggest that treatment with GLP-1 is efficient in reducing weight regained after bariatric surgery and the use of semaglutide 1.0 mg weekly is more effective than the use of liraglutide 3.0 mg daily. **Keywords:** obesity; GLP-1; bariatric surgery.

AP-257 PROFILE OF PATIENTS WITH OBESITY CANDIDATES FOR BARIATRIC SURGERY ATTENDED AT A UNIVERSITY CENTER OUTPATIENT CLINIC

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Introduction: Obesity is a growing public health problem, affecting 22% of adults in the capital cities of Brazil. It is associated with increased morbidity and reduced life expectancy. Bariatric surgery may improve several obesity related comorbidities and should be considered in selected cases. **Objective:** To describe the demographic, epidemiological, and clinical characteristics of patients with obesity candidates for bariatric surgery. **Patients and methods:** Cross-sectional study conducted through electronic medical records review of all patients seen between 03/2022 and 04/2023 at the obesity outpatient clinic of a Brazilian university center. In agreement with the municipality, patients were referred from primary care in the Unified Health System for evaluation for bariatric surgery if they were over 18 years old, had a BMI of 40-49.9 kg/m², and challenging-to-manage comorbidities. Descriptive data analysis was performed using Excel (mean, median, standard deviation, and frequencies). The study was approved by the Institutional Review Board (CAAE: 68243823.0.0000.5093). **Results:** Out of the 199 patients, 136 had consultations recorded in electronic medical records and were thus included in this study. The mean age was 43.6 (±11.0) years, and 79% were women. BMI ranged from 35.7 to 60 kg/m², with a mean of 45.1 (±4.1) kg/m². Overall, 92% of patients had received prior medical advice for lifestyle changes, with 74% reporting adherence to the recommendations for an average of 2.5 years. Pharmacological therapy for obesity had been taken for a median period of 6 months by 65.8% of patients, of whom 43%, 21%, and 7% had used sibutramine, orlistat, and liraglutide, respectively. Off-label treatment for obesity had been used in 70% of the previously treated patients. Comorbidities were present in 92% of the participants, with the most common being hypertension (89%), anxiety/depression (66%), diabetes mellitus (61%), and dyslipidemia (30%). The number of medications currently in use ranged from 1 to 13, with a mean of 4.4 per participant. Only 75% of patients expressed a desire to undergo bariatric surgery. **Conclusion:** The results confirm a high prevalence of comorbidities in patients with obesity and therapeutic failure with prior clinical treatments. Bariatric surgery may be an option for long-term weight reduction and can lead to substantial amelioration or even long-term remission of diverse obesity related comorbidities in these patients. **Keywords:** obesity; bariatric surgery; obesity related comorbidities.

AP-258 SAFETY AND EFFICACY OF SETMELANOTIDE FOR WEIGHT LOSS IN OBESE PATIENTS: A META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

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Introduction: According to the World Health Organization, obesity affects more than two billion people worldwide. Setmelanotide is a new drug that activates the melanocortin-4 receptor (MC4R), playing a crucial role in regulating appetite and energy balance in individuals with rare genetic obesity disorders. Although there are some trials including the drug, no consensus was reached associating its benefits and collateral effects in syndromic and non-syndromic obesity. **Objective:** To assess the benefit of setmelanotide in obese patients in weight reduction. **Materials and methods:** We used the guidelines described by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) for the production of this meta-analysis. PubMed, Embase and Cochrane databases for randomized controlled trials (RCTs), comparing setmelanotide with placebo in obese patients. After selection, 4 studies were included. We computed risk ratios (RRs) for continuous endpoints, with 95% confidence intervals (CIs). Heterogeneity was examined with the I^2 statistic. Statistical analysis was performed using the R Software, version 4.4.3. **Results:** We included four RCTs with 151 patients, of whom 103 (68%) received setmelanotide. Mean follow-up ranged from 8 to 98 days. Compared to placebo, setmelanotide therapy significantly reduced weight (SMD -1.44; 95% CI -2.,41, -0.46; p = 0.04; I^2 = 68%). However, there were no significant differences between setmelanotide and placebo in reducing hunger rate (SMD -0.44; 95% CI -0.90, 0.03; p = 0.06; I^2 = 0%). Adverse effects had no significant difference was seen between setmelanotide and placebo groups: headache (RR 1.35; 95% CI 0.29, 6.32; p = 0.70; I^2 = 51%), nausea (RR 2,13; 95% CI 0.57, 7.91; p = 0.26; I^2 = 57%). Although, vomit rate was (RR 4.02; 95% CI 1.18, 13.69; p = 0·03; I^2 = 0%), skin pigmentation (RR 6.12; 95% CI 1.70, 22.03; p = 0·06; I^2 = 22%) and effects at the injection site (RR 0.84; 95% CI 0.73, 0.97; p = 0·02; I^2 = 0%) were frequent in the SETMELANOTIDE group. **Conclusion:** Setmelanotide, the first and only drug approved by the FDA for the treatment of genetic obesity, demonstrating significant reductions in body weight in obese patients without an increased risk of serious complications. However, vomiting, skin hyperpigmentation, and injection site adverse effects were significant adverse events. **Keywords:** setmelanotide; obesity; efficacy.

AP-259 INTEGRATED MULTIDISCIPLINARY CARE MODEL FOR OBESITY TREATMENT IN A LARGE OUTPATIENT MEDICAL DIAGNOSIS CENTER IN BRAZIL

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Introduction: Obesity represents a major health challenge. Providing a health program with personalized treatment through a multidisciplinary approach in the same environment must bring better outcomes. **Objective:** To evaluate an integrated multidisciplinary health care program for obesity treatment performed in a large outpatient medical center in Brazil. **Methods:** The program begun in April 2021, with hybrid service: person and online calls offered to employees and their dependents belonging to a large outpatient medical center in different regions of Brazil. The program included patients with body mass index (BMI) above 30 kg/m^2, starting with medical appointments and with a nurse, establishing weight loss goals, followed by appointments with doctors, nurses, nutritionists, psychologists and physical educators monthly. Eating disorders and signs and symptoms of mental disorders were screened using questionnaire ECAP scale (Self-Reported Cross-sectional Signs and Symptoms Scale of DSM-V). To analyze the Health-Related Quality of Life of patients, a EuroQol 5 Dimensions (EQ-5D) instrument was used at baseline and at the 3rd, 6th and 12th month. Group activities were provided to nutritional and emotional support and live with physical activities presentations. Patient monitoring was performed by the nursing team. Patients were excluded if absent for more than 3 consecutive months, personal or company drop-off, or lost health insurance. After 12 months, initial goals were evaluated. **Results:** Until May/2023 3,737 patients were attended, with an average participation of 753 patients/month with an NPS assessment of 95. Mean age was 37 years (88% female). Obesity categories were: 45% grade 1, 33% grade 2 and 11% grade 3. Mental health assessment showed that 34% had some symptom or sign of mental disorder, such as anxiety and depression, and 11% binge eating behaviour. Among patients who completed 12 months of follow-up, the weight reduction was: 5% to 9% in 14% of participants and loss greater than 10% in 10% of participants. Twenty percent were taking medications to help reduce weight, and the use limitation was mostly due to high price. There was a 54% improvement in EQ5D questionnaire. **Conclusions:** Approach to obese patients is complex, even in a multidisciplinary program, with a high frequency of mental health disorders and a low adherence to treatment. Patients who were engaged in the program have, for the most part, improved quality of life. **Keywords:** obesity; multidisciplinary program; hybrid service.

AP-260 ABDOMINAL CIRCUMFERENCE AS A SIMPLE AND EFFECTIVE MEASURE TO QUANTIFY ADIPOSITY IN CLINICAL PRACTICE

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Introduction: The pattern of fat distribution has a profound influence on cardiometabolic risk. Abdominal obesity is directly associated with increased visceral fat and also related to endothelial dysfunction, inflammation, insulin resistance, metabolic syndrome, diabetes mellitus, dyslipidemia and cancer. **Objective:** To analyze the correlation between waist circumference (WC) and other body composition measures such as Body Mass Index (BMI), fat mass, fat percentage and lean mass. **Materials and methods:** This is a cross-sectional observational study carried out in a clinic specializing in the treatment of people with obesity. A total of 790 patients underwent the following procedures: electrical bioimpedance (BIA, InBody® 370S) determining body weight (kg), fat mass (kg), lean mass (kg) and percentage of fat, measurement of abdominal circumference measured by the midpoint between the last rib and the iliac crest with an inelastic measuring tape and height measurement using a fixed stadiometer; all measurements were verified at the same time. The sample was obtained for convenience, evaluating the patients who attended the clinic. The following variables were compared: body weight (kg), fat mass (kg), percentage of fat and lean mass (kg) with the measurement of abdominal circumference (cm). Statistical analysis was performed using the SPSS software, version 20.0, with a normality test and simple linear correlation using the Spearman test for asymmetric variables. Variables with p value < 0.05 were considered statistically significant. This study was approved by the Ethics and Research Committee Unifesp/EPM (CAAE 51080121.9.0000.5505, protocol number 5.117.359). **Results:** Age ranged from 18 to 60 years [mean 45.6 years (SD ± 13.22)], most of whom were women (67.2%). The following means were identified: BMI 30.8 kg/m² (±6.8, obesity class I), fat percentage 37.3% (±10.5) and WC 94.3 cm (±16.0). There was a strong, positive and statistically significant correlation between waist circumference and BMI (kg/m²) r = 0.83 (p < 0.001) and fat mass (kg) r = 0.75 (p < 0.001) measurements and a moderate correlation with lean mass (kg) r = 0.56 (p < 0.001) and fat percentage r = 0.45 (p < 0.001). **Conclusion:** Waist circumference measurement is a simple, quick, cheap and effective measure to be performed in clinical practice, presenting a significant correlation with adiposity measurements obtained with a bioimpedance device. **Keywords:** abdominal circumference; adiposity; electric bioimpedance.

AP-262 PREVALENCE OF HOSPITALIZATIONS DUE TO ENDOCRINE DISEASES THAT HAD OBESITY AS A MORBIDITY IN THE STATE OF RIO GRANDE DO NORTE BETWEEN 2018-2022

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Introduction: It is known that as the body mass index (BMI) of an individual increases, the likelihood of developing type 2 diabetes mellitus exponentially increases. This is because both insulin resistance and pancreatic secretion failure can more easily develop in obese individuals. Furthermore, obesity is a well-known major risk factor for systemic arterial hypertension (SAH), and obesity-associated dyslipidemia is one of the main contributors to increased cardiovascular risk in this population. It is characterized by hypertriglyceridemia, low HDL-c, small and dense LDL, and postprandial hyperlipemia. **Objective:** To evaluate the prevalence of hospital admissions caused by complications in endocrine diseases with obesity as a comorbidity in the state of Rio Grande do Norte from 2018 to 2022. **Materials and methods:** This is an epidemiological study with a quantitative approach, and the data were obtained through consultation of Tabnet, a generic public domain tabulator developed by the *Departamento de Informática do Sistema Único de Saúde* (Datasus). The data were accessed under the categories "Epidemiology and Morbidity" and "Hospital Morbidity of SUS (SIH/SUS)" and selected "General, by place of residence from 2008." The geographic scope considered was "Rio Grande do Norte." The selected filters were: "ICD-10: IV, Nutritional and Metabolic Endocrine Diseases"; "ICD-10 morbidity list: Obesity"; and the period "year" was from 2018 to 2022. For this study, submission to the Research Ethics Committee (CEP) was not required. **Result:** According to the data obtained from 2018 to 2022, a total of 479 hospital admissions were recorded for complications in endocrine diseases with obesity as a comorbidity. Analyzing the same period, it was observed that females (360) were more affected than males (119), and the year 2019 had the highest number of cases, totaling 131 admissions. **Conclusion:** Based on the collected data, it can be observed that females had more hospital admissions during this time period compared to males. However, it is uncertain if this number truly reflects reality since women seek medical assistance earlier, and due to the state's limited infrastructure, many of the admissions during this interval may have been underreported. **Keywords:** obesity; hospitalizations; morbidity.

AP-263 THE INFLUENCE OF METABOLIC SYNDROME IN ACUTE MYOCARDIAL INFARCTION: A SYSTEMATIC REVIEW

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Introduction: Metabolic syndrome (MeS) is a complex condition characterized by the combined presence of metabolic disorders and endocrine dysfunction. Its diagnosis is based on physical and laboratory criteria, including increased waist circumference, high levels of triglycerides, cholesterol, high blood pressure and impaired fasting glucose. MeS is strongly associated with a higher risk of developing cardiovascular diseases, such as acute myocardial infarction (AMI), and also type 2 diabetes due to insulin resistance. **Objectives:** The aim of this study is to understand the relationship between metabolic syndrome and acute myocardial infarction, investigating their pathophysiological mechanisms and possible interactions between these pathologies. **Materials and methods:** A systematic review of articles published in the PubMed and BVS databases was carried out using publications from the last 5 years as a filter. The keywords used were "myocardial infarction", "obesity" and "metabolic syndrome", extracted from MeSH. The search was performed by crossing the keywords "Myocardial infarction" AND "metabolic syndrome". A total of 896 articles were found, of which 10 were selected after applying the inclusion and exclusion criteria. After that, the PRISMA methodology was followed. **Results:** Cumulative exposure to the components of metabolic syndrome over time increases the risk of cardiovascular disease, however, regular physical activity demonstrates beneficial effects. It reduces the severity of metabolic syndrome and improves the metabolic profile, decreasing the risk of cardiovascular events. In addition, studies have shown that patients with metabolic syndrome submitted to coronary stent had lower in-hospital mortality after infarction acute myocardial infarction with ST-segment enlargement. These findings underscore the importance of managing metabolic syndrome and adopting an active lifestyle in preventing cardiovascular problems. **Conclusions:** This research demonstrates the close relationship between the metabolic syndrome and the development of acute myocardial infarction. Given this association, the importance of identifying criteria for metabolic syndrome to prevent or mitigate the risk of AMI is highlighted. Understanding the importance of adopting healthy habits and practicing physical activities helps to improve the metabolic syndrome and prevent cardiovascular complications. **Keywords:** metabolic syndrome; myocardial infarction; obesity.

AP-264 COMBATING CHILDHOOD OBESITY AND INTEGRATED CARE VIA TELEMEDICINE

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Introduction: Confronting the childhood obesity epidemic has been placed as a priority by WHO in public health actions for countries. Brazil is among the 10 countries with the highest prevalence of childhood obesity and has made interventions through national food and nutrition policy in the last two decades. It is observed that 7% of children under five years of age present obesity. The need for early, integrated and intersectoral care are presented as the most effective strategies. The irregular distribution of health professionals in the country does not allow this care to occur in a timely manner in the face-to-face care model. **Material and method:** Through a digital health platform developed for teleconsultations between focal specialists and primary care professionals working in the Unified Health System, the care of a 4-year-old child with obesity was made possible after 2 years of waiting in the vacancies regulation system for in-person care. **Results and discussion:** The outpatient follow-up via teleinterconsultation began in February 2023 when it was identified changes in laboratory tests and high consumption of sugars, simple carbohydrates, little intake of fiber, fruits and vegetables. Since the first consultation, the intervention of the primary care team professionals together with the endocrinologist, guiding changes in the family's eating habits, the child's practice of physical activity, and drug therapy to restore metabolic balance, added to the monthly follow-up, positively impacted the habits and weight of the whole family. The child's growth curve from birth to the beginning of follow-up with percentiles above the expected for age and after 3 months of follow-up where the result of interventions already showed changes with weight reduction after the first interventions. **Conclusion:** The viability of care via telemedicine allows access and qualification of health care throughout the national territory, allowing to prevent diseases and reduce morbidity and mortality. **Keywords:** child obesity; integrated care; digital health.

AP-265 WEIGHT REGAINS AFTER BARIATRIC SURGERY: EXCELLENT RESPONSE TO LOW DOSE SEMAGLUTIDE

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Patient, female 48-year-old, underwent gastric sleeve in 2018. Her heaviest weight before surgery was 102 kg, height 163 cm, and body mass index (BMI) 38.9. She was hypertensive with hypertriglyceridemia and hepatic steatosis. After surgery in the first year, she reached her lowest weight of 76 kg, and her comorbidities improved. She currently weighs 82 kg and has a BMI of 30. Twelve months ago, she reported fatigue with worsening over the last 4 months, after starting liraglutide. She mentions return of comorbidities with weight gain. Has depression, sedentarism, and subclinical hypothyroidism with high anti-TPO followed by grazing towards sweets. No clinical criteria for binge eating disorder. Currently in use of: duloxetine 30 mg/day, olmesartan 20 mg/day, levothyroxine 12.5 mcg day, multivitamin 01 tablet a day, cholecalciferol 7,000 IU/week, and irregular use of liraglutide 0.6 mg/day due to worsening fatigue which made it difficult to carry out daily activities every time the medication was applied, even at low doses. Investigation of causes of chronic fatigue was carried out, with normal laboratory tests for nutritional deficiencies, autoimmune, infectious, neurological, and hormonal disorders. In the evaluation of weight regain an upper digestive endoscopy was performed, no alterations detected. Readjusted the treatment of depression, subclinical hypothyroidism, and weight with bupropion 300 mg/day associated with vortioxetine 10 mg/day, levothyroxine 25 mcg/day and semaglutide 0.5 mg/week, respectively. The patient evolved with a weight loss of -14.8 kg in 6 months, with a body composition assessment of -11 kg of fat mass and -1.8 kg of lean mass. She also showed clinical improvement in chronic fatigue complaints. This clinical case reinforces the concept that obesity is a chronic and relapsing disease, and that bariatric surgery has a considerable rate of weight regain. Drug treatment should be considered as an adjuvant therapy to bariatric surgery. The excellent result with low dose semaglutide, in the case presented here, may have been reached by the prescription of bupropion 300 mg/day to the treatment of depression. Weight regain after bariatric surgery has resulted in a significant increase in revisional bariatric surgeries, which leads to increased surgical risk and adverse outcomes for the patient, so pharmacotherapy is a safer and more effective option. **Keywords:** obesity; bariatric surgery; semaglutide.

AP-266 IMPACT ON WEIGHT AND BODY COMPOSITION IN ELDERLY WITH OBESITY AND PHYSICAL LIMITATIONS AFTER USE OF SEMAGLUTIDE: CASE SERIES

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Case presentation: Three elderly people with obesity and physical limitations underwent treatment with semaglutide (SMG). Case 1: A.E.F.N., 75-year-old man with a history of hypothyroidism and bowel cancer. On examination: weight of 99.5 kg (maximum reached of 102.6 kg), body mass index (BMI) of 34 kg/m^2, with 42% body fat percentage (BFP) and 31.7 kg of skeletal muscle mass (SMM). After using SMG for 5 months, with progressive doses up to 1mg/week, he reached a weight of 88.5 kg (-11 kg), BMI of 30.27 kg/m^2 (-3.73 kg/m^2) BFP of 35.2% (-6.8%) and SMM 31.4 kg (-0.3 kg). Case 2: M.L.S.B., 74-year-old woman with pre-diabetes and systemic arterial hypertension. In the evaluation, she presented a weight of 108.6 kg, BMI of 44.63 kg/m^2, 53% of BFP and 27.4 kg of SMM. Using SMG for 9 months, with progressive doses up to 1.5 mg/week, reduced weight to 94.8 kg (-13.8 kg), BMI to 38.95 kg/m^2 (-5.68 kg/m^2), SMM to 24.7 kg (-2.7 kg) and maintained BFP (53.6%). Case 3: L.G.G., diabetic woman, 78 years old. On examination: weight of 76.4 kg (maximum reached of 80.3 kg), BMI of 34.4 kg/m^2, with 53.7% of BFP and 18.4 kg of SMM. She started treatment with SMG up to a dose of 1.25 mg/week. After 14 months: weighted 69.2 kg (-7.2 kg), BMI of 31.17 kg/m^2 (-2.7 kg/m^2), BFP 50.5% (-3.2%) and SMM 17.8 kg (-0.6 kg). The percentage of weight lost in cases 1, 2 and 3 were: 11%, 12.2% and 9.42%, respectively. As for the change in relative SMM (SMM adjusted for weight), there was an increase in the percentage of SMM/weight in the three cases: case 1 (31.8% to 35%), case 2 (25.23% to 26%) and case 3 (24% to 25.72%). Patients in cases 1 and 3 did resistance exercise, while case 2 had difficulty in adhering to the exercise. In all cases, the patients improved disposition, mobility when squatting or getting up from a chair and walking. The patient in case 1 underwent knee prosthesis surgery during treatment. **Discussion:** SMG proved to be safe and effective for weight loss in all cases described. Despite the concern about loss of muscle mass during weight loss in the elderly, our cases demonstrated that we should consider not only absolute muscle mass, but mainly relative muscle mass. **Final comments:** SMG proved to be effective in weight loss, improved mobility and ambulation, as well as a relative improvement in SMM in elderly people with physical limitations. **Keywords:** obesity; elderly; semaglutide.

AP-267 NALTREXONE AND BUPROPION COMBINATION FOR WEIGHT CONTROL AND MANAGEMENT OF OBESITY-RELATED COMORBIDITIES

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Introduction: Obesity is a nutritional and metabolic disorder with a growing prevalence in the global population. Obesity is associated with an increased risk of developing type 2 diabetes mellitus, dyslipidemia, fatty liver disease, hypertension, among others. However, losing 5%-10% of body weight can reduce this metabolic and cardiovascular risk. The treatment of obesity involves lifestyle changes, and in some cases, medications can be used in combination to aid in effective weight loss, such as the combination of Naltrexone and Bupropion, which have effects on two distinct areas of the brain involved in food intake regulation: the hypothalamus and the mesolimbic dopamine circuit. **Objective:** To analyze, in the literature, articles and studies on the use, efficacy and validity of the use of naltrexone associated with bupropion for the treatment of obesity. **Methods:** This study carried out a systematic review of the literature based on the PRISMA methodology, using the PubMed and SciELO databases, selecting 6 articles from the last five years. **Results:** Treatment with naltrexone combined with bupropion offers a new approach to managing obesity that is superior to the individual use of these drugs, as it can improve the ability to control eating behavior and food cravings. Additionally, this treatment is generally well-tolerated, although it may present mild to moderate adverse effects such as nausea, constipation, and headache. It is worth noting that there is no evidence of negative effects on depression or suicidal tendencies associated with the use of this drug combination. The use of naltrexone with bupropion is capable of providing clinically significant weight loss, along with corresponding improvements in comorbidities frequently associated with obesity, reduction in LDL levels, insulin and fasting glucose, decreased average blood pressure, improved weight-related quality of life, and better control over food intake. **Conclusion:** The exponential increase in the prevalence of obesity worldwide is associated with comorbidities and a decrease in patients' quality of life. Thus, the use of the Naltrexone and Bupropion combination proves to be an effective approach to promote weight loss and combat the negative consequences of obesity.
Keywords: obesity; naltrexone; bupropion.

AP-268 THIAMINE DEFICIENCY AFTER BARIATRIC SURGERY AND PROGRESSION TO WERNICKE-KORSAKOFF ENCEPHALOPATHY: A CASE REPORT

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Case report: Patient, female, 25 years old, sought an endocrinologist due to a history of sleeve gastrectomy in 2020 due to severe obesity (BMI: 46.39 kg/m²). In 2020, shortly after bariatric surgery (BS), she presented with persistent vomiting, unable to eat properly, mental confusion, gait ataxia and stopped walking. At that time, she was not diagnosed and evolved into a coma with hospitalization in the ICU. After a month, she was discharged from the hospital still with significant muscle weakness, imbalance and unable to walk. In the course of 1 year, she presented significant weight loss (weight: 47.8 kg and BMI: 15.08 kg/m²). associated with nausea and vomiting. In addition, she maintained the same neurological complaints with significant impairment of walking and memory. She sought a neurologist 1 year after the BS and was diagnosed with Wernicke-Korsakoff encephalopathy (WKE), started treatment with intravenous thiamine. Despite the improvement in the condition, she still had sequelae. In March 2023, she was hospitalized due to malnutrition and several nutritional deficiencies (iron deficiency anemia, vitamin b12 and thiamine deficiency). During hospitalization, she received an enteral diet and venous replacement for the nutritional deficiencies. After hospital discharge, she sought an endocrinologist. At the consultation, she complained of mental confusion, muscle weakness, fatigue, imbalance, hair loss, sadness, anhedonia, easy crying, very low food intake and great difficulty to walk. On physical examination: 54.7 kg, BMI = 17.4 kg/m², skeletal muscle mass of 21.3 kg (greatly reduced), weight-adjusted muscle mass of 0.389 and handgrip strength (HGS) of 5 kg. Supplementation with hypercaloric and hyperproteic supplements was initiated (around 1,000 kcal per day and protein of at least 60 g per day) and replacement of oral iron, vitamin D, calcium citrate, thiamine 300 mg, injectable vitamin b12 and escitalopram. After 45 days, she was already walking alone, improved in strength, mood and food intake. On examination: improvement in muscle mass adjusted for weight 0.390 and HGS 21.1 kg. **Discussion:** Thiamine deficiency occurs in about 8% of patients undergoing BC. In a few cases, its deficiency can lead to WKE. It usually starts its clinical manifestation in the first 6 months after surgery, and has a higher prevalence among young women. **Final comments:** In the suspicion of thiamine deficiency the treatment should be promptly instituted to avoid the WKE. **Keywords:** Wernicke-Korsakoff encephalopathy; bariatric surgery; thiamine deficiency.

AP-269 HEALTHY EATING, OBESITY, AND QUALITY OF LIFE IN THE ELDERLY

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Introduction: Healthy eating is a set of choices aimed at providing the necessary nutrients for maintaining health and well-being, being one of the main forms of prevention against obesity. Considering Brazil's current demographic transition and the undeniable association of obesity as one of the main risk factors for various chronic diseases, the importance of discussing this topic, especially in the elderly population, is evident. **Objective:** To analyze the influence of healthy eating as a protective factor against obesity and a predictor of quality of life and life expectancy. **Methods:** This is a literature review using the PRISMA methodology, utilizing the databases: SciELO, LILACS, and BVS, totaling 6 articles. **Results:** Changes in dietary patterns due to the consumption of processed and easily prepared products are common among the elderly, especially in unfavorable domestic circumstances such as isolation, loneliness, and functional impairment. This, combined with other factors, leads to significant nutritional alterations, predisposing to obesity. When combined with all the physiological modifications and fatigue that aging promotes in the body, this results in problems that negatively affect the quality of life of the elderly. Among these adversities, the most affected are the cardiovascular system, promoting the development of systemic arterial hypertension, a risk factor for heart attack and stroke; consequences in the musculoskeletal system, causing bone and cartilage wear; in the respiratory system, resulting in sleep apnea; and mental and psychosocial consequences resulting from possible social stigmatization related to their condition. All these factors contribute to a decline in the quality of life of the elderly and are related to premature morbidity and mortality. **Conclusion:** The elderly population is the fastest-growing age group in the Brazilian population, and understanding the behavior of diseases such as obesity in these individuals is of utmost importance. This knowledge can lead to health prevention actions, such as promoting healthy eating, with the aim of improving quality of life and increasing longevity. **Keywords:** quality of life; obesity; elderly.

AP-270 RECURRENT PARATHYROID ADENOMA SECONDARY TO PRIMARY HYPERPARATHYROIDISM WITH CDC73 GENE MUTATION IN A YOUNG ADULT: CASE REPORT

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Case presentation: 21-year-old female patient, previous surgery for parathyroid adenoma 7 years ago, with excision of a 2.0 x 0.8 cm nodule in the right thyroid bed. Recent laboratory tests showed: serum calcium = 11.5 dL/mL, ionic calcium = 1.59 mmol/L, serum albumin = 4.6 g/dL, parathyroid hormone (PTH) = 100 pg/mL, creatinine = 0.76 ng/dL, 24-hour calciuria = 269 mg/dL, prolactin and calcitonin levels, as well as normal hand and skull X-rays. Ultrasonography found recurrence of parathyroid adenoma, with a nodule of 1.0 x 0.6 cm and parathyroid scintigraphy with sestamibi + spect CT, however, showed a negative result. Because of the high PTH and age below 40 years, a genetic panel was performed to search for primary hyperparathyroidism, which identified a mutation in the CDC73 gene. A new resection of the parathyroid adenoma was chosen and was successful, with a reduction of 78 pg/mL in the PTH level in the first 10 minutes after surgery. The patient was followed up as an outpatient by an endocrinologist, and five-yearly screening for renal and uterine tumors was indicated, in addition to collecting calcium and PTH tests from first-degree relatives. **Discussion:** Primary hyperparathyroidism (PHPT) is an endocrinopathy with a mean incidence of 28 affected per 100,000 individuals. In 80%-85% of cases, it arises from an adenoma in one of the parathyroid glands and is associated with a recurrence rate of 2.5%-5.5%. It usually manifests in isolation and rarely in the familial form of the disease or as an integral tumor of multiple endocrine neoplasia (MNE) type 1 or type 2A. In this context, somatic loss-of-function mutations of the CDC73 gene, encoding parafibromin, are common. Commonly, PHPT has no typical symptoms, and most patients are asymptomatic. The diagnosis is based on the identification of hypercalcemia, elevated blood PTH concentration, and the presence of parathyroid tumors, performing diagnostic exclusion of NEM 1 and NEM 2A, as well as other endocrinopathies. Parathyroidectomy is the therapy of choice for patients with PHPT, symptomatic or not, as long as the latter meet the minimum criteria that recommend surgery. **Final comments:** The case report describes a young patient with recurrent parathyroid adenoma and associated CDC73 gene mutation. Thus, the importance of requesting the genetic panel for cases of primary hyperparathyroidism in patients suspected of genetic disease is portrayed. **Keywords:** hyperparathyroidism, primary; parathyroid neoplasms; genetic counseling.

AP-271 A RARE CASE OF MEDULLARY APLASIA SECONDARY TO THE USE OF METHIMAZOLE: A CASE REPORT

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Case presentation: A 59 years old, male, with polyglandular autoimmune syndrome type 2 (diagnosis of primary adrenal insufficiency since 1993), developed hyperthyroidism due to Graves' disease in 2021, in which TSH < 0.01 mU/L, free T4 2.03 ng/dL and TRAb 0.9 (RV < 0.55). Thyroid ultrasonography (US) showed a thyroid with increased volume, diffusely heterogeneous texture, without nodules. methimazole 10 mg/day was initiated but the patient referred irregular use. Six months after the beginning of treatment, was evidenced thrombocytopenia (89,000 mm³), without other symptoms. during investigation, the patient evolved with severe anemia (HB 5.8 g/dL) and neutropenia (<500/mm³), in addition to worsening of thrombocytopenia (9,000 mm³). He was admitted to a tertiary care service to further investigation. myelogram and bone marrow biopsy showed medullary aplasia, with no evidence of neoplasia. It was excluded infectious, metabolic, storage diseases and other autoimmune disorders. Methimazole was discontinued and then started high-dose corticosteroid therapy and cyclosporine. After three months, the patient is still with slow increase of hemoglobin and platelets. At the moment, in weaning from corticosteroids and in need of cyclosporine for treatment maintenance. **Discussion:** Methimazole is a drug commonly used for the treatment of Graves' disease. Agranulocytosis is one of the possible adverse effects, with an occurrence rate of 0.1%-1%. medullary aplasia can also occur more rarely. Caution is warranted in patients over 40 years of age and/or at doses greater than 30 mg. the mechanism of this side effect remains undefined, but there is evidence of an autoimmune phenomena. Most cases have a benign evolution and rapid resolution, but cases in which bone marrow transplantation is necessary are described. **Final considerations:** It is necessary to be aware of the myelotoxicity induced by antithyroid drugs even in patients with low doses, especially in those who use irregularly. Improvement after suspension usually occurs between 2-5 weeks, but there are more severe cases with a slow response. **Keywords:** medullary aplasia; methimazole; rare case.

AP-272 CORRELAÇÃO ENTRE HISTOLOGIA E CITOLOGIA DE NÓDULOS DE TIREOIDE REALIZADAS EM UM HOSPITAL UNIVERSITÁRIO

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Introdução: O carcinoma de tireoide é a neoplasia endocrinológica mais frequente. A citologia aspirativa por agulha fina (PAAF) permite a avaliação dos nódulos tireoidianos, estimando o seu risco de malignidade, mas a confirmação do diagnóstico de câncer de tireoide é feita pelo exame histológico. O sistema Bethesda tem sido usado para classificar os achados da PAAF com base no risco de malignidade, sendo as categorias III e IV controversas quanto ao manejo clínico, pois os riscos de malignidade variam significativamente. **Objetivo:** Avaliar a taxa de malignidade dos nódulos de tireoide puncionados em um hospital universitário de acordo com a classificação de Bethesda. **Métodos:** Foram analisados os prontuários de pacientes atendidos de janeiro de 2013 a dezembro de 2020 que realizaram PAAF de nódulo tireoidiano e tireoidectomia. Foram calculados taxa de malignidade por classificação Bethesda, sensibilidade, especificidade, valor preditivo positivo (VPP), valor preditivo negativo (VPN) e acurácia das PAAF. **Resultados:** A taxa de malignidade dos nódulos categoria I de Bethesda foi de 21%, Bethesda II, de 6,7%, Bethesda III, de 17,2%, Bethesda IV, de 36,4%, e Bethesda V e VI, de 100%. A sensibilidade da PAAF foi de 76,2%, a especificidade, de 90,9%, o VPN, de 93,2%, o VPP, de 70,2% e a acurácia, de 87,7%. **Conclusão:** A taxa de malignidade dos nódulos tireoidianos foi semelhante às previstas na classificação de Bethesda. A sensibilidade, a especificidade, o VPP, o VPN e a acurácia do estudo citológico dos nódulos tireoidianos neste serviço estão dentro da média encontrada em outros centros. **Keywords:** nódulo da glândula tireoide; neoplasias da glândula tireoide; biópsia por agulha fina.

AP-273 DNA METHYLATION PATTERNS DEFINE SUBTYPES OF DIFFERENTIATED FOLLICULAR CELL-DERIVED THYROID NEOPLASMS

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Introduction: Alterations in DNA methylation are stable epigenetic events that can serve as clinical biomarkers. The aim of this study was to analyze methylation patterns among various follicular cell-derived thyroid neoplasms to identify disease subtypes and help understand and classify thyroid tumors. **Methods:** We employed an unsupervised machine learning method for class discovery to search for distinct methylation patterns among various thyroid neoplasms. Our algorithm was not provided with any clinical or pathological information, relying exclusively on DNA methylation data to classify samples. We analyzed 810 thyroid samples (n = 256 for discovery and n = 554 for validation), including benign and malignant tumors, as well as normal thyroid tissue. **Results:** Our unsupervised algorithm identified that samples could be classified into three subtypes based solely on their methylation profile. These methylation subtypes were strongly associated with histological diagnosis ($p < 0.001$) and were therefore named normal-like, follicular-like, and PTC-like. Follicular adenomas, follicular carcinomas, oncocytic adenomas, and oncocytic carcinomas clustered together forming the follicular-like methylation subtype. Conversely, classic papillary thyroid carcinomas (cPTC) and tall cell PTC clustered together forming the PTC-like subtype. These methylation subtypes were also strongly associated with genomic drivers: 98.7% BRAF V600E-driven cancers were PTC-like, whereas 96.0% RAS-driven cancers had a follicular-like methylation pattern. Interestingly, unlike other diagnoses, follicular variant PTC (FVPTC) samples were split into two methylation clusters (follicular-like and PTC-like), indicating a heterogeneous group likely to be formed by two distinct diseases. FVPTC with a follicular-like methylation pattern were enriched for RAS mutations (36.4% *vs.* 8.0%; $p < 0.001$), whereas FVPTC with PTC-like methylation patterns were enriched for BRAF V600E mutations (52.0% *vs.* 0%, Fisher exact $p = 0.004$) and RET fusions (16.0% *vs.* 0%, Fisher exact $p = 0.003$). **Conclusions:** Our data provide novel insights into the epigenetic alterations of thyroid tumors. Since our classification method relies on a fully unsupervised machine learning approach for subtype discovery, our results offer a robust background to support the classification of thyroid neoplasms based on methylation patterns. **Keywords:** thyroid cancer; epigenetic; DNA methylation.

AP-274 EVALUATION OF THE NEW TOOL THYROID NODULE APP (TNAPP) IN CYTOPATHOLOGICAL OUTCOMES OF THYROID NODULES WITH INDETERMINATE CYTOLOGY: A RETROSPECTIVE STUDY

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Introduction: About two-thirds of the population have thyroid nodules. Ultrasound is used for initial assessment, and, if necessary, followed by Fine Needle Aspiration Biopsy (FNAB). The Thyroid Nodule App (TNAPP) was developed as a tool to aid clinical decision making, provide guidelines and classify patients as "for" or "against" FNAB. **Objectives:** Our aim is to analyze its accuracy and compare it with the Thyroid Imaging Reporting and Data System (TI-RADS), and its correlation with the diagnosis of malignant neoplasia. **Materials and methods:** This is a single-center study, with a retrospective analysis of a database of patients with thyroid nodules who underwent FNAB (with Bethesda III or IV cytopathological report) guided by ultrasound, composed by fifty-eight nodules managed by the Endocrinology Team of a Brazilian hospital in the period from 2016 to 2022. The ultrasonographic findings were classified according to the TNAPP and TI-RADS methods. Data analysis was performed using the R software version 4.2.1. **Results:** In the present study, the anatomopathological examination revealed that 48.27% of the nodules were benign and 51.72% were malignant. By the TNAPP ultrasound classification, 20.7% of the nodules were classified as low, 51.7% as moderate, and 27.6% as high suspicion. In the TI-RADS classification, 7% of the nodules were classified as low suspicion, 25.8% as moderately suspicious and 67.2% as highly suspicious. Thus, there was no statistically significant association between the nodules classified by TNAPP or by TI-RADS, and the assessment of agreement between the results was low for both exams. Furthermore, in all Bethesda categories, the p value was greater than 0.05, however, when we evaluated by subgroup, we can observe that Bethesda III nodules classified by TI-RADS had a p value close to 0.05, which suggests that in this specific subgroup there could be an advantage in using the TI-RADS tool. **Conclusion:** The TNAPP showed low sensitivity but high specificity in detecting malignancy in Bethesda III and IV nodules. When compared to TI-RADS, there was no statistically significant difference in malignancy detection despite the low agreement between the methods. Therefore, TNAPP is not considered useful for nodules with indeterminate cytological examination, but it has potential to be explored. **Keywords:** thyroid nodule; thyroid nodule app; fine needle aspiration biopsy.

AP-275 ASSOCIATION OF HYPERTHYROIDISM AND HYPERPARATHYROIDISM: A CASE REPORT

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Female, 75 years old, with tremors, palpitations and weight loss for one year, referred to Endocrinology for hyperthyroidism due to Graves' disease (TRAB+); with previous diagnoses of hypertension and type 2 diabetes, using hydrochlorothiazide, metformin, ASA, atenolol and NPH insulin. There was USG of the thyroid with multinodular goiter and bone densitometry with osteoporosis. Hypercalcemia (Ca 11.3 on 05/10/22; 11.2 on 01/19/23), due to hyperparathyroidism (PTH 265.5 on 11/12/22; 377.7 on 04/04/23), maintained after treatment of hyperthyroidism with methimazole 20 mg. Hypercalcemia is seen in patients with hyperthyroidism in up to 22% cases; this occurs due to bone resorption due to increased FT4 and its severity is directly proportional to the osteoclastic activity of thyroid hormone in the bones. Hypercalcemia usually resolves after correction of hyperthyroidism. The association of hyperthyroidism and PPH is rare, being present in less than 1% of patients with hyperthyroidism. The difficulty in these cases is usually the overlapping of symptoms, in addition to the absence of specific symptomatology of the association, with laboratory evaluation being essential for the diagnosis of hypercalcemia and, therefore, the evaluation of PTH to differentiate between hypercalcemia secondary to hyperthyroidism or hypercalcemia due to PPH in a patient with concomitant hyperthyroidism. Therefore, hypercalcemia in a patient with hyperthyroidism requires investigation for PPH. The patient was using hydrochlorothiazide and evolved with worsening of renal function due to underlying diseases, but both did not exclude the diagnosis of PHP. It is necessary to discuss whether hyperthyroidism and hyperparathyroidism would be part of a syndrome or whether they are pathologies with sporadic association. The thyroid and parathyroids have the same embryonic origin, which suggests that this association may be part of a syndrome of multiple endocrine adenomas, secondary to genetic mutation. Furthermore, there is the hypothesis that hyperparathyroidism is secondary to a long-lasting effect of thyroid hormone on adrenergic receptors. Still, this association would be more frequent, which is not the case, since most patients with concomitant hyperthyroidism and PPH have parathyroid adenoma. Although the association of hyperthyroidism and hyperparathyroidism is rare, the need for investigation of hyperparathyroidism in patients with hyperthyroidism and hypercalcemia must be emphasized. **Keywords:** hyperthyroidism; primary hyperparathyroidism; hypercalcemia.

AP-276 EVALUATION OF THE EFFECTIVENESS OF THERMOABLICATION IN THE TREATMENT OF THYROID NODULES

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Introduction: The traditional surgical approach, transcervical thyroidectomy, remains the most common technique for the resolution of thyroid nodules, but it generates a large scar in the cervical region. However, there is a need for evolution with less invasive techniques, which allow a better functional and aesthetic result in this region. Thermoablation of thyroid nodules is a technique used by surgeons to reduce the size of nodules in order to maintain normal thyroid function. **Objectives:** The present study aims to evaluate the effectiveness of the thermoablation technique in the treatment of thyroid nodules, highlighting its main advantages. **Materials and methods:** Our study consists of a systematic review of the literature with the objective of evaluating the main databases through a bibliographic survey. The searched universe refers to studies indexed in the following databases: LILACS and PubMed. The analysis period comprised the years 2019 to 2023. Thus, 36 articles were included. **Results**: When properly indicated, the technique allows for a better aesthetic result, as it is a less invasive procedure, its great advantage is the absence of scars and a lower risk of nerve damage in the cervical region. With less postoperative pain and morbidity and lower complication rates compared to the conventional approach. Although thermoablation is a low-risk procedure that is easy to perform in an outpatient setting, it has some limitations, which include: cost and dependence on the operator's ability. Radiofrequency is the thermoablation technique with the largest number of studies in the literature. The use of thermoablation techniques is in benign thyroid nodules, however, some studies have shown that they can be used safely in some neoplastic nodules, such as low-risk papillary thyroid microcarcinoma. **Conclusion:** Thermoablation, when compared to traditional thyroidectomy, proved to be a safe, effective, relatively low-cost alternative with a better prognosis in the treatment of thyroid nodules, the technique still has insufficient data on long-term results. **Keywords:** thyroid surgery; thyroid nodules; thermoablation.

AP-277 MANAGEMENT OF PAPILLARY THYROID CARCINOMA PRESENTING WITHIN A THYROGLOSSAL DUCT CYST: CASE REPORT AND LITERATURE REVIEW

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Case presentation: J.E.M.S., male, 43 years old, presented a cervical tumor in the midline, with progressive growth for 4 years. A CT scan of the cervical region showed the presence of a thyroglossal duct cyst measuring 4.9 x 4.8 cm, with ectopic thyroid tissue in the median and left paramedian infrahyoid. He was evaluated by head and neck surgery and Sistrunk surgery was indicated. The anatomopathological result showed a cyst excision product measuring 8.0 x 6.0 x 1.0 cm, with papillary thyroid carcinoma measuring 1.8 x 1.6 x 1.3 cm, restricted to the cyst lumen, not exceeding the fibrous capsule, with hyoid segment and surgical margins free of neoplasia, without blood vascular, angiolymphatic or perineural invasion. Complementary tests showed thyroid function within normal limits and thyroid ultrasound showed a nodule in the middle third of the right lobe, measuring 0.5 x 0.4 x 0.2 cm, hypoechoic, without foci of calcification, TI-RADS 4. It was decided to maintain a conservative approach and watch for a thyroid nodule. **Discussion:** The thyroglossal duct is an embryological remnant of thyroid development, which under physiological conditions presents obliteration around the 7th week of gestation. Around 7% of the adult population fails in this involution, which can give rise to a cyst. Clinically, it is evidenced as a cystic lesion in the midline of the cervical region. The presence of carcinoma is a rare presentation, with a prevalence of around 1%. Although the Sistrunk procedure is considered suitable for removing the cyst, there is no clear consensus on the approach to carcinoma in this duct, due to the possibility of metastasis from an occult primary tumor of the thyroid gland. Despite this doubt, the "de novo" theory is more accepted in the literature, in which ectopic thyroid tissue develops primarily in this duct. There is controversy regarding the management of the thyroid gland, with surgery indicated mainly in patients characterized as high risk. **Final comments:** This case illustrates a rare association described in the literature, in which conservative management of the thyroid gland was chosen, since in low-risk patients (<45 years, single tumor focus, negative margins, no extension of the carcinoma beyond the cyst wall), the Sistrunk procedure alone may be sufficient, maintaining only ultrasound surveillance and clinical follow-up. **Keywords:** thyroglossal duct cyst; papillary thyroid carcinoma; thyroid gland.

AP-278 MORTALITY IN BRAZIL DUE TO THYROID GLAND DISORDERS IN WOMEN FROM 2010 TO 2021

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Introduction: The thyroid is a hormone-producing gland, its main function is to control metabolism, but it also influences the functioning of other systems. Disorders in this gland cause several problems, such as hyper and hypothyroidism, and, in Brazil, they are the 4th leading cause of mortality due to endocrine, nutritional and metabolic diseases, with women being the most affected group. **Objective:** To describe the distribution profile, by sex and age, of mortality due to thyroid gland disorders in Brazil between 2010 and 2021. **Materials and methods:** This is an observational, descriptive and retrospective study, built from the Mortality Information System (SIM/SUS). For data analysis, they were organized into tables, and the variables observed were age, sex, and state. **Results:** From 2010 to 2021 there were 9,380 deaths in Brazil due to disorders in the thyroid gland. Among these, the Southeast region has the highest rates with 4,626 (49.3%) registered deaths, followed by the Southern region with 1,943 (20.7%). In relation to gender, it is clear that women are the most affected group by the problem, with a number of 6,982 (74.4%) deaths recorded in this period, following the same order of prevalence by region, with the Southeast being the most affected, with 3,389 (48.5%) deaths, and the southern region, with 1,434 (20.5%). Regarding the age group, it was observed that women aged 80 and over and 70 to 79 years are the most affected, with 2,861 (40.9%) and 1,359 (19.4%), respectively. **Conclusion:** Based on the results presented on mortality due to disorders of the thyroid gland, it can be observed that women account for more than 70% of deaths, in addition to a higher prevalence in people of an older age group, following the epidemiology of the disease. Regarding location, there is a predominance of deaths from the problem in the southeast and southern regions. **Keywords:** epidemiology; thyroid gland; Brazil.

AP-279 THYROGLOSSAL DUCT CYST PAPILLARY CARCINOMA: A SINGULARITY TO BE UNDERSTOOD

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The thyroglossal duct cyst (TGDC) originates from the involution of the duct present in the embryonic stage, which participates in the formation of the thyroid. Therefore, it may have thyroid remnant epithelium cells in its structure and may be subject to neoplastic processes. We report the case of a 31-year-old woman with a TGDC associated with a hypoechoic nodule inside it diagnosed 5 years ago, in addition to low suspicion thyroid nodules and absence of suspicious lymph nodes. Fine needle aspiration of the intracystic nodule was performed, resulting in cytology suggestive of papillary thyroid carcinoma (PTC), Bethesda V category. Therefore, the patient underwent total thyroidectomy and surgical excision of the TGDC in 2022 (Sistrunk's procedure). Anatomopathological and immunohistochemical analysis of the cyst showed classic papillary thyroid carcinoma in a cystic structure and invasion of adjacent skeletal striated muscle, positive for thyroglobulin and TTF1.On histopathology of the thyroid gland, only nodular hyperplasia was found, with no evidence of neoplasia in this topography. There are different theories about the origin of the PTC from the TGDC, such as de novo origin, synchronous tumor, or metastasis from the thyroid tissue to its remnant, in addition to discussions about the best surgical approach: excision of the TGDC only, or its excision associated with thyroidectomy. In the reported case, we have histological confirmation of the de novo origin, ratified with absence of PTC in the thyroid. The follow-up of these cases is also the subject of controversy, given their rare occurrence and scarcity of information in the literature. Decision-making takes into account adaptations of current guidelines for the management of differentiated thyroid carcinoma. Considering the presence of microscopic extension to the adjacent striated muscle, the case was categorized as having an intermediate risk of recurrence, and suppressive therapy with levothyroxine was promptly initiated. The patient is currently scheduled for a therapeutic dose of radioiodine, what would make mandatory to perform a total thyroidectomy beyond the excision of TGDC. The exposed case is a learning instrument and a unique source of experience for endocrinologists. **Keywords:** thyroglossal duct cyst; papillary carcinoma; Sistrunk.

AP-280 CASE REPORT: ANAPLASTIC THYROID CARCINOMA IN ELDERLY PATIENT WITH RAPID GROWING CERVICAL MASS

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Case presentation: Male, 62 years old, attended the outpatient clinic in May/2022 with a cervical nodule on the left, noticed since October/2021. He had intermittent, stabbing pain, as well as hoarseness. A thyroid ultrasound was performed in March 2022, which showed a mixed thyroid nodule in the left lobe, hypoechogenic, with ill-defined margins and microcalcifications, measuring 5.4 x 3.9 x 5.7 cm (volume 62.42 cm^3). In neck CT, an expansive lesion was observed in the left lobe of the thyroid measuring 8 x 7 cm, causing deviation of the larynx and trachea to the right, with areas of necrosis, and lymph node enlargement at levels IIA and IV on the left and subcarinal with signs of necrosis. Patient was referred for elective surgery. A new thyroid ultrasound was performed in June, with a mass in the left cervical region, heterogeneous, with compression of cervical structures, measuring 15 x 10 x 6 cm (volume 468 cm^3), with fine needle aspiration biopsy suggestive of anaplastic thyroid carcinoma or metastasis. However, in an outpatient consultation in June, the patient presented with tachydyspnea, being referred to the emergency room. On physical examination, he had a cervical mass measuring 10 cm, firm, adhered to the deep planes with erythema and local heat. The chest CT showed multiple nodules in the lung parenchyma suggestive of secondary implants. During hospitalization, he developed stridor and respiratory failure, being referred for transtumoral tracheostomy and biopsy. The anatomopathological showed poorly differentiated malignant neoplasm; immunohistochemical study was consistent with anaplastic thyroid carcinoma. Discussed with the palliative care team and opted to prioritize comfort and symptom control. Patient died on 29/06/2022. **Discussion:** rapidly growing thyroid nodule, associated with pain on palpation, dyspnea, hoarseness, and a cervical mass adhered to deep and firm planes must raise a suspicion of anaplastic thyroid carcinoma (ATC). ATC is an extremely aggressive undifferentiated tumor derived from follicular cells, with high mortality, accounting for 1.3% of all cases of thyroid carcinoma. Patients with ATC have an average survival of 5 months to 1 year, with an early diagnosis and resection of the lesion being the best perspective. **Final comments:** Anaplastic thyroid carcinoma has an aggressive course with high mortality. Early diagnosis of ATC can provide immediate multidisciplinary care, allowing shared treatment options with patients and families. **Keywords:** anaplastic thyroid carcinoma; thyroid neoplasm; thyroid.

AP-281 EFFECTS OF HEAVY METALS ON THYROID FUNCTION: A SYSTEMATIC LITERATURE REVIEW

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Introduction: The presence of heavy metals in the environment, resulting from industrial activities, atmospheric pollution, contamination of water resources, among other sources, has been recognized as a serious threat to human health. Among the human body systems affected by these substances, the thyroid gland stands out as an essential organ for hormonal homeostasis, regulation of metabolism, growth, and development. In this context, understanding the detrimental effects of heavy metals on thyroid function becomes extremely important in the public health field. **Objective:** To analyze and comprehensively synthesize the available evidence on the effects of heavy metals on thyroid function and identify the main underlying mechanisms of these deleterious effects. **Methods:** The methodology employed consisted of a systematic review, strictly following the guidelines recommended by PRISMA. A systematic and comprehensive search was conducted in major electronic databases, such as PubMed, Scopus, and Web of Science, using specific terms related to heavy metals and thyroid function. Studies published from 2010 onwards that investigated the effects of heavy metals on thyroid function were selected. At the end of the process, 34 articles were carefully selected for detailed analysis. **Results:** The thorough evaluation of the selected studies allowed addressing a wide range of aspects related to the effects of heavy metals on thyroid function. Hormonal and thyroid activity alterations were highlighted, as well as the influence of these elements on thyroid gene expression and glandular development and growth processes. The obtained results revealed a significant association between exposure to heavy metals and thyroid dysfunctions, such as hypothyroidism, hyperthyroidism, and disruption in the production of thyroid hormones. **Conclusion:** This review reinforces the relevance of heavy metals as risk factors for thyroid dysfunctions in humans. The close relationship between exposure to these toxic elements and damage to thyroid function, leading to potential negative consequences for health, is highlighted. Understanding the underlying mechanisms of these effects is essential to develop preventive strategies and control exposure to heavy metals, aiming to protect thyroid function and promote the well-being of the population. **Keywords:** heavy metals; thyroid function; health effects.

AP-282 EVALUATION OF THE AMERICAN COLLEGE OF RADIOLOGY THYROID IMAGING, REPORTING AND DATA SYSTEM AND AMERICAN THYROID ASSOCIATION ULTRASOUND CLASSIFICATIONS AS A TOOL FOR DECISION MAKING IN PATIENTS WITH INDETERMINATE CYTOLOGY

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Introduction: The initial evaluation of thyroid nodules is crucial for confirming malignant lesions. For this purpose, the main method used is fine-needle aspiration biopsy (FNAB), which is performed based on a recommendation derived from a previous ultrasound analysis. Such recommendations can be based on the American College of Radiology (ACR) TI-RADS and the American Thyroid Association (ATA) guidelines. **Objectives:** Thus, the present study aims to determine whether the aforementioned guidelines, in association with the Bethesda System, could be used to assist in the therapeutic decision. **Materials and methods:** This is an observational and longitudinal study, with retrospective analysis from a database of FNA guided by Ultrasound, composed by fifty-one nodules analyzed between January 2018 and July 2022. The cytopathologic results were based on The Bethesda System (categories III and IV) and the ultrasound findings were classified according to ATA and ACR TI-RADS guidelines. The statistics were analyzed using software R version 4.2.1., T test for quantitative variables and Chi-square test for categorical variables. **Results:** In the present study, the overall malignancy rate was 64.70%. However, there was no significant association between Bethesda III nodules and ACR TI-RADS. Regarding ATA, there was a significant difference ($p < 0.05$) as there was a higher percentage of "highly suspicious" and "non-classifiable" nodules in the group with malignant histopathological results compared to the non-malignant group. In Bethesda IV nodules, there was no significant difference between the categories of these classifications and the risk of malignancy according to ACR TI-RADS and ATA ($p >= 0.05$). **Conclusion:** In this study, we did not observe a statistically significant relationship between the ATA and ACR TI-RADS classification and the risk of malignancy. However, further studies are warranted to assess the effectiveness of these standardized tools, with the aim of improving the diagnosis and treatment of patients. **Keywords:** thyroid; nodules; malignancy.

AP-283 UNUSUAL FINDING IN HEART FAILURE – THYROTOXICOSIS: CASE REPORT

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Male, 48 years old, sought the Emergency Care Unit due to progressive dyspnea, edema of lower limbs and scrotum for 1 month, associated with weight loss. He denied previous pathological antecedents. In the physical exam, he presented jugular swelling, signs of pulmonary congestion, edema in lower limbs. He was transferred to the reference hospital performing an echocardiogram due to the diagnostic hypothesis of heart failure (HF). On hospital admission he presented bilateral exophthalmos, bulky and multinodular goiter, in addition to irregular heart rhythm, leading to suspicion of decompensated hyperthyroidism. On the same day, the patient evolved with psychomotor agitation, atrial fibrillation with rapid ventricular response (frequency heart rate 126 bpm), diarrhea, worsening dyspnea and fever. With the hypothesis diagnosis of thyrotoxic crisis (TC) was started propylthiouracil (PTU), hydrocortisone, propanolol. Tests: TSH < 0,01 mU/L, total T4 29.7 ng/dL, TRAb > 40. Ludo thyroid ultrasound: diffusely heterogeneous echotexture, solid, hyperechogenic, well-delimited nodular images ranging from 0.4 to 1.4 cm (TI-RADS 3).Echocardiogram report: irregular heart rhythm, diffuse myocardial biatrial hypocontractility, ejection fraction: 33%. He was discharged from the hospital after clinical stabilization, returning via outpatient clinic without complaints, for endocrinological follow-up. Thyrotoxicosis is an endocrinological disease whose signs and symptoms may also be present in other pathologies. In the case presented, the patient initially received treatment for HF, which ended up delaying the main diagnosis of Graves' disease and precipitating a TC, which is an endocrinological emergency. TC involves exacerbation of thyrotoxicosis with hypermetabolic manifestations. The diagnosis is clinical, and scores above 45 on the Burch-Wartofsky Score confirm the hypothesis in a probable context. The patient above presented scored of 70 points: fever (15), psychomotor agitation (10), gastrointestinal dysfunction (10), tachycardia (15), atrial fibrillation (10) and symptoms of heart failure (10). Treatment should be initiated in the face of clinical suspicion, with therapy aimed at reducing the production and secretion of thyroid hormone and inhibiting peripheral action; PTU is the thionamide of choice. Beta-blockers inhibit the peripheral action of catecholamines, Propranolol is the most used. Glucocorticoids should be administered as prophylaxis for adrenal insufficiency.
Keywords: thyrotoxic crisis; heart failure; thyrotoxicosis.

AP-284 COMPARATIVE ANALYSIS OF CONVENTIONAL CYTOLOGY VERSUS LIQUID-BASED CYTOLOGY IN FINE-NEEDLE ASPIRATION BIOPSIES OF THE THYROID GLAND

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Introduction: Fine-needle aspiration biopsy (FNAB) is the reference procedure for thyroid nodule evaluation. Its main limitation are inadequate samples, which should be less than 20%. Liquid-based cytology (LBC) has been recently started in sampling thyroid lesions and has shown good results. **Objective:** The aim of our study was to compare the cytomorphology of thyroid lesions by conventional smear (CS) and LBC method. **Materials and methods:** We performed a retrospective study including patients from October 2022 to April 2023 with nodular thyroid disease who underwent fine needle aspiration. The ultrasound classification of nodules used was Thyroid Imaging Reporting and Data System (TI-RADS) and the cytological classification was Bethesda System for Reporting Thyroid Cytopathology (TBSRTC). Thyroid FNAB samples were taken to prepare 3-5 slides for conventional reporting and one sample for LBC preparation by SurePath method. Staining with hematoxylin and eosin, May-Grünwald-Giemsa, and Papanicolaou was done in CS. Cases were reported by TBSRTC and compared. **Results:** The sample consisted mostly of women (83,1%) and the mean age was 54 + 13 years. The majority had TI-RADS 4 (69,2%), TI-RADS 5 (15.4%), TI-RADS 3 (13.8%) and TI-RADS 2 (1.5%). The benign results in CS were 70.7%, while 86.2% of cases were benign in LBC. Malignancy were the same in both methods – 6.2%. The amount of insufficient material was significantly higher in CS 21.5% compared to 7.7% of LBC ($p < 0,01$). **Conclusion:** LBC biopsies represent an alternative to conventional cytology with the advantage of lower rates of undiagnosed results. More studies must be carried out to evaluate the possibility of applying additional techniques to enhances the efficacy of the conventional cytologic diagnosis of thyroid lesions. **Keywords:** thyroid; conventional cytology; liquid-based cytology.

AP-285 SEVERE OSTEOPOROSIS WITH MULTIPLE FRACTURES SECONDARY TO HYPERTHYROIDISM: A CASE REPORT

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Introduction: Thyroid hormones are essentials for bone metabolism, but can have deleterious effects and cause osteoporosis in thyroid disorders. **Objective:** To describe a hyperthyroidism case diagnosed in the presence of osteoporosis and fractures. **Case report:** A 38 years old female patient was admitted to emergency unit with multiple fractures after fall from standing height. The diagnosis of osteoporosis and hyperthyroidism was made and she was referred to the Endocrinology service. She described a 12-month history of weight loss, insomnia, increased bowel movements, hair loss, palpitations and 5 months with irregular periods. Physical examination revealed a skinny and sweated patient with trembling, tachycardia and enlarged thyroid. Laboratory investigation confirmed hyperthyroidism due to Graves' disease: TSH < 0,01 (0,4-5,6 µUI/mL); T4L 4,67 (0,7-1,8 ng/dL) and TRAb > 40,0 (≤1,75 UI/L). Ultrasonography revealed diffuse parenchymal thyroid disease and larger thyroid. Bone mineral densitometry (BMD-DEXA scan) showed Z-score -3,2 in lumbar spine and -4,1 in femoral neck (Z-score ≥ -2,0). She was treated with methimazole (60 mg/day) and propranolol (40 mg/day). After 10 months, was referred to radioactive iodine therapy (RIT) (15 mCi). Methimazole was reintroduced (30 mg/day) 6 months after RIT because of insufficient radioactive iodine dose. Nowadays, she presented asymptomatic for hyperthyroidism and had laboratory tests: TSH < 0,01; T4L 0,92 and TRAb 37,0. New BMD performed 10 months after the diagnosis evidenced significant treatment response: Z-score -2,0 in lumbar spine and -2,4 in femoral neck. **Discussion:** Fragility fractures are late and rare Graves' disease repercussions. Physicians must be attentive to patient's physical examination at all levels of health care to ensure early diagnosis and avoid dangerous manifestations. In addition, they should always consider hyperthyroidism for osteoporosis and pathological fractures the possible cause. **Conclusion:** This case highlights how diagnosis delay in hyperthyroidism can have serious and life-threatening consequences. **Keywords:** osteoporosis; fractures; hyperthyroidism.

AP-286 AGRANULOCYTOSIS IN A PATIENT WITH UNTREATED HYPERTHYROIDISM: A CASE REPORT

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Case presentation: Woman, 44 years old, went to emergency care due to cough, odynophagia, headache and fever for five days. As evidenced agranulocytosis (neutrophil count 10/mm³) in admission's blood count, she was admitted for investigation and treatment. In history of past illnesses, she has arterial hypertension, being treated with atenolol 50 mg, and anxiety disorder, using sertraline 50 mg daily. Actively questioned about previous thyroid diseases, the patient reported the diagnosis of Graves' disease, with previous use of Tapazol for more than 2 years (discontinued on her own). Exams confirmed hyperthyroidism (TSH 0.01 mU/L, FT4 4 mg/dL) and agranulocytosis investigation ruled out hematological neoplastic diseases, nutritional deficiencies or viral infections. In addition to the antibiotics, treatment with dexamethasone and propranolol in high doses were chosen in order to control hyperthyroidism. The patient evolved into improvement of neutropenia and was discharged. After 2 months of follow-up, she underwent radioiodine therapy with 30 mci I131 and developed hypothyroidism, thus, Levothyroxine was started. There was resolution of arterial hypertension and anxiety disorder. In the meantime, she had no recurrence of the agranulocytosis. **Discussion:** neutropenia can affect about 10% of patients with Graves' disease, and severe cases of agranulocytosis are even rarer (0.1 to 1%), being classically associated with the use of antithyroid drugs (methimazole or propylthiouracil). Changings of one or more hematopoietic lineages can occur in hyperthyroidism, even without recent use of antithyroid drugs, and are a diagnosis of exclusion. In this case, what corroborated the hypothesis was the finding of hypercellular bone marrow, with blockage of maturation in granulocytic series and the improvement after achieving euthyroidism. **Final comments:** thyrotoxicosis affects hematopoiesis in several ways. The pathophysiological mechanisms are poorly understood and possibly multifactorial. Agranulocytosis is a serious and rare condition in patients with hyperthyroidism even without the use of antithyroid drugs. This case report aims to increase the recognition of hyperthyroidism in patients with hematological alterations and vice versa: recognizing the presence of agranulocytosis or other cytopenias at the first diagnosis of hyperthyroidism and the prudent use of antithyroid medications. **Keywords:** hyperthyroidism; agranulocytosis; Graves' disease.

AP-287 ESOPHAGEAL ATRESIA IN A NEWBORN AFTER USING METHIMAZOLE DURING PREGNANCY – CASE REPORT

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Case presentation: Female patient, 22 years, with Graves' disease (GD) since JAN/20, with irregular metimazol (MMI) use (20 mg/day). In SEP/20 her exams were: TSH: 0,01 mUI/mL (RR: 0,5-5,0), T4 livre: 2,17 ng/dL (RR: 0,89-1,76) e TRAb: 6,11 (RR< 0,55). The dose was then increased to 40 mg/day. On OCT/20, she was confirmed to be pregnant and the primary care physician stopped MMI. Evolved with frank thyroid decompensation, returning MMI to 40 mg/day after 3 weeks of suspension. The dose was progressively reduced with suspension at 29 weeks, and euthyroidism was maintained until the end of pregnancy. TRAb was 1.23. Term delivery, TSH at neonatal screening of 4.18 mUI/L (VR < 10). The newborn developed respiratory distress at birth, unsuccessful gastric lavage. Esophagography was performed and esophageal atresia and tracheoesophageal fistula with distal stump were visualized. Chest angiotomography revealed esophageal atresia and findings suggestive of duplication of the superior vena cava, considered an anatomical variation. The baby was referred for surgical correction of the defect, staying in ICU for 12 days after surgery, with good evolution. The mother had a postpartum hyperthyroidism decompensation and 20 mg of MMI was restarted. **Discussion:** Hyperthyroidism is one of the most prevalent endocrinopathies during pregnancy, affecting approximately 0.2%. Propylthiuracil (PTU) is the preferred drug in the first trimester of pregnancy because of the lower frequency and severity of malformations compared with MMI (2%-3% risk for PTU and 3%-4% risk for MMI). Teratogenic effects associated with MMI use include congenital aplasia cutis, choanal atresia, facial dysmorphism, cardiac malformation, defects of the abdominal wall, urinary and gastrointestinal tract, such as esophageal atresia. The greatest risk of these events occurs between the 6th and 10th weeks of gestation, indicating the use of PTU in early pregnancy and a new switch to MMI from the 16th week onwards due to the risk of hepatotoxicity of PTU. **Final comments:** It is important to discuss pregnancy planning with all women of childbearing age diagnosed with thyrotoxicosis and to instruct GD patients to immediately notify their physician in case of an unplanned pregnancy. Ideally, pregnancy should be postponed until euthyroidism is achieved, given the risks of maternal-fetal complications arising from decompensated hyperthyroidism and antithyroid drugs during pregnancy. **Keywords:** antithyroid agents; Graves' disease; pregnancy.

AP-288 EPIDEMIOLOGIC PROFILE OF PATIENTS WITH THYROID'S DISEASE ATTENDED AT OUTPATIENT SPECIALIZED CLINIC

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Introduction: Thyroid diseases are common in our country. In Brazil, its prevalence varies between 6%-20%, depending on area and population. Thyroid nodules are a prevalent problem of great clinical importance considering that, when it's found, there has to be the exclusion of thyroid cancer, a common pathology with good prognosis and great chances of cure. **Methods:** The present study describes the epidemiological profile of patients treated at the outpatient clinic of specialists in thyroid diseases at the Alcides Carneiro University Hospital (HUAC), at the Federal University of Campina Grande (UFCG), determining a prevalence of benign and malignant diseases correlating with age, sex, life habits and origin. This is an individualized and retrospective study with documental analysis of over 18 years of age patients' medical records from both sexes. The data were collected through 136 medical records and after applying inclusion and exclusion criteria, were selected 68 records that had information for collected and pre-status SPSS (Statistical Package for Social Science for Windows) entries. The analysis was performed by the researcher and collaborators. For statistical analysis, measures of central tendency and dispersion for numeric variables and obtained frequency determination tables for categorical variables. The project was approved by the Research Ethics Committee of HUAC and, after approval, was prepared in accordance with resolution 1466/202. **Results:** The results suggest that most patients with thyroid diseases are women, aged between 30 and 59 years, coming from Campina Grande/PB, with a body mass index (BMI) greater than 25. In addition, the most prevalent disease was hypothyroidism and the main cause of thyroidectomy was due to malignant diseases. The patients had, concomitantly, other diseases such as systemic arterial hypertension, diabetes mellitus (DM), osteoporosis and osteopenia. **Conclusion:** The results found are in line with what's described in literature, but due to the lack of data available in some medical records, the results are limited and may not reflect other centers' reality, so generalization and applicability may be restrict. **Keywords:** thyroid gland; hypothyroidism; epidemiology.

AP-289 IODINE NUTRITIONAL STATUS AMONG PREGNANT WOMEN IN BOTUCATU, SAO PAULO STATE

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Introduction: The World Health Organization (WHO) recommends a daily intake of 250 µg of iodine for pregnant women. In Brazil, there are reports of a low intake of iodine by pregnant women even in areas considered sufficient iodine. **Objective:** To evaluate the factors associated with the nutritional status of iodine in pregnant women in Botucatu, Sao Paulo state. **Patients and methods:** To characterize the population, socioeconomic, demographic, environmental and health information of pregnant women was collected from the application of a semi structured questionnaire through the Red Cap® tool in 25 pregnant women of any gestational age aged 18 years or older. All urine analyses for iodine determination were performed using a mass spectrometer Exclusion criteria: previous thyroid disease. **Results:** Twenty-five eligible pregnant women were interviewed in two health care units. Ioduria was evaluated in 23 participants with a mean age of 26 years. The mean urine iodine concentration was 231.4 µg/L; 21.7% between 150 and 249 µg/L and 47.9% between 250-499. According to iodine intake, 17 participants (74.0%) made use of sea salt, followed by 21.7% of coarse salt, and 1 participant (4.3%) made use of refined salt; 58.3% made use of industrialized seasonings periodically. A statistically relevant difference was observed between urinary iodine concentrations and gestational age, represented by pregnant women in the first trimester showing a higher concentration (297.28) compared to the second trimester (133.36) ($p < 0.05$). The participants reported that one kilogram of salt usually lasts a little over 3 months. We estimated that since each gram of salt offers 25 mcg of iodine and that 1kg lasts an average of 100 days in the home of these patients with most presenting a family nucleus of 3.6 persons, this results in 2.7 grams of salt, or 67 mcg of iodine intake per day per person, which would result in a deficiency in intake. **Discussion:** The WHO recommends that for epidemiological assessment of iodine nutritional status, the median urinary iodine concentrations of pregnant women should be between 150-249 µg/L, which would reflect adequate iodine nutrition despite insufficient intake. **Keywords:** iodine; pregnancy; iodine intake.

AP-290 ATYPICAL PRESENTATIONS OF HYPERTHYROIDISM: CASE REPORT

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Case presentation: A 70-year-old hypertensive man and former alcoholic with dyspnea on exertion associated with edema of the lower limbs after pneumonia. Upon admission, he reported unintentional weight loss without loss of appetite of approximately 20 kg in 1 month and, in light of this finding, an investigation was initiated. Serologies, glycemia, renal and hepatic functions were unchanged, as well as abdominal imaging and upper digestive endoscopy without alterations. Complete blood count showed pancytopenia with normal vitamin B12 and folic acid findings and iron kinetics showing iron deficiency anemia with increased ferritin. Chest X-ray showed cardiomegaly and right pleural effusion. Thus, a transthoracic echocardiogram was requested, which showed heart failure with reduced ejection fraction (35%). Thyroid function was requested, which showed clinical hyperthyroidism (TSH 0.01 uUI/mL and free T4 14.5 µg/dL). In view of the findings, thiamazol was started and the patient evolved with a good response and without adverse events related to the therapy. **Discussion:** In hyperthyroidism, there is an increase in hormone production due to thyroid anomalies, with Graves' disease being more common. The disease manifests itself in multiple systems and, depending on age, it can present in its typical form (in young people) or atypical form (in the elderly). In the elderly, the manifestations are less evident due to the changes typical of aging and, in this age group, it usually occurs with cardiovascular decompensations and weight loss. In the case portrayed, medullary involvement translated by hypoplasia was observed, since hyperthyroidism can affect hematopoiesis. Most cases related to Graves' disease present hematological alterations secondary to the treatment, but their absence can lead to damage, such as anemia and pancytopenia, which are manifestations considered to be predictors of severity. In this case, as the patient had no previous history of treatment, a bone marrow study was not performed, opting to start an antithyroid drug, which resulted in clinical improvement and resolution of hematological changes. **Conclusion:** Since hyperthyroidism can present atypically in the elderly, it is necessary to recognize these manifestations so that the diagnosis is not delayed. It is also emphasized the need for a multisystem follow-up, with intervention not only in metabolic alterations, but also in cardiac, neurological and hematological disorders. **Keywords:** hyperthyroidism; weight loss; bone marrow hypoplasia.

AP-291 SHIFTING FROM HYPOTHYROIDISM TO HYPERTHYROIDISM: A CASE REPORT

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Clinical case: A 74-year-old woman presented with hypothyroidism in 1989, using levothyroxine (LT4) since then. In February 2020, she was asymptomatic, with normal thyroid function taking LT4 88 mcg/day. After 6 months, she reported weight loss of 11 kg, palpitations, TSH < 0.005 µUI/mL and FT4 3.19 ng/dL, with 62.5 mcg/day of LT4. Thyroid ultrasound did not show focal lesions and parenchyma had heterogeneous echotexture. Medication was discontinued by then. After 2 months without LT4, she remained in hyperthyroidism with positive antibodies against thyroid peroxidase (62.9 IU/mL), against thyroglobulin (5.1 IU/mL) and TRAB – Thyrotropin receptor antibodies (33.93 IU/mL). Triggering factors such as exposure to iodine contrast and medications such as amiodarone were excluded. Methimazole 20mg/day was started, controlling hyperthyroidism in 2 months. A progressive dose reduction was performed and the patient is currently using 5/10 mg every other day with good clinical and laboratory outcomes. **Discussion:** The conversion of hypothyroidism to hyperthyroidism is a rare but well-known condition. In 2023, Daramjav *et al.*, described in a literature review, 50 cases demonstrating that the average duration of conversion is 7 years. Clinical outcomes showed 25% recovery of thyroid function, while 75% recurred to hypothyroidism. The most important mechanism of conversion from hypo to hyperthyroidism includes TSH blocking receptor shifting to TRAB. Clinical manifestations will be determined by which antibody predominates. We describe an elderly woman with hypothyroidism treated with LT4, who became biochemically and clinically hyperthyroid after 30 years of diagnosis. After LT4 suspension, she remained with hyperthyroidism and TRAB positive, confirming Grave's disease, requiring antithyroid drugs, without remission until now. Few cases have been described in the literature and the long conversion time is noteworthy, with only one case reported with such a long period. **Conclusion:** Conversion from hypothyroidism to hyperthyroidism should be remembered whenever LT4 doses need to be progressive reduced for no apparent reason. Premature diagnosis and treatment of hyperthyroidism reduce the risk of adverse events, especially in the elderly. **Keywords:** hypothyroidism; hyperthyroidism; autoimmune disease.

AP-292 MEDULLARY THYROID CARCINOMA WITH HIGH PREOPERATIVE CALCITONIN AND CEA LEVELS WITHOUT EVIDENCE OF LOCAL OR DISTANT METASTASIS: CASE REPORT

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Medullary thyroid cancer (MTC) is a rare neuroendocrine tumor (1%-2% of thyroid cancer cases). 70% of patients with MTC and a palpable nodule at diagnosis have lymphnode metastasis and 10% have distant metastasis. Baseline serum calcitonin concentrations usually correlate with tumor mass, presurgical baseline serum calcitonin > 500 pg/mL indicates high risk of metastatic disease. Carcinoembryonic antigen (CEA) values also correlate with severity, and CEA values between 30-100 ng/mL are associated with a greater volume of lymphnode metastasis (10 or more lymph nodes affected). Case report: Female patient, 27 years old, who in 2018 noticed an increase in volume in the anterior cervical region and ultrasonography (USG) showed a nodule in the right solid lobe, isoechoic, regular margin, with a thin halo, 3.8 x 1.7 x ,24 cm without calcification. She did not follow up with the diagnostic investigation and 04 years later she repeated the USG, which showed the nodule had grown to 4.3 x 1.9 cm, performing FNAB suggestive of neuroendocrine origin. Complementary exams showed serum calcitonin 5,007 (VR < 5.0), CEA 91 (VR < 2.5) and FNA aspirate calcitonin 1,190 pg/mL. Screenings for pheochromocytoma and hyperparathyroidism were negative. Screening for metastatic disease was carried out and despite the high levels of calcitonin, cervical USG, bone scintigraphy, chest, abdomen and pelvis computed tomography did not identify structural disease. Tomography of neck voluminous tumor in the right lobe of the thyroid without evidence of trachea, carotid and other infiltration and structures and without evidence of metastatic cervical lymph node enlargement. After total thyroidectomy, histopathological and immunohistochemical aspects were consistent with the diagnosis of MTC in the right lobe, non-invasive, with absence of necrosis, mitosis and low rate of recurrence (Ki67: positive expression in less than 1% of neoplastic cells), characterized by new WHO classification as low-grade CMT. In the postoperative period, the patient evolved with Calcitonin < 2.0 and CEA 3.27 (<5.0). This case illustrates an uncommon presentation of CMT larger than 4 cm, with calcitonin and CEA values in the preoperative period suggestive of metastatic disease, with negative imaging exams and evolving with an excellent response after therapy, and also draws attention to the good evidenced correlation between the classification of low-grade MTC with the favorable clinical evolution presented by the patient **Keywords:** neuroendocrine tumor; medullary thyroid cancer; metastatic disease.

AP-293 SERIOUS CARDIAC COMPLICATIONS OF DECOMPENSATED HYPERTIREOIDISM IN YOUNG MALE PATIENTS: CASE REPORT

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Case presentation: Male, 27 years old, smoker, reporting symptoms of hyperthyroidism due to Graves' disease (GD) with irregularly use of methimazole (MMZ), in the last 5 years. On physical examination, restless, tremors of extremities, warm and moist skin, normal blood pressure, heart rate: 113 bpm, without orbitopathy signs, diffusely enlarged thyroid, regular cardiac rhythm with a 3rd heart sound. Thyroid ultrasound: enlarged thyroid, with nodular images in left lobe of 32 x 23 x 18 mm and 30 x 18 x 11 mm (TI-RADS 3). TSH antireceptor antibody (TRAb) positive (30U/L). Transthoracic echocardiogram (TTE) showed signs of dilated cardiomyopathy and severe mitral insufficiency (MI), estimated LV ejection fraction (EF) of 45%. In the follow up, progressive adjustments of the MMZ dose were made up, with poor adherence to the treatment, without achieving clinical and laboratory control. The patient was hospitalized for clinical stabilization and definitive treatment. During this period, agranulocytosis leads to discontinuation of MMZ and underwent a total threoidectomy (TT). Microscopic examination confirmed diffuse toxic goiter and a year later of clinical euthyroidism, TTE showed improvement in EF (70%) and MI (moderate). **Discussion:** Hyperthyroidism incidence ranges from 0.2% to 1.5% in the general population, and its main etiology is GD (60%), which is more prevalent in women (9% in women *vs.* 0.5% in men), and has a doubled risk in smokers. Thyroid hyperfunction is directly linked to deleterious effects that can be irreversible if the underlying disease is not properly treated. Among these, cardiac complications are the most prevalent and can be caused or aggravated by hyperthyroidism. Between the most frequent complications we have atrial fibrillation (present in 13.8% of cases), which is one of those that most increase morbidity and mortality in these patients and Heart failure (HF), that occurs in 6% of cases. There are some case reports described that shown with the resolution of hyperthyroidism, the heart disease will be reversed. The case reported was about a smoker young man that developed severe heart disease by uncontrolled hyperthyroidism, that even after a long period of clinical lack of control, he obtained a significant improvement in heart disease after a year euthyroidism. **Final considerations:** The case demonstrate the importance of appropriate management of hyperthyroidism to reduce severe complications. **Keywords:** hypertireoidism; Graves' disease; heart disease.

AP-294 BIG DATA-BASED TOTAL TRIIODOTHYRONINE (TT3) SHOWS A SIGNIFICANT DECREASE WITH AGE REQUIRING CARE IN INTERPRETING THE RESULTS

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Introduction: Although triiodotironine (T3) measurement is not used in the usual assessment of thyroid function, it can be decisive in clinical decision-making in several cases, such as suspected nodular toxic goiters, hyperthyroidism during pregnancy, during treatment of hyperthyroidism, and other clinical situations. Although it has been shown that T3 is lower in aged male rats, is still not clear enough if these changes occur in humans. The National Academy of Clinical Biochemistry (NACB) suggests that T3 levels would be lower in subjects over 60 years (y), but the number of elderly patients assessed in the mentioned study was small for a robust statistical assessment at that time. In search on PubMed, crosschecking the terms elderly/age/aging, with triiodothyronine/T3/total T3, there are a few studies available using current assays with a significant number of patients. Therefore, the demonstration of how the TT3 performs with age is still an opened question. **Objective:** The aim of this study is to observe if TT3 changes significantly with age. **Methods:** We, retrospectively, analyzed blood samples requesting outpatient TT3, TSH, TPOAb, TGAb, TRAb and/or TSI of patients, ≥20 y in a clinical laboratory in Brazil, in ten years. Serum TT3 was measured by electrochemiluminescence assay, reference interval (RI) 70-210 ng/dL. Exclusion criteria were (and/or): use of drugs that could interfere with the measurements, TSH ≤ 0.1 mIU/L or ≥ 10 mIU/L, and any positive antibody. The level of statistical significance was $p < 0.05$. **Results:** Were surveyed 959,297 records from the database. After applying exclusion criteria, 141,819 subjects were eligible: mean age = 45 y; median = 42 y, 62% female (F). Statistically significant differences were found by age. TT3 values (in ng/dL): 20- 59 y = 120 ± 26.6; 60-79 y = 109 ± 20.7; 80 y/over = 97.2 ± 20. In the elderly, T3 was negatively correlated with TSH: as T3 decreased, TSH increased (results not showed). Comparing TT3 means by age groups, it is 9% lower in those aged 60-79 years and 19% lower in those 80 years/older, compared to younger (20 to 59 y). **Conclusion:** In the search in PubMed, this is the largest collection of data on the relationship between TT3 and age. A statistically significant decrease of TT3 occurs in elderly, and mainly in very elderly. This remark, call attention that T3 results should be analyzed clinically considering the patient's age, and that laboratories should establish specific RI by age. **Keywords:** total triiodothyronine; TT3; aging.

AP-295 CLINICAL AND ANATOMOPATHOLOGICAL CHARACTERIZATION OF DIFFERENTIATED THYROID CANCER WITH LOW-RISK OF RECURRENCE IN A TERTIARY SERVICE OF THE FEDERAL DISTRICT, BRAZIL

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Introduction: Thyroid carcinoma is the most common endocrine malignancy in the population and accounts for approximately 2.1% of cancer diagnoses worldwide. Among the types of thyroid cancer, approximately 90% are of the differentiated type (differentiated thyroid carcinoma – DTC). After surgical treatment, the DTC risk stratification may be either high, intermediate, or low, based on the chance of disease recurrence. **Objectives:** To characterize the clinical and anatomopathological behavior of DTC with low risk of recurrence with or without radioiodine therapy (RIT) in a tertiary service in the Federal District. **Methods:** Collection of data from medical records of patients in follow-up at the Endocrinology outpatient clinic of a tertiary service in the Federal District. **Results:** The mean age of this cohort was 44 ± 10.3 years with RIT and 49.3 ± 10.2 years without RIT. Among the 81 patients (50 in the RIT group and 31 in the non-RIT group) included, there was a female predominance (98.7%). The papillary histological type accounted for > 90% of cases. The mean follow-up time was 14.2 ± 4.1 years (RIT group) and 10.9 ± 2 years (non-RIT group) ($p < 0.001$). Total thyroidectomy with central dissection was performed in 98% of the RIT group ($p = 0.006$). There were no cases of recurrence in the RIT group. Disease recurrence or persistence occurred in one patient in the non-RIT group, who maintained a positive anti-thyroglobulin antibody for more than 10 years. Excellent treatment response occurred in 98% of the RIT group *versus* 83.9% of the non-RIT group ($p = 0.039$). **Conclusions:** This study corroborate data from the current literature, by showing that the absence of RIT does not increase recurrence/mortality nor decrease overall survival. Positive anti-thyroglobulin antibody levels for more than three years may justify the use of RIT. **Keywords:** thyroid gland neoplasms; papillary thyroid cancer; thyroidectomy.

AP-296 PAPILLARY THYROID MICROCARCINOMA WITH LATERAL LYMPH NODE METASTASIS AT DIAGNOSIS

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Case presentation: A 28-year-old female patient presented with cervical lymph node enlargement and was diagnosed with lymph node (LN) metastasis on fine needle aspiration. Immunocytochemistry was consistent with papillary thyroid carcinoma. No thyroid nodule was observed on repeated ultrasound examination. Total thyroidectomy with neck dissection was then performed. The biopsy confirmed the presence of papillary thyroid microcarcinoma, infiltrative follicular subtype, measuring 0.1 cm, as well as right lymph node metastases on levels II, III, IV and V, with the largest metastatic focus of 5.0 x 4.0 cm, without extranodal extension. The tumor was classified as high risk of recurrence, and the patient received radioiodine therapy (150 mCi). On follow-up visit, stimulated thyroglobulin levels were < 0.9 ng/mL, with negative antithyroglobulin antibodies, and neck ultrasound showed no cervical lymph node enlargement. **Discussion:** Papillary thyroid microcarcinoma (PTMC) is defined as a tumor 1 cm or less in size. Disease-specific mortality rates have been reported to be < 1%, loco-regional recurrence rates are 2%-6%, and distant recurrence rates are 1%-2%. A 10-year study of more than 1,200 patients with PTMC led researchers to conclude that active surveillance is an acceptable first-line approach to patient management instead of immediate surgery to remove the tumor. However, PTMC may also present with lymph node metastases, such as in this case. It has been reported that PTMC without evidence of involved LNs (microPTC cN0) have better outcomes than PTMC cN1b (with palpable lateral lymphadenopathy) regarding disease persistence and recurrence. **Final comments:** PTMC has a low risk mortality and recurrence or tumor persistence, and active surveillance is an option to be considered. However, lymph node positivity contraindicates this approach. Patients with PTMC cN1b that had an excellent response to initial treatment may achieve long-term disease free survival. **Keywords:** lymphatic metastasis; thyroid neoplasms; papillary thyroid microcarcinoma.

AP-297 COMPARISON OF TSH LEVELS IN EUTHYROID OBESE PATIENTS

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Introduction: There is evidence of a positive correlation between body mass index (BMI) and TSH, and a negative correlation with free T4. The proposed mechanisms for this association are as follows: the elevation of leptin in obese individuals promotes the hypothalamic expression and synthesis of TRH in the paraventricular and arcuate nuclei, leading to increased TSH levels. Additionally, leptin may increase the conversion of T4 and T3 in peripheral tissues, resulting in a reduction in free T4. **Objective:** Comparison of TSH and free T4 levels in obese patients. **Methods:** This is an observational, cross-sectional, retrospective study involving the analysis of medical records of 48 obese patients between April 2022 and March 2023. We collected anthropometric data: weight (kg) and BMI (kg/m²), as well as hormonal data: TSH (RR: 0.35-4.94 mU/L) and free T4 (RR: 0.7-1.48 ng/dL). We divided the patients into two groups: group A (BMI between 30-39 kg/m²) and group B (BMI > 40 kg/m²). Patients with a previous diagnosis of primary hypothyroidism and hyperthyroidism were excluded. We applied the Student's T-test to compare the variables TSH and free T4 between the groups. Statistical significance was considered when $p < 0.05$. **Results:** Among the 48 obese patients analyzed, we obtained 22 patients in group A (BMI 38.05 kg/m² + 1.16), with a mean age of 55.1 + 9.13 years, and 26 patients in group B (BMI 42.43 kg/m² + 1.54), with a mean age of 48.3 + 11.34 years. In group A, we obtained (TSH 2.61 mU/L + 1.33) and (free T4 1.0 ng/dL + 0.18). For group B, we obtained (TSH 1.81 mU/L + 1.37) and (free T4 0.98 ng/dL + 0.14). There was no statistical difference between the groups regarding TSH ($p = 0.53$) and free T4 ($p = 0.69$) when comparing them. **Conclusion:** The levels of TSH and free T4 did not differ between groups A and B, and it is not possible to assert in this population that higher BMI leads to higher TSH levels. **Keywords:** TSH; BMI; obesity.

AP-298 METASTATIC PAPILLARY THYROID MICROCARCINOMA DIAGNOSED THROUGH BIOPSY OF A SINGLE LUNG NODULE: CASE REPORT

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Case presentation: Female, 53 years old, being followed up for 7 years at the endocrinology outpatient clinic for atoxic multinodular goiter, in clinical follow-up. During the COVID-19 pandemic in 2021, the patient had flu-like symptoms and underwent a computed tomography scan of the chest that showed the presence of a nodule in the right lung apex, which was biopsied and the histopathological finding described carcinoma infiltrating the lung parenchyma, with the immunohistochemical profile being with expression of CK7, TTF1,Tg and PAX8 favoring the case of primary site carcinoma metastasis in the thyroid. PET-CT was performed in May/2022, which showed a hypermetabolic right pulmonary nodule, hypermetabolic thyroid nodules and a slightly hypermetabolic right cervical lymph node. The patient underwent total thyroidectomy in August/2022 and brought the anatomopathological report describing the presence of nodular hyperplasia (colloid goiter) in the left lobe of the thyroid, with no other significant findings. Faced with the strong suspicion of malignancy, a slide review was requested, which showed papillary thyroid carcinoma, unifocal lesion, 0.5 cm in its longest axis, present encapsulation, angiolymphocyte invasion not evidenced, free margins, pathological staging p T1a, pN0. In the follow-up, it was decided to perform iodine therapy (200 mCi) in February 2023. Post-iodine whole body scan revealed increased uptake in the anterior cervical region, with no evidence of distant metastases. She evolved with postoperative hypothyroidism and was treated with levothyroxine, targeting a TSH < 0.1 (high risk of recurrence). **Discussion:** Papillary thyroid carcinoma is a subtype of differentiated thyroid carcinoma that most often is a neoplasm with an indolent behavior and a favorable prognosis, being classically diagnosed through biopsy of a thyroid nodule, but in the case described the diagnosis was made after identification of a single pulmonary nodule suggestive of differentiated thyroid carcinoma metastasis. In the treatment, in addition to performing a thyroidectomy, for patients with distant metastases (high risk), administration of high-dose radioiodine therapy (100 to 200 mCi) is recommended, as in the case presented here (pulmonary metastasis). **Conclusions:** This is an atypical case of evolution and diagnosis of high-risk papillary thyroid carcinoma, since in the literature the site most affected by metastasis is the lymph node tissue, with indolent evolution. **Keywords:** papillary thyroid carcinoma; metastatic microcarcinoma; high risk.

AP-299 METASTATIC NEUROENDOCRINE TUMOR SIMULATING MEDULLARY THYROID CARCINOMA

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Case report: A 44-year-old woman was under oncology follow-up due to a well-differentiated neuroendocrine tumor of rectal origin with liver metastasis, receiving palliative therapy with lanreotide. One year after the diagnosis, a thyroid ultrasound revealed five well-defined hypoechoic images, Chammas III, measuring as follows: N1 – 1.27 x 0.88 cm, N2 – 1.04 x 0.7 cm, N3 – 0.72 x 0.59 cm, N4 – 0.65 x 0.30 cm, and N5 – 0.42 x 0.35 cm. Additionally, two images were found in the left lobe: N1 – hypoechoic, measuring 0.67 x 0.39 cm, and N2 – anechoic, measuring 0.58 x 0.47 cm. Thyroid function was normal. A fine-needle aspiration biopsy (FNAB) was performed on the mixed nodule (N3) in the right lobe. The cytological report classified the material as Bethesda V, suspicious for medullary carcinoma. Serum calcitonin levels were below 2 pg/mL. Screening for pheochromocytoma and hyperparathyroidism was negative. The patient underwent total thyroidectomy, cervical lymphadenectomy, and mediastinal lymphadenectomy. The histopathological examination described carcinoma with organoid architecture and monotonous cells, exhibiting "salt and pepper" nuclei in both lobes, clear margins, and negative lymph node analysis. Mediastinal dissection revealed metastasis of carcinoma in 1 out of 11 lymph nodes without capsular breach. Pathological staging: mpT1b mpN1a. Immunohistochemistry was negative for calcitonin, positive for synaptophysin and CD56, with a Ki-67 index > 10%, suggesting metastatic neuroendocrine tumor in the thyroid. **Discussion:** The differential diagnosis between medullary thyroid carcinoma (MTC) and neuroendocrine tumors (NETs) is challenging. However, there are distinguishing features such as histological findings - MTC exhibits a diffuse pattern with polygonal cells and "salt and pepper" nuclei, while NETs display varied patterns; immunohistochemical markers – MTC expresses markers such as calcitonin, whereas NETs present diverse immunohistochemical profiles; and associated clinical features, such as multiple endocrine neoplasia type 2 syndrome in MTC and different neuroendocrine syndromes in NETs. The sensitivity of FNAB in MTC ranges from 46.1% to 63%, with 82% correct identification and 9% false negatives. Measurement of calcitonin in the washout fluid improves diagnostic accuracy. **Conclusions:** FNAB may suggest a diagnosis of MTC, but the possibility of metastatic NET should be considered if immunohistochemistry is negative for calcitonin. **Keywords:** metastatic neuroendocrine tumor; medullary thyroid carcinoma; calcitonin.

AP-300 ASSOCIATION BETWEEN THE PULMONARY VASCULAR METRICS ON CHEST CT FOR COVID-19 PATIENTS AND THYROID FUNCTION: PROSPECTIVE COHORT STUDY WITH ADULT HOSPITALIZED PATIENTS

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Introduction: Coronavirus disease 2019 (COVID-19) has been the subject of intense research since its inevitability. Previous studies suggest that infection with the SARS-CoV-2 virus can trigger a systemic inflammatory response that affects multiple organs and systems, including the thyroid. Therefore, understanding whether there is an association between pulmonary vascular metrics and thyroid function in patients hospitalized with COVID-19 may provide important insights into the underlying mechanisms of this disease and its systemic impact. **Objective:** The aim of this prospective cohort study was to investigate the association between pulmonary vascular metrics identified on chest CT scans of patients with COVID-19 and thyroid function. **Methods:** We performed a prospective cohort study to investigate an association between the pulmonary vascular metrics on chest CT for COVID-19 patients and thyroid function in adult patients admitted between June and August 2020. We analyzed blood biochemistry, thyroid function tests (TSH, free T3, free T4, reverse T3, and thyreoglobulin), length of stay, comorbidities, complications, and severity scores from 205 hospitalized patients with COVID-19. We measured the main pulmonary artery diameter and transverse axial diameter of the ascending aorta at the level of the bifurcation of the right pulmonary artery and calculated the ratio pulmonary-aorta (PA). **Results:** Two hundred five patients [median age: 62 (49-75) years] were stratified into ration PA< 0.81 (83) and ration PA > 0.81 (122) groups. Forty-eight patients (23.4%) were admitted to the intensive care unit, and 33 (16.1%) died. TSH levels were lower in ration < 0.81 compared with ration PA > 0.81 [TSH: 1.93 (1.0-3.6) pg/mL *vs.* 1.46 (0.81-3.0) pg/mL, p = 0.049]. The univariate logistic regression revealed correlation between in-hospital mortality and ratio PA > 0.81 levels (odds ratio [OR]: 3.07; 95% confidence interval [CI 1.3-7.91]; p = 0.012). Serum free T3, free T4, and reverse T3 values were not significantly associated with ratio PA. **Conclusion:** Biological markers obtained during hospitalization, such as serum reverse T3 levels, may serve as predictors of death in patients hospitalized for COVID-19 and serve as a predictor of disease severity. **Keywords:** COVID-19; thyroid function; pulmonary vascular metrics.

AP-301 KARTAGENER'S SYNDROME AND PAPILLARY THYROID CARCINOMA, AN UNUSUAL ASSOCIATION: CASE REPORT

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A 41-year-old female patient diagnosed with Kartagener's syndrome (situs inversus with dextrocardia, bronchiectasis, chronic sinusitis) in childhood. She undergoes medical follow up with a pulmonologist periodically and searched help from an endocrinologist for hormonal evaluation, without any specific complaints. Physical examination: presence of a palpable nodule in the left lobe of the thyroid, diffuse rhonchi on respiratory auscultation and visible and palpable ictus cordis in the right hemithorax. Thyroid ultrasound (US): nodule in the distal third of the right lobe (RL) measuring 1.4 x 1.0 x 0.9 cm with punctate echogenic foci, TI-RADS 5; nodule in the middle third of the left lobe (LL) measuring 1,6 x 1,3 x 1,2 cm, TI-RADS 4 and nodule in isthmus 0.7 x 0.6 x 0.5 cm, TI-RADS 4. Fine needle aspiration (FNAB) guided by US RL nodule suggestive of papillary carcinoma, Bethesda 6, nodule in isthmus Bethesda 1 and LL nodule Bethesda 1. The patient had a decline of her respiratory condition, up to 3 months after the FNAC, when she evolved with better clinical condition and was fit to be operated. The anatomopathological exam of the total thyroidectomy showed: well-differentiated papillary carcinoma, classifying as pT1b, pN1a. Presence of neoplasm in 4 sites: RL of 1.6 cm, RL 0.4 cm, RL 0.3 cm and isthmus of 0.8 cm. Presence of angiolymphatic, perineural invasion and metastases in 2 out of 2 perithyroid lymph nodes at the level of the isthmus. The patient evolved well and was discharged on the second postoperative day. Kartagener syndrome affects 1/25,000 people and may have symptoms such as dyspnea, cough, otitis, recurrent pneumonia, among others. When there is a proper follow up with specialized professionals (otorhinolaryngologist, pulmonologist and cardiologist) and early diagnosis, it does not alter life expectancy, leading to good prognosis. Papillary carcinoma is the most common and least aggressive thyroid tumor, being 3 times more frequent in women, with predominance in the 3rd and 4th decades of life. The mortality rate increases after the age of 40, especially in men. Most of these patients are asymptomatic, presenting as a manifestation a thyroid nodule. Cervical metastases, occur in 4 out of 10 cases. A low incidence association such as the one described, has only few cases in the literature, highlighting the importance of its reporting and contribution to the medical knowledge. **Keywords:** thyroid gland; carcinoma; Kartagener's syndrome.

AP-302 RAPIDLY PROGRESSING GOITER IN MALIGNANT THYROID NEOPLASM

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Case report: Female, 58 years old, admitted to the ICU due to acute respiratory failure caused by airway compression from a goiter that started 60 days ago. The goiter rapidly increased in size and was associated with dysphagia and a weight loss of 17 kg. No previous thyroid pathologies. A computed tomography showed an enlarged thyroid and an infiltrative thyroid mass in the right lobe, measuring 9.1 x 6.6 x 6.5 cm, with heterogeneous enhancement and necrotic areas, extending into the mediastinal region involving the esophagus and trachea up to the carina level, along with the presence of lymphadenopathy in level IV on the right side. Normal thyroid function. In the face of secondary acute respiratory failure due to tumor obstruction, the patient underwent a tracheostomy to ensure an airway, and intraoperative evaluation subsequently revealed that the thyroid lesion had an infiltrative and stony appearance in the right lobe, without a cleavage plane with the trachea and esophagus, thus making resection impossible. Additionally, there was a lymph node mass in the mediastinum with intrathoracic extension. The histopathological examination of the analyzed specimen did not detect any neoplasia in the thyroid, but identified metastasis of papillary carcinoma in the mediastinal lymph node with capsular rupture. The most likely hypothesis was papillary thyroid carcinoma with dedifferentiation, and doxorubicin was initiated. Despite this, there was clinical deterioration, and the patient died 2 months after admission. **Discussion:** Thyroid cancer can be classified in differentiated, medullary, and anaplastic. Anaplastic cancer is rare, accounting for 1% of cases, but responsible for 25% of thyroid cancer-related deaths. It primarily affects women aged 65 to 70 years and presents symptoms such as rapid growth, dyspnea, dysphonia, dysphagia, neck pain, Horner's syndrome, and stroke. The exact origin of anaplastic cancer is still unclear, but it may arise from dedifferentiated differentiated thyroid cancers or as a new poorly differentiated cancer. The presence of BRAF mutations is common in 25% of anaplastic cancer cases, often indicating the presence of an underlying papillary carcinoma. The most challenging differential diagnosis is poorly differentiated thyroid carcinoma. **Conclusion:** This case alerts us to the fact that some thyroid cancer cases evolve unfavorably, requiring active surveillance and more aggressive therapeutic management. **Keywords:** papillary carcinoma; anaplastic cancer; poorly differentiated cancer.

AP-303 ACUTE THYROIDITIS RESULTING FROM PENETRATION OF A FISHBONE INTO THE THYROID – CASE REPORT

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Clinical case: A female patient, 43 years old, sought medical care because of pain in the anterior cervical region. This pain persisted for 23 days, since eating fish. Patient underwent a computed tomography scan (CT-scan) that showed a foreign body transfixing the left thyroid lobe. Laboratory tests were compatible with thyroiditis. Patient underwent partial thyroidectomy and her condition improved. **Discussion:** Esophagus transfixation by a fishbone with penetration of thyroid tissue is very rare in clinical practice and is often underdiagnosed due to mild symptoms. Exams such as laryngoscopy, used to evaluate a foreign body in the oropharynx, usually do not show abnormalities. When submitted to other imaging tests, such as CT-scan, a foreign body inserted into the thyroid and a local inflammatory response can be evidenced, depending on relapsed time. If thyroid involvement occurs due to transfixation of a fishbone, the most common location is the left thyroid lobe in view of anatomical factors. Thyroiditis can resolve over time. Thus, the clinical picture is usually accompanied by redness, edema, heat and local pain. Sometimes systemic symptoms like fever and asthenia can co-exist. The definitive treatment is subtotal thyroidectomy, which results in regression of all symptoms. **Conclusion:** We present a rare case of acute thyroiditis caused by thyroid perforation by a fishbone. Not the first hypothesis in a patient who presents with pain and anterior neck edema, and is generally underdiagnosed in the emergency room. The treatment may require the use of antibiotics and anti-inflammatories, with subtotal thyroidectomy being the definitive treatment. **Keywords:** thyroiditis; fishbone; thyroid.

AP-304 CASE REPORT – WHEN TO THINK ABOUT AN ANAPLASTIC THYROID CARCINOMA?

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Male, 55 years old, healthy, with increased cervical volume in the last 4 months associated with dysphagia and weight loss. Sought medical care at an external service where a CT scan of the cervical region was performed, showing multiple lymph node enlargement and a mass in the thyroid topography. On admission to our service, he was clinically thin and with a hardened mass in the cervical region. He had PTH-independent hypercalcemia with serum calcium of 12.7 mg/dL and PTH 11.9 pg/mL, in addition to TSH < 0.01 pmol/L and FT4 2.23 ng/dL, which were treated with bisphosphonates and propylthiouracil. He performed a USG of the thyroid, which showed hypoechoic nodular lesions, mainly in the left thyroid lobe. He underwent core biopsy, FNA of the thyroid and lymph nodes, and calcitonin and thyroglobulin measurements in aspirates, with values within the normal range, 7.75 ng/mL and 2.1 pg/mL, respectively. FNA showed a positive sample for malignancy, with the presence of anaplastic cells suggesting anaplastic thyroid carcinoma with lymph node metastasis. Unfortunately, the patient developed acute respiratory failure and ended up dying as a result of pneumonia associated with mechanical ventilation. **Discussion:** Anaplastic carcinoma is the least common type of thyroid neoplasms, but it is the most severe with a prevalence of 1% to 3% of cases, predominantly among those aged 65-70 years. Derived from thyroid follicular cells with rapid growth and early local invasion, with a median survival of 5 months. They often cause metastases to cervical and distant lymph nodes. In the vast majority of cases, thyroid function is normal, but more rarely, symptoms of hyperthyroidism may occur due to tumor necrosis and release of thyroid hormones. The diagnosis is given through FNA and core biopsy. Recently, targeted therapies have been used according to present mutations with good results. Due to the aggressiveness of the tumor, a multidisciplinary approach involving endocrinologists, surgeons and oncologists is important. **Final comments:** This case report shows the importance of bearing in mind the diagnosis of undifferentiated thyroid cancer, given that its rapid growth and lethality require therapies. **Keywords:** anaplastic thyroid carcinoma; undifferentiated thyroid cancer; thyroid neoplasms.

AP-305 CASE REPORT: HOBNAIL VARIANT THYROID PAPILLARY MICROCARCINOMA WITH MULTIPLE LYMPH NODE METASTASES IN A YOUNG PATIENT PRESENTING WITH THYROTOXICOSIS

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Case report: A 23-year-old woman presented with thyrotoxicosis without goiter and negative serum TRAb. A 0.8 cm hypoechoic thyroid nodule in the left lobe with a suspicious lymph node in the left lateral chain were found on ultrasound. Fine needle aspiration of the nodule and lymph node showed a papillary thyroid carcinoma. Thyroglobulin levels in the lymph node aspirate were substantially elevated. The patient was referred for total thyroidectomy associated with neck dissection of recurrent and left lateral chains. Initial anatomopathological examination revealed classic non-encapsulated unifocal papillary carcinoma measuring 0.9 x 0.6 cm in the left lobe, without extrathyroidal extension. Metastases were found in the left lateral compartment without in 1/27 lymph nodes (largest measuring 6 mm) and in 6/9 lymph nodes examined in the left recurrent chain (largest measuring 4 mm), without extra nodal extension. The patient received 100 mCi I^{131} and post-dose whole body scan showed avid uptake in the surgical bed, however, no ectopic uptake. At 6-month follow-up, no abnormalities were found on cervical ultrasound and thyroglobulin levels were undetectable on suppressive therapy with thyroxine. Anti-thyroglobulin antibody levels were also negative. A new slide analysis of the surgical specimen was requested due to the more aggressive behavior of the microcarcinoma, which showed that it was a more aggressive histological variant with vascular and lymphatic invasion and a Hobnail component in 20% of the neoplasm. The patient is on structural and biochemical remission. **Discussion:** This is a case of papillary microcarcinoma with a more aggressive behavior represented by multiple neck metastases, including the lateral chain. Appropriate initial treatment was only possible thanks to careful pre-operative ultrasonographic evaluation. The characterization of the Hobnail variant was also performed only after reassessing the slides due to clinical suspicion of more aggressive behavior. **Final comments:** although the absolute majority of thyroid microcarcinomas have a more indolent behavior and a low risk of progression, preoperative ultrasonography performed by an experienced examiner is essential in decision making. Also, communication with the pathologist when there is suspicion of more aggressive forms of cancer allows a more careful analysis approach. **Keywords:** thyroid cancer; Hobnail variant; papillary tumor.

AP-306 SMALL CELL CARCINOMA OF THE THYROID ASSOCIATED WITH PARAVERTEBRAL SCHWANNOMA

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Case presentation: Female patient, 39 years old. A year ago, cervical bulging to the left started, with two months of evolution. Three solid hypoechoic thyroid nodules (TI-RADS 5) were identified, the largest measuring 2.3 x 1.2 cm and confluent lymph node enlargement at levels III, IIa and IIb on the left, the largest measuring 4.6 x 1.5 cm. FNAB was suggestive of malignancy, and total thyroidectomy with left neck dissection was chosen. The anatomopathological examination described high-grade thyroid carcinoma (pT4a pN1) with tumor necrosis, angiolymphatic and perineural invasion, extrathyroidal extension to adjacent fibromuscular tissue and 5 out of 17 lymph nodes involved. Immunohistochemistry (IHC) showed diffuse positivity for TTF1 and negativity for epithelial markers, of neuroendocrine differentiation, calcitonin, PAX, and CEA, suggestive of small cell carcinoma of the thyroid (SCCT). The postoperative staging identified a heterogeneous nodular lesion measuring 3 cm in the right hemithorax, cervical lymph node at level IV on the right, measuring 1.6 x 1.1 cm, multiple bone lesions in the lumbar and pelvic vertebral bodies compatible with secondary implants. A right paravertebral lesion was biopsied and described as a schwannoma in IHC. Thus, palliative chemotherapy was started with carboplatin and etoposide, in addition to zoledronic acid, replaced with irinotecan due to the side effects profile, with good control of the disease. Neurosurgery adopted a conservative approach in relation to schwannoma. **Discussion:** SCCT is a rare and poorly known primary thyroid tumor. It has histopathological characteristics like other rare types of thyroid carcinomas, which makes diagnosis difficult. In addition, there are studies that show mortality like that of anaplastic carcinoma, characterizing SCCT as a very aggressive tumor. Furthermore, there is still no definition on the association of SCCT and the increased risk of other synchronous primary tumors, which makes the finding of schwannoma relevant in this case. **Final comments:** Clinical aspects, TNM staging, multifocality and extra-thyroidal extension play a fundamental role in the treatment of thyroid tumors, especially in the more aggressive ones. Moreover, a possible association between SCCT and other primary tumors could be a way to better characterize this difficult-to-diagnose tumor. **Keywords:** small cell carcinoma; thyroid; paravertebral schwannoma.

AP-307 LARGE MULTINODULAR GOITER IN A PATIENT WITH CONGENITAL GENERALIZED LIPODYSTROPHY: A CASE REPORT

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Case presentation: 35-year-old woman, from Ceará, Brazil, diagnosed with congenital generalized lipodystrophy (CGL) due to mutation in AGPAT2. She presented lipodystrophic phenotype since birth associated with hypertriglyceridemia (223 mg/dL) at 6 months old. Her clinical follow up started at age 13, after she was diagnosed with Diabetes. She developed diabetic kidney disease at 16 yo and presented two episodes of pancreatitis due to hypertriglyceridemia at 17 yo. At age 20, she was diagnosed with a diffuse goiter and subclinical primary hyperthyroidism (TSH 0,144 uU/mL; FT4 1,1 ng/dL). Treatment with methimazole was started. At age 25, she developed proliferative diabetic retinopathy and visual loss in the right eye, peripheral neuropathy and cardiac autonomic dysfunction. She evolved to end stage renal disease and hemodialysis at age 29, and also was affected by macrovascular complications such as forefoot amputation due to diabetic foot ulcer and multivessel coronary artery disease. She also had an increase in total thyroid volume on ultrasound from 76 cm^3 to 164 cm^3 over 17 months. Her thyroid showed regular contours and heterogeneous texture, with six benign nodules on cytology (Bethesda 2 category), larger one 2.7 x 2.5 x 1.7 cm. Total thyroidectomy was indicated and performed at age 33 with accidental removal of left parathyroid and subsequent autologous implant in the left sternocleidomastoid muscle. She developed hypoparathyroidism and calcium and calcitriol reposition was started. Histopathology: colloid goiter, without malignancy. **Discussion:** CGL is a rare congenital disorder characterized by total or near-total absence of adipose tissue resulting in ectopic fat deposition, severe metabolic disorders such as hypertriglyceridemia, hyperinsulinemia and insulin resistance (IR). Insulin reduces insulin-like growth factor-binding protein levels, leading to increased levels of insulin-like growth factor (IGF), subsequently resulting in cell multiplication and apoptosis reduction. It has been demonstrated that individuals with higher IR had a higher number of nodules and greater thyroid volume, independent of BMI (body mass index). **Final comment:** This case illustrates the association between a human model of insulin resistance that developed a large multinodular goiter. Prospective studies are needed to better define the association between thyroid nodules and severe IR and demonstrate the possible benefit of thyroid evaluation in patients with CGL.
Keywords: insulin resistance; congenital generalized lipodystrophy; large goiter.

AP-308 RISK OF THYROID CANCER ASSOCIATED WITH GLP-1 RECEPTOR AGONIST USE: SYSTEMATIC REVIEW AND META-ANALYSIS

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Preclinical studies have shown a potential association between GLP-1 receptor agonists (RA) and thyroid cancer. However, this hypothesis in clinical studies remains uncertain. We aim to determine whether there is a correlation between GLP-1 RA use and the risk of developing thyroid cancer. We conducted a systematic review following PRISMA guidelines. The search was performed until May 25, 2023, in MEDLINE and Cochrane Central Register of Controlled Trials. Our search strategy included the terms (GLP-1) AND (Thyroid Cancer) OR (Thyroid Carcinoma). We included observational studies (cohort and case-control) and clinical trials that investigated the association between GLP-1 RA use and the risk of thyroid cancer in humans. We excluded reviews, comments, case reports, non-human studies, and unrelated publications from our research question. Bias assessment was conducted using the GRADE tool. Data extraction focused on study settings, participant characteristics, GLP-1 RA use, and relevant outcomes. Findings were synthesized narratively and with a meta-analysis. Out of the 73 publications initially screened, nine studies were included in the systematic review, of those five were included in the meta-analysis due to data limitations. The studies had a diverse range of data sizes and employed diverse designs, including case-control, cohort, clinical trial, and cross-sectional. Conflicting results were observed regarding the association between GLP-1 receptor antagonist use and thyroid cancer risk. Three studies suggested a potential association between GLP-1 RA use and an increased risk of thyroid cancer. However, six studies did not find a significant association between GLP-1 RA use and thyroid cancer risk. The overall quality of the included studies varied, with ratings ranging from very low to high, indicating different levels of confidence in the findings. Our meta-analysis included five studies, comprising 245,486 patients. Significant heterogeneity was observed among the included studies ($Tau^2 = 1.56$). The overall analysis revealed a non-significant association between the use of GLP-1 receptor agonists (RA) and thyroid cancer ($Z = 1.30$, $p = 0.19$, OR 2.15, 95% CI [0.68, 6.81]). It is still unclear if GLP-1 RA has any causal relationship with the risk of thyroid cancer. However, due to the low incidence of this pathology and the variation in the methodological quality of the included studies, further studies are needed to better explore this association.
Keywords: thyroid neoplasms; GLP 1 receptor; thyroid cancer.

AP-311 GIANT GOITER IN AN ELDERLY QUILOMBOLA IN THE AMAZON: CASE REPORT

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Giant goiters are characterized by thyroid enlargement greater than 10 g/kg of body weight and constitute a challenge in clinical practice due to compressive symptoms and anatomical distortions; thus, the objective of this study is to describe a case report of a giant toxic goiter in an elderly patient with high surgical risk. Patient, 90 years old, female, from *quilombola* area in the State of Pará, attended the first consultation with an endocrinologist with a report of cervical enlargement for more than 20 years, complaining of dyspnea at rest, dysphagia for solids and hoarseness; on examination, she showed lethargy, irregular heart rhythm, tachycardia at rest (HR: 110 bpm), pulmonary crepitation in bases, bilaterally, edema in the lower limbs and thyroid with greatly increased dimensions and consistency, irregular contours with multiple nodules in both lobes. She was referred for admission to the internal medicine department, the complementary tests showed euthyroidism using Tapazole (TSH 2.61, free T4 1.04) with very high thyroglobulin (1,882 IU/mL), increased creatinine (2.6 mg/dL); GFR: 17 mL/min/1.73 m^2), ECG demonstrating atrial fibrillation, chest X-ray with cardiomegaly and pulmonary congestion, echocardiogram with ejection fraction of 31% (left ventricular systolic performance significantly reduced due to diffuse hypokinesia. Significant biatrial enlargement); cervical CT showed a massive thyroid goiter with an asymmetric increase to the right, determining deviation of the vascular structures and a reduction in tracheal amplitude greater than 50% without a mediastinal component, with dimensions of the right thyroid lobe of 15.3 x 8.8 x 14.8 (volume of 1,036 cm^3), left with 45 cm^3. After clinical treatment, there was an improvement in dyspnea, lower limb edema and renal function, and the case was discussed with the head and neck surgery, cardiology and anesthesiology team, and a total thyroidectomy was chosen, despite the high surgical risk (ASA IV). The thyroid weighed 802 grams (12.3 g/kg of weight), with dimensions of 15 x 15 x 8 cm. In the postoperative period, the patient presented reversed hemodynamic instability and hypocalcemia, being discharged 26 days after the surgical procedure, with significant improvement of the clinical picture. In conclusion, surgical treatment of giant goiters is a safe option, even in elderly patients with comorbidities, due to compressive complications, changes in thyroid function and risk of malignancy. **Keywords:** goiter; giant goiter; hyperthyroidism.

AP-312 A CASE REPORT OF PAPILLARY THYROID CARCINOMA INITIALLY PRESENTING WITH PROXIMAL FEMORAL METASTASIS

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Case report: Male patient, 50 years old, with a previous history of chronic left hip pain which led to multiple emergency visits, attended the emergency unit once again in late 2016 reporting significant worsening of this symptom. Imaging tests detected a lytic lesion measuring 5.0 cm in diameter at the left proximal femur, with a biopsy performed later suggested metastatic adenocarcinoma. The investigation proceeded with immunohistochemical analysis, which demonstrated positivity for CK7 (with negative CK20), TTF1 (Thyroid transcription factor 1) and thyroglobulin, in accordance with the diagnosis of metastatic thyroid carcinoma, with Ki-67 (proliferative index) showing a maximum of 5%. This gentleman was then referred to a specialist surgical center for femoral head resection, with replacement by endoprosthesis. Subsequently, he was referred for total thyroidectomy and neck dissection, with anatomopathological examination showing high-risk multicentric papillary thyroid carcinoma affecting right (2.2 and 0.8 cm) and left (0.8 cm and 0.5 cm) lobes, with free margins, invasion of the thyroid capsule, without extension to vascular or musculoskeletal tissue. Eight lymph node recurrences were detected (seven on the right and one on the left). Iodotherapy was performed with 200 mci, and subsequent whole-body radioiodine scanning with iodide-131 demonstrated areas of increased uptake in the left cervical region, suggesting the possibility of local dissemination. Surgical re-approach to the left femur was required on 3 new separate occasions due to recurrence, with debridement, prosthesis replacement and ostectomy of long bones. The patient was referred for outpatient follow-up at the *Centro de Diabetes e Endocrinologia da Bahia* (Cedeba), where he has regular appointments. He is currently using levothyroxine at a dose of 188 mcg (approximately 2.21 mcg/kg/day) to maintain TSH between 0.1 and 0,5 mUI/L and remains with better functional status, significant improvement in pain after adjustment of analgesics and physiotherapy. **Discussion and conclusion:** Differentiated thyroid cancer are generally characterized as indolent tumors with favorable outcomes, however, atypical presentations may arise mainly in developing countries and/or in more vulnerable samples. The case presented demonstrates the complexity of managing this condition when the diagnosis is made late, often complicated by the difficulty encountered by neglected populations to reach health care. **Keywords:** papillary thyroid carcinoma; thyroid; cancer.

AP-313 MEDULLARY THYROID CANCER: WHEN GENETICS LIGHTS THE WAY

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Case presentation: Female patient, 37 years old, diagnosed with metastatic medullary thyroid cancer (MTC) at age 27. At follow-up, laboratory tests showed TSH: 0.11; FT4: 2.1; calcitonin: 1405.3 (reference value 9.8 pg/mL), calcium: 8.8; metanephrines: 421.7. Genetic investigation was carried out by sequencing the RET gene, which found the missense mutation V804L. She has no family history of tumors, but some sisters and son have been tested for calcitonin, which has not shown any alterations. Testing was indicated for the child at age 5, who proved to be a carrier, and who was referred for discussion of prophylactic thyroidectomy. **Discussion:** Pathogenic variants in the RET gene are associated with different cancer predisposition phenotypes with autosomal dominant inheritance, including familial MTC and multiple endocrine neoplasia type II (MEN2A), with high risk for MTC. Molecular definition is essential not only to assess family members and those at risk, but also to define conduct and management. In this context, genetic counseling is important for families affected by the mutation, and follow-up options will be based on the individual clinical context. As 80% of individuals with MEN2A have a family history, carrier screening is indicated, aiming at the possibility of performing preventive surgery. Due to the penetrance of MTC in the pediatric age group, pre-symptomatic testing is exceptionally indicated in minors. The variants at codon 804, previously only associated with MTC, today also indicate screening for pheochromocytoma, starting at 20 years of age. However, prophylactic thyroidectomy, ideally performed at 5 years of age, can be postponed if normal and/or stimulated baseline annual serum calcitonin; normal annual cervical ultrasound; family history of less aggressive MTC. In addition, there is great clinical variability involved, with affected patients younger than 5 years old and asymptomatic ones older than 80 years old. The continuous updating of tumors related to this gene, as medical knowledge advances, requires clinical follow-up with frequent updating of protocols and family history. **Conclusion:** This report is relevant to show a case of MTC, a neoplasm with a poor prognosis but which is preventable in families with a known RET variant, allowing early screening and treatment for this and other tumors, as well as genetic counseling, which offers support about individual and family risk of the condition. **Keywords:** medullary thyroid cancer; genetic counseling; multiple endocrine neoplasia type 2A.

AP-314 THYROID NODULE: WHEN THE UNEXPECTED IS REVEALED

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A 51-year-old Brazilian woman had non-toxic uninodular goiter with proliferative follicular lesion by thyroid cytopathology. After 6 years of clinical follow-up, she presented cervical enlargement, especially on the left side, dysphagia, hoarseness and weight loss. During reassessment, thyroid function was normal and ultrasonography showed a left thyroid lobe mass of 5.1 x 3.4 x 4.0 cm. Thyroidectomy was indicated due to tumor size and symptoms. Initially, the head and neck surgery department performed a partial left thyroidectomy. Anatomopathological revealed a 6.8 x 5.0 cm follicular tumor of uncertain malignant potential, single focus, involved by capsule without vascular or lymphatic invasion. Right lobectomy and levothyroxine replacement were also performed. Immunohistochemical evaluation was compatible with paraganglioma (PG) and positive to chromogranin A, S-100 protein and succinate dehydrogenase subunit B (SDHB). After 5 years from diagnosis, imaging and laboratory revealed no other lesions or hypersecretion related to paraganglioma. No relative presented any clinical finding suggestive of PG. Paragangliomas are rare neuroendocrine tumors. Neck and head paragangliomas (HNPGLs) have parasympathetic origin and are nonfunctional, asymptomatic, slow-growing tumors, and affect women between ages 40 and 60 years. They are usually discovered by imaging or cervical mass in advanced stages. Thyroid paragangliomas are even rarer with 75 cases reported worldwide. They are solitary thyroid nodules and misdiagnosed as a follicular neoplasm by fine-needle aspiration (FNA). SDHD mutation is more predominant in HNPGLs) while SDHB mutation is more in thoraco-abdominal paragangliomas and second in HNPGLs. Furthermore, SDHB mutation is associated with a poorer prognosis. Therefore, a genetic test is necessary. The patient presented a nonfunctional and sporadic tumor as mostly found in literature. In opposition, she had SDHB mutation, she did not show a malignancy clinical evolution. We present a rare case of thyroid paraganglioma, with conventional follow-up for a thyroid nodule with cytology suggestive of follicular lesion. Evaluating the growth and symptoms was surgery indicated and the histopathological diagnosis could have been established. The case illustrates the importance of recognizing this entity, which can bring complications, such as metastases and their short- and long-term consequences. **Keywords:** paraganglioma; thyroid nodule; immunohistochemistry.

AP-315 THERAPEUTIC APPROACH IN ANAPLASTIC THYROID CARCINOMA: A CASE REPORT

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Case presentation: A 60-year-old male patient presented with a progressively growing voluminous cervical lesion, local inflammatory signs, and compressive symptoms. Tracheostomy was performed to ensure airway patency, and gastrostomy was placed to improve nutritional support. The investigation started with thyroid ultrasound and fine-needle aspiration biopsy (March 9, 2023), which yielded cytological findings suspicious of follicular neoplasia. Consequently, a frozen section biopsy and histopathological analysis were performed (April 26, 2023), confirming undifferentiated malignant neoplasm with epithelioid pattern and necrotic foci infiltrating soft tissues. Consequently, the patient was transferred to the medical ward, where he is receiving palliative care due to the impracticability of surgical interventions. **Discussion:** Anaplastic thyroid carcinoma represents the least common type of thyroid cancer with an associated mortality rate approaching 100%. Therefore, the therapeutic approach for this type of cancer is complex and challenging, guided by the individuality of the case, stage, and molecular testing results. Thus, stage IVA tumors amenable to surgery are completely resected, followed by concurrent chemotherapy and radiotherapy. Stage IVB tumors initiate neoadjuvant therapy to facilitate complete excision. Stage IVC has no curative therapy, as the patient is affected by metastases. **Final remarks:** This case highlights a patient diagnosed with anaplastic thyroid carcinoma characterized by rapid progression of clinical symptoms, including signs of adjacent compressions, hyperemia, and local pain. Comfort was prioritized due to the impracticability of surgical and curative therapy. It is important to emphasize that even with palliative care, multidisciplinary management is necessary to control symptoms and improve the patient's quality of life. Regular medical follow-up and emotional support are also crucial in this context. **Keywords:** anaplastic thyroid carcinoma; palliative care; surgical interventions.

CONGRESSO BRASILEIRO DE ATUALIZAÇÃO EM **ENDOCRINOLOGIA E METABOLOGIA**

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