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Archives of Endocrinology and Metabolism

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SBEM – Brazilian Society of Endocrinology and Metabolism

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34º CONGRESSO BRASILEIRO DE ENDOCRINOLOGIA E METABOLOGIA
A ENDOCRINOLOGIA EM TEMPOS DE INTELIGÊNCIA ARTIFICIAL
BRASÍLIA - 28 DE NOVEMBRO A 05 DE DEZEMBRO DE 2020
SBEM Sociedade Brasileira de Endocrinologia e Metabologia

MENSAGEM DOS PRESIDENTES

A 34ª edição do Congresso Brasileiro de Endocrinologia e Metabologia (CBEM 2020) começou a ser delineada ainda em setembro de 2016, quando Brasília foi escolhida para ser sua sede. Muitos planos foram traçados para que a capital dos brasileiros fosse também a capital da Endocrinologia. Mas 2020 chegou com a monumental pandemia causada pelo vírus SARS-CoV-2, que exigiu drásticas mudanças no formato do evento e em toda a logística para sua realização.

O tema central "*A Endocrinologia em Tempos de Inteligência Artificial*", escolhido ainda no início do ano, tornou-se real ao exigir apoio de tecnologia para que o conhecimento pudesse chegar aos congressistas. Apesar dos enormes desafios, 90% do programa científico original delineado para o evento presencial foi mantido no modelo virtual. Serão 175 palestrantes, com cerca de 200 aulas distribuídas em conferências plenárias, miniconferências, mesas-redondas, simpósios, debates e encontros com professores *on demand*. Foram 343 trabalhos submetidos, 24 selecionados para apresentação oral e os demais, para a sessão de pôsteres, tudo gravado em vídeos que serão apresentados ao longo da programação científica do congresso.

Não bastasse o volume de aulas, o evento contempla atividades científicas de altíssimo nível em todas as áreas de atuação da Endocrinologia, que é, sabidamente, uma especialidade presente em todas as etapas da vida. Teremos atividades em conjunto com três grandes sociedades internacionais: a *Endocrine Society*, a *European Society of Endocrinology* e a *Worldwide Diabetes*. Os palestrantes foram escolhidos pelo padrão de excelência do seu conhecimento e de suas publicações científicas.

A pandemia parou o mundo, mas exigiu velocidade máxima da ciência. E esta correspondeu também no nosso evento. Dos trabalhos submetidos, muitos concorrerão a importantes prêmios e todos eles poderão ser lidos e estudados nestas páginas. Portanto, este Suplemento dos *Archives of Endocrinology and Metabolism* (AE&M) merece mesmo ser chamado de "especial", pois reflete o trabalho de pessoas ligadas à ciência em uma época que exigiu esforço redobrado de todos e de cada um.

Registre-se também a outorga dos Prêmios SBEM a quatro personalidades de fundamental relevância para a Sociedade Brasileira de Endocrinologia e Metabologia (SBEM) e a Endocrinologia mundial: o holandês Aart J. van der Lely e os brasileiros Ana Luiza Maia, Valéria Cunha Campos Guimarães e Renan Magalhães Montenegro. A eles, juntam-se duas jovens pesquisadoras premiadas pelas melhores publicações nas áreas básica e clínica nos AE&M em 2019: Tábata M. Silva e Mariana de Andrade Balbi. É o reconhecimento de que, para além da tecnologia, é o valor do trabalho das pessoas que continuará definindo o papel que se espera da ciência.

Os mais de 3 mil congressistas, além de atualização científica, terão certamente a oportunidade de testemunhar a história: será o primeiro congresso *virtual* da SBEM e, portanto, o primeiro em que palestrantes e congressistas estarão interligados de suas casas e também o primeiro congresso brasileiro com tradução de todo o conteúdo para a língua espanhola.

As Comissões Científica e Organizadora, que trabalharam com entusiasmo, acreditam que o e-CBEM 2020, valorizando "a nuvem da tecnologia", combinará com o céu que é chamado de "mar de Brasília" e será um marco na história da SBEM – que em 1º de setembro de 2020 completou 70 anos de sua fundação.

Bom evento e ótima leitura para todos!

Neuton Dornelas Gomes
Presidente do CBEM 2020

César Luiz Boguszewski
Presidente da Comissão Científica do CBEM 2020

e-CBEM

34º CONGRESSO BRASILEIRO DE ENDOCRINOLOGIA E METABOLOGIA

A ENDOCRINOLOGIA EM TEMPOS DE INTELIGÊNCIA ARTIFICIAL

BRASÍLIA - 28 DE NOVEMBRO A 05 DE DEZEMBRO DE 2020

SBEM Sociedade Brasileira de Endocrinologia e Metabologia

RESUMO DA PROGRAMAÇÃO

DIA A DIA DO e-CBEM 2020

GRADE CIENTÍFICA e-CBEM 2020

HORÁRIO	28 DE NOVEMBRO - SÁBADO	29 DE NOVEMBRO - DOMINGO	30 DE NOVEMBRO - SEGUNDA-FEIRA	01 DE DEZEMBRO - TERÇA-FEIRA
08:00-09:00	**Simpósio Satélite** **LILLY**	—	—	—
09:30-12:00	**Workshop** **SBEM-Worldwide Diabetes** Advancing Strategies in the Management of Type 2 Diabetes	**Workshop** **SBEM-European Society of Endocrinology** Let's talk about guidelines	**Workshop** **Comissão de Formação Médica em Endocrinologia e Metabologia** Ciência versus Pseudo-ciência	**Workshop** **Farmaco-economia em Endocrinologia** Conversando sobre tratamento e seus custos
12:00-14:00	**Almoço**			
14:00-15:00	**Simpósio Satélite** **NOVO NORDISK**	**Simpósio Satélite** **ASTRAZENECA**	**Simpósio Satélite** **ASTRAZENECA**	—
15:30-18:00	**Seminário** **Comissão de Endocrinologia do Exercício e Esporte** Evidências cientificas na Endocrinologia do Exercício e do Esporte	—	**Workshop** **Tema CBEM 2020** Endocrinologia na era da Inteligência Artificial	
18:00-19:00	—	**Seminário** **Comissão de Ética e Defesa Profissional** A Endocrinologia enfrenta a Endocriminologia	—	
19:00-20:00	—		**Simpósio Satélite** **NOVO NORDISK**	**Cerimônia de Abertura com Mini-Conferência** Arficial intelligence and machine learning in Endocrinology and Metabolism
20:00-20:30	—		—	

GRADE CIENTÍFICA e-CBEM 2020

HORÁRIO	02 DE DEZEMBRO - QUARTA-FEIRA			03 DE DEZEMBRO - QUINTA-FEIRA		
	ESTÚDIO 1	**ESTÚDIO 2**	**ESTÚDIO 3**	**ESTÚDIO 1**	**ESTÚDIO 2**	**ESTÚDIO 3**
08:30-10:30	**Mesa Redonda 1** Dúvidas frequentes na abordagem da doença nodular e do câncer de tireoide	**Mesa Redonda 2** Reconhecendo o paciente com risco de fraturar	**Mesa Redonda 3** Desprescrevendo drogas: quando e como?	**Mesa Redonda 4** Tratando o diabetes 100 anos após a primeira injeção de insulina	**Mesa Redonda 5** Reposição hormonal na mulher e sistema cardiovascular	**Mesa Redonda 6** Desafios diagnósticos e terapêucos nas doenças tireoidianas
11:00-12:00	**Prêmio e Conferência José Dantas de Souza Leite**	—		**Prêmio e Conferência Luiz Cesar Povoa** Cancer is a metabolic disease	—	
12:15-13:15	**Sessão Temas Livres 1**	**Sessão Temas Livres 2**	**Sessão Temas Livres 3**	**Sessão Temas Livres 4**	**Sessão Temas Livres 5**	**Sessão Temas Livres 6**
13:30-15:00	**Simpósio 1** Doutor, estou gordo e com diabetes...	**Simpósio 2** Novos conceitos em doenças hipofisárias	**Simpósio 3** Fragilidade óssea em situações especiais	**Simpósio 7** Revisitando as formas não tradicionais de diabetes	**Simpósio 8** Pelos demais, pelos de menos	**Simpósio 9** Situações diceis no paciente dislipidêmico
15:30-17:00	**Simpósio 4** Situações complexas na infância e adolescência	**Simpósio 5** A gestante com problemas endócrinos	**Simpósio 6** Estudos polêmicos em tireoidite	**Simpósio 10** O laboratório nas doenças ósteo-metabólicas	**Simpósio 11** Água de mais, sal de menos	**Simpósio 12** Interagindo com a função tireoidiana
17:45-18:00	**Prêmio Antonio Barros de Ulhôa Cintra**	—		**Prêmio José Scherman**	—	
18:00-18:30	**Mini-conferência** Terapia com testosterona em mulheres: quando, como e por quê?	**Mini-conferência** O que a COVID-19 nos ensinou sobre vitamina D e imunidade	**Mini-conferência** Risco cardiovascular na terapia crônica com glicocorticoides	**Mini-conferência** Common errors in the interpretation of bone densitometry	**Mini-conferência** O que a COVID-19 nos ensinou sobre obesidade e síndrome metabólica e vice-versa	—
19:00-20:00	**Simpósio Satélite BOEHRINGER**	—		—		**Simpósio Satélite NOVO NORDISK**

GRADE CIENTÍFICA e-CBEM 2020

HORÁRIO	04 DE DEZEMBRO - SEXTA-FEIRA			05 DE DEZEMBRO - SÁBADO		
	ESTÚDIO 1	ESTÚDIO 2	ESTÚDIO 3	ESTÚDIO 1	ESTÚDIO 2	ESTÚDIO 3
08:00-09:00	—			**Simpósio Satélite TAKEDA**	—	
08:30-10:30	**Mesa Redonda 7** Aspectos especiais do hipogonadismo masculino	**Mesa Redonda 8** Fortalecendo os ossos osteoporóticos	**Mesa Redonda 9** Aprendendo (quase) tudo sobre os adenomas hipofisários funcionantes	**Workshop** SBEM-Endocrine Society	—	
11:00-12:00	**Debate 1** Testes genéticos em nódulos de tireoide com citologia indeterminada: vale a pena?	**Debate 2** "Drug Holiday" no tratamento da osteoporose	**Debate 3** Avaliação de risco cardiovascular para além de 10 anos			
12:15-13:15	**Sessão Pôster**			**Prêmios e Encerramento**	—	
13:30-15:00	**Simpósio 13** Hipoglicemiantes orais em situações especiais	**Simpósio 14** Cuidando da pessoa transgenêro	**Simpósio 15** A tríade da mulher atleta			
15:30-17:00	**Simpósio 16** Circundando os glicocorticoides	**Simpósio 17** Tirando dúvidas sobre contracepção hormonal	**Simpósio 18** Fertilidade e Reprodução			
17:30-18:30	**Prêmio AE&M (Archives of Endocrinology and Metabology)**	**Debate 4** Inibidores de aromatase na baixa estatura	**Debate 5** Conduta no aldosteronismo primário			
18:00-18:30	**Mini-conferência** Função Tireoididana, complicações vasculares e mortalidade	—				
19:00-20:00	**Posse Diretoria SBEM**	—				

ATIVIDADES ADMINISTRATIVAS

01/12 *19h - 20h30* **Cerimônia de abertura**

02/12 *13h -15h* **Reunião do Conselho Deliberativo**

03/12 *18h15* **Assembleia Geral Ordinária (AGO)**

04/12 *19h* **Posse da nova Diretoria da SBEM**

05/12 *12h15 - 13h15* **Entrega de prêmios e cerimônia de encerramento**

PALESTRAS ON DEMAND

SESSÃO EMBE - ENDOCRINOLOGIA E METABOLOGIA BASEADA EM EXERCÍCIOS

Complicações crônicas do DM: diagnóstico e tratamento
Andre Vianna (PR)

Atualização no uso de medicamentos no tratamento do DM: os novos estudos clínicos
Roberto Zagury (RJ)

Hipertensão Endócrina: hiperaldosteronismo primário
Flávia Amanda Costa Barbosa (SP)

Hipogonadismo masculino
Renato Torrini (RJ)

Puberdade atrasada
Leandra Steinmetz (SP)

Risco e benefícios das dietas *low carb*
Livia Lugarinho

Tumores hipofisários não funcionantes
Flavia Barbosa (RJ)

Jejum intermitente e outras dietas da moda
Cristiano Barcellos (SP)

CASOS CLÍNICOS | PÔSTERES COMENTADOS

Tireoide
Glaucia Mazeto (SP)

Diabetes
Melanie Rodacki (RJ)

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Adriane Maria Rodriguesa (PR)

PALESTRAS ON DEMAND

ENCONTRO COM PROFESSOR

Fiz bariátrica e engordei tudo de novo. E agora doutora?
Cintia Cercato (SP)

Meu paciente diabético internou, e agora?
Ticiana Costa Rodrigues (RS)

Balão intra-gástrico e técnicas endoscópicas no tratamento da obesidade: para quem elas servem?
Erika Paniago Guedes (RJ)

Atualização em Neoplasia Endócrina Múltipla (NEM)
Delmar Lourenço Jr (SP)

Tumores primários malignos das adrenais
Maria Candida Fragoso (SP)

A origem dos craniofaringeomas e sua potencial implicação terapêutica
Margaret Castro (SP)

Velhos e novos paradigmas na abordagem do Diabetes gestacional
Leticia Schwerz Weinert (RS)

Prevenindo, diagnosticando e tratando a apoplexia hipofisária
Julio Abucham (SP)

Transtornos alimentares no obeso: como abordá-los?
Rogerio Friedman (RS)

O que não fazer no tratamento da obesidade
Henrique Suplicy (PR)

Passado, presente e futuro das sulfonilureias no tratamento do diabetes
Ruy Lyra (PE)

Qual o melhor tratamento para proteger o coração e o rim do meu paciente com diabetes?
Maria Tereza Zanella (SP)

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Mario Vaisman (RJ)

Cushing iatrogênico: como abordar e como retirar o glicocorticoide
Lucio Vilar (PE)

Genética da baixa estatura e da resposta ao tratamento com GH
Alexander Jorge (SP)

Pré-diabetes: diagnóstico e tratamento
Thaísa Dourado Guedes (BA)

Revisitando as interrelações entre fígado e diabetes
Bruno Geloneze (SP)

Hipertireoidismo nas diferentes etapas da vida
Danilo Villagelin Neto (SP)

Consequências da deficiência e do excesso de iodo na gestação
Patrícia de Fátima dos Santos Teixeira (RJ)

Aprendendo a sequenciar a microbiota
Roberta Cristina Ruedas Martins (SP)

Hiperandrogenismo na pós-menopausa
Poli Mara Spritzer (RS)

Genética na insuficiência ovariana precoce: expandindo os conhecimentos sobre a função ovariana
Berenice B Mendonça (SP)

Hipogonadismo, obesidade e síndrome metabólica
Ricardo Meirelles (RJ)

Doença Hepática Gordurosa e Síndrome Metabólica: contínuo de uma pandemia
Amelio Godoy-Matos (RJ)

Bons e maus momentos na historia da Terapia Hormonal da Menopausa
Dolores Pardini (SP)

Armadilhas no diagnóstico diferencial da hiperprolactinemia
Marcello Bronstein (SP)

PALESTRAS ON-LINE

28 de novembro

08:00 - 09:00 - SIMPÓSIO SATÉLITE

09:30 - 12:00 - WORKSHOP SBEM-WORLDWIDE DIABETES
ADVANCING STRATEGIES IN THE MANAGEMENT OF TYPE 2 DIABETES

Hypoglycemia
Simon Heller (UK)

The Role of insulin intensification and managing clinical inertia
Chantal Mathieu (Belgium)

The Psychological aspects of patient adherence
Jeffrey Gonzalez (USA)

New Type 2 Diabetes treatment options based on results of recent CVOTs
Marcello Bertoluci (Brazil)

14:00 - 15:00 - SIMPÓSIO SATÉLITE

15:30 - 18:00 - SEMINÁRIO COMISSÃO DE ENDOCRINOLOGIA DO EXERCÍCIO E ESPORTE *EVIDÊNCIAS CIENTÍFICAS NA ENDOCRINOLOGIA DO EXERCÍCIO E DO ESPORTE*

Atividade física e neuroplasticidade
Clayton Macedo (RS)

Sarcopenia e o paradoxo da adiposidade nas doenças crônicas
Tatiana MRL Costa (PR)

Termogênicos: pequenos benefícios, grandes riscos ou vice-versa?
Fabio Moura (PE)

Exercício físico, diabetes e obesidade
Beatriz Schaan (RS)

29 de novembro

09:30 - 12:00 - WORKSHOP SBEM-EUROPEAN SOCIETY OF ENDOCRINOLOGY *LET'S TALK ABOUT GUIDELINES*

Pituitary aggressive tumors
Gerald Raverot (France)

Gastroenteropancretic neuorendocrine tumors: functioning and incidental
Camilla Schalin-Jantti (Finland)

Adrenal incidentalomas
Felix Beuschlein (Germany)

Evidence-based management of polycystic ovary syndrome
Bulent Yildiz (Turkey)

14:00 - 15:00 - SIMPÓSIO SATÉLITE

18:00 - 20:30 - SEMINÁRIO COMISSÃO DE ÉTICA E DEFESA PROFISSIONAL
A ENDOCRINOLOGIA ENFRENTA A ENDOCRIMINOLOGIA

Modulação hormonal, bioidênticos, chips: o que precisamos saber para não fazer?
Mauro Czepielewski (RS)

Bomba, tô dentro (se for de chocolate!). Fatos e mitos sobre esteroides anabolizantes
Alexandre Hohl (SC)

Meu cortisol está baixo... é fadiga adrenal, né doutora?
Milena Caldato (PA)

A "Somatopausa" é do bem ou é do mal?
Manuel Herminio Aguiar-Oliveira (SE)

PALESTRAS ON-LINE

30 de novembro

09:30 - 12:00 - WORKSHOP COMISSÃO DE FORMAÇÃO MÉDICA EM ENDOCRINOLOGIA E METABOLOGIA *CIÊNCIA VERSUS PSEUDO CIÊNCIA*

Aprimorando a tomada de decisão: da experiência a evidência científica, das diretrizes a abordagem Bayesiana
Ayrton Moreira (SP)

Metanálise e revisão sistemática na vida do endocrinologista clínico
Vania Santos Nunes (SP)

A importância da globalização para o desenvolvimento científico
Ana Claudia Latronico (SP)

A marcha pela ciência e seu impacto para o futuro do Brasil
Denise Pires de Carvalho (RJ)

14:00 - 15:00 - SIMPÓSIO SATÉLITE

15:30 - 18:00 - WORKSHOP TEMA CBEM 2020
ENDOCRINOLOGIA NA ERA DA INTELIGÊNCIA ARTIFICIAL

O acesso à informação por meio das tecnologias digitais e seu impacto
Maria Cristiane Barbosa Galvão (SP)

Telemedicina: como o endocrinologista deve se preparar para ela?
Marcio Krackauer (SP)

Plataformas *on-line:* **o que esperar delas pós-pandemia?**
Aline M Beleigoli (MG)

Old Endocrinology, New Endocrinology
Dale Abel (EUA)

19:00 - 20:00 - SIMPÓSIO SATÉLITE

01 de dezembro

09:30 - 12:00 - WORKSHOP FARMACO-ECONOMIA EM ENDOCRINOLOGIA
CONVERSANDO SOBRE TRATAMENTO E SEUS CUSTOS

Acromegalia
Lara B Porto (DF)

Câncer de Tireoide
Carolina Janovsky (SP)

Diabetes e Obesidade
Luciana R Bahia (RJ)

Impacto econômico do diagnóstico tardio da hiperplasia adrenal congênita
Mirela Costa de Miranda (SP)

19:00 - 20:15 - CERIMÔNIA DE ABERTURA COM MINI-CONFERÊNCIA

Artificial intelligence and machine learning in Endocrinology and Metabolism
Fady Hannah-Shmouni (EUA)

PALESTRAS AO VIVO

02 de dezembro

ESTÚDIO 01

08:30 - 10:30 - MESA REDONDA 1 *DÚVIDAS FREQUENTES NA ABORDAGEM DA DOENÇA NODULAR E DO CÂNCER DE TIREOIDE*

PAF em nódulos > 3cm é confiável?
Debora Lucia Seguro Danilovic (SP)

Papel da ecografia na citologia indeterminada
Cleo Otaviano Mesa junior (PR)

Seguimento do paciente com carcinoma diferenciado de tireoide submetido a lobectomia
Fernanda Vaisman (RJ)

ESTÚDIO 02

08:30 - 10:30 - MESA REDONDA 2 *RECONHECENDO O PACIENTE COM RISCO DE FRATURAR*

FRAX e outros modelos de predição: eles funcionam?
Dalisbor MW Silva (SC)

Fratura vertebral: posição oficial da ISCD 2019
João Lindolfo Borges (DF)

Nutrição e exercício: como eles podem ajudar na prevenção?
Patrícia Costa Bezerra (DF)

ESTÚDIO 03

08:30 - 10:30 - MESA REDONDA 3 *DESPRESCREVENDO DROGAS: QUANDO E COMO?*

Na dislipidemia
Rodrigo Moreira (RJ)

No diabetes
Renan M. Montenegro Jr (CE)

Na obesidade
Mario Carra (SP)

ESTÚDIO 01

11:00 - 12:00 - PRÊMIO E CONFERÊNCIA JOSÉ DANTAS DE SOUZA LEITE

O que aprendemos sobre câncer de tireoide nas primeiras décadas do novo milênio
Ana Luiza Maia (RS)

ESTÚDIO 01

12:15 - 13:15 - SESSÃO TEMAS LIVRES 1

ESTÚDIO 02

12:15 - 13:15 - SESSÃO TEMAS LIVRES 2

ESTÚDIO 03

12:15 - 13:15 - SESSÃO TEMAS LIVRES 3

13:00 - 15:00 REUNIÃO DO CONSELHO DELIBERATIVO

PALESTRAS AO VIVO

02 de dezembro

ESTÚDIO 01

13:30 - 15:00 - SIMPÓSIO 1 *DOUTOR, ESTOU GORDO E COM DIABETES...*

Genética e epigenética: quanto isso realmente importa?
Maria Edna de Melo (SP)

Consequências metabólicas de noites mal dormidas
Bruno Halpern (SP)

O papel da dieta cetogênica na obesidade e no diabetes
Fernando Gerchman (RS)

ESTÚDIO 2

13:30 - 15:00 - SIMPÓSIO 2 *NOVOS CONCEITOS EM DOENÇAS HIPOFISÁRIAS*

Adenomas hipofisários familiares (FIPA): quando devo me preocupar com eles?
Leandro Kasuki (RJ)

Reconhecendo as novas etiologias do hipopituitarismo
Heraldo Garmes (SP)

Cabergolina no tratamento de adenomas não funcionantes
Nina Rosa Musolino (SP)

ESTÚDIO 03

13:30 - 15:00 - SIMPÓSIO 3 *FRAGILIDADE ÓSSEA EM SITUAÇÕES ESPECIAIS*

No diabetes
Carolina Aguiar Moreira (PR)

Na hipovitaminose D
Maria Lucia Fleiuss de Farias (RJ)

Nas displasias esqueléticas
Luiz Cláudio Castro (DF)

ESTÚDIO 01

15:30 - 17:00 - SIMPÓSIO 4 *SITUAÇÕES COMPLEXAS NA INFÂNCIA E ADOLESCÊNCIA*

Consequências endócrinas e metabólicas do tratamento do câncer infantil
Ana Hoff (SP)

Hipertensão arterial na criança e no adolescente
Sonir Antonini (SP)

Estatina em crianças e adolescentes: quando iniciar o tratamento?
Joaquim Custódio Jr. (BA)

ESTÚDIO 02

15:30 - 17:00 - SIMPÓSIO 5 *A GESTANTE COM PROBLEMAS ENDÓCRINOS*

Após cirurgia bariátrica
Jacqueline Rizzolli (RS)

Hipoparatireoidismo
Sergio Maeda (SP)

Hipopituitarismo
Manoel Martins (CE)

ESTÚDIO 03

15:30 - 17:00 - SIMPÓSIO 6 *ESTUDOS POLÊMICOS EM TIREOIDITE*

Tireoidectomia total para Tireoidite de Hashimoto
Valéria Guimarães (DF)

Hipotireoidismo subclínico: tratar ou não tratar?
Cleo Otaviano Mesa Jr (PR)

Hashimoto como fator de risco para câncer de tireoide
Laura Ward (SP)

PALESTRAS AO VIVO

02 de dezembro

ESTÚDIO 01

17:45 - 18:00 - PRÊMIO ANTONIO BARROS DE ULHÔA CINTRA

Valeria Guimarães (DF)

ESTÚDIO 01

18:00 - 18:30 - MINI-CONFERÊNCIA

Terapia com testosterona em mulheres: quando, como e por quê?
Rita V. Weiss (RJ)

ESTÚDIO 02

18:00 - 18:30 - MINI-CONFERÊNCIA

O que a COVID-19 nos ensinou sobre vitamina D e imunidade
Marise Lazaretti-Castro (SP)

ESTÚDIO 03

18:00 - 18:30 - MINI-CONFERÊNCIA

Risco cardiovascular na terapia crônica com glicocorticoides
Tânia Bachega (SP)

ESTÚDIO 01

19:00 - 20:00 - SIMPÓSIO SATÉLITE

PALESTRAS AO VIVO

03 de dezembro

ESTÚDIO 01

08:30 - 10:30 - MESA REDONDA 4 *TRATANDO O DIABETES 100 ANOS APÓS A PRIMEIRA INJEÇÃO DE INSULINA*

Sensores e monitorização
Domingos Malerbi (SP)

Bombas de insulina
Luciana Secchi (MS)

Novas insulinas
Hermelinda Pedrosa (DF)

ESTÚDIO 02

08:30 - 10:30 - MESA REDONDA 5 *REPOSIÇÃO HORMONAL NA MULHER E SISTEMA CARDIOVASCULAR*

Nas meninas com Turner
Magnus Régios Dias da Silva (SP)

Efeitos cardiovasculares da menopausa e da terapia de reposição
Ruth Clapauch (RJ)

Hipopituitarismo, síndrome metabólica e mortalidade
Cesar Luiz Boguszewski (PR)

ESTÚDIO 03

08:30 - 10:30 - MESA REDONDA 6 *DESAFIOS DIAGNÓSTICOS E TERAPÊUTICOS NAS DOENÇAS TIREOIDIANAS*

Diagnóstico diferencial do TSH elevado
Jose Sgarbi (SP)

Oftalmopatia de Graves: confrontando velhas e novas abordagens
Helton Ramos Estrela (BA)

Revisitando o papel do T3: das dosagens laboratoriais as potencialidades terapêuticas
Cristiane J Gomes-Lima (DF)

ESTÚDIO 01

11:00 - 12:00 - PRÊMIO E CONFERÊNCIA LUIZ CESAR POVOA

Cancer is a metabolic disease
Aart J van der lely (Holanda)

ESTÚDIO 01

12:15 - 13:15 - SESSÃO TEMAS LIVRES 4

ESTÚDIO 02

12:15 - 13:15 - SESSÃO TEMAS LIVRES 5

ESTÚDIO 03

12:15 - 13:15 - SESSÃO TEMAS LIVRES 6

PALESTRAS AO VIVO

03 de dezembro

ESTÚDIO 01

13:30 - 15:00 - SIMPÓSIO 7 *REVISITANDO AS FORMAS NÃO TRADICIONAIS DE DIABETES*

MODY
Milena Teles (SP)

Double diabetes
Wellington Santana da Silva Jr (MA)

LADA
Rosangela Rea (PR)

ESTÚDIO 02

13:30 - 15:00 - SIMPÓSIO 8 *PELOS DEMAIS, PELOS DE MENOS*

Pubarca iatrogênica
Marilza Nascimento (SC)

Hiperandrogenismo e resistência insulínica
Larissa G Gomes (SP)

Alopecia: o que todo Endocrinologista precisa saber
Patrícia Damasco (DF)

ESTÚDIO 03

13:30 - 15:00 - SIMPÓSIO 9 *SITUAÇÕES DIFÍCEIS NO PACIENTE DISLIPIDÊMICO*

O paciente com HDL muito baixo
Joana Rodrigues Dantas Pereira (RJ)

Hipertrigliceridemia grave: diagnóstico diferencial e tratamento
Marcio Lauria (MG)

Hipercolesterolemia familiar
Cynthia Valerio (RJ)

ESTÚDIO 01

15:30 -17:00 - SIMPÓSIO 10 *O LABORATÓRIO NAS DOENÇAS ÓSTEO METABÓLICAS*

Marcadores de remodelação óssea
Barbara Campolina Silva (MG)

Armadilhas nas dosagens do PTH
Monique Nakayama Ohe (SP)

Escrutinando as dosagens de Vitamina D
Maria Isabel Chiamolera (SP)

ESTÚDIO 02

15:30 - 17:00 - SIMPÓSIO 11 *ÁGUA DE MAIS, SAL DE MENOS*

SIADH induzida por drogas
Luciana Naves (DF)

Abordando o paciente com hiponatremia
Juliana Drummond (MG)

Investigando diabetes insipidus
Paula Elias (SP)

ESTÚDIO 03

15:30 - 17:00 - SIMPÓSIO 12 *INTERAGINDO COM A FUNÇÃO TIREOIDIANA*

Metabolismo glicêmico e função tireoidiana
Denise Pires de Carvalho (RJ)

Drogas e função tireoidiana
Gustavo Cancela e Penna (MG)

Tecido adiposo e função tireoidiana
Celia Regina Nogueira (SP)

PALESTRAS AO VIVO

03 de dezembro

ESTÚDIO 01

17:45 - 18:00 - PRÊMIO JOSÉ SCHERMAN *AO VIVO*
Renan Montenegro (CE)

18:15 - ASSEMBLEIA GERAL ORDINÁRIA

ESTÚDIO 01

18:00 - 18:30 - MINI-CONFERÊNCIA

Common errors in the interpretation of bone densitometry
Michael Lewiecki (EUA)

ESTÚDIO 02

18:00 - 18:30 - MINI-CONFERÊNCIA

O que a COVID-19 nos ensinou sobre obesidade e síndrome metabólica e vice-versa
Marcio Mancini (SP)

ESTÚDIO 03

19:00 - 20:00 - SIMPÓSIO SATÉLITE

PALESTRAS AO VIVO

04 de dezembro

ESTÚDIO 01

08:30 - 10:30 - MESA REDONDA 7 *ASPECTOS ESPECIAIS DO HIPOGONADISMO MASCULINO*

Dosagem de testosterona total vs livre e outros marcadores: como interpretá los corretamente?
Adriana Lofrano (DF)

Hipogonadismo funcional: como diagnosticar, tratar e monitorar
Alexei Dourado Guedes (BA)

Reposição de testosterona no homem com HPB e câncer de próstata
Luiz Otávio Torres (MG)

ESTÚDIO 02

08:30 - 10:30 - MESA REDONDA 8 *FORTALECENDO OS OSSOS OSTEOPORÓTICOS*

Cálcio, vitamina D e atividade física: qual a quantidade?
Miguel Madeira (RJ)

Prós e contras das drogas osteoformadoras
Marise Lazaretti-Castro (SP)

Prós e contras das drogas antireabsortivas
Francisco José de Paula (SP)

ESTÚDIO 03

08:30 - 10:30 - MESA REDONDA 9 *APRENDENDO (QUASE) TUDO SOBRE OS ADENOMAS HIPOFISÁRIOS FUNCIONANTES*

Tratamento medicamentoso da acromegalia: qual droga, quando e por quê?
Monica Gadelha (RJ)

Quando operar um paciente com prolactinoma?
Felipe Henning Gaia (SP)

Opções terapêuticas após falha cirúrgica na doença de Cushing
Paulo Augusto Carvalho Miranda (MG)

PALESTRAS AO VIVO

04 de dezembro

ESTÚDIO 01

11:00 - 12:00 - DEBATE 1 *TESTES GENÉTICOS EM NÓDULOS DE TIREOIDE COM CITOLOGIA INDETERMINADA: VALE A PENA?*

Não
Rafael Scheffel (RS)

Sim
Carolina Ferraz (SP)

ESTÚDIO 02

11:00 - 12:00 - DEBATE 2 *"DRUG HOLIDAY" NO TRATAMENTO DA OSTEOPOROSE*

Sim
Bruno Ferraz de Souza (SP)

Não
Bárbara Campolina Silva (MG)

ESTÚDIO 03

11:00 - 12:00 - DEBATE 3 *AVALIAÇÃO DE RISCO CARDIOVASCULAR PARA ALÉM DE 10 ANOS*

Sim, vale a pena
Fernando Gerchmann (RS)

Não, não vale a pena
Rodrigo Lamounier (MG)

ESTÚDIO 01

12:15 - 13:15 - SESSÃO PÔSTER

ESTÚDIO 02

12:15 - 13:15 - SESSÃO PÔSTER

ESTÚDIO 03

12:15 - 13:15 - SESSÃO PÔSTER

PALESTRAS AO VIVO

04 de dezembro

ESTÚDIO 01

13:30 - 15:00 - SIMPÓSIO 13 *HIPOGLICEMIANTES ORAIS EM SITUAÇÕES ESPECIAIS*

Na criança e no adolescente
Mauro Scharf Pinto (PR)

Na gestante
Cristina Façanha (CE)

Na terceira idade
João Eduardo Salles (SP)

ESTÚDIO 02

13:30 - 15:00 - SIMPÓSIO 14 *CUIDANDO DA PESSOA TRANSGENÊRO*

Reposição hormonal a longo prazo: há o que temer?
Karen FM Seidel (RJ)

Impacto da terapia hormonal cruzada na composição corporal da mulher transgenêro
Flavia S. Cunha (PA)

Bloqueio puberal: uma boa alternativa ou um campo minado?
Elaine Frade Costa (SP)

ESTÚDIO 03

13:30 - 15:00 - SIMPÓSIO 15 *A TRÍADE DA MULHER ATLETA*

Amenorreia
Andrea Fioretti (SP)

Osteoporose e fraturas de estresse
Victoria ZC Borba (PR)

Transtornos alimentares
José Carlos Appolinario (RJ)

ESTÚDIO 01

15:30 - 17:00 - SIMPÓSIO 16 *CIRCUNDANDO OS GLICOCORTICOIDES*

Hipercortisolismo sub-clínico: o que fazer?
Monike Lourenço Dias (GO)

Diabetes induzido por glicocorticoides
Fabio Trujilho (BA)

Insuficiência adrenal, crise adrenal e uso de glicocorticoides em tempos de COVID
Leonardo Vieira Neto (RJ)

ESTÚDIO 02

15:30 -17:00 - SIMPÓSIO 17 *TIRANDO DÚVIDAS SOBRE CONTRACEPÇÃO HORMONAL*

Na adolescente com diabetes
Cristiane B Leitão (RS)

Na mulher obesa
Monica de Oliveira (PE)

Na peri-menopausa
Amanda Athayde (RJ)

ESTÚDIO 03

15:30 - 17:00 - SIMPÓSIO 18 *FERTILIDADE E REPRODUÇÃO*

Fatores Reguladores da Puberdade e Reprodução
Ana Claudia Latronico (SP)

Na hiperplasia adrenal congênita
Milena C F Caldato (PA)

Nos tumores hipofisários agressivos
Silvia Regina Correa da Silva (SP)

PALESTRAS AO VIVO

04 de dezembro

ESTÚDIO 01

17:30 - 18:00 - PRÊMIO AE&M (ARCHIVES OF ENDOCRINOLOGY AND METABOLOGY)

Prêmio Professor Thales Martins pelo melhor trabalho publicado na área Básica-Translacional em 2019
Tabata M. Silva (SP)

Prêmio AE&M Professor Waldemar Berardinelli pelo melhor trabalho publicado na área Clínica em 2019
Mariana de Andrade Balbi (SP)

ESTÚDIO 02

17:00 - 18:00 - DEBATE 4 *INIBIDORES DE AROMATASE NA BAIXA ESTATURA*

Sim, sou a favor
Paulo Solberg (RJ)

Não, sou contra
Margaret Boguszewski (PR)

ESTÚDIO 03

17:00-18:00 - DEBATE 5 *CONDUTA NO ALDOSTERONISMO PRIMÁRIO*

Decisão baseada na imagem
Claudio Kater (SP)

Decisão baseada no cateterismo
Madson Queiroz de Almeida (SP)

ESTÚDIO 01

18:00 - 18:30 - MINI-CONFERÊNCIA

Função tireoidiana, complicações vasculares e mortalidade
Rui Maciel (SP)

ESTÚDIO 01

19:00 - 20:00 - POSSE DIRETORIA SBEM

PALESTRAS AO VIVO

05 de dezembro

ESTÚDIO 01 – CANAL 01

08:00 - 09:00 - SIMPÓSIO SATÉLITE

ESTÚDIO 01 – CANAL 01

09:30 - 12:00 - WORKSHOP *SBEM-ENDOCRINE SOCIETY*

Heart Failure in Type 2 Diabetes Mellitus
Dale Abel (EUA)

New develpments in adrenocortical carcinoma
Gary Hammer (EUA)

Pharmacotherapy for the treatment of adolescent obesity: Where are we now? Where are we going?
Ania Jastreboff (EUA)

Thyroid nodules and cancer during pregnancy, post-partum and preconception planning
Megan Rist Haymart (EUA)

ESTÚDIO 01 – CANAL 01

12:15 - 13:15 - PRÊMIOS E ENCERRAMENTO

SIMPÓSIOS SATÉLITES

28/11/2020 - SIMPÓSIO SATÉLITE LILLY

28/11/2020 - SIMPÓSIO SATÉLITE NOVONORDISK

28/11/2020 - SIMPÓSIO SATÉLITE AMGEN

29/11/2020 - SIMPÓSIO SATÉLITE SANOFI

29/11/2020 - SIMPÓSIO SATÉLITE ASTRAZENECA

30/11/2020 - SIMPÓSIO SATÉLITE SANOFI

30/11/2020 - SIMPÓSIO SATÉLITE ASTRAZENECA

30/11/2020 - SIMPÓSIO SATÉLITE NOVONORDISK

01/12/2020 - SIMPÓSIO SATÉLITE FARMOQUÍMICA

02/12/2020 - SIMPÓSIO SATÉLITE BOEHRINGER

03/12/2020 - SIMPÓSIO SATÉLITE NOVONORDISK

05/12/2020 - SIMPÓSIO SATÉLITE TAKEDA

e-CBEM
34º CONGRESSO BRASILEIRO DE ENDOCRINOLOGIA E METABOLOGIA
A ENDOCRINOLOGIA EM TEMPOS DE INTELIGÊNCIA ARTIFICIAL
BRASÍLIA - 28 DE NOVEMBRO A 05 DE DEZEMBRO DE 2020
SBEM Sociedade Brasileira de Endocrinologia e Metabologia

TRABALHOS CIENTÍFICOS

CBEM 2020

APRESENTAÇÕES ORAIS

E-PÔSTER

APRESENTAÇÃO ORAL

NEUROENDOCRINOLOGIA

ENDOCRINOLOGIA BÁSICA

DIABETES MELLITUS

METABOLISMO ÓSSEO E MINERAL

NEUROENDOCRINOLOGIA

OBESIDADE

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

OBESIDADE

TIREOIDE

E-PÔSTER

ADRENAL E HIPERTENSÃO

DIABETES MELLITUS

DISLIPIDEMIA E ATEROSCLEROSE

ENDOCRINOLOGIA BÁSICA

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

ENDOCRINOLOGIA PEDIÁTRICA

METABOLISMO ÓSSEO E MINERAL

NEUROENDOCRINOLOGIA

OBESIDADE

OUTROS

TIREOIDE

DISLIPIDEMIA E ATEROSCLEROSE

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SBEM Sociedade Brasileira de Endocrinologia e Metabologia

APRESENTAÇÃO ORAL

NEUROENDOCRINOLOGIA

AP-1 CLINICAL PREDICTORS FOR OCCURRENCE OF MUTATION REFINE PHENOTYPIC SIGNATURES OF MUTATION-NEGATIVE (PHENOCOPIES) AND MUTATION-POSITIVE INDEX CASES WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1

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Background: Index cases diagnosed with multiple endocrine neoplasia type 1 (MEN1) and no germline MEN1 mutation are known as phenocopies. In comparison with positive-mutation cases, most phenocopies are diagnosed in older age, primary hyperparathyroidism (HPT) and pituitary adenoma (PIT) account for the most frequent association, HPT is frequently uniglandular, rarely develop a third MEN1-related tumor and are associated with lower morbidity and longer survival. However, these data are derived of genetic studies by Sanger targeted to MEN1 gene from a strict number of MEN1 phenocopies. **Casuistic/Methods:** 143 MEN1 index cases: 87 MEN1-positive and 56 true MEN1 phenocopies (excluded mutations for MLPA assay and by a mini-painel based on long-range PCR and next generation sequencing of 6 MEN1-related genes covering full coding and non-coding regions: MEN1, p15, p18, p21, p27, AIP). **Results:** High detectability rate of MEN1 mutation was associated with the presence of ≥ 4 organs affected for primary tumors (100%), association of HPT/PET (neuroendocrine pancreatic tumor)/PIT (93%), HPT/PET (81%), positive familial history (88% vs. 48%), presence of PET (84%) as malign (80%) as multifocal (95%), two different PETs (100%), multiglandular HPT (81%) and diagnosis of one MEN1-related tumor (93%) or of two/three MEN1 tumors diagnosed before 21y (100%). The combination HPT/PIT has the lowest rate of detection of mutation (33%), it is even lower if PIT was acromegaly (12%) or age at the diagnosis of HPT and PIT was, respectively, >45y and >30y (8%) and absent if it is added uniglandular HPT (0%) or if there was association HPT/PIT (age-independent) with uniglandular HPT (0%). The prediction for detection of mutation increases if these cases HPT (>45y)/PIT (>30y) have multiglandular HPT (20%) and it is 100% with association HPT (<30y)/PIT (<21y). Based on these predictors, scores were attributed in a scale (0-100) for each one of them allowing the building of a integrate model of prediction. **Conclusions:** By integration of phenotypic clues and full genetic analysis applied to the largest series of MEN1 phenocopy, we built an intelligent tool to routine clinical application aiming to refine the prediction for mutation detection and revealing the estimated chance of an index case harbor a mutation or be classified as phenocopy. By their peculiarities, the management/treatment of phenocopies should potentially be different of that recommended to mutation-positive cases.

AP-2 GSP MUTATION IS NOT A MOLECULAR BIOMARKER OF LONG-TERM RESPONSE TO FIRST-GENERATION SOMATOSTATIN RECEPTOR LIGANDS

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Introduction: First-generation somatostatin receptor ligands (fg-SRLs) are the first option for the medical treatment of acromegaly, and some controversy exists regarding whether activating mutations in the stimulatory G-protein α subunit (gsp mutation) are a biomarker of response to these drugs. **Aim:** To evaluate whether gsp mutation predicts long-term response to fg-SRL treatment and to characterize the phenotype of patients harboring gsp mutations. **Patients and methods:** Demographic, laboratory and imaging data of patients with acromegaly who underwent transsphenoidal pituitary surgery were collected. Biochemical control was defined as GH < 1.0 ng/mL and normal age-adjusted IGF-I levels. GNAS1 sequencing was performed by Sanger. SST2 and SST5 were analyzed by immunohistochemistry (IHC) and real-time RT-PCR. The cytokeratin granulation pattern was evaluated by IHC. **Results:** Tumors from 136 patients were analyzed, and fifty-four (40%) harbored a gsp mutation. Eighty-one patients were treated with fg-SRLs. Biochemical control with fg-SRL treatment was similar in gsp+ and gsp- patients (37% vs. 25%, p = 0.219). In addition, mutation was not associated with sex, age, GH or IGF-I at diagnosis or the granulation pattern. Tumors harboring gsp mutation were smaller (p = 0.035) and less frequently invaded cavernous sinus (p = 0.001). SST2 protein and mRNA expression were similar between gsp+ and gsp- tumors, whereas SST5 protein (p = 0.047) and mRNA (p = 0.013) expression levels were higher in wild-type tumors. **Conclusion:** In this study of the largest series available in the literature, we concluded that the gsp mutation cannot be used as a molecular biomarker of response to fg-SRL treatment in acromegaly. However, the importance of its negative association with cavernous sinus invasion and SST5 expression needs to be further investigated.

AP-3 MOLECULAR INVESTIGATION BY EXOME IN PATIENTS WITH CONGENITAL HYPOPITUITARISM

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Introduction: Hypopituitarism is defined by insufficient secretion of one or more hormones produced in the pituitary. Mutations in transcription factors involved in pituitary development was associated to congenital hypopituitarism (CH). PROP1 is the most prevalent gene associated to CH in familial cases or proband from consanguineous parents. The development of next generation sequencing approach increased molecular diagnosis in consanguineous and familial cases. **Aim:** To screen by exome in the search of novel genes in patients with CH born to consanguineous parents (CP). Patients: Among 36 patients born from CP, 17 patients (12 males) were without molecular diagnosis. Thirteen presented multiple hormone deficiency and 4 isolated growth hormone (IGD). 12 ectopic neurohypophisis. Exome sequencing from peripheral blood DNA was carried out using HiSeq plataform from Illumina. Allelic variant filtering included MAF 1% in the exonic or splicing region, classified as pathogenic in 3/5 by in silico prediction sites, subsequently it was search phenotype description in OMIM, ClinVar and Genecards, association with predicted phenotypes in knockout mice at MGI and zefrabish at Zfin followed by the search of pituitary expression in GteX. The promising allelic variants were confirmed and segregated in the family by Sanger and classified by the ACMG criteria. **Results:** GH1c.171delT(p.Phe57Leufs*43) was found in a Male Patient with IGH that was classified as pathogenic by the ACMG criteria. CDH2c.865G>A(p.Val289Ile) was found in a female patient with GH, TSH, ACTH and LH/FSH, classified as deleterious in 3/5 in silico prediction sites. Functional study to look for aggregation cell using L1 fibroblast cell lines transfected either with wild type or allelic variant showed reduced capacity for cell adhesions in the p.Val289Ile allelic variant. It was classified as likely pathogenic by the ACMG criteria. SZT2 c.C7625T(p.Ser2542Phe) was found in a male patient born premature that evolved with GH, LH/FSH and TSH deficiencies. He presented situs inversus totalis and learning difficulty. SZT2 is expressed in the pituitary but it was never described with hypopituitarism. It was classified as variant of unknown significance by ACMG. **Conclusion:** The exome analysis pointed 2 new candidate genes associated to congenital hypopituitarism. To confirm phenotype genotype relationship, unrelated patients harboring allelic variants in CDH2 and SZT2 are necessary to be found.

ENDOCRINOLOGIA BÁSICA

AP-4 AGE-AND PUBERTAL-RELATED CHANGES IN EXPRESSION OF CIRCULATING MIR-200C

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Introduction: Control of puberty onset is exerted by complex regulatory gene networks composed of multiple functional components. Epigenetic mechanisms may provide coordination and transcriptional plasticity to this genetic network. Animal model studies have indicated that miRNAs play a role in this coordinated mechanism. It has been shown that mice injected with target-site blockers for miR-200 in the pre-optic brain region have a higher expression of the transcriptional repressor Zeb1 and low expression of GnRH. This raises the question whether members of the miR-200 family could play a similar role in humans and if it is possible to detect them in a non-invasive method. **Objectives:** To analyze and profile age and pubertal-related changes in plasma expression of miR-200c, a known regulator of GnRH in puberty onset, and miR-210, a non-puberty related miRNA. **Methods:** Blood samples were obtained from 38 male individuals: 29 blood donors (18 to 55 years old [yo]) and 9 male children (3 to 12 yo; testicular volume < 3mL) who underwent postectomy. Subjects were distributed by age in groups: 1-12 yo (n = 9), 13-20 yo (n = 8), 21-30 yo (n = 12), 31-40 yo (n = 3) and 41-55 yo (n = 6). All pre pubertal (PP) subjects (n = 9) were located in the 0-12 yo group (n = 9) and the post pubertal subjects (PostP) (n = 29) were distributed in the groups 13-20 to 41-55 yo. miR-200c, miR-210, and reference miR-23a plasma expressions were measured by RT-qPCR and analyzed by ΔCt and 2-ΔΔCt . **Results:** Plasma expression of miR-200c was higher in the groups aged 13-20 to 41-55 yo than in the group aged 1-12 (ANOVA $p = 0.004$). In addition, all groups over 13 yo had individually higher means of miR-200c than the group of 1-12 yo ($p < 0.05$). No difference in expression of miR-200c was observed among the four groups aged over 13 yo. Higher expression of miR-200c was also observed when the PostP individuals' group was compared to PP individuals' group ($p = 0.003$). miR-210 did not present any significant value variation among groups. **Conclusion:** The analysis of circulating miR-200c expression profile, a known regulator of GnRH and ZEB1 in the brain, identified a higher expression level in pubertal than pre pubertal individuals, which was maintained throughout adulthood. Identification of miRNA biomarkers in plasma may have a great potential as a noninvasive diagnostic tool. Additional studies are needed to determine the exact role that miR-200c plays in the control of the pubertal process.

DIABETES MELLITUS

AP-5 EFFECT OF DAPAGLIFLOZIN VERSUS GLIBENCLAMIDE ON VISCERAL FAT MASS AND ADIPOKINES IN PATIENTS WITH TYPE 2 DIABETES AND ATHEROSCLEROTIC DISEASE: A PRE-SPECIFIED ANALYSIS OF THE ADDENDA TRIAL

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Sodium-glucose co-transporter 2 inhibitors (SGLT2i) promote body weight (BW) reduction in patients with type 2 diabetes (T2D). The repercussion on visceral fat mass (VFM) and adipokine is less explored. We aimed to investigate the different effects of dapagliflozin compared to glibenclamide on adipose tissue in T2D patients with confirmed atherosclerotic disease. **Methods:** In this pre-specified analysis of the ADDENDA-BHS2 trial, we performed Dual-Energy X-Ray absorptiometry and laboratorial exams at randomization and after 12-weeks of treatment with dapagliflozin 10 mg or glibenclamide 5 mg on top of metformin. Primary endpoint was the change of VFM. Secondary endpoints included the changes in android (AFM) and gynoid fat mass (GFM), plasma adiponectin, ratio adiponectin/leptin, HOMA-IR and the number of patients reaching at least 5% of BW loss. Atherosclerotic disease was mandatory and confirmed by previous history of myocardial infarction or revascularization, cerebral vascular disease, or carotid thickening on ultrasound. Data are presented as mean and standard deviation or median and interquartile range for normal or non-normal distribution. Inter-group comparison was performed by Mann-Whitney or T Test for parametric or non-parametric data. A p-value < 0.05 was considered statistically significant. **Results:** We evaluated a total of 674 patients. From these, 134 entered in run-in phase for laboratorial adjustments (HbA1c 7%-9% and blood pressure lower than 140/90 mmHg) and 49 patients were randomized for each arm of intervention. After 12-weeks treatment, fasting glucose and HbA1c were equivalent in both arms (p = 0.786 and 0.851, respectively). Compared to glibenclamide, dapagliflozin significantly reduced VFM [-98 g (305) vs. +58 (259)], AFM [-233 (260) vs. +61 (229)], GFM [-293 (323) vs. +11 (278)], total fat mass [-1625 (2147.77) vs. +278 (1110.02)], HOMA-IR [-1.81 (3.59) vs. -1.00 (2.85)], while increased adiponectin [+0.77 (5.83) vs. -0.37 (2.37)] and the ratio adiponectin/leptin [+0.068 (0.28) vs. -0.02 (0.14)]. A greater number of patients reached at least 5% of BW loss in dapagliflozin than in glibenclamide arm (22.9% vs. 4.1%, p = 0.015). **Conclusion:** Compared to glibenclamide, in equivalent glycemia condition, dapagliflozin 12-weeks treatment reduces VFM, android and gynoid fat mass, while improves adiponectin and HOMA-IR in patients with T2D with atherosclerotic disease.

AP-6 TELE-HEALTH STRATEGY TO MITIGATE THE NEGATIVE PSYCHOLOGICAL IMPACT OF THE COVID-19 PANDEMIC IN TYPE 2 DIABETES: A RANDOMIZED CONTROLLED TRIAL

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Introduction: The COVID-19 pandemic can result in psychological strains in patients with diabetes. Remote interventions may be a potential strategy to allow providers to assist patients during the quarantine period. **Objectives:** To assess the impact of a tele-intervention on mental health parameters in patients with type 2 diabetes during the COVID-19 pandemic. **Methods:** This is a randomized trial conducted for a tele-health intervention during the pandemic in Southern Brazil. Adults ≥18 years-old with previous diagnosis of type 2 diabetes, and who were available to receive weekly phone calls were invited to participate in the study. The intervention included a weekly multidisciplinary telephone call during the first four months of the recommended social distancing period. The phone calls involved strategies aimed to help patients to keep themselves healthy during the pandemic. The control group received only their usual diabetes care. The primary outcome was the presence of positive screening for anxiety and depression (SRQ-20) after the 16 week-intervention. Secondary outcomes included the screening for diabetes-related emotional distress (B-PAID), eating disorders (EAT-26), and sleep disorders (MSQ). Comparisons were performed using x2 tests for dichotomous outcomes and Mann-Whitney U test for continuous variables. **Results:** According to the sample size estimation, a total of 91 individuals were included in this study (46 in the intervention group and 45 in the control group). Overall, participants had a mean age of 61.3 ± 9.1 years old, diabetes duration of 18.1 ± 9.5 years and HbA1c value of 8.8 ± 1.7%. Baseline characteristics were similar in both groups. After 16 weeks of follow-up, a positive screening for anxiety and depression was found in 37.0% of participants in the intervention group vs. 57.8% in the control group (P = 0.04). The presence of diabetes related emotional distress was found in 21.7% of participants in the intervention group vs. 42.2% in the control group (P = 0.03). No differences were found between the intervention and the control groups with regard to eating disorders (73.9% vs. 77.8% respectively; P = 0.67), and sleep disorders (73.9% vs. 73.3% respectively; P = 0.95). **Conclusion:** This study demonstrated that maintaining remote connections with health professionals during the period of social distancing has the potential to reduce the prevalence of depression and anxiety and diabetes-related emotional distress in adults with type 2 diabetes.

AP-7 APPLICATION OF MOLECULAR DIAGNOSIS IN CASES OF *DIABETES MELLITUS* WITH FAMILY RECURRENCE TO IMPROVE THE PATIENT'S QUALITY OF LIFE THROUGH PERSONALIZED TREATMENT

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Diabetes mellitus is an important health problem worldwide. Additionally to the multifactorial forms, monogenic types have been reported as an important cause of the disease, responsible for approximately 2% of the diabetes cases. However, the real contribution of mutations in monogenic genes as the cause of diabetes, especially in populations with mixed background as in Brazil is unknown. The aim of this study was evaluated the occurrence of mutations probably harmful in eleven genes associated to monogenic diabetes. Forty-one patients with autosomal dominant history of diabetes and fifty-three relative were enrolled in this study. The patients inclusion criteria was age of onset less or equal 40 years old, body mass index (BMI) less than 30 kg/m², at least two affected generations and negative anti-GAD and anti-IA2 antibodies. Analysis of HNF4A, GCK, HNF1A, PDX1, HNF1B, NEUROD1, KLF11, PAX4, INS, KCNJ11, and MT-TL1 genes were performed by Sanger sequencing. In silico algorithms were used to assess the potential impact of amino acid substitutions on protein structure and function. We identified 29 patients (age of diagnostic average: 16.2 ± 8.7 years, ranging from 9 months to 35 years; BMI average: 26.9 ± 10.4 kg/m²; HbA1c average: 7 ± 1.4%) mutated, 18 GCK-MODY, 9 HNF1A-MODY, and one mutation each in HNF1B, and PAX4 genes. We described three novel mutations, the missense c.343A>G (p.Met115Val) in GCK and one nonsense c.489C>G (p.Tyr163Ter), and one frameshift insertion c.1136_1137insC (p.Pro379ProfsTer) were identified in HNF1A. The segregation study among the fifty-three relatives from fifteen families revealed that among the 33 diabetic subjects, 28 were mutated, and among the 20 relatives reported to not have diabetes, 7 presented the same mutation identified in the proband from their families. Concerning the treatment before the molecular diagnostic, 11 probands were managed with nutritional therapy (10 GCK-MODY and 1 HNF1A-MODY); 8 with oral hypoglycemic agents (OHA) (4 GCK-MODY and 4 HNF1A-MODY); 8 patients had been treated with insulin (3 GCK-MODY, 3 HNF1A-MODY, 1 HNF1B-MODY and 1 PAX4-MODY); one patient was managed with both, OHA and insulin, and we did not had this information from one patient. Here we highlight the importance of screening for monogenic diabetic forms in patients with familial history of diabetes. Additionally, the results obtained here could improve the choice of the best therapeutic management of patients and their families.

AP-8 INFLUENCE OF CHRONIC KIDNEY DISEASE IN THE PERFORMANCE OF ION-EXCHANGE HPLC FOR GLYCATED HEMOGLOBIN ASSESSMENT

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Background: Some clinical scenarios, such as chronic kidney disease (CKD), appear to affect the measurement of glycated hemoglobin (HbA1c) when performed by methods based on electrical charges separation, such as ion-exchange high-performance liquid chromatography (HPLC). In contrast, affinity HPLC is not affected by this condition. **Objective:** To evaluate the performance of ion-exchange HPLC to measure HbA1c in the presence or absence of CKD in comparison to affinity HPLC. **Methods:** We compared the boronate-affinity HPLC (Premier™ Hb9210, reference method) to ion-exchange HPLC (BioRad™ Variant II). Glomerular filtration rate (GFR) was estimated using CKD-EPI equation, and CKD was defined as a GFR <60 mL/min/1.73 m². Spearman's correlation, Lin's concordance correlation coefficient (CCC), Bland-Altman agreement analysis, and percentage within total allowed error were calculated. **Results:** Whole blood samples from 116 patients (aged 59 ± 14 years, 62% women, 64% with CKD, and 69% with known DM) were examined. HbA1c measurements by boronate affinity (mean 7.02 ± 1.7%) and ion-exchange (7.08 ± 1.8%) presented a strong correlation, either in patients with (n = 42, eGFR = 40 ± 16 mL/min/1.73 m², r = 0.99; p < 0.001) or without CKD (n = 74, eGFR = 90 ± 18 mL/min/1.73 m², r = 0.98; p < 0.001). A strong CCC was also demonstrated in both groups (with CKD: r = 0.984; without CKD: r = 0.985). The Bland-Altman plots confirmed the strong agreement between the methods, and only 12 (10%) of the 116 measurements were outside the recommended 6% total error. **Conclusion:** Boronate-affinity and ion-exchange HPLC methods of HbA1c measurement showed excellent agreement, demonstrating that the ion-exchange method does not appear to be affected by the presence of CKD, as previously stated.

AP-9 CLINICAL CHARACTERISTICS AND OUTCOMES OF DIABETIC PATIENTS AFFECTED BY SARS-COV-2

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Introduction: Diabetes and new-onset hyperglycemia are relevant risk factors for COVID-19 severity and higher mortality, and well-controlled glucose levels improved outcomes in type 2 diabetes. The underlying mechanisms are still unclear, but beta-cells express ACE-2, an entry receptor for SARS-CoV-2, and hyperglycemia might increase the cytokine storm. **Objectives:** To analyze clinical profile and outcomes of diabetic patients with COVID-19 followed at a reference center. **Patients and methods:** This is a prospective observational study, in which patients with COVID-19 received medical care in a reference center and were remotely monitored after the consult. Clinical data and outcomes were inserted in a database from April through August 2020 and further analyzed. **Results:** From a total of 1,134 patients with COVID-19, 102 (9%) had type 2 diabetes. Among diabetics, mean age was 55.5 ± 9.8 years and 55.9% were female. After initial risk stratification, 61.7% of diabetics were moderate and 21.5% severe. Comorbidities were more frequent in diabetics: hypertension (73.5% vs. 23.9%; $p < 0.001$), obesity (44.1% vs. 23.5%; $p < 0.001$), prior myocardial infarction (5.9% vs. 0.7%; $p < 0.001$), chronic kidney disease (2.9 % vs. 0.1%; $p < 0.001$) and dyslipidemia (6.9% vs. 7.5%; $p < 0.001$). There was no difference between groups regarding smoking and pulmonary disease. Dry cough, dyspnea and altered mental status were more frequent in diabetics, while odynophagia, headache, sneezing and runny nose were more commonly found in non-diabetic patients. The duration of COVID-19 symptoms was longer in diabetics (20.1 ± 8.4 vs. 17.1 ± 8.4 days; $p < 0.001$). Assistant physicians prescribed antibiotics, corticosteroids and heparin more often for diabetic subjects. The following clinical outcomes were more frequent in the diabetes group: hospital admission (16.7% vs. 2.7%; $p < 0.001$), use of oxygen therapy (12.9% vs. 1.9%; $p < 0.001$), intensive care unit admission (6.3% vs. 0.5%; $p < 0.001$) and mechanical ventilation (4.2% vs. 0.2%; $p < 0.001$). Hospital stay was longer among diabetic patients. Mortality rate was 2.9% among diabetics and 1% in non-diabetics ($p = 0.074$). **Conclusion:** Diabetic patients with COVID-19 had high frequency of comorbidities, were mostly classified as moderate or severe and presented more often with worrisome symptoms, such as dyspnea, while mild features were more frequent in non-diabetics. Diabetics also had longer hospital stays and more adverse clinical outcomes.

METABOLISMO ÓSSEO E MINERAL

AP-10 ASSESSMENT OF TBS AND INTRAMUSCULAR LIPIDS IN TYPE 2 DIABETES, THE BONE AND FAT RELATION

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Context: Type 2 diabetes (T2D) is mistakenly considered a condition not associated with bone fragility, because T2D individuals can exhibit normal or elevated bone mass in comparison to non-diabetic subjects. Previous studies show that weight has a positive impact on bone mass, but less is known about the relationship between body composition and bone quality. **Objective:** to assess the association of body fat percentage and intramuscular lipids with bone mass and trabecular bone score. **Design and methods:** The study comprised 23 controls (C), 27 healthy subjects paired (P) with type 2 diabetes group by body mass index (BMI), and 30 type 2 diabetes subjects (T2D). Bone mineral density (BMD) was determined by Dual-energy X-ray absorptiometry. Trabecular Bone Score (TBS) was assessed by using the TBS iNsight software. Blood samples were collected for biochemical measurements. 1H Magnetic resonance spectroscopy was used to measure intra and extramyocellular lipids. Regression analysis were applied to determine the association between parameters. Model 1 is a simple one, and model 2 is a multiple linear regression model, adjusted by body weight and age. **Results:** C, P and T2D groups are paired by age and height. Body mass index was lower in C than the other 2 groups. C, P, and T2D groups had preserved bone mass Intramuscular lipids was higher in T2D than C. On the other hand, TBS was lower in T2D than the other 2 groups (C = 1.40 ± 0.08; P = 1.34 ± 0.12; T2D = 1.26 ± 0.14). Glycated hemoglobin was negatively associated with TBS (E = -0.02; p = 0.0006), but not with bone mineral density. Total hip BMD was negatively related with body fat percentage (E = -0,007; p = 0.002). This linear regression was adjusted by age and BMI. In addition, the body fat percentage was negatively related with TBS (E = -0.05; p = 0.03). Moreover, there was a trend of negative association between intramuscular lipids and TBS (E = 0.02; p = 0.01). **Conclusion:** TBS is an emerging clinical tool for improvement of bone fragility recognition. This work reinforces the importance of adding TBS in the evaluation of T2D. The fat reallocation in muscle and poor glycemic control measured by A1c were negatively associated with TBS, but not with bone mass.

AP-11 COMPARISON BETWEEN THE DIRECT-ACTING ORAL ANTICOAGULANTS (DOACS) WITH A VITAMIN K INHIBITOR IN THE IMPACT ON BONE DENSITY AND QUALITY

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Oral anticoagulants that inhibit vitamin K, especially warfarin, have negative effects on bone mineral density (BMD). Direct-acting oral anticoagulants (DOACs) have emerged as an alternative to almost all indications for anticoagulation and act independently of vitamin K. It is believed that the use of DOACs may not interfere with the formation of bone matrix. This study aimed to evaluate the BMD and bone microarchitecture in patients treated with DOACs and warfarin. A cross-sectional, observational study, that included patients of both genders, aged between 35 - 70 years, using oral anticoagulants for more than 1 year, grouped into DOAC group (DOACG) and warfarin (WG) group, besides a control, paired group (CG). All patients filled out a questionnaire on the primary disease, comorbidities, continuous medications, and lifestyle, underwent physical evaluation and bone densitometry exam with a Trabecular Bone Score (TBS). Laboratory results were collected from medical files. 150 patients were included in the analysis (50 patients in each group). The mean age was 60.49 + 7.48 years, most of them male (64%). The most frequent comorbidities were hypertension, dyslipidemia, and hyperglycemia, similar between the groups (p > 0.05). Low bone mass was diagnosed in 42%, 50% and 66% (p = 0.012) in CG, DOACG and WG, respectively. In the logistic regression model, BMD was associated with BMI (OR 0.846, CI 0.763 - 0.926, p = 0.001), creatinine (OR 0.024, CI 0.001 - 0.434, p = 0.017) and TBS (OR 17.777, CI 4.526 - 96.903, p = 0.000). The mean TBS decreased progressively in the three groups (CG, DOACG, and WG), respectively 1.328, 1.264, and 1.203 (p < 0.001). Multivariate linear regression showed that the negative predictors of TBS were the use of warfarin (-0.06, CI -0.11 - -0.02, p = 0.006), BMI (-0.01, CI -0.01 - -0. 00, p < 0.001) and hyperglycemia (-0.07, CI -0.11 - -0.03, p = 0.003) and the positives were active IPAQ classification (0.06, CI 0.01 - 0.11, p = 0.029) and family history of hip fracture (0.07, CI 0.01 - 0.14, p = 0.029). Patients on anticoagulants use present lower BMD and lower TBS in comparison to controls. This negative effect on the bone skeleton is more pronounced with vitamin K inhibitors but showed that the use of DOACs are also not inert to bone metabolism.

AP-12 NEW TECHNOLOGY REMS FOR BONE EVALUATION COMPARED TO DXA IN ADULT WOMEN: A REAL-LIFE EXPERIENCE

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Purpose: To better investigate the accuracy of Radiofrequency Echographic Multi Spectrometry (REMS) technology in diagnosing osteoporosis defined by Dual X ray absorptiometry (DXA) in a Brazilian women population. **Methods:** A population of 30-80-year-old women was recruited at DXA Service of São Paulo School-Hospital, in São Paulo, Brazil. They underwent dual X-ray absorptiometry (DXA) and REMS scans at the axial sites. The REMS accuracy for the diagnosis of osteoporosis defined by DXA was evaluated along with other comparisons on bone mineral densities from different sites assessed by both methods. The short-term intra-operator precision CV% were also performed. **Results:** A total of 343 patients were included (mean age 59.9 ± 10.2 years). After exclusions due to poor quality on acquisitions in any of the both method or other technical reasons, 227 spines and 238 femurs were acceptable for comparison. In this resulting dataset, there were high correlations between both methodologies for BMD values ($r = 0.75$, $p < 0.001$ for lumbar spine and $r = 0.78$, $p < 0.001$ for femoral neck). The differences between DXA and REMS T-score using the Bland-Altman plot showed the average difference (expressed as bias ± 1.96 SDs) of -0.026 ± 0.176 g/cm$_2$ for the spine and -0.027 ± 0.152 g/cm^2 for the femoral neck. For the diagnosis of osteoporosis in women older than 40 years, the REMS approach effectively discriminated the osteoporotic patients from the non-osteoporotic for both lumbar spine (sensitivity = 80%, specificity = 94%) and femoral neck (sensitivity = 85%, specificity = 92%). By accepting a 0.3 tolerance on T-score value of "borderline" patients, these parameters were even better. For lumbar spine the sensitivity was 84% and specificity = 94.6%, and for femoral neck the sensitivity was 92.6%, and specificity 93.5%. The BMDUS precision (CV%) was 1.43% for lumbar spine and 1.93% for femoral neck. **Conclusion:** This new technology REMS demonstrated a high level of accuracy and precision for the diagnosis of osteoporosis in women when compared with the gold standard method by DXA. Due to its non-ionizing principle, portability, and lower costs, it is a promising approach that can amplify the access to the population to the diagnosis and treatment of osteoporosis.

NEUROENDOCRINOLOGIA

AP-13 MACHINE LEARNING-BASED PREDICTION MODEL FOR ACROMEGALY MEDICAL TREATMENT

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Context: Artificial intelligence (AI), in particular machine learning (ML), may be used to deeply analyze biomarkers of response to first-generation somatostatin receptors ligands (fg-SRL) in the treatment of acromegaly. **Aim:** to use AI techniques to evaluate several biomarkers of response to fg-SRL and to propose a prediction model to guide medical management in patients with acromegaly. **Methods:** Demographic, laboratorial, imaging and immunohistochemical data were analyzed in 153 patients with acromegaly not cured by primary surgical treatment and who had adjuvant therapy with fg-SRL for at least 6 months after surgery. Patients were considered controlled if they presented GH < 1.0 ng/mL and normal age-adjusted IF-I levels. Six models were evaluated on the training set: Logistic Regression (LogRes), KNN classifier (KNNc), Support Vector Machine (SVM), Gradient Boosted classifier (GBC), Random Forest (RF) and multilayer-perceptron (MLP). Models performance was evaluated using 5-fold stratified cross-validation (CV). Afterwards, a parameter tuning for each model was done using the GridSearch with 5-fold CV and their performance was evaluated by measurement of accuracy and area under the ROC (AUROC). Initial features (age at diagnosis, sex, at diagnosis and pre-treatment GH and IGF-I levels, SST2 and SST5 protein expression and cytokeratin granulation pattern) were removed one by one with evaluation of AUROC score of each subset of features, until there was only one feature left. The feature set that wielded the best result for each model was evaluated on the test set. Final models were compared regarding accuracy (A), sensitivity (Se), specificity (Sp), positive predictive value (PPV) and negative predictive value (NPV). **Results:** After evaluating each model in the training set, the best performing models were the SVM (AUROC = 0.824 ± 0.024) with three features, followed by SVM (AUROC = 0.808 ± 0.0.067) with seven features and RF (AUROC = 0.803 ± 0.055) with seven features. These three models were further evaluated on the test: SVM3: A = 81.8%/Sv = 71.4%/Sp = 86.6%/PPV = 71.4%/NPV = 86.6%; SVM7: A = 86.3%/Sv = 71.4%/Sp = 93.3%/PPV = 83.3%/NPV = 87.5%; RF7: A = 72.7%/Sv = 73.3%/Sp = 73.3%/PPV = 55.5%/NPV = 84.6%. **Conclusion:** ML techniques may be used to evaluate biomarkers of response to fg-SRL with high accuracy, improving medical management of acromegaly, reducing therapy burden on patient's quality of life and on health services costs.

AP-14 TELOMERASE EXPRESSION IN CLINICALLY NON-FUNCTIONING PITUITARY ADENOMAS

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Introduction: Non-functioning pituitary adenomas (NFPA) are benign tumors. However, 20%-40% are aggressive. Telomeres are non-coding nucleoproteic structures found in the chromosomes extremities of eukaryotic cells. Main function is maintenance of genome integrity. In somatic cells, in each cell division telomere length is reduced until the cell loses its capacity of dividing, entering senescence. In tumorous cells, shortening of telomeres is compensated by telomerase enzyme's action that reestablishes the loss of telomeric DNA. Telomerase is detectable in 85%-90% of human cancers, being used as biomarker of aggressiveness. **Aim:** Assess if human telomerase reverse transcriptase (hTERT) is present in NFPA and if it can be used as marker of aggressiveness and proliferation. **Patients and methods:** Consecutive patients diagnosed with NFPA were included. Patient's gender, age, visual field defect, surgical cure, tumor's aggressiveness and proliferation, and hTERT mRNA expression by RT-PCR were assessed. Tumors that grew ≥ 20% in volume in the first three years of follow-up were considered aggressive and tumors with Ki-67 ≥ 3% were considered proliferative. **Results:** We included 109 samples from 86 patients followed for a median period of 60 months (5-120 months). The majority (60.5%) was male with median age at diagnosis of 56 years (17-69) and had visual field defect (92%). Tumor's largest diameter was 3.9 cm (1.4-8.0 cm). The majority was of gonadotrophic origin (74.4%), followed by corticotrophic (11.6%), lactotrophic (5.8%), plurihormonal (5.8%), null cell adenoma (1.2%) and hormone-negative (with further classification being not possible because of unavailable paraffin block; 1.2%). Aggressive tumors were present in 66% of cases and proliferative in 47.7%. Seven (6.4%) samples expressed hTERT: 3 had aggressive and proliferative tumors, of corticotrophic origin, giant in size, that did not cure and were submitted to radiotherapy; 2 only exhibited aggressiveness with one being a giant gonadotropinoma and the other a macroprolactinoma; and the remaining 2 exhibited only proliferation and cured. Five out of 35 tumors (14%) that were aggressive and two out of 23 non-aggressive tumors (9%) expressed hTERT. Five (16%) of the 31 proliferative tumors and two (6%) of 34 non-proliferative tumors expressed hTERT. **Conclusion:** hTERT expression is present in a minority of NFPA and is not associated with tumor aggressiveness or proliferation in NFPA.

AP-15 VASCULOMETABOLIC EFFECTS IN PATIENTS WITH CONGENITAL HYPOPITUITARISM WITH AND WITHOUT GH REPLACEMENT THERAPY DURING ADULTHOOD

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Introduction: Congenital hypopituitarism (CH) can be present as isolated growth hormone deficiency (IGHD) or combined with the impaired production of other pituitary hormones (CPHD). GH exerts biological effects on metabolic profiles and the cardiovascular (CV) system. While adults with acquired GHD is often associated with increased CV risk, in adults with congenital GHD the CV risk is rarely reported and the consequences of GH replacement therapy (GHRT) remains unclear. **Objectives:** To evaluate the impact of daily subcutaneous GHRT on vasculometabolic properties in adults with CH. **Patients and methods:** A cross-sectional study conducted in a single tertiary center. Ninety-one subjects were divided into three groups: (1) CH with GHRT: 32 patients (17 females), mean age = 35.8 ± 7.6 years and with GHRT at adulthood for 5.6 years (range = 1-21 years); (2) CH without GHRT: 27 patients (15 females), mean age = 38.4 ±7.8 years, without GHRT for 11 years (range = 1-24 years) and (3) Controls: 32 healthy individuals (17 females), mean age = 37 ± 8.9 years. Anthropometric parameters, metabolic profiles, dual-energy X-ray absorptiometry and vascular properties (carotid intima media thickness, pulse wave velocity and flow-mediated dilation) were compared among the groups. **Results:** Body fat percentage and waist-to-height ratio (WHR) were lower in patients with GHRT than patients without GHRT (30.7 ± 10.4 vs. 40.2 ± 10 $p \leq 0.001$ and 0.49 ± 0.06 vs. 0.54 ± 0.07 $p \leq 0.001$, respectively). After logistic regression model, lower WHR were significantly associated with the period of the use GHRT in the transition phase ($p = 0.008$). In addition, we observed negative association between lower body fat percentage and FMI with GHRT throughout life ($r = -0.387$, $p = 0.004$ and $r = -0.326$, $p = 0.017$, respectively) and between lower WRH ratios with the period of the use GHRT in the transition phase ($r = -0.629$, $p \leq 0.001$). We observed higher triglyceride (112 ± 62 vs. 77 ± 36, $p = 0.02$) and lower HDL cholesterol (49 ± 19 vs. 67 ± 23, $p < 0.01$) levels in patients without GHRT in comparison to controls, but no difference between replacement group. No statistical differences were observed for vascular properties among the groups. **Conclusions:** GHRT in adults with CH was associated with improved body composition without deleterious effects on vascular system. GHRT remains an individualized decision in adults with CHP.

OBESIDADE

AP-16 TRANSCRANIAL MAGNETIC STIMULATION IMPROVES FOOD BEHAVIOR AND WEIGHT LOSS IN PATIENTS WITH WEIGHT RECOVERY AFTER BARIATRIC SURGERY: A PROSPECTIVE, TRIPLE-BLIND AND RANDOMIZED STUDY

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Bariatric surgery (BS) is the most effective treatment for severe obesity associated to comorbidities. However, there is a high frequency of patients who present inadequate weight loss or weight regain in the postoperative period. Repetitive transcranial magnetic stimulation (rTMS) is a well-tolerated and safe alternative therapy which strengths prefrontal cortex to modulate dysregulated anorexigenic and orexigenic pathways. Our primary objective was to evaluate if rTMS improves patient behavior and weight loss in obese patients with weight regain after BS. We recruited 21 patients who underwent BS at least 2 years ago, presenting inadequate weight loss or weight regain. They were randomly randomized into 2 groups. The intervention group underwent to rTMS sessions at dorsolateral prefrontal cortex for 3 months. The induction phase was carried out for 4 weeks, in which they received 2 sessions per week. In the maintenance phase, a once-a-week stimulation was performed for 8 weeks. The control group underwent to the same protocol, but stimulation was at midline cortex with 10% of motor threshold. Patients, evaluators and statistician were blindfolded. All patients were asked to answer questionnaires (Yale Food Addiction Scale Adult Version, Binge Eating Scale, Hospital Anxiety and Depression Scale, Barratt Impulsiveness Scale) and were evaluated according to anthropometric measures, bioimpedance and biochemicals exams (triglycerides, cholesterol, glycemia, insulin, microalbuminuria, glycated hemoglobin, PCR and uric acid) before induction phase (T0), before maintenance phase (T1), in the end of them (T2) and 2 months after the last session (T3). Both groups were homogeneous among themselves in respect to all variables analyzed. According to ANCOVA analysis rTMS improved food addiction, impulsiveness, anxiety and depression in intervention group compared to placebo over study times. The correlation analysis evidenced weight loss and metabolic improvements (hip circumference, body adiposity index, HOMA index insulin resistance) among patients who had the highest levels of Yale Food Addiction Scale in the intervention group. All these results had statistical significance considering p-value < 0,05. We concluded that weight regain in post BS patients can be related to food addiction, impulsiveness, anxiety and depression. So rTMS has proved to be a good treatment for these eating disorders, helping patients to lose weight and improve metabolic parameters.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

AP-17 EVIDENCE OF ESTROGEN SIGNALING AND RET PROTO-ONCOGENE INTERPLAY IN BREAST CANCER

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Introduction: The RET proto-oncogene is a pivotal driver for several human neoplasia. RET mutations are rare events in breast cancer, but recent studies reported increased RET expression despite the absence of a major genetic alteration. Interestingly, RET expression is particularly high in the estrogen receptor-positive (ER+) subgroup. The recent development of targeted therapies has made the understanding of RET biology a major interest topic, offering RET-altered tumors new treatment options. **Objectives:** To evaluate RET mRNA expression in different molecular subtypes of breast cancer samples. **Methods:** We searched Gene Expression Omnibus (GEO) and cBioportal to identify large (>1,000 samples) breast cancer datasets containing transcriptomic data. Data analysis was conducted using R 4.0. **Results:** We identified three datasets [TCGA (n = 1,102), METABRIC (n = 1,904) and SCAN (n = 3,410)] for analysis. RET expression was increased in breast cancer when compared to normal breast tissue (Fold Change (FC) = 3.61; $p < 0.0001$). Luminal B tumors expressed the highest levels of RET mRNA in comparison to normal breast tissue (FC = 7.76; $p < 0.0001$), followed by luminal A (FC = 5.66; $p < 0.0001$) and HER2 (FC = 4.39; $p < 0.0001$). RET expression did not differ between normal-like tumors and normal breast tissue (FC = 1.50; $p = 0.071$) and it was decreased in basal tumors (FC = 0.48; $p = 0.0067$). Next, we performed a Spearman correlation analysis to identify genes closely associated to RET expression. Interestingly, five genes of the estrogen signaling pathway (ESR1, FOXA1, GATA3, CXXC5, and TFF1) were highly correlated to RET in the three datasets. To explore whether a causal link existed among these associations, we compared the expression of RET mRNA among groups of patients harboring ESR1, FOXA1 or GATA3 mutations using TCGA, since both mRNA expression and DNA sequence were available. Tumors harboring GATA3 mutations expressed higher levels of RET transcripts (FC = 2.76; $p < 0.0001$) whereas tumors harboring ESR1 and FOXA1 mutations expressed marginally higher RET expression (FC = 2.57; $p = 0.052$ and FC = 1.94; $p = 0.050$, respectively) in comparison to wild-type samples. **Conclusion:** Using large transcriptomic data from breast cancer samples, we observed evidence supporting a link between the RET expression and estrogen signaling pathway in breast cancer. Our findings suggest that RET-targeted therapies should be further explored for the treatment of ER+ breast tumors.

AP-18 11-OXYGENATED ANDROGENS AS POTENTIAL BIOMARKERS OF METABOLIC DISFUNCTIONS IN WOMEN WITH POLYCYSTIC OVARY SYNDROME

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Introduction: Polycystic ovary syndrome (PCOS) affects around 15% of the female population worldwide. It is strongly related to high metabolic risk, and hyperandrogenism is believed to be the main driven to PCOS adverse metabolic profile. The positive correlation of high levels of the classical C19 androgens androstenedione (A4) and testosterone (T) with metabolic dysfunctions has already been well stablished. Recent studies have demonstrated that the adrenal 11-oxygenated C19 steroids, as the potent androgen 11-ketotestosterone (KT) and the androgen precursor 11-ketoandrotenedione (KA4) are elevated in several androgen excess disfunctions, including PCOS. However, the role of the 11-oxygenated androgens on the metabolic profile of women with PCOS is yet to be elucidated. **Objectives:** To measure serum classical C19 androgens and 11-oxygenated C19 androgens by LCMS-MS and to correlate with metabolic profile of Brazilian women with PCOS. **Materials and methods:** 70 Brazilian women of reproductive age with PCOS and 21 age-matched controls recruited on a tertiary endocrinologic centre. Metabolic profile was assessed by BMI, OGTT, calculated HOMA-IR, HbA1c and lipid profile. Serum samples were collected during the follicular phase and DHEA, A4, T, 11-hydroxiandrostenedione (OA4), 11-hydroxitestosterone (OHT), KA4 and KT were measured by LCMS-MS at the Institute of Metabolism and Systems Research at University of Birmingham, United Kingdom. **Results:** Compared to controls, PCOS women presented higher BMI (26.1 x 32.3, $p < 0.001$), higher HOMA-IR (2.0 x 4.1, $p < 0.001$), increased levels of A4 (3.7 x 5.9 nmol/L, $p < 0.001$) and T (1.0 x 1.8 nmol/L, $p < 0.001$) and higher KT/KA4 ratio (0.19 x 0.29, $p < 0.005$). OGTT 2h-insulin was found to present a positive moderate correlation with 11KT ($R = 0.30$; $p < 0.05$). HbA1c correlated positively and moderately with 11KT ($R = 0.3$; $p < 0.05$) and with 11KT/11KA4 ratio ($R = 0,33$; $p < 0.05$). **Conclusions:** 11-oxygenated C19 steroids might be useful on assessing androgen excess and predicting adverse metabolic profile in women with PCOS in association with classical C19 androgens.

OBESIDADE

AP-19 FECAL AND PLASMA SHORT CHAIN FAT ACIDS: ASSOCIATIONS WITH ADIPOSITY AND METABOLIC PHENOTYPES IN THE NUTRITIONISTS' HEALTH STUDY

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Introduction: The gut microbiome is associated with obesity and mainly mediated by bacteria-produced short-chain fatty acids (SCFA). **Objective:** We compared fecal and plasma SCFA among individuals categorized by body adiposity and metabolic phenotypes: metabolically healthy normal-weight (MHNW), metabolically unhealthy normal-weight (MUNW), metabolically healthy overweight (MHO) and metabolically unhealthy overweight (MUO). We also examine associations between SCFA and energy and glucose homeostasis. **Patients and methods:** Cross-sectional study with 111 nutrition undergraduates and graduates. Metabolic phenotype was defined by the absence of cardiometabolic alterations. Body adiposity (DEXA) and energy and glucose homeostasis (standard mixed-meal tolerance test with indirect calorimetry) were assessed. Oral glucose insulin sensitivity index (OGIS) and areas under the curve (AUC) for glucose, insulin, GLP-1 and plasma SCFA were calculated. Plasma and fecal SCFA (total, acetic, propionic, and butyric) were quantified by gas chromatography and mass spectrometry. **Results:** MHNW phenotype had higher plasma propionic acid in comparison to MHO and MUO ($p = 0.024$). No differences in fecal SCFA were detected among metabolic phenotypes. Fecal propionic and butyric acids were associated with lower body adiposity, reaching significance for BMI ($p = 0.026$; $p = 0.047$), waist circumference ($p = 0.017$; $p = 0.010$) and visceral fat ($p = 0.018$; $p = 0.018$). Fasting and propionic acid AUC were larger in individuals with a lower amount of total ($p = 0.011$; $p = 0.036$), android ($p = 0.011$; $p = 0.023$), gynoid ($p = 0.025$; $p = 0.048$) and visceral fat ($p = 0.029$). Fecal propionic ($p = 0.040$) and acetic acids ($p = 0.039$) correlated inversely with glucose AUC. Fecal propionic acid correlated positively with insulinogenic index ($p = 0.030$) and GLP-1 AUC ($p = 0.033$). Plasma acetic acid correlated positively with GLP-1 AUC ($p = 0.016$) and inversely with fasting insulin ($p = 0.034$) and HbA1c ($p = 0.039$). Total plasma SCFA AUC correlated inversely with OGIS and HbA1c ($p < 0.01$). All fecal SCFA and plasma propionic acid correlated positively with resting energy expenditure ($p < 0.05$). Fecal propionic acid correlated inversely with carbohydrate oxidation rate at fasting and positively with lipid oxidation rate after oral stimulus ($p < 0.05$). **Conclusion:** The SCFA are involved in the maintenance of body adiposity, energy and glucose homeostasis, though the SCFA could not discriminate the metabolic phenotypes. **Funding:** Fapesp 2017/24578-2;2017/10185-9.

AP-20 IMPACT OF INTERMITTENT FASTING ON REDOX BALANCE OF BROWN ADIPOSE TISSUE AND ITS PHENOTYPE IN ADULT WISTAR RATS

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Introduction: Obesity prevalence is rising year after year, with a great impact on health. In parallel, new dietetic approaches have emerged, among them the intermittent fasting (IF), consisting of extended periods of fasting (usually 12-24h) and a smaller period of feeding. This strategy brings benefits, such as weight loss, better glycemic control, and reduced blood pressure. However, the involvement of brown adipose tissue (BAT) redox balance in these effects remains elusive. **Aim:** Evaluate the effect of intermittent fasting on redox homeostasis of BAT of rats fed regular or high-fat diet (HFD). **Material and methods:** Adult male Wistar rats were divided into 4 groups. fed: regular diet ad libitum (RDAL), regular diet in intermittent fasting (RDIF), HFD (55% calories from fat) ad libitum (HFDAL), HFD in intermittent fasting (HFDIF). IF consisted of cycles of 2 days with free access to food and 1 day of total fasting. The treatment lasted 12 weeks. We performed in vivo analyses (weight gain, body composition, food intake, fasting glycemia, insulin tolerance test (ITT), and oral glucose tolerance test (OGTT) in the last week of treatment and molecular analyses (enzymatic activity, colorimetric assays, Western blot, and qPCR) after euthanasia. **Results:** RDIF gain less weight than the other groups while HFDAL gained more weight than all other groups. Both HFD groups presented higher body fat% and less lean mass content. RDAL ingested more calories than the other groups. Fasting glycemia and the area under the curve of insulin tolerance test, BAT weight and thiol content were higher in the HFDAL group while HFDIF parameters did not differ from regular diet groups, thus suggesting a relationship between metabolic improvements and BAT redox homeostasis. Then, we analyzed some thermogenesis and BAT differentiation markers. We have found increased PGC1 alpha and decreased PPAR gamma, MCT1, MCT4 mRNA levels in the HFDIF group. We also observed that the UCP1 and FGF21, important targets of BAT, were not changed. **Conclusion:** In summary, we observe that IF can improve the detrimental effects caused by diet-induced obesity and that these improvements are probably associated with changes in BAT redox homeostasis. Moreover, modulation of PGC1 alpha suggests that changes in mitochondrial biogenesis could impact substrate fuel consumption of BAT, thus contributing to the beneficial effect of IF.

TIREOIDE

AP-21 IN SILICO STUDY OF THE ROLE OF RS1137101 POLYMORPHISM OF THE LEPR GENE IN THE RISK OF THYROID CANCER IN OBESE INDIVIDUALS

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The increase in the risk of differentiated thyroid cancer (DTC) and other malignancies in obesity has been attributed to the inflammatory status associated to the presence of insulin resistance and hyperleptinemia. Leptin (LEP) is involved in the regulation of immune and inflammatory responses, hematopoiesis, angiogenesis, proliferative, mitogenic, and antiapoptotic activity. Mutations in this gene have been associated with obesity and polymorphisms of LEPR have been linked to an increased susceptibility to various types of cancer. We recently demonstrated that polymorphisms in LEP and LEPR might modify leptin levels and represent a risk for thyroid cancer. We also found that rs1137101 increased the risk of DTC development. This polymorphism occurs at codon 223, causes an exchange of an adenine for a guanine that leads to the substitution of a glutamine (Gln) for an arginine (Arg). In order to further understand the role of rs1137101 on the carcinogenic process and its possible influence in the increased risk of thyroid tumors in obese individuals, we used robust in silico tools based on data obtained from the NCBI dbSNP database and UniProt aiming to evaluate the effect of amino acid changes on the protein structure of the LEPR. Possible morphofunctional impacts and protein stability were analyzed using the programs: PredictSNP1.0, Provean, MuPRO, Modpred and I Mutant2.0. PredictSNP1.0 is a consensus that brings together 9 tools (SIFT, PolyPhen-1, PolyPhen-2, MAPP, PhD-SNP, SNAP, PANTHER, PredictSNP and nsSNPAnalyzer) for the investigation of conformational, structural and functional aspects of the protein. The analysis showed that rs1137101 has no functional and/or structural impact on the protein since only one of the tools (SNAP) classified this SNP as deleterious. However, MuPRO and I-Mutant 2.0 analysis demonstrated that this change can cause a decrease in protein stability. Also, according to ModPred, Q223R substitution can cause a post translational modification (PTM) from proteolytic cleavage site to ADP-ribosylation site. This kind of PTM is reversible and it is involved in many cellular processes, including cell signaling, DNA repair, gene regulation and apoptosis. In fact, ADP-ribosylation has been involved in some types of cancer. We conclude that major protein modifications caused by LEPR rs1137101 may explain the association of the presence of this genetic variant with an increased risk of thyroid cancer in obese individuals.

AP-22 ARE GLUT 1, GLUT 3 AND GLUT 12 AND HEXOKINASES 2 AND 3 OVEREXPRESSED IN WELL DIFFERENTIATED THYROID CARCINOMA AND IN FDG AVID BENIGN THYROID NODULES?

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Malignant thyroid nodules are almost always avid for FDG, while around 56% of benign thyroid nodules are avid for FDG. It is unknown which biomarkers play a role in FDG uptake and whether different biomarkers are responsible for FDG uptake in benign and malignant thyroid tissue. Our aim is to investigate if immunoexpression of different GLUTs and hexokinase (HK) subtypes by thyroid nodules is associated with malignancy and with FDG PET uptake by these nodules. Immunohistochemistry of Gluts 1, 3 and 12 and hexokinases (HKs) 2 and 3 was assessed by tissue microarray in 18 malignant and 25 benign thyroid nodules in 43 patients who had undergone thyroidectomy and preoperative FDG PET scan. Abnormal FDG PET uptake was assessed by measuring the maximum standardized uptake value (SUVmax) in thyroid topography. Concordance rate was 100% and 89% between the 2 different observers that evaluated FDG PET exams and immunohistochemical analysis, respectively. GLUT 12 and HK3 were expressed by all thyroid nodules, while GLUT 1, GLUT 3 and HK2 were expressed by 7%, 16.2% and 58.1% of thyroid nodules, respectively. The percentage of cells expressing Glut1, Glut3, HK2 and Glut12 was not associated with malignancy ($p = 0.25$, 0.64, 0.052 and 1.0, respectively). SUVmax of the nodule was not associated with the percentage of cells immunoexpressing Glut1 ($p = 0.34$), Glut3 ($p = 0.21$), Glut12 ($p = 0.56$) and HK2 ($p = 0.25$) and with the intensity of immunoexpression of Glut12 ($p = 0.75$), HK2 ($p = 0.61$) and HK3 ($p = 0.67$). In comparison to nodules with SUVmax < 15, nodules with very high FDG uptake (SUVmax > 15) had a greater intensity of immunoexpression of HK3 ($p = 0.019$), but not of Glut1 ($p = 0.13$), Glut3 ($p = 0.61$), Glut12 ($p = 0.24$) and HK2 ($p = 0.13$). Glut 12 was expressed in more than 50% of the nodule cells in 41 specimens, but the intensity of expression was weak in 67% of these cells. This is the first report which shows that Glut12 is highly expressed in thyroid nodules. Well differentiated thyroid carcinomas do not show an increased immunoexpression of Glut1, Glut3, Glut12, HK2 and HK3 when compared to benign thyroid lesions. Glut1, Glut3, Glut12 and HK2 are not overexpressed in FDG avid thyroid nodules when compared to FDG nonavid nodules and may not play an important role in determining FDG thyroid nodule increased uptake. Increased HK3 immunoexpression may play a role in FDG uptake by thyroid nodules with very high FDG uptake (SUVmax > 15).

AP-23 IMPACT OF THE USE OF AMERICAN COLLEGE OF RADIOLOGY TI-RADS ON THYROID FINE-NEEDLE ASPIRATION PERFORMANCE

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Introduction: Thyroid nodules are common and may be observed at ultrasonography in up to 50% of the adult population. The vast majority of these lesions are benign, and only 9.2% to 13% of those thyroid nodules selected for fine-needle aspiration (FNA) are diagnosed as thyroid cancer. The American College of Radiology Thyroid Imaging Reporting and Data System (ACR TI-RADS) is a sonographic risk stratification system being proposed as "rule-out" test that can identify nodules that do not require fine-needle aspiration (FNA). **Objectives:** To evaluate the impact of TIRADS on thyroid FNA performance. **Material and methods:** This is a retrospective and prospective cohort in a single academic referral center. All patients with thyroid nodules who performed FNA, based on the American Thyroid Association criteria between 2012 and 2019 were included. ACR TI-RADS data were extracted from radiological medical records. The malignancy rates were defined based on cytological (Bethesda V and VI) and anatomopathological cell block results. **Results:** One thousand three hundred and eighty nodules were analyzed, 346 were excluded. A total of 929 patients (1,044 nodules) were included, 88% female, mean age of 56 ± 18.5 years. The ACR TI-RADS classification was as follows: 13 ACR TI-RADS 1, 524 ACR TI-RADS 2, 273 ACR TI-RADS 3, 148 ACR TI-RADS 4 and 85 ACR TI-RADS 5. Accordingly, to the ACR TI-RADS FNA criteria, only 314 (30%) nodules should have undergone FNA, with a sensitivity of 75% (95% CI: 63-84.7), the negative predictive value of 97.6% (95% CI: 96.5-98.5) and accuracy 73.1% (95% CI: 70.3-75.8). Of them, 157 (50%) were classified as benign, 45 (14.3%) as undetermined, and 51 (16.2%) as malignant. Of the remaining 729 nodules that did not meet FNA criteria, 17 (2.3%) were classified as malignant, similar data to other studies. Of them, 4 cases were classified as TI-RADS 2, 5 as TI-RADS 3 and 8 as TI-RADS 4. According to TI-RADS recommendations, follow up would be suggested for all patients but 9 patients classified as TI-RADS 2 and/or with nodules < 1 cm. **Conclusion:** ACR TI-RADS use allows a significant decrease in the number and increases the diagnostic accuracy of thyroid FNA. Further evaluation of additional criteria might add to the improvement of false-negative rates.

AP-24 HOSPITALIZATIONS FOR IODOTHERAPY IN DIFFERENTIATED THYROID CARCINOMA IN BRAZIL AND REGIONS BY THE UNIFIED HEALTH SYSTEM BETWEEN 2010 AND 2019

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Introduction: Radioactive iodine (RAI) therapy for thyroid cancer has been used in clinical practice for more than 70 years, but has undergone major changes in the past 10 years. Since the Brazilian 2013 consensus, RAI is no longer indicated in patients at very low risk for persistent/recurrent disease. In 2014, the Brazilian Ministry of Health started to incorporate low dose RAI (30 mCi and 50 mCi) for low and intermediate-risk patients, as well as recommending that only doses greater than 50 mCi require hospitalization. **Materials and methods:** This is a descriptive epidemiological study in a time series based on data from hospitalizations for iodotherapy in differentiated thyroid carcinoma (AIH: 0303120010, 0304090018, 0304090026, 0304090034, 0304090032, 0304090032) made available by the SUS Hospital Information System (SIH/SUS). Data were analyzed for the five Brazilian regions over 10 years (2010-2019), considering the variables: Hospitalization Authorization (AIH) approved, total cost, the average cost per AIH, and the average stay. **Results:** Between 2010 and 2014, 23,.701 AIHs were approved in the country (56.36% of the total for the period), and between 2015 and 2019, 18,363 AIHs were approved (43.63% of the total for the period). Over the 10 years, the average cost per AIH in Brazil decreased by 2.95%. In the first period considered, this amount was R$ 1,315.30, and R$ 1,279.76 in the second period. In both periods the region with the highest cost per AIH was the Southeast. The total cost in the first 5 years across Brazil was R$ 31,048,504.97 (56.92% of the total for the period), and R$ 23,501,460.70 (43.08% of the total for the period) in the next 5 years, in both periods the region with the highest costs was the Southeast. The average number of days spent in hospital in Brazil between 2010 and 2014 was 1.62 days. In both periods, the region with the longest hospital stay was the Southeast and the one with the lowest was the North region. **Conclusion:** Considering the data obtained, there was a reduction in the number of AIHs authorized for oncological iodotherapy comparing the period from 2010 to 2014 and the period from 2015 to 2019, following recent guidelines changes. The decrease in the total cost of radioactive iodine therapy in Brazil is possibly associated with a lower number of AIHs. However, when compared between the regions, above-average costs are noted in the Southeast and Central-west regions.

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E-PÔSTER

ADRENAL E HIPERTENSÃO

E-PO1 A CASE REPORT OF SEVERE HYPERCALCEMIA AS A FEATURE OF ADRENAL INSUFFICIENCY

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Adrenal insufficiency may be caused by disturbances of corticotropin (ACTH) secretion by the pituitary gland, corticotropin-releasing hormone (CRH) secretion by the hypothalamus, or cortisol production by the adrenal glands. In addition to the classic findings of hypotension, nausea, abdominal pain, and hypoglycemia, patients may experience hypercalcemia, but its pathophysiology is not fully known. Both total and ionized serum calcium concentrations are found to be elevated, while parathyroid hormone (PTH), parathyroid hormone-related protein (PTHrP), and calcitriol levels are suppressed. We report a case of a 33-year-old male patient living with HIV since 2019 who was admitted with mood swings, lack of appetite, and sporadic vomiting, later developing confusion and dysarthria, with evidence of severe PTH-independent hypercalcemia (calcium 15.8 mg/dL, reference range: 8.4 to 10.2 mg/dL). Additional workup ruled out infectious diseases, malignancy, granulomatous conditions, and potential opportunistic diseases. The patient's symptoms were attributed to severe hypercalcemia, requiring treatment with pamidronate. High calcium levels were ascribed to adrenal insufficiency, with significant clinical improvement and normalization of calcium levels after corticosteroid therapy initiation. Severe hypercalcemia thus requires a thorough investigation of potential etiologies in order to correctly treat these patients and improve their prognosis.

E-PO2 ACNES FULMINANS IN A VERY YOUNG PATIENT WITH ADRENAL CARCINOMA AFTER SURGICAL TREATMENT

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A 2.3 years-old male diagnosed with adrenocortical tumor presenting pubarche, increased penis and body hair (Figure 2), severe acne lesions in face, chest and back and also arterial hypertension. He was previously healthy, with normal development at his first year. The investigation showed adrenal hyperandrogenism and hypercortisolism. Total Testosterone 1,500 ng/dL (7,00-25,91 ng/dL). ACTH 7,2 pg/mL (46 pg/mL). DHEAS 682 µg/dL (15 µg/dL). Serum cortisol 8 AM 30.65 µg/dL (5.27 to 22.45 µg/dL). Salivary cortisol 29.5 nmol/L (7.6 nmol/L). The abdominal computed tomography (CT) showed the left suprarenal gland with a 5,1 x 3,9 cm lesion (Figure 1). Left adrenalectomy was performed, whose histology confirmed adrenocortical carcinoma, without exceeding the capsule, but with a vascular invasion focus and Ki-67 rate of 20%. Hormonal levels in the early follow up were normal and prophylactic corticosteroid therapy was progressively removed. At the three months after surgery outpatient follow-up, worsening of his skin acneiform lesions was observed. He presented painful papules, pustules and crusts at face, chest and back, with purulent exudation and bleeding lesions, associated with axillary and inguinal adenomegaly and acne fulminans was diagnosed. Clinical and ultrasonographic examination also showed the presence of hepatosplenomegaly. The treatment was initially made with oral corticosteroids and antibiotics (Figure 4). At this time, laboratory tests of androgens, DHEAS and salivary cortisol were normal, but inflammatory markers were elevated (CRP 38,6 mg/L). A new postoperative abdominal CT showed, at the left adrenal topography, two lesions, 47 HU attenuation, 1.5 x 1.2 x 1.1 cm and 2.3 x 1.7 x 2.0 cm, and also confirmed mild hepatosplenomegaly. Biopsy of inguinal lymph nodes were performed, and histology showed lymphoid follicles hyperplasia. This case report showing the association between acne fulminans and adrenocortical carcinoma, at postoperative time, when the child already had normal serum androgens and after hypercortisolism resolution, without oral corticosteroid therapy. Disordered immune response and/or hypersensitivity reaction to Propionibacterium acnes antigens, are also considered as possible triggering factors, although the etiology for these cases is not well stablished. The description of an acne fulminans case in such a young patient with adrenocortical carcinoma seems unusual and such association deserves further elucidation.

E-PO3 ACTH-INDEPENDENT CUSHING'S SYNDROME BY ADRENAL ADENOMA, WITH 6 CM OF DIAMETER, AT HOSPITAL SANTA MARCELINA, SÃO PAULO-SP: CASE REPORT

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L. S. S., female, white, 18 years old, no previous diseases, referred to endocrinology due to amenorrhea for 8 months, presence of violet streaks, increased facial, trunk and thigh hair, high blood pressure, weight gain and abdominal pain. Physical examination: BP 150 x 100 mmHg, weight 69 kg, height 1.62 m and BMI 26.29 kg/m^2; full moon facies, hirsutism (Ferriman 20), acne, fat deposit in the supra-clavicular fossae and gibbosity. Lab tests (July/2020) showed plasma cortisol after suppression with dexamethasone 21.4 µg/dL, urinary cortisol 514,9 µg/24 h (VR: 4.3-176), ACTH 5 pg/mL (VR: <46), S-DHEA 199.2 µg/dL (VR = 61.2-493.6), androstenedione 10 ng/mL (VR: 0.3-3.7), total testosterone 65.6 ng/dL (VR: 13.84-53.35 ng/dL), K 3.2 mEq/L (VR: 3.5-5.1), aldosterone: 17.6 ng/dL, renin: 1.63 µUI/mL, plasmatic renin activity: 0.135 ng/mL/h and aldosterone ratio/PRA: 130 (after potassium replacement), plasma catecholamines: adrenaline 43.8 pg/mL (VR: <90), noradrenaline 214.1 pg/mL (VR: <460), dopamine < 15 pg/mL (VR: <30), plasma metanephrines: metanephrines 15.1 pg/dL (VR: <65) and normetanephrine 22.8 pg/dL (VR: <196). Abdominal CT scan (July/2020) showed solid tumor in the right adrenal, with regular contours, measuring 5.4 x 6.2 x 6.1 cm (108 cm^3), with heterogeneous contrast enhancement and medium attenuation 30 UH and 78 UH after contrast. ACTH-independent Cushing's syndrome by adrenal tumor with mixed secretion was confirmed: producer of cortisol, aldosterone and androgens. Surgical treatment with laparoscopic right adrenalectomy occurred without complications. The anatomopathological exam showed adenoma of the adrenal cortex. After the surgery, the patient remained stable, with improvement in BP levels and clinical signs. Antihypertensive drugs suspended; prescribed prednisone 5 mg. 1 month after surgery tests showed an improvement in androstenedione: 0.3 ng/mL, total testosterone: 4.08 ng/dL and free testosterone: 0.15 ng/dL. She is being followed up at the endocrinology service. Adrenal adenomas are responsible for 10%-15% of Cushing's syndrome cases. They are usually < 3 cm, develop hypercortisolism with gradual onset and tend to produce only one class of steroids. In general, lesions > 6 cm are typical of carcinoma, especially when hypercortisolism is associated with hyperandrogenism. Therefore, we see an atypical case of a young woman, with an adrenal adenoma of infrequent size e secretion, whose complications can be avoided with early diagnosis and treatment.

E-PO4 ADDISON'S DISEASE MASKED BY STEROID TREATMENT FOR PRESUMED POLYMYALGIA RHEUMATICA: A CASE REPORT

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Case presentation: Female, 62 years old, sought rheumatologic treatment for diffuse myalgia and tiredness for a month. She reported vomiting, skin darkening, loss of 10 kg and fever. She has autoimmune hypothyroidism for at least 20 years. Empirical therapy with prednisone 10 mg/day was initiated due to suspected polymyalgia rheumatica and tests were requested for such diagnosis and exclusion of adrenal insufficiency. The patient reported improvement after using prednisone for 10 days, but worsening after suspension. The exams revealed a slight increase in the erythrocyte sedimentation rate (ESR) with C-reactive protein (CRP) within the normal range, weakening the initial hypothesis of polymyalgia rheumatic. In addition, high adrenocorticotropic hormone (ACTH) (1,250 pg/mL; reference value < 46 pg/mL) and reduced basal cortisol (1.8 mcg/dL; reference values 5.3-22.5 mcg/dL) were observed and the patient was referred to an endocrinologist on suspicion of primary adrenal insufficiency (Addison's disease – AD), since ACTH levels greater than 100 pg/mL and baseline cortisol less than 3 mcg/dL are highly sensitive and specific for this disease. The diagnosis was corroborated by the hyperpigmentation of the skin, improvement of the pain with the use of prednisone and elevated plasma renin activity (13.10 ng/mL/h; reference values 0.6-4.18 ng/mL/h). Thus, 7.5 mg prednisone daily was associated with fludrocortisone. Anti-21-hydroxylase-α; and anti-adrenal antibodies were measured. Anti-adrenal antibodies (title 1:80; normal up to 1:10) confirmed the autoimmune etiology of AD, which in association with previous autoimmune hypothyroidism characterizes Type II Autoimmune Syndrome or Schmidt Syndrome. **Discussion:** AD is rare, predominates in women and is usually diagnosed between the 3rd and 5th decade of life. Hyperpigmentation is the most characteristic physical finding of AD and results from excess ACTH. The most characteristic laboratory finding of AD is low baseline cortisol associated with elevated plasma ACTH levels. **Final comments:** In the face of diffuse pain it is essential to carry out an adequate anamnesis, since AD usually manifests itself with nonspecific symptoms. In the case presented, the response to corticosteroids in the therapeutic test for the initial hypothesis of polymyalgia rheumatica together with a high degree of suspicion for AD enabled the correct diagnosis and the consequent appropriate treatment for the patient.

E-PO5 ADRENAL CRISIS AS FIRST MANIFESTATION OF NON-SMALL CELL LUNG CARCINOMA: A CASE REPORT

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Case presentation: a 64-year-old man was admitted to the E.R. due to poor general condition, limb weakness, difficulty walking and appetite loss. No comorbidities except leg revascularization surgery one week earlier. He had just quit smoking and drinking. At admission K 7,1 mEq/L; Na 123 mEq/L; Hb 11,5g/dL; Ht 33%; leukocytes 15,880/µL; eosinophilia and renal impairment. During hospitalization, hypotension and hypoglycemia had occurred, leading to adrenal insufficiency suspicion. Basal cortisol was 6,6 mcg/dL. It was administered IV hydrocortisone and his general condition improved rapidly, as did his blood pressure and electrolytes. After one day of hydrocortisone K was 5,2 mEq/L and Na 135 mEq/L. He had no cutaneous hyperpigmentation but was emaciated. Abdominal CT showed nodular lesions occupying most of the adrenal glands bilaterally. Abdominal MRI evidenced enlarged adrenal glands with lobulated margins and peripheral contrast enhancement, possibly due to metastatic lesions. Chest radiography didn´t show any lesion, but CT detected a 3 cm mass at inferior left lung lobe, suggesting neoplasia. Transthoracic lung and adrenal biopsy were performed, revealing poor differentiated non-small lung carcinoma and moderately differentiated metastatic adenocarcinoma in adrenal gland. The patient was discharged with prednisone and fludrocortisone and was referred to the oncologist. **Discussion:** Adrenal insufficiency (AI) is considered a rare condition. The most frequent causes are autoimmune adrenalitis and infections (paracoccidioidomycosis, tuberculosis, histoplasmosis, virus). Adrenal crisis occurs especially during stress conditions, such as infections, surgery or trauma. In this case report, it was probably related to the surgery performed. Although lung cancer is the second most common adult cancer in Brazil, adrenal glands being a common site of metastasis, adrenal crisis is quite a rare manifestation, once 90% of the adrenal tissue must be compromised to allow adrenal insufficiency to occur. This case highlights the importance of considering AI in patients with bilateral adrenal lesions and the pursuit of etiologic diagnosis of AI. **Final comments:** Adrenal insufficiency symptoms are non-specific and potentially life-threatening. In the oncological context, considering AI as a differential diagnosis is particularly important, especially among patients with bilateral lesions since AI treatment can improve patient condition and enable cancer therapy.

E-PO6 ADRENAL GANGLIONEUROBLASTOMA (GNB) IN A TEENAGER: A RARE INCIDENTALOMA CASE REPORT

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Case presentation: A previously healthy 18-year-old man was diagnosed with COVID-19 and performed a chest computed tomography (CT) scan that showed an incidentaloma described as an oval formation with soft tissue density in the right retroperitoneum, anterior to the adrenal. After that, he performed a magnetic resonance with the presence of an expansive lesion with isosignal in T1 and discrete hypersignal in T2 located in the adrenal store on the right, with no evidence of enhancement after administration of the paramagnetic agent. An endocrinologist evaluated the patient with a complete normal physical examination, as well as a hormonal laboratory that proved to be normal. In a referral center, undergoing CT of the upper abdomen, which confirmed the right paravertebral retroperitoneal formation, with a slightly heterogeneous aspect, predominantly cystic. Of regular contours, without invading the adjacent structures, measuring 6.6cm. Specialist indicated diagnostic excision, a procedure performed laparoscopically. The surgical specimen sent for pathological examination consisted of a right adrenal and a nodular mass measuring 8.2 x 6.9 cm, with diagnostic of GNB intermixed subtype. The patient remained stable and uneventful in the postoperative period. **Discussion:** GNB is a rare intermediary malignant tumor of the adrenal gland histologically composed of ganglioneuroma and neuroblastoma. Most of the cases reported in the literature are of children up to four years old with an incidence rate of less than 5/1,000,000. The symptoms depend on the location of the mass effect or from the existence of metastasis. As for the diagnosis, tumors of the neural crest in adults are rare and there is a difficulty in differentiating them only by imaging exams. Preoperative suspicion is challenging and diagnostic confirmation is often made by the pathologist after surgical removal. In a survey conducted at PubMed with the keywords: Adrenal Ganglioneuroblastoma Adult, 19 cases of adrenal GNB beginning in adulthood were found. The literature review showed a pattern of the tumor to be located generally in the right adrenal gland, with a minimum age at diagnosis of 20 years and symptoms usually associated with pain. The patient in the reported case does not fit the disease presentation pattern. **Final comments:** Few data are available on the diagnosis and treatment of adults with GNB, making clear the importance of case report publications on the subject.

E-PO7 ADRENAL INSUFFICIENCY AS AN INITIAL MANIFESTATION OF DISSEMINATED PARACOCCIDIOIDOMYCOSIS

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D. L. F., 63 years old, resident of Pontes Lacerda-MT, worked as a farmer for 20 years, drinker and heavy smoker for 30 years. In 2013, he started Addison's disease with asthenia, dizziness, cold sweating, hypotension, polyuria, skin color change, hyporexia and weight loss, being admitted for investigation with the main hypothesis of autoimmune adrenalitis. Exams show cortisol 5.86 mcg/dL, ACTH 166 pg/mL, abdominal CT with adrenal calcification. Tests for granulomatous diseases were negative. He was discharged from the hospital with Prednisone 20 mg/day and lost follow-up. He returned to the clinic in 2018 reporting vertigo and asthenia, with progressive worsening, progressing with urinary incontinence, deviation from the rhyme to the right, ataxic gait, dysarthria. Interned for investigation. Cerebrospinal's fluid exams without changes, skull MRI with several diffuse nodular parenchymal formations, with areas of perifocal edema, characterizing an inflammatory/infectious process, with the main hypothesis of neurotoxoplasmosis. Empirical treatment for toxoplasmosis was initiated, without good response. Empirical RIPE scheme was also conducted, unsuccessfully. Stereotactic biopsy was performed with negative screening for granulomatous and fungal diseases. He had a slight unilateral testicular enlargement, testicular USG with expansive formation, negative tumor markers, opting for unilateral orchiectomy. Direct microscopy of the piece revealed sporulation in a rudder wheel, a Grocott-colored blade with numerous spherical and multisporulated fungi consistent with paracoccidioidomycosis (PCM). Initiated Amphotericin B lipid complex at a dose of 200 mg/day, showing clinical improvement. He was discharged with Sulfamethoxazole-Trimethoprim and Prednisone 40 mg/day. Keep outpatient follow-up with clinically stable neurological sequelae of PCM. Addison's disease has autoimmune adrenalitis as its main etiology, followed by infectious causes, especially tuberculosis and PCM. This one has a high incidence in the Midwest, more frequent in rural men in the 4th and 5th decades of life and smokers. It affects the respiratory system, skin and lymph nodes more. In the report, there are several atypical manifestations, with extensive etiological investigation, being possible to establish a diagnosis only after orchiectomy. Due to our epidemiology, infectious causes for Addison's disease must be suspected and investigated, and the patient must be properly treated and monitored.

E-PO8 ADVANCED, ANDROGEN- AND CORTISOL-PRODUCING ADRENOCORTICAL CARCINOMA: A CASE REPORT

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Adrenocortical carcinomas (ACC) are rare tumors and may present as a variety of clinical features, depending on whether or not they secrete hormones. Among hormone-secreting ACC, most (45%) cause isolated Cushing's syndrome. We report a case of a 36-year-old female patient who presented with secondary hypertension, hyperglycemia, Cushingoid facies, and a buffalo hump. The diagnostic workup included serum cortisol at 8 a.m. of 41.7 mcg/dL following a 1-mg dose of dexamethasone at bedtime, 24-hour urinary cortisol of 444.4 mcg/dL (reference range: 9.5-136.2 mcg/dL), and elevated androgen levels, such as dehydroepiandrosterone sulfate (DHEAS), androstenedione, and testosterone. The tumor was surgically resected, and its histopathologic features and immunohistochemistry were consistent with ACC. Despite a Weiss score of 5, preoperative staging did not detect distant metastases; however, a 68-Ga DOTATATE PET scan performed two months later detected nodules in her right adrenal gland, liver, and both lungs, underlining the importance of follow-up. Her liver and lung nodules increased in number, size, and metabolic activity despite chemotherapy with doxorubicin, cisplatin, etoposide, and mitotane, and new bone lesions were uncovered. Advanced ACC is known to carry a poor prognosis, as seen in this particular case, and new therapies are needed in order to reverse disease progression.

E-PO9 ALDOSTERONE-SECRETING ADRENAL CORTICAL CARCINOMA PRESENTING WITH BACK PAIN AND MUSCULAR WEAKNESS. A CASE REPORT

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Aldosterone-secreting adrenocortical carcinomas are large tumors described as case reports due to its rarity. We report the case of a 44-year-old man referred to our University Hospital presenting back pain, muscular weakness and hypokalemia. A year earlier, hypertension had been diagnosed when the patient suffered of daily headaches. Throughout this period, hypertension had been refractory to antihypertensive medications and patient also presented progressive weight loss of 10 kg. Family history was negative for hypertension or adrenal diseases. At the time of presentation, his BMI was 25 kg/m^2, his blood pressure was 180/120 mmHg and his heart rate was 72 bpm. There was no peripheral edema. He had no signs of cortisol or androgen excess. Upon abdominal palpation, no mass was detected. He had a sodium of 143 mmol/L, potassium of 1.2 mmol/L and metabolic alkalosis. Due to abdominal pain and liver enzymes abnormalities, an abdomen CT was performed and revealed a heterogeneously 10 x 8 x 6 cm (volume: 256 cm^3) left adrenal mass that compressed the left renal vein and inferior cava vein, extending to liver caudate lobe. The chest CT and bone scintigraphy were normal. Hormonal status was determined: plasma aldosterone levels were 75 and 85 ng/dL and renin were < 2 and 6 mU/L. There was no evidence of cortisol co-secretion: the plasma cortisol post 1mg dexamethasone suppression was 2 µg/dL. Morning plasma ACTH levels was 16 pg/mL. Urinary metanephrines were within normal limits. Patient was initially treated with spironolactone and potassium replacement with clinical improvement. An open adrenalectomy was proposed for treatment of probable aldosterone-secreting carcinoma. However, patient professed Jehovah's Witnesses and refused blood transfusions, so due to this high risk, surgery was not performed. Therefore, histopathological examination wasn't possible to obtain, the patient had been managed with mitotane but owing to liver enzymes increase, the drug was withdrawn after two months of follow-up. A control abdomen MRI was performed after ten months and revealed a tumor mass increase (12 x 8 x 9 cm; volume: 460 cm^3), extending to the left kidney. Nowadays, patient is in palliative clinical management in our service. In conclusion, we describe an uncommon case of primary aldosteronism in a patient presenting with short-term hypertension and refractory hypokalemia due to an aldosterone-secreting adrenocortical carcinoma.

E-PO10 ANALYSIS OF THE PROFILE OF HOSPITAL ADMISSIONS FOR ADRENALECTOMY IN THE BRAZILIAN UNIFIED HEALTH SYSTEM BETWEEN 2010-2019 IN THE NORTHEAST AND CENTRAL-WEST REGIONS

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Introduction: Adrenalectomy is defined as a surgical procedure to remove, unilaterally, or bilaterally, the adrenal glands. This procedure can be performed laparoscopically or laparotomically and is usually indicated for resection of solid tumors, especially malignant ones. This study aims to describe the arrangement of inpatients for adrenalectomies that occurred in the Unified Health System (SUS) in Brazil, between January 2010 and December 2019 in the Northeast and Central-west regions. **Materials and methods:** This is an observational study on hospitalizations for adrenalectomy in the SUS. Data were collected in the Ministry of Health's Datasus database, using information regarding Hospital Admission Authorizations (AIH) of the Hospital Admission System (SIH). These data were stratified by the variables: hospitalizations, and cost, and compared between the Northeast and Central-west regions, in the period from 2010 to 2019. **Results:** Between January 2010 and December 2019 there were 2,626 adrenalectomy hospitalizations in Brazil. The Northeast and Central-west regions were responsible for 16.2% and 5.3%, respectively, of surgeries. In 2012, there was the highest number of admissions in the Northeast (60); compared to 2018, when fewer surgeries were performed (32), there was a 46.6% reduction. In the Central-west, there was a greater number of procedures in 2013 (20); compared to 2019, when fewer interventions were performed (7), there was a reduction of 65%. The total expenses with the procedure in the country were R$ 3,849,966.83, with the Northeast region responsible for 16.6% of the amount spent, and the Central-west region for 5.1%. Also, the cost to SUS for each patient in the Northeast region was R$ 1,503.90, while in the Central-west was R$1,431.03. **Conclusion:** In light of the aforementioned data, it is concluded that the Northeast region not only performs more hospitalizations for the adrenalectomy procedure but also has higher costs for it when compared to the Central-west region. Also, information about the similarity between the 6-year intervals between peak and decline in the number of hospitalizations in each of the regions suggest a possible trend that may be studied in more detail in future works. Finally, there is a clear need for more studies to deepen the data found, including comparing it with other regions of the country, so that it is possible to develop strategies for a better organization of the SUS.

E-PO11 BILATERAL NON-SECRETING PRIMARY ADRENAL CARCINOMA PRESENTS WITH PRIMARY ADRENAL INSUFFICIENCY IN AN ELDERLY WOMAN

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Primary adrenal carcinoma is a rare entity and corresponds to 0.05 to 0.2% of all cancers. Approximately 94% of adrenal carcinomas are functioning. About 90% of the randomly discovered are not functioning carcinomas. A meta-analysis reported an average of 4% of the diagnosis of carcinoma in patients with adrenal insufficiency. 65-year-old diabetic and hypertensive woman started with abdominal pain a year ago, more intense since last month. There was a history of weight loss of 20 kilograms in the last two months, lack of appetite, asthenia and dizziness on rising. To physical examination the patient had postural hypotension, cold extremities with reduced perfusion, diffuse abdominal pain by the palpation and strength grade II in lower limbs. The investigation demonstrated a potassium of 5.6 mEq/L (3.5 to 5.5) and 129 mEq/L (132-146) serum sodium. Computed tomography of the abdomen with contrast revealed adrenal glands presenting with a heterogeneous lobulated contours expansive processes, right lesion measuring 12.9 x 10.7 x 11.6 cm and left 6.6 x 4.7 x 10.07 cm, which may correspond to a primary lesion. The right adrenal mass presented with an invasion component of the posterior surface of the liver and the left mass infiltrated the medial surface of the upper pole of the left kidney. Tomography of skull showed an expansive right occipital lesion with adjacent vasogenic edema, measuring approximately 2 cm in the in the largest diameter. The patient was treated with intravenous corticosteroids, volume expansion and fludrocortisone, restoring hemodynamic status and achieving the normalization of sodium and potassium. A biopsy of the adrenal masses was performed and showed positive immunohistochemistry panel for cortical adrenal carcinoma. The patient rapidly deteriorated her clinical condition and died two months after the diagnosis. This case depicts a case of bilateral non-secretory primary adrenal carcinoma presenting by primary adrenal insufficiency and aggressive evolution.

E-PO12 CUSHING'S SYNDROME AND CORONAVIRUS INFECTION: TWO CASE SERIES

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The first case consists of a 19-year-old patient with Cushing's disease due to a pituitary adenoma measuring 0.5 x 0.7 x 0.9 cm (W x H x AP), which recurred after 4 years of tumor resection, evolving with a pulmonary clinical condition compatible with Coronavirus infection, confirmed after RT-PCR for SARS-Cov2 positive. She presented with more than 50% involvement bilateral ground-glass pulmonary infiltrate, requiring hospitalization in a closed unit and supplemental oxygen for 7 days. The second case describes a 53-year-old woman, hypertensive, diabetic, obese, with type 1 neurofibromatosis, COPD, with active Cushing's syndrome due to bilateral macronodular adrenal hyperplasia, who developed dyspnea and fever for 4 days and arrives at the hospital in acute respiratory failure. After research of RT-PCR for SARS-CoV2, infection with Coronavirus was confirmed. She remains on ventilatory support for 20 days with recovery of lung function. Patients with hypercortisolism are more susceptible to infections, due to the immunosuppressive and inflammatory state. In addition, the association of comorbidities such as diabetes, hypertension and obesity confers a greater risk of severity in coronavirus infection. Despite the above, so far in the literature, corticosteroid therapy has shown benefit in the evolution of patients with severe pneumonia associated with COVID-19, especially in the inflammatory phase to reduce the cytokine storm. Thus, the endogenous hypercortisolism that the two patients present could decrease the hyperinflammatory response and prevent severe organic dysfunction.

E-PO13 *DIABETES MELLITUS* AS MAIN MANIFESTATION OF PHEOCHROMOCYTOMA: A CASE REPORT

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V. L. S. B., a 64-year-old patient complaining of weight loss and anxiety disorder. She had uncontrolled diabetes and hypertension, despite proper therapy, dyslipidemia, and positive personal history of type 2 diabetes mellitus (DM). Laboratory tests were requested, which showed microscopic hematuria. She underwent an unenhanced computed-tomography scan of the abdomen, which identified a voluminous (9,5 x 7,5 cm) solid-cystic adrenal mass, later diagnosed as pheochromocytoma. After tumor resection there was improvement of the anxiety disorder and hypertension, weight recovery and complete remission of DM. Although the cardiovascular consequences of catecholamine circulation are well-known, their metabolic actions are not totally established in the literature. This contributes to delayed diagnosis and underdiagnosis of tumors, and consequently, to increased cardiovascular morbidity and mortality rates. Dysglycemia in pheochromocytoma is a metabolic disorder found in 23% of patients and it may be secondary to the excess of circulating catecholamines or aggravated by the tumor in predisposed patients. It is still discussed how to identify the patients most likely to develop DM as a symptom and which of them are more likely to resolve DM after tumor resection. In order to contribute to current studies, and considering the rarity of the disease, we report a case in which the absence of typical symptoms masked the existence of the tumor and delayed the diagnosis indefinitely. At the outset, the development of diabetes could be attributed to the risk factors for DM 2 previously exhibited by the patient. However, the complete remission of the carbohydrate disorder led to the investigation about the physiopathology of the DM. The large size of the tumor and the fact that there was total remission of DM after surgical excision of the pheochromocytoma are the main evidence that diabetes was secondary to the tumor. Furthermore, the patient presented pre-operatory indicators that contributed to the remission. This is a patient with adequate BMI and high levels of preoperative urinary metanephrine, which are associated with the remission of hyperglycemia in the postoperative period. This case reinforces the importance of suspecting of pheochromocytoma in patients with atypical manifestations and contribute to the current discussion on the multifactoriality of DM in course of pheochromocytoma.

E-PO14 INTESTINAL SEMI-OCCLUSION REVEALING THE DELAYED DIAGNOSIS OF MULTIPLE ENDOCRINE NEOPLASIA TYPE B

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U. M. S., 33 years old, male, has shown abdominal pain and alternating intestinal rhythm with diarrhoea and constipation for 3 years. He was assisted in the emergency room presenting abdominal pain and under the suspicion of acute intestinal semi-occlusion. In the occasion the patient presented with episodes of sweating, palpitation followed by hypertense peaks, reaching 210 x 144 mmHg. Presented with an increase of the volume in the region of the front cervical region without compressive symptoms. The video-colonoscopy evidenced megacolon and diverticulum. A computerized tomography of the abdomen revealed bilateral adrenal injuries measuring 80 x 61 mm on the right and 15 x 14 mm on the left. Metanephrines within the 24-hours urine of 2,673.7 mcg and normetanephrines 27,503.9 mcg. Physical examination with marfanoid habitus, mucosal neuromas on the tongue and large multinodular goitre, larger on the right. Calcitonin: 8,889 pg/mL and thyroid's ultrasound with solid nodules on the left lobe TIRADS 5 and atypical lymph nodules in the cervical chain. Fine Needle Aspiration suggestive of thyroid's medullar carcinoma (CMT), Bethesda V. Submitted to the right adrenalectomy after preparation with intra and post-surgical hemodynamic instability, not making possible contralateral adrenalectomy. The urinary metanephrines reduced to 928 mcg/24 h and normetanephrines 783 mcg/24 h. Left adrenalectomy was performed followed by total thyroidectomy with cervical and lateral drainage which confirmed multifocal CMT with ganglionic metastasis (pT3b pN1b). The sequencing of the proto-oncogene RET revealed mutation on exon 16, codon 918 (ATG ACG). Currently using prednisone, fludrocortisone and levothyroxine. After the surgery presented calcitonin: 24 pg/mL and Carcinoembryonic Antigen: 1.16 ng/dL. The multiple endocrinal neoplasia type B (MEN2B) is a rare genetic syndrome, with dominant autosomal characteristic, from which CMT, pheochromocytoma (FEO), marfanoid habitus, mucosal neuromas and intestinal ganglioneuromatosis are part. It is associated with the germinative mutations on the proto-oncogene RET. We present a case of MEN2B diagnosed in adulthood from an abdominal case related to megacolon. The presence of bilateral adrenal injuries, with positive biochemical for FEO, draws attention to the possibility of MEN2. Faced with the suspecting of MEN2, the molecular analysis of proto-oncogene RET becomes mandatory, determining conduct, follow-up and family advising.

E-PO15 LINEAR IGA BULLOUS DERMATOSIS AND AUTOIMMUNE POLYGLANDULAR SYNDROME TYPE 2: A RARE ASSOCIATION

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Case report: A 55-year-old woman noticed vesicles over abdomen and limbs in July 2020. Two weeks before, she had taken 10 days of amoxicillin/clavulanic acid to treat acute otitis media. Previously, oral levofloxacin and fosfomycin were prescribed for upper airway and urinary tract infection, respectively. After dermatological evaluation, she was advised to take 5 days of acyclovir to treat herpes zoster. Because eruptions did not improve, sequential treatment attempts were prescribed (cephalexin with prednisone 40 mg/day and methylprednisolone 125 mg followed by 60 mg/day prednisone). In August 2020, she was hospitalized after a new physical examination revealed multiple pustules, fluid-filled bullae and targetoid macules. Past medical history included autoimmune polyglandular syndrome type 2 (APS2) (Addison's disease (AD), type 1 diabetes (T1D), hypothyroidism). Clinical and histological findings could be due to a wide range of classical immunobullous disorders. Linear IgA Bullous Dermatosis (LABD) diagnosis was confirmed by immunofluorescence, which showed linear deposits of IgA at the basement membrane zone. **Discussion:** We report the case of a woman presenting with two rare diseases. APS2 affecting about 1.4-2/100,000 inhabitants. Regarding LABD, there are no epidemiological studies in Brazil, however, recent studies show a prevalence of 30/100,000 inhabitants in the United Kingdom. LABD is caused by immunoglobulin A autoantibodies produced against basement membrane zone. It is characterized by erythematous papules, urticarial plaques or vesicobullous eruptions. However, cutaneous manifestations may mimic other bullous diseases. The histopathological exam demonstrates subepidermal blister with neutrophilic infiltrate. A linear pattern of immunoglobulin A deposition at the basement membrane zone on direct immunofluorescence is considered the gold standard for diagnosis. LABD may be idiopathic or due to different triggering factors, including drugs. APS2 is defined by the presence of AD associated with autoimmune thyroid disease and/or T1D. APS clusters with several non-endocrine autoimmune diseases like immunogastritis and pernicious anemia. **Conclusion:** We report the first published case of APS with LABD. The coexistence of APS2 and LABD may reflect the clinical diversity of multiple autoimmune diseases. Therefore, it is important to pay attention to new onset of other autoimmune diseases in patients with medical history of a previous autoimmune disorder.

E-PO16 MORTALITY FROM ADRENAL CANCER IN BRAZIL AND REGIONS BETWEEN 2009 AND 2018

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Introduction: Adrenal gland cancer is a rare and aggressive malignancy, which affects mainly patients in the first, fourth, and fifth decade of life, reaching, globally, around 0.7 to 2.0 people per million inhabitants each year1. Adrenal cancer lethality depends on its stage, and most patients at stage III and IV do not survive after 5 years of diagnosis. The present study aims to assess mortality from adrenal gland cancer in Brazil and its regions between 2009 and 2018. **Materials and methods:** Data were collected from the Mortality Information System (SIM) provided by the Department of Informatics of the Unified Health System (Datasus). This is an ecological study, in which the information collected refers to the number of adrenal cancer deaths stratified by the region and the biological sex of the patients, from 2009 to 2018, with a mortality rate (per 100,000 inhabitants) adjusted for age. **Results:** Between 2009 and 2018, 3.109 adrenal cancer deaths occurred in Brazil. The Southeast region was responsible for 46,6% of deaths, followed by the Northeast (21.68%) and South (17.79%). During this period, adrenal cancer deaths in the country increased by 30.99%. The Northeast presented the greatest increase (80.39%), while the smallest (7.69%) occurred in the North. When the mortality was compared between the biological sex of the patients, men represented 50.3% of deaths and women 49.7%. In concern to age groups, most deaths (20.33%) occurred between 0 and 4 years old. High mortality rates were also found in the 50-59 age group (14.18%) and 60-69 age group (13.19%). The highest average mortality rate occurred in the South (0.19), and the lowest rate occurred in the North (0.09). When the presented rates were adjusted for age, the Center-west presented the highest value (0.19), surpassing the South (0.18), while the North remained with the lowest rate (0.1). **Conclusion:** The presented results indicate adrenal gland cancer mortality in Brazil increased over the 10 years analyzed. This increase may be related to a greater number of diagnoses; however, the high rate may reflect a low investment in health prevention and, consequently, more cases with late diagnoses and less life expectancy. Furthermore, the adrenal cancer mortality rate in the South may be related to genetic factors, and, therefore, genetic screening provision by the Unified Health System would allow early diagnoses and interventions.

E-PO17 PARAGANGLIOMA OF THE URINARY BLADDER: A CHALLENGING DIAGNOSIS

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Paragangliomas (PGL) of the urinary bladder are extremely rare tumors, comprehending less than 0,5% of bladder tumors and 1% of chromaffin tumors. When functional, PGL secretes catecholamines and their metabolites, causing paroxysms of hypertension, palpitation and micturition syncope. Clinical presentation includes hypertension (with hypertensive crises coinciding with micturition), headache and hematuria. Here we report the case of a 67-year-old woman presenting with hematuria, vomiting, weight loss and episodes of weakness and dizziness during urination. She had a history of hypertension diagnosed at 33 years of age, well controlled with amlodipine. Magnetic resonance imaging (MRI) showed a bladder tumor, prompting mass biopsy. During the procedure, the patient experienced intense fluctuations of the arterial pressure, ranging from hypotension to severe hypertension. Afterwards, she presented with paroxysms of headache, tachycardia and pressure lability, which triggered the suspicion of pheochromocytoma. Biopsy showed positive immunohistochemical staining for chromogranin, synaptophysin, neuronal specific enolase and S100, confirming PGL. Biochemical evaluation 2 months after biopsy showed elevated serum metanephrine (MN) levels (3,0 nmol/L; reference range < 0,5 nmol/L) and extremely elevated normetanephrine (NMN) levels (77 nmol/L; reference range < 0,9 nmol/L). ^{131}I-metaiodobenzylguanidine (MIBG) scintigraphy showed important uptake of the tracer in the bladder, without uptake in other regions. MRI-scan showed a large heterogeneous mass in the bladder (7,7 x 5,4 x 7,1 cm), with muscular invasion. Prior to surgery, alpha blockade with prazosin was performed. Complete tumor resection with cystectomy, and additional right ureterostomy and left nephroureterectomy was performed. Biopsy confirmed PGL of the bladder. Five months after surgery, the patient presented with normal MN and NMN levels. Postoperative MIBG showed normal uptake, and MRI-scan showed no signs of relapse. PGL in unusual locations can lead to confusion and diagnostic error, and the diagnosis is frequently obtained by biopsy. Surgery is the primary treatment for pheochromocytomas and PGL, always preceded by alpha blockade. Some patients can experience recurrence or metastasis during follow-up. Lifelong follow-up is mandatory with MN/NMN measurements and imaging when recurrence is suspected. Genotyping is also recommended as they are highly related to inherited germline mutations.

E-PO18 PHEOCHROMOCYTOMA ASSOCIATED WITH A CONGENITAL HEART DEFECT DURING PREGNANCY: A CHALLENGING CASE

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Pheochromocytoma (PHEO) is a rare cause of secondary hypertension. Diagnosis and treatment are often challenging. Anecdotal cases have been described during pregnancy, with prevalence being estimated as 7 cases per 100,000 pregnancies in a Mayo Clinic 20-year retrospective study. We describe a case of PHEO in a 24-year-old pregnant woman who also had a congenital heart disease. The patient was initially diagnosed with anxiety disorder due to multiple hospital admissions with palpitations and psychomotor agitation in the prior 5 years. During her 2nd pregnancy and cesarean delivery, tachycardia and tremors were noted; four days after, she had an adenosine-sensitive supraventricular paroxysmal tachycardia (SVPT) followed by cold-wet acute heart failure. Subsequent investigation revealed an ostium-secundum atrial septal defect (ASD) with pulmonary hypertension, and a heterogeneous, 5.3 cm sized tumor of the right adrenal, with no evidence of systemic hypertension. Elevated 24 h urinary metanephrines confirmed a PHEO. Alpha and beta-blockers were started, and elective adrenalectomy was proposed before surgical correction of the ASD. The patient lost follow-up but returned to the outpatient clinic a few months later, complaining of paroxystic headaches with palpitations in her 3rd pregnancy at week 16. Due to limitations in the public health system aggravated by the COVID-19 pandemic, adrenalectomy was not done in the 2nd gestational trimester. Intensive, multidisciplinary clinical management was undertaken, and a term cesarean delivery was planned. Pregnancy evolved uneventfully until week 36, when symptoms recurred and a surgical delivery was performed, giving birth to a female newborn, weight 2,784 g, height 47 cm, Apgar 8/9. Another adenosine-sensitive SVPT occurred on immediate puerperium, quickly reversed. Right laparoscopic adrenalectomy was performed 30 days after delivery without complications. PHEO is often misdiagnosed and delayed identification remains common. The reported case is peculiar due to the concomitant occurrence of an ASD and a noradrenalin-secreting tumor during at least two pregnancies. The clinical history corroborates the hidden presence of PHEO in the 2nd pregnancy. Notably, a 3rd pregnancy overlapped and a loss of the window of opportunity for surgery in the 2nd trimester made this case even more emblematic. The multidisciplinary management of the case in the context of a tertiary hospital was fundamental for the successful outcome.

E-PO19 PHEOCHROMOCYTOMA SIMULATING ACUTE CORONARY SYNDROME (SCA) – CASE REPORT

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Case presentation: Patient J. G. C., 30 years old, male, black, woodworker, episodes of general discomfort, headache and nausea for 3 years, associated with thoracic pain. Troponin positive. He had an episode of hypertension urgency, with PA of 200 x 100. Heart catheterization did not show obstructive lesions. TC of the abdomen showed solid mass in left adrenal. RM of the abdomen showed retroperitoneal mass, in left adrenal, measuring 90 x 75 x 70 mm, discretely hyperintense in relation to the liver on T2 images, with focal areas of hypersignal T1. One dosage of urinary Norepinephrine resulted 111 mcg, urinary epinephrine of 143 mcg and urinary metanephrine of 6 mcg. Plasmatic metanephrine of 34.31 nmol/L and normetanephrine of 22.35 nmol/L. Scintigraphy with MIBG showed capturing in adrenal tumor region to the left without other places of capturing. Normal bone scintigraphy. Patient was submitted to a left adrenalectomy with a closed diagnosis of pheochromocytoma mixed producer of noradrenaline + adrenaline. Mutation research: Von Hippel-Lindau tumor suppressor and TMEM127 genes, both negative. After the surgery, urinary metanephrines got normalized. Anatomy pathological test showed a PASS of 5. **Discussion:** Pheochromocytomas are tumors of the chromaffins cells of the sympatic-adrenomedular axis, producers of catecholamines, more commonly adrenalin and/or noradrenalin. Peak occurs between the third and the fourth life decades and approximately 90% of the tumors are unique and benign. Multiple tumors are found with high frequency in the cases of familiar origin. Patient from this case presented an unique tumor, characteristic of the sporadic pheochromocytomas. The clinic frame is variable, with a classic three combination, associated to hypertension, headache, sudoresis and palpitations. **Final considerations:** Pheochromocytomas must be diagnosed untimely, since has lethality potential and it can cause a hemorrhagic encephalic vascular accident and heart attack, mainly related to adrenergic paroxysms. Patient from this case had a diagnosis hypothesis of heart attack, however the thoracic pain was due to the heart spasm generated by the increase of catecholamines. Patient was submitted to surgery and arterial pressure was normalized without the need of anti-hypertensives, a fact expected in 75% of the patients after the removal of the tumor. The prognosis is good, with recidives occurring in only 5%-10% of the patients.

E-PO20 PHEOCHROMOCYTOMA WITH ATYPICAL TOMOGRAPHIC PRESENTATION: A CASE REPORT

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Case report: We report the case of a 37-year-old male patient referred to the endocrinology service due to 3 nodular lesions in the left adrenal, the largest measuring 3.5 cm. He had a 5-year history of hypertension and anxious symptoms; there was no headache, tachycardia or sweating. The patient had a history of gout, metallic aortic prosthesis due to severe insufficiency and previous alcoholism, and he was on 4 different classes of antihypertensive drugs in optimal doses. Computed tomography (CT) revealed three nodular lesions in the left adrenal gland, heterogeneous, measuring 32 x 25 mm (lateral portion), 26 x 21 mm (medial portion) and 14 x 13 mm (central portion). The lesions reached 90 UH in the arterial phase and had a washout of less than 60% in the late phase. 24-h urinary metanephrines were discretely elevated, other adrenocortical hormones were within normal limits. The patient was referred to the urology service and he underwent resection surgery. The anatomopathological result was compatible with pheochromocytoma. **Discussion:** Pheochromocytoma is a tumor arising from the adrenal medulla, which secretes catecholamines. The peak incidence occurs between 4th and 5th decades of life, with an incidence of 0.8 per 100,000 person years. Presumably, 40% of these tumors are part of hereditary syndromes, most commonly von Hippel-Lindau, MEN 2 or neurofibromatosis type 1. Approximately half of the cases present with classic paroxysmal symptoms, such as sweating, headache and tachycardia; arterial hypertension is usually present in 85%-90% of cases. Characteristics on CT scan include a single, large and heterogeneous lesion. High densities in the arterial phase (90-110 UH) are suggestive of pheochromocytoma. **Final comments:** Pheochromocytomas are tumors that usually present as single lesions. Multiple lesions are rare but the diagnosis should be suspected if pathognomonic radiological characteristics are present. Early diagnosis can prevent future complications, especially resistant hypertension.

E-PO21 PRIMARY ALDOSTERONISM: THE EXPERIENCE OVER THE PAST 20 YEARS AT RIBEIRÃO PRETO MEDICAL SCHOOL – USP

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Background: Primary aldosteronism (PA) is one of the most common cause of secondary hypertension. Unlike other adrenal disorders, there is no typical phenotype to guide the clinician to suspect PA and many patients are diagnosed late, when they have developed hypokalemia and irreversible cardiovascular and renal complications. **Objectives:** The aim of this study was to evaluate the clinical and biochemical characteristics of the cases of PA followed at our universitary hospital from 1999-2019. **Patients and methods:** In our cohort of 63 cases, 50.8% were men. Of note, 76% of the PA diagnosis were performed in the last 5 years compared to 1.6% in the first 5 years. Hypertension was diagnosed at the mean age of 33 years (range 17-76) and PA diagnosis was achieved with a mean delay of eighteen years (range 25-76). The prevalence of overweight was 82% and obesity in 55%. At diagnosis, 78% of patients had resistant hypertension, taking on average four antihypertensive drugs with the mean blood pressure of 154 x 95 mmHg. Hypokalemia was observed in 82% of the patients. The mean aldosterone and renin levels at baseline was 41.5 ng/dL and 2.1 mU/L, respectively. Twenty-seven patients (43%) were submitted to a confirmatory test (intravenous saline infusion test) and an adrenal vein sampling was performed in 26 patients (41%). Aldosteronoma (APA) was the etiology in 50.8% of the cases, bilateral adrenal hyperplasia (IHA) was found in 47.5%, and aldosterone-producing adrenal carcinoma in one patient. The mean size of adenomas was 1.7 cm (range 0.6-3.9 cm). APA patients had lower serum potassium (2.8 x 3.3 mEq/L, p = 0.004) and higher aldosterone levels (54 x 26 ng/dL, p = 0.005) at baseline, compared to IHA. Patients with APA were treated with unilateral laparoscopic adrenalectomy and patients with IHA with spironolactone. Post-operatively, the daily requirement was decreased from 3.5 to 1.6 class of anti-hypertensive drugs and 30% of patients were normotensive with no medications. Hypokalemia was controlled in all patients. **Conclusion:** PA diagnosis should be though in patients with resistant hypertension, especially among the young patients. Although there was an improvement in the diagnosis over the last 20 years at our institution, the higher frequency of hypokalemia suggests that the diagnosis is still delayed. Medical education and a multidisciplinary team are crucial to improve the diagnosis.

E-PO22 PRIMARY PIGMENTED NODULAR ADRENAL DISEASE (PPNAD) WITH MICRO AND MACRONODULAR DISEASE ASSOCIATED WITH MELANOTIC SCHWANNOMA: A RARE PRESENTATION OF CARNEY COMPLEX

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Case report: Woman, 32 years-old, with a history of recurrent nephrolithiasis, atraumatic fractures and bariatric surgery, complaining of proximal weakness, weight gain, capillary fragility and acne. On physical examination, cushingoid facies, facial plethora, grade 2 obesity, gibe and violet stretch marks > 1 cm. On abdominal CT, bilateral adrenal nodules, the largest being 2.3 cm on the right side. She was diagnosed with Cushing's syndrome in another service, and underwent a nodulectomy, with pathology compatible with 2.1 cm adrenal cortex adenoma. However, the patient persisted symptomatic and was referred to our care for investigation. The diagnosis of independent ACTH hypercortisolism was confirmed with the following tests: cortisol (F) post-1 mg dexamethasone 8.6 mg/dL (NR < 1.8); dexamethasonemia 193 ng/mL; 11 pm salivary F 115 ng/dL (NR < 100); ACTH < 1 pg/mL (NR 7-63). Other hormonal tests were normal. Adrenal CT showed a nodular formation on the right and three on the left (> 10 UH), the largest measuring 1.2 cm. In addition, a nodular formation was identified in the right conjugation foramen of L3/L4, with discrete hypersignal in the T1 sequence, suggestive of melanocytic schwannoma. The hypothesis of Carney complex (CC) was raised and a review of the adrenal nodulectomy was requested. Histopathological analysis confirmed the diagnosis of primary pigmented nodular adrenocortical disease (PPNAD). Patient without other characteristic changes of CC. Now scheduled for surgery to remove the Schwannoma, followed by adrenalectomy. **Discussion:** PPNAD stands out for multiple nodules smaller than 1 cm, bilateral and pigmented, and is a rare form of ACTH-independent Cushing's syndrome (0.6%-1.9%). It is associated with CC in 90% of the time, being the most common endocrine manifestation of CC. Our patient fills out the diagnosis of CC by presenting two main diagnostic criteria: melanocytic schwannoma (a rare myelin sheath tumor variant) and PPNAD. Although PPNAD generally presents as a micronodular adrenal disease with nodules < 4 mm, in our case the patient had micro and macronodular lesions, the largest being 2.1 cm. In addition, the association with schwannoma melanocytic is extremely rare, being described in only 10% of CC cases. **Conclusion:** Although rare, CC can be presented with macronodular adrenal disease. Moreover, the presence of melanocytic schwannoma raises the suspicion of CC, as observed in the case reported.

E-PO23 RESISTANCE TRAINING REDUCES BLOOD PRESSURE, IMPROVES BODY COMPOSITION AND INCREASES STRENGTH LEVELS IN PATIENTS WITH STAGE TWO CHRONIC KIDNEY DISEASE

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Introduction: The kidneys have a fundamental role in regulating the patient's blood pressure, therefore, chronic kidney disease (CKD) could interfere with the patient's blood pressure homeostasis. Resistance training (RT) has been used as an adjunct therapeutic strategy to control blood pressure and body composition in stage two CKD patients. The performance of RT associated with blood flow restriction (RT + BFR), by using lower loads, could be an alternative for patients with muscle mass loss and low effort tolerance, frequently associated with CKD. Thus, this study aimed to investigate the influence of six months of resistance training with and without blood flow restriction on resting blood pressure, body composition and handgrip strength in patients with stage two chronic kidney disease. **Methods:** Patients with chronic arterial hypertension and CKD (n = 90) were randomly assigned into: control group (CTL n = 30), RT (n = 30) and RT + BRF (n = 30). Systolic and diastolic blood pressure, body composition and handgrip strength levels were measured in all patients before and after the training. RT and RT + BRF groups performed the physical training for six months, three times a week in non-consecutive days, and the training loads were adjusted every two months. Each training session included eight exercises, alternating between upper and lower limbs, under professional supervision. To compare the differences between and within groups, a Two-Way ANOVA was performed, and the significant level was set as 5% ($p < 0.05$). The study was approved by the local Human Research Ethics Committee and registered on the Brazilian clinical trial registration. **Results:** RT and RT + BFR decreased systolic and diastolic blood pressure compared to pre-intervention and CTL in clinic and ambulatory measurements ($p < 0.01$). Fat mass decreased ($p < 0.01$) in both training groups (RT and RT + BFR), and fat-free mass increased in both ($p < 0.01$). Handgrip strength increased in response to RT and RT + BFR compared to pre-intervention and CTL ($p < 0.01$). **Conclusion:** Six months of resistance training, with and without flow restriction decreased blood pressure, improved body composition and increased the isometric handgrip strength of stage two chronic renal patients in a conservative stage.

E-PO24 X-LINKED ADRENOLEUKODYSTROPHY

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Presentation: P. P. H. M., male, 51 years old, with generalized tonic-clonic seizures since the age of 9; he evolved with progressive cognitive worsening maintaining neurological monitoring in treatment for epilepsy, when he started to present asthenia, excessive weakness, weight loss being referred to endocrinology. The investigation showed a serum cortisol 2.0 ug/dL, ACTH 1,250 pg/mL, total testosterone 173 mg/dL, with high FSH and LH. The increased AGCML dosage and skull MRI with hyperintense lesions in T2 and FLAIR wrapped in deep white substance with hyposignal in T1, confirmed the diagnosis of X-linked adrenoleukodystrophy (X-ALD). **Discussion:** X-ALD is a demyelinating, peroxisomal, genetic disease, with X-linked inheritance, caused by a mutation in the ABCD1 gene, which results in deficient AGCML degradation and accumulation in the CNS, adrenal cortex and testis. Affected individuals may present with manifestations, which vary according to isolated, simultaneous or sequential involvement of the adrenal and CNS. ALD-X can present with varied phenotypes and symptoms, depending on the proportion of involvement of the brain, spinal cord and peripheral nerves. The diagnosis should be suspected in boys with attention deficit disorder, who show signs of dementia, progressive behavioral disorder, loss of vision, incoordination or other neurological disorders; men with progressive gait disorders, stiffness or weakness in the lower limbs, sphincter uncontrolling and sexual dysfunction, with or without adrenal insufficiency. The measurement of AGCML(s) together with suggestive signs and symptoms is sufficient to establish the diagnosis in most of those affected. Allogeneic hematopoietic stem cell transplantation is the most effective therapy for stopping the brain inflammatory process, when performed at an early stage of the disease, however demyelinating lesions continue to expand for 12 and 18 months after transplantation. This therapy did not show a reversal of adrenal insufficiency nor of gonadal involvement, which should be treated with hormone replacement. **Conclusion:** It is a case of late diagnosis with unfavorable neurological evolution. It is important to be attentive to the diagnosis of adrenoleukodystrophy in every boy with signs and symptoms of adrenal insufficiency.

E-PO25 X-LINKED ADRENOLEUKODYSTROPHY (X-ALD) – REPORT OF TWO BROTHERS WITH X-ALD ISOLATED ADRENAL FORM

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Introduction: X-linked adrenoleukodystrophy (x-ALD) is a peroxisomal beta-oxidation disorder that results in the accumulation of very long-chain fatty acids (VLCFAs) in all tissues. In the adrenal gland, abnormal VLCFAs can change cell function, inhibiting the action of ACTH on adrenocortical cells. Primary adrenal insufficiency, in most cases, occurs simultaneously with degenerative neurological defects, or it can be the only clinical presentation, preceding neurological manifestations by years or decades. **Case 1:** A 25-year-old male patient started diffuse cutaneous hyperpigmentation in the trunk, limbs, face at the age of 14, preserving the periorbital area. The patient was evaluated by dermatologists when he was 17 and than, he was referred to endocrinology. Primary adrenal insufficiency (ACTH 1,580 basal cortisol 3.0) was identified and treatment was started with prednisone. He also had chronic fatigue, lack of appetite and weight loss, in addition to avidity for salt. During this period, the treatment was modified to hydrocortisone and fludrocortisone was started. The Anti 21 hydroxylase antibody was negative and the abdominal computed tomography (CT) scan had no abnormality in the adrenal glands. The brain Magnetic resonance imaging (MRI) was normal. VLCFA search: C26: 1.7 Ratio C24: 0/C22: 0 1.2 and Ratio C26: 0/C22: 0 0.04, a result compatible with peroxisomal disease. suggesting the diagnosis of X-ALD. **Case 2:** A 23-year-old male patient started, at the age of 16, cutaneous hyperpigmentation in the trunk, limbs and face, affecting the oral mucosa, evolving with fatigue, asthenia and excessive sleepiness. Her brother (case 1), had a similar clinic. Diagnosed with primary adrenal insufficiency (ACTH 296 basal cortisol 1.4) and initiated hydrocortisone. There was no avidity for salt, lipothymia, postural hypotension, nor evidence of electrolyte disturbances. Normal brain MRI. The Anti-21 hydroxylase antibody was negative. Abdominal CT without changes in the adrenals. High VLCFA dosage (C26: 0 1.5 Ratio C24: 0/C22: 0 1.12 Ratio C26: 0/C22: 0 0.05), suggesting x-ALD. **Conclusion:** We report 2 cases of siblings diagnosed with X-ALD. Both patients, to date, have had no abnormal neurological findings or psychiatric disorders and there were no abnormality in the white matter of the brain in the MRI. The HIV serologies was negative. We therefore consider the diagnoses of X-ALD in the form of isolated Addison's disease.

DIABETES MELLITUS

E-PO26 DISPOSAL PRACTICES FOR SHARP, CHEMICAL AND BIOLOGICAL WASTE BY *DIABETES MELLITUS* PATIENTS FOLLOWED IN A PRIMARY HEALTH CARE UNIT IN RIO DE JANEIRO

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Introduction: Diabetes mellitus (DM) is a disease that has been increasing its prevalence in recent decades in Brazil. Waste produced by insulin users also gain relevance, since sharps have a different disposal than other types of residential waste. **Objectives:** To analyze the disposal practices of these residues within a cohort of insulin users at a Primary Health Care Unit and identify the personal aspects of patients, knowledge of waste disposal, and other aspects associated with the management of sharps. **Materials and methods:** We searched the PubMed platform for terms "disposal needles"; "disposal syringes diabetes"; and selected eight articles. We elaborate a questionnaire that approached the main characteristics, such as the practices of use of waste and the time of insulin use. The questionnaire was submitted and approved by the University Ethics and Research Committee. We searched 102 data patients attended by a primary care unit and we contacted them, obtaining response of 32 of these. **Results:** We found a percentage of 53.1% for females and 46.9% for males. When addressing age, 45.5% were between 70 and 79 years old, while 58.4% were between 50 and 69 years old. Questioned about the container used to store the insulin needles: 37.5% of people used plastic bag, 28.1% soda bottle and 21.9% used none container. In relation to the local where they took the container with the insulin needles: 59.4% took it to health care unit, while 40.6% discarded it in the house trash. At the moment that they were inquired if they had already received guidance on disposal correct, 59.4% denied versus 40.6% who said they had already received guidance. When they were questioned about the occurrence of accidents with waste, 90.6% denied it. **Conclusion:** In a large part of our cohort, we did not find adequate practices disposal of sharps, although most patients have information on the appropriate place to dispose of such waste. This work, however, served to clarify both the profile of patients with DM in the region studied as to the form of disposal most practiced by them.

E-PO27 A CASE OF A 37-YEARS-OLD WOMEN WITH DIABETES TYPE MODY 2 WHO HAD BEEN DIAGNOSED AND TREATED FOR TYPE 2 *DIABETES MELLITUS* SINCE CHILDHOOD

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This case report describes a 37-year-old woman diagnosed with type 2 diabetes mellitus (DM2) since childhood. She was treated with different drugs until adulthood, with periods without medication due to the lack of satisfactory results. During pregnancy, despite prenatal exams showing high glycemic levels, she did not undergo glucose-lowering treatment due to a history of refractoriness. Because a suspicion of having a different diabetes other than type 1 and type 2, a genetic test was requested, whose confirmed the diagnosis of MODY 2 (Maturity Onset Diabetes of the Young type 2), also known as MODY-GCK (mutation in the GCK gene). MODY is a monogenic disease and represents approximately 1 to 4% of all diabetes cases diagnosed in patients under 30 years of age. Most MODY 2 patients have mild, non-progressive fasting hyperglycemia and no long-term complications. Drug treatment with anti-hyperglycemic agents in these patients does not significantly alter blood glucose and is only indicated during pregnancy. The best response in these cases is the introduction of a diet with low glycemic index carbohydrates and physical exercises, with excellent prognosis. The diagnosis of DM2 seemed unlikely in this case, as this type of diabetes is usually associated with obesity, with some response to drug treatment. Knowledge about the clinical and biochemical characteristics, phenotypic classification and available tests is essential to guide treatment and prognosis. After the diagnosis of MODY2 and tailoring the treatment to medical needs, the withdrawal of anti-hyperglycemic agents and the introduction of a low glycemic index carbohydrate diet, the patient showed improvement in glycemic control, with weight maintenance and quality of life in general. All family members of patients diagnosed with MODY2 diabetes, are advised to undergo molecular genetic tests. The suspicion and characterization of MODY phenotype through clinical history, and genetic tests are essential to avoid unnecessary or inefficient treatments and also to allow a better quality of life.

E-PO28 A SUCCESSFUL CASE OF BARIATRIC SURGERY IN A TYPE 1 DIABETES PATIENT: 2 YEARS FOLLOW-UP

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Case presentation: Male 36 years old patient diagnosed with type 1 diabetes (T1D) at the age of 16. His body weight progressively increased, with a maximum weight of 153 kg and BMI 44.2 kg/m² at 32 years old. He had good glycemic control (glycated hemoglobin of 6.3%), used basal-bolus insulin regimen (120 units of insulin, 0.78 units of insulin/kg). He also developed hypertension, dyslipidemia and hepatic steatosis and was treated with a low dose statin and three oral anti-hypertensives, along with lifestyle modifications. He underwent vertical gastrectomy on June 2018, with a preoperative weight of 148 kg, BMI 42.77 kg/m². He had no complications. His minimum weight of 97 kg and BMI 28.03 kg/m² was reached 16 months after surgery, with a total daily insulin dose of 25 units. He had remission of hypertension and dyslipidemia. 26 months after surgery, he had regained weight due to social isolation (103.5 kg and BMI 29.92 kg/m²). He was on a low carb diet and exercising regularly, with episodes of mild hypoglycemia during the night. We decreased his insulin dose to a total of 14 units (0.13 units/kg) and added palatinosis to his last meal, with good response. **Discussion:** Obesity is increasing in T1D patients. Management of T1D in severely obese individuals is challenging, and bariatric surgery has emerged as a treatment option. Literature shows that T1D patients who have undergone bariatric surgery, had a significant improvement in weight loss, insulin resistance and comorbidities associated with obesity, but maintaining their glycated hemoglobin levels. In addition, there is an increased risk of post-surgery ketoacidosis and hypoglycemia. Our patient had preoperative characteristics similar to those observed in most studies, with outstanding outcomes. He had a 68.1% excess weight loss, improvement in comorbidities associated with obesity, and a more pronounced reduction in the total dose of insulin and insulin/kilogram of weight than usual (89% total dose insulin reduction). Explanations include his diet (low carb diet) and regular physical activity, in addition to the weight loss and changes in incretins secondary to surgery. He maintained a glycated hemoglobin of 6.3% and only few episodes of mild hypoglycemia. **Conclusion:** We presented a successful case of bariatric surgery in T1D patient, with no complications. This report shows that, when properly indicated, bariatric surgery can play a relevant role in improving the health of patients with T1D.

E-PO29 A SURVEY OF PHYSICIANS' EXPERIENCES AND TREATMENT SATISFACTION USING FAST-ACTING INSULIN ASPART (FASTER ASPART) IN PEOPLE WITH TYPE 1 AND TYPE 2 DIABETES

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Introduction: Faster aspart is a new mealtime insulin with a faster onset of action versus insulin aspart which demonstrated improved PPG control in people with T1D and T2D in the onset clinical trial program. This research aimed to provide an understanding of physicians' clinical experience and satisfaction using faster aspart in patients with diabetes, as well as patients' characteristics and satisfaction. **Methods:** Physicians from Canada, Denmark, Finland, Switzerland and the UK who were treating people with T1D or T2D and registered in the OneKey and MEBOS database were randomly invited, from February 2018 to April 2018, to complete an online survey. The survey consisted of 33 questions, along with screener questions to ensure only physicians relevant to the study were included. **Conclusion:** Respondents observed an increased likelihood of patients achieving glycemic goals and reported greater treatment satisfaction with faster aspart versus other mealtime insulins for attributes including dosing flexibility and improved PPG control.

E-PO30 ANALYSIS OF RISK FACTORS FOR HYPOGLYCEMIA IN HOSPITALIZED DIABETIC PATIENTS

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Introduction: Hypoglycemia affects 5% to 20% of hospitalized patients, especially those treated with oral antidiabetic drugs (sulfonylureas) or insulin, but may also occur among non-diabetics, who occur before cardiovascular, metabolic and infectious diseases. The presence of recurrent hypoglycemia increases morbidity and mortality in any type of patient, reducing the severity level. **Objective:** Identify risk factors for hypoglycemia in diabetic patients admitted to the medical clinic wards of the *Fundação Santa Casa de Misericórdia do Pará* (FSCMPA). **Patients (materials) and methods:** This was a cross-sectional, analytical and descriptive study. Dividing patients diagnosed with type 1 and 2 diabetes mellitus, in two groups: with (n: 20) or without (n: 20) hospital hypoglycemia. **Results:** A decrease and/or diet changes was found in approximately 50% of hypoglycemia cases, in patients with an average age of 63.8 years, being metabolic diseases (sepsis, infections) the second main risk factor. Among the patients with hypoglycemia, 15% (03/20) presented a severe form of the disorder, associated with clinical symptoms. In addition, considering time of the event, 55% (11/20) of patients with hypoglycemia in the morning, concentrated at 6:00 am. There were no statistical differences related to the hospital insulin therapy regime and risk factors among the two groups. **Conclusion:** Our study suggests that hypoglycemia is an essential and determining factor in patient prognosis and should be constantly evaluated. Avoiding prolonged dietary intervals, to individualize glucose corrections and adjust insulin doses, considering the changes in the patient's metabolic profile. Although the two groups were subjected to the same risk factors, it would be necessary to expand the number of patients studied, to analyze the increased sensitivity in some hypoglycemia cases.

E-PO31 ANALYSIS OF THE EMERGENCY PHYSICIANS KNOWLEDGE OF DIABETIC KETOACIDOSIS APPROACH IN A PUBLIC TERTIARY HOSPITAL

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Introduction: Diabetic ketoacidosis (DK) is an acute hyperglycaemic complication that can affect patients with type 1 diabetes (T1DM). It is an important cause of hospitalization, with high morbimortality. About 25% of T1DM present DK at first diagnose. Other precipitating factors are poor adherence to treatment and/or infections. **Objective:** We sought to determine the situational diagnosis, of the knowledge in the management of DK among the professionals who provide the first care to this patient at a tertiary hospital. **Methods:** Cross-sectional, descriptive study, of the medical knowledge about the management of DK by emergency physicians of Taguatinga Regional Hospital, Brazil. The survey consisted of questions related to DK management at the emergency room. Forty-seven emergency physicians filled the questionnaire, that was anonymous. None refuse to participate. **Results:** Regarding the confidence in the management of DK, almost half (46.8%) of the physicians said they only had an average confidence in the management, 40.45% reported being confident and 10.6% extremely confident. Regarding the first therapeutic approach to be taken after the diagnosis, 97.9% answered venous hydration with saline infusion, but 42.6% would prescribe bicarbonate even at pH > 6.9. About potassium replacement, 63.8% did not know the right cutoff point. Only 17% included among their answers all diagnostic criteria for DK. Regarding the DK resolution criteria, only 27.65% of professionals answered correctly. **Discussion:** Most of the physicians interviewed have no doubts about the initial measures in the management of DK, however, many did not feel confident in the other stages of treatment. The lack of knowledge about issues that imply greater risks of complications in DK, such as potassium replacement, administration of bicarbonate and resolution criteria, drew attention. **Conclusion:** This study made it possible to make a situational diagnosis about the knowledge of the physician who provides the first care to patients with DK. From this work, it was proposed the development of educational measures to disseminate the hospital's endocrinology unit protocol and the adoption of the InsulinApp by the emergency team, contributing to improve care and reduce the morbimortality of these patients.

E-PO32 ASSESSMENT OF HEALTHCARE PROVIDED TO PATIENTS WITH TYPE 2 DIABETES (T2D) IN PRIMARY CARE IN THE STATE OF BAHIA, BRAZIL

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Introduction: Most patients with type 2 diabetes (T2D) can be adequately treated in primary care, as long as care facilities are prepared with trained professionals, financial resources, and reference matrix, to provide the best possible care. **Objectives:** This study aimed to assess whether diabetic patients who attended a sample of primary care facilities in municipalities in the State of Bahia have been receiving adequate care. **Methods:** Population-based study, based on data from medical records, collected from January 2016 to October 2019, in 90 primary care clinics distributed in 16 municipalities in Bahia. These files contained information requested directly from patients and obtained from medical records, regarding T2D medical history. Some files were incomplete or duplicated, so the entire analysis was done only with the registered data. **Results:** There were 2,782 patients with T2D, 70.1% women. Mean age of 61.1 years. The majority were from Salvador (32.1%), Paulo Afonso (13.1%) and Glória (10.1%). 86.8% already knew they had diabetes and 79.2% had previous medical visits because of T2D. 72.4% did not know about self-care and 48.2% did not know or did not receive education in self-care. 35.6% and 18.9% said they had had previous examinations for diabetic foot and retinopathy, respectively. 42.5% and 12.8% mentioned having at least one glycated hemoglobin (Hb1Ac) or microalbuminuria evaluation, respectively. 50.1% had a previous Hb1Ac on record and 33.8% of them had an Hb1Ac greater or equal to 7.0. Average BMI was 29.2 kg/m², 38.5% were overweight and 39.3% were obese. Upon looking at isolated blood pressure values during visits, 51.3% of individuals would be classified as hypertensive. 90.7% of these patients did not undergo any screening for nephropathy and 97.3% did not undergo any screening for retinopathy. Among patients who had previous fundoscopy, 85.5% did not present any findings suggestive of retinopathy. **Conclusion:** T2D patients studied in this paper are receiving insufficient care. We observed that many patients were not within HbA1c goals, didn't have comorbidities controlled, didn't have about chronic complication screening on record, and did not receive education for self-care. The documentation of such findings has substantial value for the state management of health resources.

E-PO33 ASSOCIATION BETWEEN OF 25(OH)D, HBA1C AND ALBUMINURIA IN DIABETES MELLITUS: DATA FROM A POPULATION BASED STUDY (VIDAMAZON)

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Introduction: Recent evidence suggesting that Vitamin D(VD) may reduce insulin resistance, paired with the anti-inflammatory effects of this hormone, allowed a discussion regarding the role of VD in glycemic control and in diabetes mellitus (DM) complications, especially the microvascular disease. Despite current efforts, this relationship has not been firmly established yet. **Objective:** The aim of this study was to evaluate the relationship between serum 25-hydroxy-vitamin D (25(OH)D) levels with HbA1c and diabetic kidney disease. **Patients and methods:** A cross-sectional study was performed, on a populational basis, evaluating the association between the levels of 25(OH)D, HbA1c and albuminuria in 1,577 individuals with DM. Those with glomerular filtration rate below 60 mL/min/1,73 m² were excluded. **Results:** Correlations were found between VD with HbA1c ($r = -0,1$; $p \leq 0,0005$), and albuminuria ($r = -0,2$; $\leq 0,0005$). Patients who did not reach the goal for glycemic control, according to the American Diabetes Association (ADA) (HbA1c < 7%), presented lower levels of VD (28 ± 10 vs. $29,5 \pm 10$ ng/mL; $p < 0,01$). Moreover, linear regression models between VD, HbA1c and albuminuria showed that VD might explain 2% of HbA1c behavior and 3% of albuminuria. Additionally, increases of 1 ng/dL in VD were associated with a reduction of 0,1% in HbA1c. **Conclusion:** Our study suggests an association of 25-OH-Vitamin D serum levels and HbA1c. The data also suggests that the association between the urinary excretion of albumin and VD may precede the loss of renal function in individuals with DM.

E-PO34 ASSOCIATION BETWEEN THE CONSUMPTION OF PROCESSED AND ULTRA-PROCESSED FOOD AND CARDIOVASCULAR DISEASE AND ITS RISK FACTORS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Introduction: A higher dietary ultra-processed food (UP) intake can be associated with obesity, increased prevalence of type 2 diabetes, and hypertension, all traditional cardiovascular risk factors. Therefore, regarding the prevention of cardiovascular disease (CVD), it is important to study the UP food consumption, especially in high risk patients. **Objective:** Analyze the association between consumption of processed and ultra-processed food and CVD and its risk factors in patients with type 2 diabetes. **Methodology:** Patients from the diabetes research clinic at Hospital de Clínicas de Porto Alegre were consecutively recruited and oriented to perform the 3-day weighted diet records (WDR) to evaluate dietary habits. The items of food consumption reported by the patients were classified in 4 groups: in natura or minimally processed foods, culinary ingredients (oil consumption), processed and ultra-processed foods. **Results:** A total of 481 patients (52% women; mean age: 61 ± 9 years and time since diabetes diagnosis: 12 ± 9 years) were evaluated. The consumption of processed and UP foods corresponded, respectively, to 20,4 ± 12,4% and 14,2 ± 10,8% of daily energy. The patients were divided based on the quartiles of the sum of processed and UP foods consumption. The patients from quartile 3 were younger (59,1 ± 9,8 years; P = 0,037) than those from quartile 1 (62,4 ± 8,4 years). Regarding the glycemic and blood pressure controls and lipid profile, no difference was observed among the quartiles groups. Furthermore, the frequency of CVD was not different among the groups. Regarding the dietary characteristics, the patients from quartile 4 presented a higher energy intake, compared with the patients from quartile 1. The trans and saturated fatty acids intake were higher in quartiles 3 and 4 compared with quartiles 1 and 2. The consumption of proteins and polyunsaturated fatty acids was lower in quartile 4 compared with quartile 1. **Conclusions:** In this sample of patients with type 2 diabetes, an inverse association between the consumption of foods with a higher processing level and age was observed. The consumption of these types of foods was associated with a higher intake of calories, trans and saturated fatty acids. No association was observed between highly processed foods and CV risk factors. Additional longitudinal studies are necessary to confirm these results.

E-PO35 AUTOIMMUNE DIABETES SECONDARY TO IMMUNOTHERAPY: A REPORT OF TWO CASES WITH DIFFERENT PRESENTATIONS

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Cases report: A 69-year-old man with metastatic urothelial carcinoma, primary hypothyroidism and a 27 years history of T2D, well controlled with dapagliflozin and metformin, presented with acute abdominal pain and nausea. Laboratory tests confirmed diagnosis of ketoacidosis (plasma glucose 276 mg/dL, pH 7.25 and ketonuria). This event occurred a month after introduction of pembrolizumab and 7 days after its second cycle. Additional investigation revealed autoimmune etiology of diabetes: C-peptide 0.3 ng/mL, glutamic acid decarboxylase antibody (anti-GAD) > 2,500 UI/mL (NR < 10) and glycated hemoglobin 7.2%. There were no other endocrine disorders. Glycemic control was achieved using basal-bolus insulin regimen. The second case is a 68-year-old man with metastatic renal cell carcinoma and no history of diabetes, who was also admitted with ketoacidosis (plasma glucose 493 mg/dL, pH < 7.3 and ketonuria). He had received combined therapy with ipilimumab and nivolumab for 4 months and then nivolumab for more 4 months. Laboratory tests confirmed pancreatic β cell failure, with C-peptide of 0.3 ng/mL and glycated hemoglobin of 8%, however anti-GAD was negative. Autoimmune hypothyroidism was also diagnosed: TSH 12.7 mUI/L; anti-thyroid peroxidase antibody 570 UI/mL (NR < 9), anti-thyroglobulin antibody 636 U/mL (NR < 60). Basal-bolus insulin regimen and levothyroxine were introduced. **Discussion:** Ipilimumab is a monoclonal antibody anti-cytotoxic T-lymphocyte antigen 4 (CTLA-4) and Nivolumab and Pembrolizumab are anti-programmed cell death protein-1 (PD-1). The spectrum of endocrine immune-related adverse events includes hypophysitis, primary or secondary thyroid disease, primary or secondary adrenal insufficiency and, more rarely, hypoparathyroidism and hyperglycemia due to type 1 diabetes (T1DM). T1DM has rarely been reported as a side effect of anti-PD-1 therapy (0.2%-0.9%) and has not been reported with the use of ipilimumab alone so far. Reported cases of T1DM related to anti PD-1 have shown conflicting results regarding the presence of diabetes related autoantibodies after development of T1DM. **Conclusion:** Due to the widening use of immunotherapy, the prevalence of T1DM secondary to this treatment must increase. Considering the severity of diabetic ketoacidosis and the possibility of concomitant endocrine disorders, hormone profile should be appropriately monitored throughout immunotherapy.

E-PO36 BRAZILIAN TYPE 1 & 2 DIABETES DISEASE REGISTRY (BINDER): A SNAPSHOT OF THE TYPE 1 *DIABETES MELLITUS* (T1DM) SCENARIO IN BRAZIL

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Introduction: BINDER is a multicentre study designed to assess DM treatment and follow-up in Brazil. **Objective:** To describe the proportion of T1DM patients (pts) with HbA1c < 7.0% or within the individual target. **Patients and methods:** This observational study, with cross-sectional and longitudinal phases, collected demographic and clinical data from medical records every 6 months for 2 years. Data from 201 pts with T1DM were assessed in wave 6 of data collection; 104 pts had longitudinal data (waves 1 to 6). **Results:** In wave 6, pts had a mean age of 37.3 ± 13.8 years, and the time since diagnosis was 18.7 ± 12.6 years. The mean number of medical appointments per year was 2.3 ± 2.1, and the mean number of self-monitoring of blood glucose (SMBG) per day was 3.7 ± 1.5. Only 29 pts (17.7%) had an HbA1c < 7.0%, and 37 (27%) pts achieved their individual target. The private sector had more pts achieving the HbA1c target (21.7%) than the public sector (14.3%). The mean HbA1c was 8.7 ± 2%. 48 (28.2%) pts reported hypoglycemia episodes in the previous month (47.1% nocturnal, 16.1% severe) with mean number of events of 1.3 ± 1.8 and 0.4 ± 1.3, respectively. Selected comorbidities were present in 74.6% of pts: 32.7% hypertension, 53.1% dyslipidemia, 32% hypothyroidism and 23.8% obesity/overweight. Diabetic retinopathy was present in 31.1%, neuropathy in 18.4%, and nephropathy in 18.4% of pts. Diabetes treatment was insulin in 99.5% of pts. Only 17.6% of the pts reported having received educational support on insulin therapy, 42.5% used insulin regimen in fixed doses and 20.4% performed self-titration of insulin dose. In addition to insulin, 16.2% of pts were using metformin, and 6.6% an SGLT2 inhibitor. During the 2 years of follow-up the mean HbA1c did not change (0 ± 2%), but there were increased percentages of pts using long-acting insulins (57.7% to 71.7%), fast-acting insulins (52.9% to 78.3%), and an SGLT2 inhibitor (3.8% to 8.7%). Almost half of the pts had changes in treatment. The main reasons for drug discontinuation were lack of efficacy, hypoglycemia risk, pt request and difficulty to titrate the dose. **Conclusion:** Most (~80%) T1DM pts in Brazil did not reach HbA1c targets, despite an adequate number of appointments for DM management and SMBG, increased use of insulin analogs, and treatment modifications. Inadequate/absent education on insulin therapy and impaired treatment adherence could be in part responsible for the poor glycemic control in this group. **Funding:** Sanofi.

E-PO37 BRAZILIAN TYPE 1 & 2 DIABETES DISEASE REGISTRY (BINDER): A SNAPSHOT OF THE TYPE 2 DIABETES (T2DM) SCENARIO IN BRAZIL

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Introduction: BINDER is a Brazilian multicentre study designed to assess the real-life management of diabetes mellitus (DM). **Objective:** This sub-analysis aims to describe the results from T2DM patients. **Patients and methods:** BINDER had cross-sectional and longitudinal phases; 250 public and private sites from 40 Brazilian cities were selected. Data were collected from medical records every 6 months for 2 years for adult patients with type 1 DM and T2DM with at least one medical appointment on the last 6 months. **Results:** 2,829 DM patients were enrolled, with 2,287 eligible patients with T2DM and 1,162 patients followed for up to 24 months as of this analysis. Eligible T2DM patients had a mean (SD) age of 65.1 ± 11.6 years, and time since diagnosis was 20.6 ± 21.9 years. 1,519 (70.4%) of the patients were treated in the private sector and 640 (29.6%) in the public sector. The mean (SD) number of medical appointments per year for DM management was 2.2 ± 1.6, and only 794 patients (49.0%) had a HbA1c below 7.0% at baseline. 58 (2.8%) patients reported hypoglycemia in the previous 6 months. The mean (SD) numbers of hypoglycemia events for patient on the last month of each cross-sectional wave were 1.1 ± 2.2 for nocturnal episodes, 0.3 ± 0.7 for symptomatic events (≤ 54 mg/dL), and 0.1 ± 0.3 for severe episodes. After 2 years of follow-up, the number of medical appointments remained unchanged (2.3 ± 2.5; p = 0.39) and no increase was noticed in the proportion of patients with HbA1c below 7.0% (369 patients [51%]; p = 0.37). The mean (SD) change in HbA1c was -0.2 ± 1.5%, with 111 individuals (19.0%) managing to achieve an HbA1c below 7.0% and 83 individuals not being able to maintain HbA1c below 7.0%. Moreover, 214 individuals (36.6%) did not reach an HbA1c below 7.0% anytime during the study and only 176 patients (30.1%) managed to maintain HbA1c below 7.0% during the 24 months period. There was a significant increase in the proportion of patients with hypoglycemia in the previous 6 months (91 patients [7.8%]; p < 0.01), as well as increased means for nocturnal episodes (3.1 ± 3.0), symptomatic events (2.3 ± 1.6), and severe episodes (1.6 ± 1.1). 280 patients discontinued at least one DM medication, in 77 cases (27.5%) due to lack of efficacy and in 51 (18.2%) due to risk of hypoglycemia. **Conclusion:** Approximately 50% of patients with T2DM in Brazil did not reach HbA1c targets. Hypoglycemia and treatment adherence seem to be challenges to this population. **Funding:** Sanofi.

E-PO38 BRAZILIAN TYPE 1 & 2 DIABETES DISEASE REGISTRY (BINDER): LONGITUDINAL, REAL-WORLD STUDY OF *DIABETES MELLITUS* (DM) CONTROL IN BRAZIL

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Introduction: BINDER is a longitudinal, observational study with a follow-up of 2 years, conducted in Brazil. **Objective:** To determine the proportion of patients (pts) with DM types 1 (DM1) and 2 (DM2) whose HbA1c levels are within the target. **Patients and methods:** Data on six cross-sectional waves were obtained, with information on demographics, comorbidities, DM complications, hypoglycemic episodes, medications used, and treatment interruptions. Each cross-sectional wave collected data from an average of 2,500 DM pts; a total of 1,266 DM pts entered the longitudinal analysis: 104 (8.2%) had DM1 and 1,162 (91.8%) had DM2. **Results:** 52 (52%) of DM1 and 297 (26.8%) of DM2 pts were in public hospitals. At the time of the initial study visit, the mean (SD) age of DM1 pts was 35 (12) years, with a disease duration of 16 (10) years. Treatment for DM2 consisted of a biguanide (77%), sulfonylureas (33%), DPP4 inhibitors (24%), SGLT2-I (13%), GLP-1Ra (2.5%), and insulin (27%). In addition to insulins (NPH [24%], regular [11%], long-acting analogues [58%], fast-acting analogues [53%], and others [12%]) DM1 pts also received a biguanide (20%), SGLT2-I (3%), and GLP-1Ra (<1%). After 2 years, some changes were observed on DM1 pts: 13% were using a biguanide, 9% SGLT2-I, 1% GLP-1Ra, and 1% pioglitazone. The use of NPH and regular insulins decreased to 13% and 8%, respectively, while 72% of insulinized pts were receiving long-acting insulin analogues, and 78% fast-acting insulin analogues. Main reasons for drug withdrawal were, in DM1 (27%) and DM2 (24%) respectively: cost (0 and 16%), lack of efficacy (29 and 27%) and risk of hypoglycemia (18 and 6%). HbA1c at baseline and after 2 years of follow-up was 8.2 (1.6)% and 7.5 (1.6)% for DM1, and 8.4 (1.9)% and 7.2 (1.3)% for DM2 pts, respectively. At baseline, the HbA1c < 7% goal was observed for 12 (28%) of DM1 and 296 (48%) of DM2 pts followed in the private sector and in 10 (25%) of DM1 and 65 (38%) of DM2 treated in the public system. After 2 years, the target of HbA1c < 7% was reached in 9 (25%) of DM1 and 292 (55%) of DM2 pts being followed in the private sector and in 9 (20.5%) of DM1 and 73 (47%) of DM2 treated in the public sector. **Conclusion:** In 2 years of follow-up, improvement was observed in the average HbA1c; but the percentage of pts achieving the target A1C levels of < 7% showed little change in both DM1 or DM2, which indicates there is important therapeutic inertia that needs to be addressed. **Funding:** Sanofi.

E-PO39 CAPTURE: A CROSS-SECTIONAL STUDY OF THE CONTEMPORARY (2019) PREVALENCE OF CARDIOVASCULAR DISEASE IN ADULTS WITH TYPE 2 DIABETES ACROSS 13 COUNTRIES

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Background and aims: There is a paucity of global and country-specific data on the prevalence of cardiovascular disease (CVD) in people with type 2 diabetes (T2D). The primary objective of CAPTURE was to estimate the contemporary (2019) prevalence of established CVD in people with T2D across 13 countries from five continents. Materials and **Methods:** CAPTURE was a multinational, cross-sectional, non-interventional study. Detailed, standardised demographic and clinical data were collected from adults aged ≥18 years with T2D attending a single routine healthcare visit in primary or specialist care between Dec 2018 and Sept 2019. Overall CVD prevalence estimates (across all 13 countries) were weighted to account for the size of the T2D population of each country. Data were analysed descriptively. **Results:** In total, 9,823 adults with T2D (primary care: 4,502; specialist care: 5,321) participated, with the following median (interquartile range, IQR) characteristics: age 64.0 years (56.0-71.0), diabetes duration 10.7 years (5.6-17.9) and HbA1c 7.3% (6.6-8.4) [56 mmol/mol (49-68)]; 45.5% were female. Overall CVD prevalence was 34.8% [32.7; 36.8] 95% CI), with most (85.8%) categorised as atherosclerotic CVD (31.8% [29.7; 33.8] 95% CI) (Table). Overall CHD prevalence was 17.7% [16.2; 19.3] 95% CI, carotid artery disease was 8.4% [7.0; 9.7] 95% CI and cerebrovascular disease was 7.2% [5.9; 8.4] 95% CI. The overall prevalence of heart failure was 2.4% [2.1; 2.7] 95% CI, driven by a relatively low prevalence in China (0.2% [0.0; 0.9] 95% CI). Prevalence estimates were similar across primary and specialist care settings. **Conclusion:** CAPTURE is the first multinational, cross-sectional study to estimate CVD prevalence in adults with T2D using standardised methodology. Our findings demonstrate that, in 2019, approximately one in three adults with T2D attending a primary or specialist healthcare visit had established CVD.

E-PO40 CAPTURE: A CROSS-SECTIONAL STUDY OF THE CONTEMPORARY (2019) PREVALENCE OF CARDIOVASCULAR DISEASE IN ADULTS WITH TYPE 2 DIABETES IN BRAZIL

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Introduction: Data regarding prevalence of cardiovascular disease (CVD) in people with type 2 diabetes (T2D) are scarce. **Aims:** The CAPTURE study (NCT03811288; NCT03786406) estimated the contemporary (2019) prevalence of established CVD in a sample representing the general T2D population across 13 countries from five continents. In this sub-analysis of CAPTURE, we report the findings from Brazil. **Materials and methods:** CAPTURE was a non-interventional, cross-sectional study that took place in 214 research centres, which included primary and specialist care centres across the world, with Brazil being the country with the highest recruitment. Detailed, standardised demographic and clinical data were collected from adults with T2D aged ≥ 18 years, attending a single routine healthcare visit in primary or specialised care between December 2018 and September 2019. Data were analysed descriptively. **Results:** In Brazil, 912 adults with T2D participated. Primary care physicians enrolled 822 individuals while specialists were responsible for the remaining 90 individuals. Median baseline characteristics were as follows: age 64 years, diabetes duration 11 years, body mass index 29.5 kg/m^2, glycated haemoglobin (HbA1c) 7.7%; 59% were female. CVD prevalence was 43.9% [40.9; 46.8] 95% CI, with most (85.8%) categorised as atherosclerotic CVD (37.6% [34.7; 40.5] 95% CI). Coronary heart disease prevalence was 27.9% [25.2; 30.5] 95% CI, heart failure was 12.4% [10.4; 14.4] 95% CI, cerebrovascular disease was 8.7% [6.8; 10.5] 95% CI and carotid artery disease was 3.4% [2.3; 4.5] 95% CI. Except for cerebrovascular disease, all the CVD subtypes were more prevalent among specialist than primary care settings. Overall weighted prevalence estimates of CVD in adults with T2D across 13 countries (N = 9,823) was 34.8% [32.7; 36.8] 95% CI. **Conclusion:** CAPTURE was the first multinational, standardised study to estimate CVD prevalence in adults with T2D, and it demonstrated that in Brazil, approximately one in two adults with T2D had established CVD. The prevalence of CVD in adults with T2D in Brazil was higher than the global prevalence.

E-PO41 CARDIOVASCULAR AND DIABETES RISK IN FAMILIES OF PATIENTS WITH DM

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Introduction: Many patients already have complications of type 2 diabetes mellitus (T2DM) at diagnosis, reflecting years of exposure to asymptomatic hyperglycemia. The identification and tracking of family members in basic health units (BHU) is a strategy that allows the implementation of preventive measures through lifestyle modification, in addition to allowing early diagnosis. **Objectives:** To identify family members of patients with DM treated at a BHU and to assess the risk of developing DM as well as cardiovascular risk (CVR). **Patients and methods:** A descriptive cross-sectional observational study based on the review of medical records of family members of patients with T2DM being followed at a BHU. Estimation of CVR was made using the "ASCVD risk calculator" application. Data are presented as median (p25-p75). **Results:** One hundred and fifty-nine T2DM records were reviewed and resulted in the inclusion of 30 family members in the study, of which 57.7% were women. Median age was 51.5 (44.3-59.5) years. Median body mass index (BMI) was 27.8 (24.4-31.3) kg/m^2. Regarding risk factors for the development of DM, 43.5% were obese, 28.6% were sedentary, 43.5% had hypertension. None had a history of cardiovascular disease, gestational DM or PCOS. The minority of participants (13%) had three risk factors, 21.7% had two, 26.1% only one, and 39.1% had none. Prevalence of smoking habit was 23.8%. Finally, median 10 years CVR was 5% (1.2-10.2). **Conclusion:** Main obstacle in data collection was that many family members seek the BHU with specific demands (sharp piercing accidents, airway infections, ...) which results in incomplete problem-solving history taking and physical examination. A very few routine laboratory exams were available. The main T2DM risk factor was obesity, accompanied by a sedentary lifestyle. It is worth highlighting the presence of modifiable risk factors such as physical inactivity and smoking that can be approached by the BHU multidisciplinary team to reduce both T2DM and cardiovascular risk.

E-PO42 CASE REPORT: DIABETIC HEPATOSCLEROSIS, A RARE HISTOPATHOLOGICAL DIAGNOSIS

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Case presentation: A 39-year-old woman with type 1 diabetes (DM1) diagnosed at 6 years old treated with insulins glargine and lispro, has chronic poor glycemic control, glycemic variability, dysautonomy, proliferative diabetic retinopathy and nephropathy, dyslipidemia, hypertension, hepatic steatosis and hypothyroidism. Since 21 years old, she has intermittent increase in transaminases and hepatomegaly, which accompanied higher elevations in glycated hemoglobin (HbA1c), in addition to an increase of alkaline phosphatase (ALP) and gamma glutamyl transferase (GGT) levels. At 23 years old, she presented aspartate aminotransferase (AST) 1,532 U/L, alanine aminotransferase (ALT) 1,047 U/L, ALP 441 U/L, GGT 1,977 U/L and a palpable liver more than 10 cm from the right costal margin. Laboratorial investigation of causes of liver disease was negative. Liver biopsy revealed absence of fibrosis, but it was not possible to rule out glycogenosis or steatosis. Ten years later, another liver biopsy showed mild fibrosis, ductal proliferation, discreet macrovesicular ballooning and steatosis, intranuclear vacuoles, centrozonal perisinusoidal fibrosis and negative iron test. Thus, the hypothesis of diabetic hepatosclerosis was proposed. At 38 years old, she developed stage V chronic kidney disease and begun hemodialysis, being submitted to simultaneous pancreas-kidney transplant in June 2019. She is currently treated with tacrolimus, mycophenolate mofetil, prednisone and midodrine, and HbA1c, renal function, transaminases, lipids, ALP and liver ultrasound presents within normality. **Discussion:** Diabetic hepatosclerosis is a rare form of liver disease recently described, characterized by perisinusoidal fibrosis and hyaline thickening of hepatic arterioles without steatosis or steatohepatitis, in patients with DM. It is considered a microvascular complication of diabetes that develops in cases of long-standing disease associated with other microvascular complications. The clinical course is usually indolent and laboratory shows, characteristically, increased ALP. Treatment options are similar to other microvascular complications, namely smoking cessation and good glucose, lipids and blood pressure control. **Final considerations:** Diabetic hepatosclerosis should be considered in patients with DM, liver enzyme elevation and the presence of microvascular complications.

E-PO43 CHARACTERIZATION OF HOSPITAL MORBIMORTALITY BY *DIABETES MELLITUS* IN RORAIMA BETWEEN 2015 AND 2019

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Introduction: Diabetes mellitus is considered a serious public health problem due to the increase in its prevalence worldwide. As it is one of the main diseases responsible for people seeking hospital services, it is necessary to understand the epidemiological behavior of its morbidity and mortality. **Objective:** To characterize data about hospital morbidity and mortality of diabetes mellitus in *Sistema Único de Saúde* (the Brazilian Public Health Service) in Roraima from 2015 to 2019. **Methodology:** Descriptive, cross-sectional and retrospective study with a quantitative approach performed by the analysis of secondary data from the hospital information system of the *Sistema Único de Saúde*. Data analysis included the variables present in the system: number of hospitalizations and deaths, period, sex, age group, color/race according to the classification of the Brazilian Institute of Geography and Statistics and mortality rate. **Results:** In the analyzed period, there were 3,085 hospitalizations for diabetes mellitus in Roraima. From 2015 to 2018 there was a progressive decrease in the number of hospitalizations. However, in 2019 there was an increase of 181 hospitalizations compared to the previous year. Despite the increase in absolute numbers, the percentage of the number of hospitalizations for diabetes mellitus when compared to the total number of hospitalizations in the state remained relatively constant between 1.2% and 1.7%. Regarding sociodemographic characteristics, hospitalizations remained higher in males (52.7%). The number of hospitalizations and deaths in all years was high among the elderly (60 years old or more) who represented 66.1%, followed by patients aged 50 to 59 years old. As for the distribution by race/color, brown-skinned people were responsible for 87.6% of deaths from Diabetes Mellitus in the analyzed period. The mortality rate ranged from 5.0% in 2015 to 6.2% in 2019 considering that there were 30 and 47 deaths from diabetes mellitus in 2015 and 2019, respectively. **Conclusion:** These results show that despite the decreasing hospitalizations, 2019 was responsible for the increase in hospitalizations and that deaths increased gradually from 2015 to 2019, despite a slight decline in 2017. In addition, there was a predominance of hospitalizations and deaths in males, in the elderly and self-declared brown-skinned patients. **Keywords:** Diabetes mellitus; hospitalizations; mortality.

E-PO44 CLINICAL PROFILE AND FACTORS ASSOCIATED WITH DIABETIC RETINOPATHY IN PATIENTS FROM A DIABETES CENTER

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Background: Diabetes, one of the oldest diseases known to man, is increasingly prevalent in all countries. Diabetic retinopathy is a highly specific neurovascular complication of chronic hyperglycemia and a relevant cause of vision loss. **Objectives:** To clinically characterize diabetic patients followed up at a reference center and describe the factors associated with diabetic retinopathy. **Patients and methods:** This is a retrospective, observational and cross-sectional study, based on chart review of diabetic patients assisted at a reference center, in the city of Aracaju, Brazil, from October 2017 to April 2018. **Results:** A total of 300 patients participated in the study, 63% of them were female, and mean age was 62.8 ± 9.8 years. The most frequent comorbidities were hypertension and dyslipidemia. In addition, 28.6% used insulin, and adequate glycemic control was observed in only 48.3% of the group. Among patients with retinopathy, most of them were female, median age and BMI were, respectively, 63 years and 29.8 kg/m^2. There was no difference in glycated hemoglobin between the groups, but the retinopathy group had more patients out of treatment targets for diabetes (52.3% vs. 26.3%; p = 0.029). The retinopathy group had higher systolic blood pressure levels and used insulin more frequently, with a higher basal dose. Diabetic neuropathy was more common in the retinopathy group (45% vs. 21.4%; p = 0.025). **Conclusion:** Diabetic patients presented a high frequency of comorbidities, such as hypertension, dyslipidemia, overweight and obesity, which demand greater attention and care. In addition, more intensive control of diabetes is required, since less than half of the participants achieved glycemic targets. Retinopathy must be screened in all type 2 diabetics, but the surveillance of this complication should be even more active in cases with other microvascular complications, insulin use and worse glycemic and blood pressure control.

E-PO45 CLINICAL PROFILE AND FREQUENCY OF DIABETIC FOOT COMPLICATIONS IN PATIENTS FROM A DIABETES CENTER

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Background: Diabetic foot complications consist of lesions in the deep tissues associated with neurological disorders and peripheral vascular disease in the lower limbs and are responsible for a large amount of hospitalizations. **Objective:** To characterize the group of diabetic patients followed up at a reference center and investigate diabetic peripheral neuropathy and foot complications. **Patients and methods:** This is an observational and cross-sectional study, in which diabetic patients from a reference center were interviewed and had their feet examined during the period from January to March 2020. **Results:** A total of 40 patients were evaluated, the median duration of diabetes was 8.5 years, 72.5% are women, 60% brown, 55% came from the countryside and 40% had incomplete elementary education. Regarding lifestyle habits, 30% were physically active, 12.5% currently drank alcohol and only 5% were current smokers. Median BMI and abdominal circumference were 29 kg/m^2 and 98.5 cm, respectively. As to comorbidities, 80% had hypertension, 75% dyslipidemia and 32.5% diabetic nephropathy. Median glycated hemoglobin, fast blood glucose and LDL-c were 7.9%, 132 mg/dL and 97.5 mg/dL, respectively. Glycated hemoglobin was above 7% in 45% of diabetics. Through feet exams in these diabetic patients, we found 27.5% of peripheral neuropathy, 47.5% of occlusive peripheral arterial disease and 20% of reduced protective threshold. The most common alterations in the limbs were dry/scaly feet in 92.5% and hyperkeratosis/cracks in 60% of patients. Bunions were the most frequent deformity, affecting 15% of diabetics. The history of prior foot wounds was present in 12.5% of patients. None of the subjects had amputations. **Conclusion:** Even though diabetic peripheral neuropathy may be a silent threat at first, diabetic foot complications are potentially catastrophic. We observed that skin alterations were frequent, over a quarter of patients had neuropathy and almost half had vasculopathy in a group of subjects with less than ten years of diabetes diagnosis. Therefore, we emphasize the need for feet exam in clinical practice and patient education for preventing diabetic foot ulcerations.

E-PO46 CLINICAL PROFILE OF TYPE 1 DIABETES PATIENTS FOLLOWED IN A DIABETES REFERENCE UNIT: EVALUATION AFTER 15 YEARS OF PIONEER DISPENSATION OF INSULIN ANALOGUES IN THE UNIFIED HEALTH SYSTEM (SUS)

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Introduction: The Brazilian Federal District (DF) instituted a pioneer protocol for the insulin analogues use in the Unified Health System (SUS) fifteen years ago. Less glycemic variability (GV) and hypoglycemia besides better quality of life (QoL) are the main benefits. **Objectives:** To audit a diabetes reference unit in the SUS-DF by analyzing the clinical profile and glucose control among type 1 diabetes patients (T1DM) using insulin analogues. **Methods:** Longitudinal, observational study, for a T1DM database (T1DM-DB). Demographic data included: sex, disease duration, age, insulin therapy (NPH and extended action analogue [EAA], regular and fast acting analogue [FAA]), glycated hemoglobin (HbA1c), thyroid and celiac diseases, chronic complications (retinopathy [DR], eye fundus; neuropathy [DN], feet exam; kidney disease [DKD], albuminuria > 30 mg/g). From 04/2020 to 09/2020 the T1DM-DB registered 503 patients: 59 were excluded due to incomplete data; thyroid and celiac diseases and DN findings (due to inconsistency) were not included for analysis. There were no hypoglycemia, GV or QoL records. Statistical analysis accessed by the SPSS version 25. **Results:** The final sample comprised 444 patients, 50.9% female, age 33 ± 11.87 (17-72) years, T1DM duration 16.99 ± 8.84 (2-45) years, HbA1c 8.6% ± 1.81 (5.4-15.8). There were 31.5% with DR and 22.3% with DKD. Regarding blood glucose control, two groups were formed: NPH therapy (163) and EAA (281). The EAA showed lower HbA1c than the NPH group (8.1 vs. 9.5%, $p < 0.05$). T1DM duration had no difference (NPH 15.35 vs. EAA 17.76, $p = 0.223$) but the NPH group had more DKD (25.15%) vs. EAA (20.64%) ($p < 0.05$), while no differences were found for DR (30.06% vs. 32.38%, $p = 0.304$). **Conclusion:** The present audit found T1DM-DB needs to review and standardize data input regarding DN; add hypoglycemia, GV and QoL registers which are crucial to evaluate and justify the main benefits of insulin analogues in the SUS. Moreover, apart these limitations, the EAA group showed much better glucose control and less chronic complications. Sadly, the HbA1c results still denote that T1DM patients are far above the ideal < 7.0% target in the Brazilian SUS. Efforts must be done to circumvent this negative scenario.

E-PO47 CLINICAL-EPIDEMIOLOGICAL ASPECTS OF PATIENTS WITH TYPE 2 *DIABETES MELLITUS* AT A REFERENCE CENTER IN SALVADOR

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Introduction: Diabetes mellitus is a worldwide public health problem of multifactorial and most often preventable causes, especially type 2, related to insulin resistance and obesity. Besides that, it has a negative impact on the patient's quality of life and create a burden for the Unified Health System (SUS). Thus, the study will assess the clinical-epidemiological profile of patients in the city of Salvador, which may lead to an earlier and more targeted intervention for this population, reducing the risk of complications. **Objective:** To describe the clinical-epidemiological characteristics of patients with type 2 diabetes mellitus at a referral center in Salvador. **Methods:** This is a descriptive and cross-sectional study, in which 84 individuals of a non-probabilistic sample, of both sexes, aged between 40 and 70 years were interviewed. Application of a Clinical-Demographic Assessment Form where anthropometric and vital data were checked, skin and diabetic foot inspection, after presentation of the Informed Consent Form for science and signature. **Results:** The mean age was 61.8 ± 5.2 years with a predominance of females (64.3%), and self-declared skin color black/brown (96.4%). As for education, (50%) studied up to primary school and 4.8% reached higher education. The monthly income of 52.4% of respondents is up to one minimum wage. The following comorbidities were found: overweight (32.1%)/obesity (57.2%), arterial hypertension (98.8%), dyslipidemia 91.6%, and 53.6% of the individuals presented between 6 and 15 years of illness. Of the interviewees, 45.2% are ex-smokers and 38.1% eventually use alcohol. 52.4% of the patients report doing physical and 51.2% already had access to some type of food planning organized by a nutritionist. **Conclusion:** DM2 is a public health problem subject to interventions and linked to demographic, socioeconomic and other conditions. In the study, a higher prevalence of the disease was identified in elderly, black/brown, low-income, obese and hypertensive women. The biological and socio-racial disparities in the country, unfortunately, still often define access to services and health care. These results point to the need of interventions, especially in Primary Care to minimize the incidence of the disease and to delay its complications. The search for a healthier lifestyle and psychosocial support for individuals should be encouraged by health professionals to improve the morbidity and mortality caused by diabetes.

E-PO48 COMPARATIVE STUDY OF DIABETES TREATMENT ADHERENCE BEFORE AND DURING THE COVID-19 PANDEMIC

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Introduction: Diabetes is a multisystem disease whose control involves specific diet, physical activity and correct medication. COVID-19 imposes limitations on the population's day life. Thus, comparing self-care habits of this population before and during the pandemic makes it possible to quantify the impact of social isolation on the self-management of the disease, as well as producing updated epidemiological screening of health practices in diabetics. **Objective:** Measure diabetic self-care during the COVID-19 pandemic comparing it to the moment before the social isolation. **Patients and methods:** This study was approved by the Institutional Research Ethics Committee of Mackenzie Evangelical School of Medicine (Brazil; protocol number 33695120.7.0000.0103), carried out between June and August 2020 by Google Forms and shared randomly on social networks. 130 diabetic people over 18 years old were interviewed and agreed with Free and Informed Consent Form. Each habit mentioned in the validated "Diabetes Self-Care Activity Questionnaire" was evaluated in 2 different moments (current and pre-pandemic). In total, 40 questions were asked: 6 of personal information and others on: diet, physical activity, medication blood glucose monitoring, foot care and smoking. Diabetics responded according to the days of the week (0 to 7) with zero being the situation with the least adherence and seven being the most favorable. It was considered the proportion of smokers, the average number of cigarettes consumed and the last time they smoked. **Results:** Most of the sample responded that there was no decrease in glycaemic control (74.6%), foot care (81.5%) and use of antidiabetic medication (84.6%) throughout the isolation period. However, the frequency of feet examination in patients with type 1 diabetics has increased significantly. Furthermore, 32.3% claimed that the eating habits are getting worse concomitant with an increase in the consumption of sweets in those who were diagnosed with diabetes less than 10 years ago. The main change was related to physical activity, with $p = 0.008$ and $p = 0.012$ among type 1 and 2 diabetics, respectively. Smoking was not affected by the pandemic. **Conclusion:** The COVID-19 pandemic affected diabetes control habits, especially physical activity. Tracing the epidemiological profile and recognizing these changes in diabetical self-management during social distancing helps to approach these patients as a form of prevention in primary care.

E-PO49 CONTEMPORARY USE OF DIABETES MEDICATIONS WITH A CARDIOVASCULAR INDICATION IN ADULTS WITH T2D: A SECONDARY ANALYSIS OF THE MULTINATIONAL CAPTURE STUDY

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Background and aims: Recent diabetes and cardiology guidelines recommend blood glucose (BG)-lowering medications with proven cardiovascular (CV) benefit in people with type 2 diabetes (T2D) and established CV disease (CVD) or at high/very high CV risk. CAPTURE was a cross-sectional, observational study of CVD prevalence in adults with T2D across 13 countries in 2019. This pre-specified secondary analysis assessed the proportion of adults with T2D and CVD using a BG-lowering medication with an approved CV indication. **Materials and methods:** Detailed demographic and clinical data were collected for adults with T2D at a single, routine health visit to primary or specialist care (Dec 2018 – Sept 2019). In this analysis, participants were grouped by CVD status (no CVD, any CVD, atherosclerotic CVD [ASCVD]). BG-lowering medication use was summarised descriptively by approved CV indication status per the current (2020) FDA label and in line with ADA/EASD guidelines, as a glucagon-like peptide-1 receptor agonist (GLP-1 RA: dulaglutide, liraglutide, semaglutide) or sodium-glucose cotransporter-2 inhibitor (SGLT2i: canagliflozin, dapagliflozin, empagliflozin). **Results:** In CAPTURE, 96.6% (n = 9,492/9,823) of participants received ≥1 BG-lowering medication: 75.6% used a biguanide, 29.2% a dipeptidyl-peptidase-4 inhibitor, 21.6% a sulphonylurea, 16.0% a SGLT2i, 10.1% a GLP-1 RA and 37.7% an insulin. 21.9% of participants were prescribed a BG-lowering medication with an approved CV indication (Figure), and this was similar irrespective of CVD status: 22.2% (n = 1,383/6,241), 21.5% (n = 771/3,582) and 21.4% (n = 659/3,074) in those with no CVD, any CVD and ASCVD, respectively. SGLT2is were more frequently used than GLP-1 RAs regardless of CVD status. **Conclusion:** In CAPTURE, fewer than 1 in 4 adults with T2D received a BG-lowering medication with an approved CV indication in 2019, irrespective of CVD status. Future implementation of recent guideline updates may help improve the discrepancy with current recommendations.

E-PO50 CONTRACEPTION AND FAMILY PLANNING IN WOMEN WITH TYPE 1 DIABETES MELLITUS

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Background: Type 1 diabetes mellitus (DM1) woman needs guidance on adequate family planning, since an unplanned pregnancy, increases risk of adverse pregnancy outcomes. Patients with diabetic complications, may need specialist advice to assess the risk-benefit equation, particularly in respect of hormonal contraception and in situations where additional risk factors such as age over 35 years, disease duration over 20 years, smoke, hypertension or obesity are present. **Objective:** Investigate the knowledge and practices of contraception and family planning of patients with type 1 diabetes mellitus of childbearing age. **Methods:** This is a cross-sectional, descriptive study, conducted by interviews using a structured questionnaire in women with DM1 of childbearing age attending a reference service at the public health care system. The study was approved by IPADE ethic board, approval number 3.372.559. For statistical analysis, the software SPSS, Inc was used. **Results:** The study evaluated 100 DM1 patients, with mean age of 28.1years, 63% had a stable relationship and a mean disease duration of 11.2 years. Diabetes complications was present in 38% and 10% had hypertension. In regard to the known risk factors related to combined hormonal contraception use in this population, 56% of them had at least one additional risk factor. In the study group, 73% had already used a contraceptive method and 28% were instructed by non-medical sources. Hormonal contraceptives were the method more frequently used (60%), followed by the condom (33%). Among patients who had previous pregnancy (n: 48), 52% planned the pregnancy, with only 35.8% seeking glycemic control prior to pregnancy. Glycemic control at the early pregnancy was adequate by 48% of patients. The absence of specific knowledge about the importance of prior glycemic control in pregnancy outcomes was an important factor (p: 0.02), leading to 5 times greater risk of unplanned pregnancies. We did not observe, however, significant differences regarding education (p: 0.52), family income (p: 0.45) or marital status (p: 0.08).**Conclusion:** Similar to general population, in a group of DM1 women of childbearing age, the hormonal contraceptives were the method of choice, independently of patient's individual risk. Unfortunately, we notice a less than expected use of condom, and we still have patients whom do not receive family planning education from the health care team. This might reflect on the large number of unplanned pregnancies.

E-PO51 DETECTING FRAILTY IN ELDERLY PATIENTS WITH TYPE 2 *DIABETES MELLITUS* TREATED IN A TERTIARY CARE OUTPATIENT CLINIC

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Introduction: The World Health Organization predicts that, in 2030, Brazil will count with approximately 11.3 million of diabetics, and approximately 33% of them will be between 60-79 years. Elderly people with type 2 diabetes mellitus (T2DM) tend to have higher rates of premature death, functional disability, and comorbidities such as hypertension, coronary artery disease and stroke, compared to those at the same age but without diabetes. In addition, diabetes potentialize geriatric syndromes, such as frailty, a state of vulnerability and a consequence of cumulative decline in multiple physiological systems over lifespan. **Objective:** To identify frailty in elderly patients with T2DM treated in a tertiary care outpatient clinic in southeast of Brazil and to estimate the cognition of these individuals. **Materials and methods:** This was an analytical cross-sectional study. The patients were classified according to the five Fried frailty phenotype criteria: (1) unintentional weight loss ≥ 4.5 kg or 5% of body weight in the previous year; (2) exhaustion assessed by self-reported fatigue, indicated by two questions on the Center for Epidemiological Studies Depression Scale (CES-D); (3) weakness measured with a dynamometer in the dominant hand and adjusted according to gender and body mass index (BMI); (4) low level of physical activity measured by weekly energy expenditure in kilocalories (based on self-reported activities and physical exercises); (5) slowness, according to the time spent walking 4.6 meters. In addition, we also evaluated fasting blood glucose, HbA1c, BMI, calf and abdominal circumference. **Results:** 40 elderly patients (31 women and 9 men), with a mean age of 69.8 years were evaluated. The mean fasting blood glucose levels was 191 ± 89 mg/dL, and HbA1c > 7% was present in 82.5% of the group. BMI > 25 kg/m^2 was observed in 77,5% (n = 31). All male patients have a normal calf circumference (>34 cm) and 25/31 female patients (80,6%) have a normal calf circumference (>33 cm). High abdominal circumference (>80 cm in women and >94 cm in men) was present in 100% of the women and 88,9% of the men. Frailty, according to the five Fried frailty phenotype criteria was observed in 37,5% (n = 15). **Conclusion:** Early detection of frailty is very important and allows the opportunity to consider targeted interventions, that will reduce functional decline and the risk of disability.

E-PO52 DIABETIC MONONEUROPATHY: HOW THE EARLY DIAGNOSIS AND THE FAST INTENSIVE TREATMENT ARE ABLE TO LEAD TO A COMPLETE RESOLUTION OF A SEVERE CASE

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Case report: We describe here a case report of a 43 years old, female patient, with type II diabetes mellitus diagnosed during pregnancy when she was 25 years old. She also has high blood pressure and grade II obesity. She has had irregular monitoring of the diseases and went to doctor's appointment presenting a sudden headache associated to an exclusive palsy of the oculomotor nerve, evolving ptosis, right eye paralysis and mydriasis. The neuro-ophthalmic exam revealed ptosis; supraduction, adduction and infra adduction paresis and right pupil mydriasis. The patient has done computerized tomography of the brain, that excluded images of either mass effect nor brain stroke. Moreover, the computerized angiotomography of the brain didn't present any abnormality. Laboratory evaluation showed a hemoglobin A1c of 10.2%. So, we reached the final diagnosis of diabetic oculomotor mononeuropathy with the involvement of pupil-motor fibers. Thus, the therapy was optimized with the introduction of a 10 UI of NPH insulin bed time, 2g a day of metformin, 120 mg a day of gliclazide and 25 mg/5 mg a day of empagliflozin + linagliptin. In two months, the hemoglobin A1c went to 7.4%. **Discussion and final reports:** There is a straight link between hyperglycemia and organ damages in patients with diabetes since the time of high glycemic values exposure can be a predictor of the extension of complications in those patients. The oculomotor mononeuropathy is an important complication that must be differentiated from other diseases such as infectious, neoplasic, iatrogenic, traumatic and vascular etiologies. During the clinical evaluation of this patient, those causes were excluded. The prognosis of this situation might be favorable with a complete resolution of symptoms in about five months if the patient is properly treated soon. Besides of the high chances of a bad prognosis in this presented case due to a bad adherence and a very bad uncontrolled diabetes, the patient had a complete resolution of the symptoms. We have noticed that this good response was possible just because of the introduction of multiple drugs that lead to a fast and effective control of the glycemia. So even in severe cases with bad prognosis if there is an intense and promptly treatment it is possible to achieve the target control of the glycemia and the complete resolution of the complications.

E-PO53 DUAL VIII: SIGNIFICANTLY LONGER TIME TO TREATMENT INTENSIFICATION WITH INSULIN DEGLUDEC/LIRAGLUTIDE (IDEGLIRA) VS. INSULIN GLARGINE IN A 104-WEEK RANDOMIZED TRIAL MIRRORING CLINICAL PRACTICE

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Background: To date, few trials have studied durability of treatment choices, and none have investigated time to need for treatment intensification with basal insulin therapy versus a basal insulin/glucagon-like peptide-1 receptor agonist (GLP-1RA) fixed-ratio combination. **Objectives and methods:** DUAL VIII is a 104 week, phase 3b, randomized controlled trial powered to study the durability of treatment effect of IDegLira (fixed-ratio combination of insulin degludec and liraglutide) vs. insulin glargine 100 units/mL (IGlar U100) in insulin-naïve patients with type 2 diabetes (T2D) inadequately controlled on oral antidiabetic drugs (OADs). Patients (pts) (n = 1,012) with T2D (A1C 7%-11%) on OADs were randomized 1:1 to open label IDegLira or IGlar U100 in a 104 week trial to assess treatment durability. The primary endpoint was time from randomization to treatment intensification (A1C ≥7.0% at 2 consecutive visits including week 26); pts who met the primary endpoint discontinued study drug. Baseline characteristics were similar. **Results:** Over 104 weeks, fewer pts with IDegLira required intensification vs. IGlar U100 (37.4% vs. 66.2%). Pts treated with IDegLira had a significantly longer time to intensification (median: >2 years/~1 year for IDegLira/IGlar U100. There was greater effect with IDegLira vs. IGlar U100 after 104 weeks, had intensification not been needed, in terms of: pts achieving A1C < 7% (55.7 vs. 28.5%), and A1C < 7% with no weight gain (20.9 vs. 6.3%), lower estimated mean insulin dose (36 vs. 51 U; estimated treatment difference -14.9 U), and 56% lower rate of severe or blood glucose confirmed symptomatic hypoglycemia (0.38 vs. 0.86 events/patient-year of exposure, ($p < 0.0001$ for all). Safety results were similar. Improved long-term glycemic control, evidenced by significantly longer time to treatment intensification, was achieved with IDegLira vs. IGlar U100 in pts previously uncontrolled on OADs. **Conclusion:** In patients with T2D previously uncontrolled on OADs, longer durability of the treatment effect was observed with IDegLira vs. IGlar U100, with median time to treatment intensification of > 2 years with IDegLira, compared with approximately 1 year with IGlar U100. DUAL VIII demonstrates the potential benefits of a fixed ratio combination therapy, such as IDegLira, as a first injectable rather than insulin alone for patients with T2D inadequately controlled on OADs.

E-PO54 DULAGLUTIDE HAS HIGHER ADHERENCE AND PERSISTENCE THAN SEMAGLUTIDE AND EXENATIDE QW: 6-MONTH FOLLOW-UP FROM US REAL-WORLD DATA

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Introduction and objective: The objective of this retrospective real-world observational study was to compare 6-month adherence and persistence among patients initiating weekly GLP-1 receptor agonists (GLP-1RA), dulaglutide (DU) vs. semaglutide (SEMA) or DU vs exenatide QW (EQW) BCise pen in the US, using claims from the HealthCore Integrated Research Database (HIRD®) between August 2017 and June 2019 (index date = earliest GLP-1RA fill date). **Patients and methods:** Patients ≥18 years old, with T2D, no claim for GLP-1 RAs in the 6 months pre-index period, ≥1 claim for DU, SEMA or EQW during the index period, and continuous enrollment 6 months pre- and post-index were included. DU users were propensity-matched 1:1 to SEMA (3,852 pairs) or EQW (1,879 pairs) users. Matched cohorts (DU:SEMA/DU:EQW) were balanced in baseline characteristics and the mean age was 54/55 years with approximately 49%/51% males, respectively. **Results:** At 6 months, DU users were more likely to be adherent [Proportion of Days Covered ≥80%] than SEMA (odds ratio = 1.986, 95% CI = [1.81, 2.18]) or EQW users (2.06 [1.81, 2.34]). The proportion of adherent patients were significantly higher in the matched DU (59.7%) versus SEMA (42.7%, $p < 0.001$) cohorts and the matched DU (58.1%) versus EQW (40.3%, $p < 0.001$) cohorts. Cox regression showed that DU users were less likely to discontinue therapy than SEMA (hazard ratio = 0.71, 95% CI = [0.66, 0.76]) or EQW users (0.59 [0.53, 0.65]). There was a significant difference between patients who discontinued therapy in DU (26.7%) versus SEMA (34.0%, $p < 0.001$) cohorts and the DU (27.7%) versus EQW (45.4%, $p < 0.001$) cohorts. **Conclusion:** At 6-mos follow-up, pts initiating DU had higher medication adherence, and were more persistent to their treatment, compared to pts initiating either SEMA or EQW.

E-PO55 EFFECT OF HIGH-DOSE VITAMIN D SUPPLEMENTATION ON CARDIOVASCULAR AUTONOMIC NEUROPATHY IN PATIENTS WITH *DIABETES MELLITUS* TYPE 1

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Introduction: Cardiovascular autonomic neuropathy (CAN) is associated with diabetes mellitus (DM), increasing morbidity and mortality. Some cross-sectional studies associated CAN with low 25(OH)D levels. **Objective:** The aim of our study was to evaluate the effect of high-dose vitamin D (VD) supplementation on CAN in Type 1 DM (T1DM) patients. **Methods:** We performed a prospective study with 23 patients diagnosed with T1DM and CAN. Subjects with VD levels < 30 ng/mL received 10,000 IU/day; the ones with VD levels between 30-60 ng/mL were given 4,000 IU/day for 12 weeks. **Results:** There was an improvement in CAN parameters related to resting heart rate (HR) variability, such as time domain parameters [LF (1.9 ± 0.5 vs. 2.5 ± 0.9 sec, p = <0.001), TP (2.5 ± 0.4 vs. 2.8 ± 0.6 sec, $p < 0.05$)] and frequency domain parameters [RRmax (0.77 ± 0.11 vs. 0.94 ± 0.51 sec, $p < 0.05$), RRNN (0.71 ± 0.10 vs. 0.76 ± 0.09 sec, $p < 0.05$) and SDNN (0.016 ± 0.007 vs. 0.03 ± 0.02 sec; $p < 0.01$)]. In addition, there was a correlation between absolute VD level variation and posttreatment HF (%), as well as among percent variation in VD level and end-of-study LF/HF ratio ($r = 0.6$, $p < 0.05$; $r = -0.5$, $p < 0.05$, respectively). **Conclusion:** Our pilot study is the first to suggest a strong association between high-dose vitamin D supplementation and improved cardiovascular autonomic neuropathy in T1DM patients. It occurred without any variation in HbA1C, blood pressure levels, lipids and insulin dose.

E-PO56 EFFICACY AND SAFETY OF DULAGLUTIDE 3 MG AND 4.5 MG VS DULAGLUTIDE 1.5 MG: 52-WEEK RESULTS FROM AWARD-11

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Introduction: Dulaglutide (DU) is approved at 0.75 and 1.5 mg doses for treatment of T2D. **Objective:** This phase 3 study, compared once-weekly DU 3 mg and 4.5 mg to DU 1.5 mg for efficacy and safety through 52 weeks (primary endpoint at 36 weeks) in patients with inadequately controlled T2D on metformin therapy. **Patients and methods:** Patients were randomized (1:1:1) to DU 1.5 mg (n = 612), DU 3 mg (n = 616), and DU 4.5 mg (n = 614). All patients were initiated on DU 0.75 mg for 4 weeks, followed by stepwise dose escalation every 4 weeks to the randomized dose of 1.5 mg, 3 mg, or 4.5 mg. Efficacy measures were analyzed based on data on-treatment without initiation of rescue medication. **Results:** At baseline, mean age was 57.1 years, mean A1C was 8.6%, and mean body weight (BW) was 95.7 kg. DU 1.5 mg, 3 mg and 4.5 mg showed significance ($p < 0.001$) compared to BL for A1C, BW and fasting serum glucose. At 36 weeks, the A1C change for DU 1.5 mg, 3 mg and 4.5 mg was -1.53, -1.71 ($p < 0.05$) and -1.87 ($p < 0.001$), respectively. The BW change was -3.1, -4.0 ($p < 0.05$) and -4.7 kg ($p < 0.001$) and the FSG change was -44.2, -47.9 and -52.3 ($p < 0.001$). At 52 weeks A1C change for DU 1.5 mg, 3 mg and 4.5 mg was -1.52, -1.71 ($p < 0.05$) and -1.83 ($p < 0.001$), respectively. The BW change was -3.5, -4.3 ($p < 0.05$) and -5.0 kg ($p < 0.001$) and the FSG change was -43.1, -48.7 ($p < 0.05$) and -52.7 ($p < 0.001$). As expected for the GLP-1 receptor agonist class, commonly reported adverse events were nausea, diarrhea, and vomiting. There were no new safety findings with the higher DU doses. **Conclusion:** Escalation from DU 1.5 mg to DU 3 mg or 4.5 mg provided clinically relevant, dose-related improvements in glycemic control and body weight with an acceptable safety profile.

E-PO57 EFFICACY AND SAFETY OF LIRAGLUTIDE 3.0 MG AS AN ADJUNCT TO DIET AND EXERCISE IN INDIVIDUALS WITH OVERWEIGHT OR OBESITY, AND BASAL-INSULIN-TREATED TYPE 2 DIABETES (T2D): THE SCALE INSULIN TRIAL

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Introduction: In the SCALE Diabetes trial, liraglutide resulted in clinically significant weight loss (WL) and glycaemic benefits, with an acceptable safety profile. However, individuals treated with insulin, were excluded. **Objective:** Measures of body weight and safety data from the trial of SCALE Insulin trial. **Materials e methods:** SCALE Insulin was a 56-week, randomised, double blind, placebo-controlled, multicentre trial in 396 individuals with type 2 diabetes and overweight or obesity. Individuals were randomised 1:1 to liraglutide 3.0 mg or placebo, both as adjunct to intensive behaviour therapy. Primary endpoints were mean change in body weight (%) and proportion with WL ≥5% at week 56. All individuals were on stable treatment with basal insulin and up to 2 OADs. The trial was designed to target similar glycaemic control in the two arms by weekly adjustments of insulin dose. **Results:** In total, 396 individuals were randomised (1:1) to liraglutide 3.0 mg or placebo, of which 195 and 197 were exposed, respectively. Baseline demographics were similar between both treatment groups. Mean estimated change in weight at 56 weeks was –5.8% and –1.5% with liraglutide 3.0 mg and placebo, respectively, corresponding to an estimated treatment difference (ETD) of –4.3% (95% confidence interval [CI]: –5.5; –3.2, $p < 0.0001$).The proportion of individuals achieving WL ≥5% was 51.8% with liraglutide 3.0 mg versus 24.0% with placebo (odds ratio [OR] 3.4, $p < 0.0001$). Values for >10% WL were 22.8% and 6.6% (OR 4.2, $p < 0.0001$), respectively. Mean estimated change in HbA1c at 56 weeks was –1.1% and –0.6% with liraglutide 3.0 mg and placebo, respectively (ETD: –0.5, 95% CI: –0.8; –0.3, $p < 0.0001$). Treatment with liraglutide 3.0 mg resulted in a smaller increase in mean insulin dose requirement at 56 weeks versus placebo; +2.8U and +17.8U, respectively, from a baseline mean in both groups of 38U. This represented a relative difference of 15U ($p < 0.0001$). Total number of hypoglycaemic events (on-drug) occurred at the respective rates of 742 and 938 events per 100 patient-years of exposure with liraglutide and placebo, with three and two severe events, respectively. Adverse event incidence was similar for liraglutide 3.0 mg and placebo, except for gastrointestinal events (liraglutide 3.0 mg, 62.1%; placebo, 46.7%). **Conclusion:** Liraglutide 3.0 mg is effective for weight management, with an acceptable safety profile, in individuals with overweight/obesity and insulin-treated T2D.

E-PO58 EFFICACY AND SAFETY OF SEMAGLUTIDE IN ELDERLY SUBJECTS WITH TYPE 2 DIABETES: A POST HOC ANALYSIS OF THE SUSTAIN 7 TRIAL

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Background: The SUSTAIN 7 trial investigated efficacy and safety of semaglutida vs. dulaglutide in subjects with type 2 diabetes (T2D). The aim of this post hoc analysis was to compare the efficacy and safety of semaglutide and dulaglutide in elderly (≥65 years old) vs non-elderly (<65 years old) in the SUSTAIN 7 trial. **Materials and methods:** Subjects with T2D were randomised to once-weekly subcutaneous semaglutide or dulaglutide for 40 weeks. As pre-specified in SUSTAIN 7, semaglutide 0.5 mg was compared with dulaglutide 0.75 mg; semaglutide 1.0 mg with dulaglutide 1.5 mg. For this analysis, subjects were stratified by age (≥65 and <65 years old). Post-baseline data were analysed using a mixed model for repeated measurements. **Results:** This analysis comprised 1,199 subjects (260 elderly and 939 non-elderly; mean ages 69.3 and 51.9 years, respectively). Mean baseline HbA1c and body weight were lower in elderly vs non-elderly subjects. Across treatment arms, reductions from baseline were similar between elderly and non-elderly subjects for HbA1c (interaction p-value: $p > 0.05$) and body weight (interaction p-value: $p > 0.05$). Reductions in HbA1c and body weight were greater with semaglutide vs dulaglutide in all subgroups. The proportions of subjects achieving HbA1c < 7.0% and ≥6.5% were higher in elderly than non-elderly subjects across all treatment arms, and were higher with semaglutide vs dulaglutide across subgroups. This is consistent with lower baseline HbA1c in elderly vs. non-elderly subjects and similar reductions in HbA1c between age groups. More elderly than non-elderly subjects reported adverse events (AEs) with semaglutide 1.0 mg and dulaglutide 1.5 mg. More elderly than non-elderly subjects reported serious AEs across all treatment arms except semaglutide 1.0 mg. Most AEs were mild to moderate in severity. A higher proportion of elderly than non-elderly subjects discontinued semaglutide 1.0 mg due to AEs. The proportion of subjects discontinuing treatment due to AEs in other treatment arms was similar between elderly and non-elderly subjects. **Conclusion:** In the SUSTAIN 7 trial, reductions in HbA1c and body weight were comparable in both elderly and non-elderly subjects and were greater with semaglutide vs dulaglutide across most subgroup comparisons. These improvements in glycaemic control in elderly subjects were not associated with a higher incidence of hypoglycaemia. The overall safety profile for semaglutide was in line with the SUSTAIN 1-5 trials.

E-PO59 EFFICACY OF ORAL SEMAGLUTIDE ACCORDING TO BASELINE HBA1C: AN EXPLORATORY SUBGROUP ANALYSIS OF THE PIONEER TRIAL PROGRAMME

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Background and aims: This exploratory subgroup analysis of the PIONEER programme evaluated the effect of baseline HbA1c on overall HbA1c and bodyweight reductions achieved during each trial. **Methods:** Data from patients who participated in PIONEER 1-5, 7 and 8 (n = 5,657) were grouped by trial and according to baseline HbA1c (£8.0%, >8.0-£9.0% and >9.0%). In the PIONEER trials, patients received either once daily treatment with oral semaglutide (3, 7 or 14 mg, or flexibly dosed) or a comparator (placebo, empagliflozin 25 mg, sitagliptin 100 mg or liraglutide 1.8 mg). Endpoints were change from baseline in HbA1c and bodyweight at week 26 (week 52 in PIONEER 7). **Results:** Reductions from baseline in HbA1c and bodyweight were greater with increasing oral semaglutide dose. HbA1c reductions were also greater with higher baseline HbA1c, but there was no consistent relationship between change in bodyweight and baseline HbA1c. Reductions in HbA1c were greater with oral semaglutide 7 mg and 14 mg versus placebo and versus active comparator in all subgroups (Table). Significant interactions by baseline HbA1c were observed for oral semaglutide vs comparator in PIONEER 3 (14 mg), PIONEER 4 (14 mg vs. placebo), and PIONEER 8 (7 and 14 mg). **Conclusions:** Oral semaglutide showed improved glycaemic control across baseline HbA1c subgroups in the PIONEER trials, with greater reductions in HbA1c with oral semaglutide 7 and 14 mg versus all comparators in all subgroups. Reductions in HbA1c were greater with higher oral semaglutide dose and higher baseline HbA1c.

E-PO60 EFFICACY OF ORAL SEMAGLUTIDE ACCORDING TO DIABETES DURATION: AN EXPLORATORY SUBGROUP ANALYSIS OF THE PIONEER TRIAL PROGRAM

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Introduction: Oral semaglutide is the first oral glucagon-like peptide-1 receptor agonist for the treatment of type 2 diabetes. **Objective:** To assess the efficacy of once daily oral semaglutide versus comparators by duration of diabetes. **Patients and methods:** An exploratory analysis of data from the global Phase 3a PIONEER clinical trial program was conducted, and included data from all patients who participated in the PIONEER 1-5, 7 and 8 trials (N = 5,657). Patients were grouped according to diabetes duration at baseline (<5, 5-<10 and 0020≥10 years) and by trial. In the PIONEER trials, patients were randomized to treatment with oral semaglutide (3, 7, or 14 mg) or comparator (placebo, empagliflozin, sitagliptin, or liraglutide). Endpoints were change from baseline in HbA1c (%) and body weight (kg) at week 26 (week 52 in PIONEER 7). Data were analyzed for all randomized patients using the trial product estimand. **Results:** Mean duration of diabetes at baseline ranged from 3.5 (PIONEER 1) to 15.0 years (PIONEER 8) across the trials. At baseline, the mean HbA1c (%) was similar across diabetes duration subgroups within each trial, whereas mean body weight was higher and age was lower in the subgroup with diabetes duration < 5 years. Reductions in HbA1c were generally greater with increasing oral semaglutide dose, but were not affected by diabetes duration. Across PIONEER trials, mean HbA1c reductions with oral semaglutide 14 mg ranged from –1.3% to –1.6%, –1.3% to –1.6%, and –1.0% to –1.4% in patients with diabetes duration of <5 years, 5–<10 years, and ≥10 years, respectively. Mean HbA1c changes from baseline ranged from 0.6 to –0.5% with placebo, –0.7% to –0.9% with empagliflozin, –1.0% to –1.2% with liraglutide, and –0.5% to –0.9% with sitagliptin, with no notable effect of diabetes duration. Estimated treatment differences in HbA1c (%) at week 26 (week 52 in PIONEER 7) were consistent across the range of diabetes durations. In general, there were no statistically significant interactions between treatment and diabetes duration. The estimated odds of achieving HbA1c < 7.0% were greater with oral semaglutide 7 and 14 mg versus comparators in all groups, irrespective of diabetes duration. **Conclusion:** Across the PIONEER trials, oral semaglutide improved glycemic control versus comparators, with an effect that was consistent across subgroups of diabetes duration. These findings support the use of oral semaglutide across a broad population of patients with type 2 diabetes.

E-PO61 EFFICACY OF SEMAGLUTIDE BY BACKGROUND SODIUM-GLUCOSE CO-TRANSPORTER-2 INHIBITOR: A POST HOC ANALYSIS OF SUSTAIN 9

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Introduction: Clinical management guidelines recommend glucagon-like peptide-1 receptor agonists (GLP-1RAs) and sodium-glucose co-transporter-2 inhibitors (SGLT-2is) for use after metformin in patients with type 2 diabetes (T2D) and established cardiovascular disease. The SUSTAIN 9 trial showed that, in subjects with T2D inadequately controlled with SGLT-2i therapy with or without metformin or a sulphonylurea, the addition of the GLP-1RA semaglutide improved glycemic control, lowered body weight, and was generally well tolerated. **Objective:** This post hoc analysis aimed to determine whether the efficacy and safety of semaglutide vs placebo was consistent in subjects on different background SGLT-2is. **Methods:** SUSTAIN 9 was a randomized, double-blind, placebo-controlled, multinational trial. Subjects were randomized to semaglutide 1.0 mg or placebo, both subcutaneous once weekly, as an add-on to SGLT-2i therapy, with or without metformin or a sulphonylurea. The primary and secondary endpoints were, respectively, change from baseline in HbA1C and body weight at week 30. In this post hoc analysis, SUSTAIN 9 data were analysed by background SGLT2i (empagliflozin, canagliflozin, dapagliflozin or other [ipragliflozin, luseogliflozin and tofogliflozin; drugs available only in Japan]). **Results:** In total, 302 subjects were randomized to semaglutide or placebo. Reductions in HbA1C and body weight were greater with semaglutide vs. placebo. There was no significant interaction between background SGLT2i and treatment effect (interaction p-value > 0.05 for both endpoints), with a smaller observed weight reduction in the 'Other' group. No safety concerns were identified when adding semaglutide to SGLT2i therapy. No diabetic ketoacidosis or lower limb amputation events occurred. **Conclusion:** In conclusion, in subjects with T2D already receiving an SGLT2i, semaglutide generally resulted in superior HbA1C and body weight reductions vs. placebo, regardless of background SGLT2i therapy.

E-PO62 EPIDEMIOLOGICAL FEATURES AND GLYCEMIC CONTROL OF PREGNANT WOMENS WITH *DIABETES MELLITUS* IN A PUBLIC HOSPITAL IN BELÉM-PA

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Diabetes mellitus (DM) in pregnancy can be classified as either Gestational DM or Overt DM. This study aims to describe the clinical and epidemiological features of pregnant women with DM during their follow-up at division of endocrinology in a public Hospital in Belém-Pará. An observational and cross-sectional study was carried out based on the review of medical records between February 2018 and March 2020. Eighty-four (84) pregnant women were enrolled, they aged 33 ± 6 years and presented a high prevalence of obesity (63%) and family history of DM (69%). The prevalence of DM related complications was low: Diabetic Neuropathy (4%), Diabetic Retinopathy (2%) and Kidney Diabetes Disease (2%). According to their diagnosis, patients were classified as previously known DM (Group 1, N = 54), DM first diagnosed at pregnancy (Group 2, N = 17) and Gestacional DM (Group 3, N = 13). Considering body mass index (kg/m²) before pregnancy, there was no difference between all groups (31.4 ± 5.9 vs. 30.4 ± 4.4 vs. 32 ± 5.4, p = 0.71). The gestational age (weeks) at the follow-up beginning was significantly higher in group 3 (31 ± 4) when compared to group 1 (21 ± 7) and group 2 (23 ± 5), p < 0.001. As expected, there was an increase in prevalence of insulin treatment from the first to the last visit in group 1 (52% vs. 82%, p = 0.005) and group 2 (35% vs. 80%, p < 0.05), and considering only patients who attended to at least 2 visits [N = 59 (70%)], the glycemic control parameters were better at the last visit when compared to the first one: HbA1c (7,7 ± 1,9 % vs. 6,1 ± 0,7 %, p = 0.01), fasting glucose (142 ± 77 mg/dL vs. 102 ± 31 mg/dL, p<0.001), and postprandial capillary blood glucose (178 ± 88 mg/dL vs. 146 ± 69 mg/dL, p < 0.001). Besides, there was a correlation between the number of visits and glycemic control assessed by HbA1c (r = -0,44, p < 0.01). Eight patients (14%) reported a hypoglycemic episode during the follow-up. These data describe an elevated prevalence of obesity and overt DM in a young group of pregnant women and that the follow-up in a specialized division, despite starting only after the second trimester of pregnancy, lead to a better glycemic control.

E-PO63 EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH DIABETES ATTENDED IN A REFERENCE SERVICE IN FORTALEZA

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Introduction: Diabetes mellitus (DM) is a chronic disease with high morbidity and mortality, whose incidence has been significantly increasing, according to the International Diabetes Federation (IDF) it is estimated that the number of people with DM in the world will reach 522 million in 2030. Brazil it currently has about 7% of its population with this comorbidity. **Objectives:** Describe the epidemiological profile of patients with DM treated at a reference service in the city of Fortaleza, Ceará. **Methodology:** Cross-sectional and retrospective study, based on the analysis of the medical records of patients with DM treated at a specialized service in Fortaleza, from January 2019 to January 2020. Variables such as gender, age, ethnicity, comorbidities and habits were analyzed through the Excel platform. **Results:** The sample consisted of 100 patients, 68 and 32 are female and male respectively, regarding the age 3% had between 20-29 years, 12% between 30-39, 30% between 40-49, 21% between 50-59 years and 34% equal or above 60. Regarding ethnicity, 19% are white, 55% are brown and 26% are black, 97% had diabetes type 2 and 3% diabetes type 1. With regard to habits 10%, 8% and 18%, are smokers, alcohol users and reported not practicing physical activity respectively, 10 patients have a family history of a relative of first degree with DM. As for associated comorbidities, 37% have hypertension, 33% dyslipidemia, 7% chronic kidney disease, 5% cardiovascular disease, 1% stroke, and 28% have a body mass index ≥30 kg/m². **Conclusion:** The present study shows a higher prevalence of DM in female, mixed race and age equal or above 40 years, according to other studies in the literature. Note the influence of habits in relation to DM, such as physical inactivity and smoking, which were present in 18% and 10% of cases, being important risk factors. The association of diabetes with several comorbidities, especially hypertension, dyslipidemia and obesity, also highlights the influence of glycemic levels on blood pressure control and lipid metabolism, and of these on glucose metabolism. Furthermore, it is necessary to emphasize the simultaneous action of these pathology increasing cardiovascular risk.

E-PO64 EPIDEMIOLOGICAL PROFILE OF TYPE 1 DIABETES PREGNANT WOMEN ATTENDED IN A TERTIARY SERVICE (HC-FMRP-USP)

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Hyperglycemia is associated with an increased risk of adverse pregnancy outcomes like stillbirths, neonatal mortality, premature delivery, fetal growth acceleration and macrosomia. Therefore, adequate glycemic control is essential to minimize these risks. Women with type 1 diabetes (T1D) should be instructed to perform an intensive glycemic control, preferably before and during pregnancy. The purpose of this study is to describe the epidemiological profile of pregnant women with T1D and neonatal characteristics of her babies. Retrospective study of analysis of patient medical histories of pregnant women with T1D attended in a tertiary service between 2009 and 2020. Twenty-six T1D pregnant women were identified, with a mean age of 25.42± 6.26 years, pre-pregnancy BMI 26.57 kg/m² ± 3.8, weight gain of 11.88 kg ± 6.54. A1c values before pregnancy mean 8.47% ± 2.02. 57.69% were multipara, 23.07% had personal antecedents of macrosomia, 23.07% premature delivery, 38.46% miscarriages and 11.53% stillbirths. Basal daily insulin doses per kilo mean 0.67 UI ± 0.24 and 19.23% counting carbohydrate. One patient used continuous glucose monitoring (CGM) with FreeStyle Libre. Gestational complications: 53.84% preterm labor, 15.38% pre-eclampsia, and no eclampsia. Delivery: 84.21% of cesarean deliveries mean gestational age was 36.08 weeks ± 2.3 and no stillbirth. About newborns: mean Apgar score 7.31 and 9.27 at the 1st and 5th minutes, respectively; 57.69% male; average birth weight of 33,955 g (1,040 to 5,200 g). 3.84% small for gestational age, 76.92% appropriate for gestational age and 19.23% large for gestational age. Macrosomia (>4 kg) was present in 23.07% of deliveries. This profile showed that most women with T1D, in this population, did not have a good control of diabetes pre-pregnancy. In the Hyperglycemia and Adverse Pregnancy Outcome (HAPO) study, increasing levels of glycaemia were also associated with worsening outcomes. On the other hand, there was no stillbirths and the most of newborns was appropriate for gestational age that may suggest adequate control of T1D during pregnancy. Therefore, intensive blood glucose control is essential and CGM can be an important tool in this context. In conclusion, diabetes education, frequent clinic visits with an endocrinologist, obstetrician and all the professionals involved to play a fundamental role in the reduction of adverse outcomes.

E-PO65 EVALUATION OF COMORBIDITIES AND CLINICAL OUTCOMES OF PATIENTS WITH DIABETES HOSPITALIZED BY COVID-19 IN A TERTIARY HOSPITAL

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Background: Patients with diabetes mellitus (DM) are at increased risk for severity of COVID-19 infection, but it is unclear if arterial hypertension (AH), cardiovascular (CVD) or chronic kidney diseases (CKD) represent additional risk factors for these individuals and whether previous glycemic control influences the outcomes. **Objective:** To investigate the association between comorbidities (AH, CVD, CKD) and recent hemoglobin A1c (HbA1c) with mortality and intensive care unit (ICU) treatment in patients with diabetes and COVID-19 infection that were hospitalized in a tertiary hospital. **Methods:** This is an observational, retrospective study. Data were obtained through review of medical charts. Patients with DM that were admitted to emergency room, infirmary or ICU from March to September 2020 were included. Age, sex, HbA1c, AH, CKD, CVD, admission to ICU, mechanical ventilation (MV) and the outcome of hospital discharge or death were analyzed. **Results:** 114 patients were included (48.2% males and 51.7% females), with mean age of 65.61 (±11.61) years. All patients had type 2 DM. 88.6% had AH, 22.1% had CKD and 30.1% CVD. 94.7% had at least one comorbidity, in addition to DM. 59.6% required ICU. The mortality rate was 43.7%. The mean HbA1C was 8.36% and there was no association between its level and death (p = 0.471) or admission to ICU (p = 0.97). The mean HbA1C was higher in patients with DM without comorbidities than in those with comorbidities (10.75% ± 1.51 vs. 8,20% ± 1,94; p = 0,018. Neither AH (p = 0.233) nor CKD (p = 0.603) or CVD (p = 0.084) were associated with death (p = 0.233, 0.603 and 0.084, respectively) or admission to ICU (p = 1.0, 0.83 and 0.65, respectively). **Conclusions:** In this group of patients with DM and a high rate of additional diseases implicated in the severity and mortality of COVID-19 infection, each individual comorbidity did not increase the burden of DM. Although the level of previous glycemic control did not influence the risk of mortality and ICU admission in this sample, few patients without comorbidities were hospitalized and they had significantly higher HbA1c levels than others. This suggests that hospitalization due to COVID-19 might be related to previous poor glycemic control or additional comorbidities such as CKD, AH and CVD.

E-PO66 EVALUATION OF RENAL FUNCTION IN DIABETIC PATIENTS IN A BASIC HEALTH UNIT

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Diabetes mellitus is one of the main risk factors that exists to develop chronic kidney disease (CKD) and, therefore, these patients must be evaluated periodically and with attention to effective preventive measures. Renal evaluation in diabetics is extremely relevant, once the early diagnosis of the initial stages of CKD allows the adoption of measures to reduce its occurrence and the treatment of its complications is able to reduce the progression of the disease. The aim of this study was to analyze the medical records of the diabetic population in a health unit, investigating whether renal function is being requested to detect possible renal dysfunction. Therefore, a study was carried out at UBSF São Carlos, located in the city of Volta Redonda – RJ, in 2019. The medical records of 46 patients in the diabetes program were randomly selected. Inclusion criteria were: confirmed diagnosis of diabetes, age ≥ 18 years. Clinical and laboratory data were verified, such as serum creatinine, creatinine clearance and presence of proteinuria and/or microalbuminuria. Everyone had a TCLE. It was found that most patients (93.9%) had creatinine and eGFR levels, which is a mandatory routine in the UBSF protocol for SAH and DM, however the minority (2.6%) had proteinuria levels, which demonstrates that the UBS staff should be trained to properly detect kidney disease. No patient with severe CKD was detected. As expected, the elderly had lower renal function.

E-PO67 EVALUATION OF THE GLYCEMIC CONTROL OF PATIENTS WITH TYPE 2 *DIABETES MELLITUS* FROM THE GLYCATED HEMOGLOBIN INDEX AND THE RELATIONSHIP WITH THE DEVELOPMENT OF CHRONIC COMPLICATIONS

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Introduction: A connection is between the exposure of individuals to hyperglycemia and the appearance of complications related to type 2 diabetes mellitus (DM2). To prevent this problem, it is essential to analyze the data that enables better control of the disease, also, screening for these complications is essential for an early diagnosis capable of delaying the problem. **Objective:** To evaluate the rates of glycated hemoglobin (H1AC) in patients with DM2 to prevent the progression of disease-related chronic complications. **Methods:** An observational and retrospective study was carried out, based on the analysis of the medical records obtained from health care units of Rio Claro-SP of 60 patients with DM2 aged over 40 years old. From the data obtained, 38 patients are women and 22 men, the average age is 63.6 years old (±12,59), 54 of them see a doctor at least once a year and 40 of these patients had taken H1AC tests. We investigation of the related between the H1AC rates of these patients with the increase of complications resulting from DM2 to clarify if these high rates cause worsening of the disease. The comparison between the time of exposure to the disease and the H1AC index was also evaluated. **Results:** While analyzing the 56 patients who have been continuously monitored, 77.3% are hypertensive, 92.4% are overweight and 86.7% are sedentary. From the 40 patients who had taken H1AC tests, an average rate of 8.65% (±2.40) was observed and 12.5% were below the recommended rate of 7%. Regarding the presence of complications related to DM2, 7 out of the 8 patients with retinopathy presented an H1AC index greater than 10%. 3 out of the 5 patients with kidney disease showed a rate greater than 11%. 5 of the 6 patients with neuropathies presented an index greater than 9%. 5 out of the 6 patients with diabetic foot presented rates higher than 10%, one patient progressed to amputation. **Conclusion:** 20 patients developed one of the complications mentioned and presented an H1AC rate greater than 9%. No patient with H1AC below 7.5% developed any complications. Obesity, physical inactivity, and hypertension did not represent direct causes for the occurrence of the mentioned complications, but they are prevalent in patients with H1AC rates above normal. The time of exposure to the disease not was a relevant factor. Lastly, the high rate of H1AC was not related to the number of complications developed, but the appearance of at least one of the mentioned complications.

E-PO68 EVALUATION OF THE GLYCEMIC LEVEL OF NON-CRITICAL PATIENTS HOSPITALIZED IN THE UNIVERSITY HOSPITAL OF UNIVERSIDADE FEDERAL DE SERGIPE

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Introduction: The hospitalar hyperglycemia is defined as a glicemic elevation greater than 140 mg/dL in-hospital and is associated with complications, as the increase of the rate of infections and a longer hospital stay. Clinical guidelines recommend glycemic measurement on the admission for all patients, to allow their classification and to plan the strategy of follow-up during the hospitalization and after hospital discharge. **Objective:** To evaluate blood glucose levels and their management in non-critical patients hospitalized at the hospital, as well as the risk factors for Hospital Hyperglycemia (HH). **Patients and methods:** This is a descriptive and cross-sectional study with a quantitative approach and convenience sampling. The data collection instrument used was a questionnaire that addresses demographic data, family history of diabetes mellitus, history of hypertension, dyslipidemia, diabetes mellitus, medications in use, blood glucose at the time of hospital admission, blood glucose monitoring and application of the protocol for management of HH. **Results:** The sample consisted of 85 non-critical patients, divided into four groups. Group 1: patients without blood glucose at the time of hospital admission; Group 2: patients with a previous diagnosis of diabetes mellitus (DM); Group 3: patients with hospital hyperglycemia; Group 4: patients without hospital hyperglycemia. There was a statistical difference in blood glucose levels between Group 2 vs. Group 4 and Group 3 vs. Group 4, $p < 0.0001$. Family history for DM, hypertension, body mass index and waist circumference was more frequent in Group 3. HH was detected in 15.5% of the sample, however the HH protocol was not applied in any patient. **Conclusion:** HH is frequent in non-critical patients hospitalized at hospital, however its management is inadequate. Our data demonstrate the association of risk factors for DM and the occurrence of HH.

E-PO69 EVALUATION OF THE IMPACT OF A PROBLEMATIZATION METHODOLOGY IN THE TREATMENT OF PATIENTS WITH TYPE 2 *DIABETES MELLITUS* IN USE OF INSULIN

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Introduction: Type 2 diabetes mellitus (T2DM) is recognized for its increasing prevalence, as well as for its association with high mortality, reduced life quality and development of complications. In this sense, adherence to the treatment becomes extremely relevant. However, studies show low adherence to treatment and difficulty in metabolic control. Among the educational modalities, the problematization methodology (PM) stands out. **Objective:** To evaluate the effects of a PM on behavioral, clinical and laboratory parameters in individuals with T2DM. **Material and methods:** A randomized clinical trial was conducted with patients with T2DM on insulin therapy, out of therapeutic target (glycated hemoglobin above 7.0%), followed at a secondary care service of an university hospital in the city of Juiz de Fora, MG. During a six-month intervention period, all subjects of the study received the routine care of patients with diabetes, and those in the intervention group also participated in monthly educational groups with PBIT. **Results:** 41 participants were included in the study, 21 randomized to the control group and 20 to the intervention group. Most participants were female, aged between 30 and 59 years, diagnosed with arterial hypertension and dyslipidemia. After six months of intervention, there was a significant reduction in body weight, waist circumference and uric acid levels, in addition to an increase in the frequency of physical activity, among participants in the intervention group. In both groups over the follow-up period, low drug adherence and difficulty in achieving glycemic control targets were observed. **Conclusion:** The methodology used in the educational program for the patients in the intervention group was effective in improving some clinical and lifestyle parameters. However, the no significant effect was observed in glycemic control.

E-PO70 EXPLORING POTENTIAL MEDIATORS OF THE CARDIOVASCULAR BENEFIT OF DULAGLUTIDE IN REWIND

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Introduction: The REWIND trial showed that relative to placebo (PL), once weekly dulaglutide (DU) 1.5 mg reduced the incidence of a major adverse cardiovascular (CV) event (MACE; nonfatal myocardial infarction, nonfatal stroke, or CV death) in patients with T2D with and without established CV disease (hazard ratio (HR) 0.88, 95% CI [0.79, 0.99]; p = 0.026). **Objective:** In this post-hoc assessment, a mediation analysis was used to estimate the degree to which the effect of DU on these risk factors could statistically account for its effect on MACE. **Patients and methods:** Data were analyzed from 9901 patients who had 1,257 first MACE events over 5.4 median yrs. of observation. Those risk factors for which the updated mean on follow-up was significantly related to MACE were added to a separate Cox model that included DU allocation, the baseline [BL] value of the measurement and the updated mean of the variable as time dependent covariates. **Results:** The effect of DU on the variable, compared to PL, was -0.61% (-0.65, -0.58) for A1C, -1.46 kg (-1.67, -1.25) for body weight (BW), and -1.70 mmHg (-2.07, -1.33) for systolic blood pressure (SBP). The mean epidemiologic relationship to MACE primary outcome (HR [95% CI]) was 1.087% (1.033, 1.144) for A1C, 0.994 kg (0.983, 1.005) for BW, and 0.999 mmHg (0.995, 1.004) for SBP. The effect of DU on the primary MACE outcome adjusted for updated mean (HR [95% CI]) was 0.923% (0.819, 1.039) for A1C. Only A1C satisfied this condition, suggesting that BW and SBP did not mediate the effect of DU on MACE in this study population. The effect size of DU on the MACE outcome was attenuated by 36.1% after accounting for its effect on A1C. DU also significantly reduced A1C, BW, and SBP. **Conclusion:** The results suggest most of the CV benefit of DU on MACE is not attributable to the A1C, BW, or SBP-lowering effects of DU.

E-PO71 FUZZY LOGIC USE IN DIABETIC RETINOPATHY EVALUATION

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Objective: Employ fuzzy logic to auxiliary in identification and diagnosis the gravity of diabetic retinopathy (DR). **Methods:** A cross-sectional study was performed, being assessed 100 diabetes mellitus patients with DR. The following ultrasound findings were measured employing a semi-quantitative punctuation method: vitreous hemorrhage, posterior vitreous detachment, epiretinal fibrosis, retinal detachment. The fundus photography (FP) aspects evaluated for diagnosis of DR were at least four or more microaneurysms with or without hard or soft exudates, and neovascularization, graded using the Early Treatment of Diabetic Retinopathy Scale. With the combination between ultrasound punctuation and FP aspects through fuzzy logic, a classification for DR has been built. **Results:** Microaneurysms were the findings which presented the better interaction with the DR severity on ultrasound, while the hard exudates showed the minors estimation errors when compared to soft exudates. A classification for DR was suggested based on the 95% confidence interval of number of microaneurysms: mild group (<24.6); moderately mild (24.6-48.0); moderate (48.1-64.5); moderately severe (64.6-77.0); severe (77.1-92.7); and very severe (>92.7). **Conclusion:** By the fuzzy logic, a DR classification was constructed supported on number of microaneurysms measurement with a simple practical application.

E-PO72 GESTATIONAL DIABETES, DEPRESSION AND PREGNANCY OUTCOMES

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Background: Previous studies have reported that patients with gestational diabetes mellitus (GDM) are at risk of developing depression in pregnancy. In normal glucose tolerant pregnancies, depression is related to negative health-related behaviors and adverse pregnant outcomes such as preterm delivery and decreased breastfeeding. In patients with GDM, depressive symptoms may affect adherence to treatment and have an additional negative effect on pregnancy out-comes related to GDM so it is important to investigate the presence of depressive symptoms among women with GDM. **Methodology:** Prospective, longitudinal cohort study in patients with GDM who participated in the LINDA-Brazil study (trial registered with NCT02327286), con-ducted through interviews in which sociodemographic data, clinical and obstetric history were obtained, as well as validated questionnaires for the evaluation of depressive symptoms (EDPS), in which a score of ≥ 12 indicates the presence of depressive symptoms. **Results:** The study evaluated 305 pregnant women, ages varying from 20 to 46 years (average age of 33.1 years), in the second or third trimester of pregnancy, with average gestational age of 29.1 (±5.6DP). Regarding socioeconomical aspects, 16.4% had low level of education, 51.8% were employed, 64,2% had a family income of 1-2 times minimum wages and 95.1% had a stable marital relation-ship. In addition, the mean BMI was 32.2 (±5.0 SD), the mean Hb1Ac was 5.4 % (0.5) and 25.3% underwent pharmacological treatment. As for comorbidities, 20.8% were hypertensive, 55.1% were sedentary, 14% had a history of depression and 20.9% reported insomnia before pregnancy. Also, the presence of depressive symptoms during pregnancy was found in 29.3% of them, with a significantly higher mean Hba1c (p: 0.07) and mean systolic blood pressure measured during pre-natal visits (p = 0.038%) being observed in the group with depressive symptoms. As for pregnancy outcomes (256 data evaluated), these patients tended to have greater weight gain (0.05) and a higher frequency of premature births (p: 0.048). **Conclusion:** According to literature, this data shows a high frequency of depression in GDM pregnancy. Furthermore, the presence of depressive symptoms was related to worst glycemic profile, higher blood pressure, weight gain and pre-term delivery. This result suggests the need to routinely screen for depression in women with GDM.

E-PO73 GLYCEMIC PROFILE AFTER 12 MONTHS OF INSTALLING CONTINUOUS SUBCUTANEOUS INSULIN INFUSION PUMP THERAPY IN ADOLESCENTS AND ADULTS WITH TYPE 1 DIABETES TREATED AT A PUBLIC HEALTH SERVICE

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Introduction: Near-normoglycaemia is associated with a reduced risk of microvascular and macrovascular complications in type 1 diabetes mellitus (T1DM). Despite many advances in T1DM therapies, most patients are still unable to achieve near-normal glycemia, and remain at high risk for severe hypoglycemia and vascular complications. In some meta-analyses the use of continuous subcutaneous insulin infusion (CSII) pump therapy compared with multiple day insulin injections reduced the HbA1c levels without increasing hypoglycemia. **Objectives:** Assess the effects on the glycemic profile of the installation of a CSII after 12 months of follow up in patient with T1DM. **Methods:** T1DM patients treated in the endocrinology outpatient clinic from the Centro Universitário da Saúde do ABC, Santo André-SP were included in the study. All the patients were previously treated with multiple dose injections (MDI) therapy and had clinical indication for CSII, according to guidelines from the Sociedade Brasileira de Diabetes. They were initiated in a CSII pump therapy program, that included multiprofessional care with a diabetes educator. The Accu Chek Spirit Combo system with smart control, was used as the CSII device. Patients' vital status and glycemic profile were followed for 12 months, with quarterly medical appointments. The results are expressed in median and standard deviation. **Results:** A total of 6 patients with T1DM, 5 females, ranged from adolescents to adults, ages between 17 to 24 years were included in the study. The median diabetes duration was 11 ± 5,21 years, ranging from 3 to 17. The median glycated hemoglobin (HbA1c) previous to the CSII was 8.07 ± 1,85 (ranged from 6,2 to 10,6%) and after 12 months of CSII was 8.17 ± 2,22 (ranged from 6,8 to 12,5%). Basal: bolus insulin ratio was 56:44 during MDI and changed to 39:61 after 12 months of CSII. 83% of the patients reported severe hypoglycemia during MDI and only 16% of them referred it after CSII. **Conclusion**: Although the change in HbA1c levels was insignificant, patients experienced a lower rate of severe hypoglycemic events after CSII pump therapy. The basal: bolus insulin ratio after CSII showed a tendency to more boluses use throughout the day, compatible with the most recent recommendations for T1DM in the literature. The role of multiprofessional care is essential for improving clinical outcomes in T1DM patients after CSII implantation.

E-PO74 HEALTH-RELATED QUALITY OF LIFE IN TYPE 1 *DIABETES MELLITUS* AFTER HIGH DOSE CHOLECALCIFEROL SUPPLEMENTATION

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Type 1 diabetes mellitus (T1DM) is the most common endocrine disorder in childhood and adolescence and has a negative impact on Health-Related Quality of Life (HRQoL). Some cross-sectional studies have suggested that low Vitamin D (VD) levels may have a negative influence on HRQoL, however, the effect of VD supplementation on HRQoL of T1DM remains unclear. This study aims to analyze the effects of high-dose VD supplementation on HRQoL of T1DM patients. We performed a prospective study including 64 T1DM patients who were supplemented for 12 weeks with high doses of cholecalciferol according to participants' VD value. Patients with VD levels below 30 ng/mL received 10,000 IU/day; those with levels between 30-60 ng/mL received 4,000 IU/day. HRQoL was assessed by EuroQol Scores (EQ-5D and EQ-VAS) before and after VD supplementation. We observed an improvement in "Mobility" and "Self-care" dimensions at the end of the study (0.73 ± 0.68 vs. 0.44 ± 0.59, p = 0.01 and 0.51 ± 0.56 vs. 0.40 ± 0.53, p = 0.01, respectively), however, no changes were observed in EQ-VAS score. Nevertheless, in a post-hoc analysis, a subgroup who presented an improvement in EQ-VAS score [N = 25 (39%)] showed higher 25-OH-VD levels when compared to those without EQ-VAS increase (63 ± 27 mg/mL vs. 49 ± 21 mg/mL, p < 0.05) with no difference in age, time of T1DM, DM related complications and glycemic control assessed by HbA1c. Our data suggest that high dose cholecalciferol supplementation could benefit HRQoL in T1DM.

E-PO75 HEPATIC PROFILE IN PREGNANT WOMEN WITH GESTATIONAL *DIABETES MELLITUS* OR OVERT DIABETES IN A HIGH RISK PRENATAL OUTPATIENT CARE FACILITY IN THE CITY OF CUIABÁ MT, BRAZIL

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Introduction: Non-alcoholic fatty liver disease (NAFLD) has insulin resistance as one of its pathogenic bases, as well as, during pregnancy, a condition that in itself leads to changes in glucose and lipid metabolism. There is little data regarding the investigation of NAFLD in pregnant women and/or pregnant women with DMG or overt DM. **Objectives:** to describe the hepatic profile (measurement of AST, ALT, GGT and liver ultrasound) in a population of pregnant women with confirmed diagnosis of DMG or overt DM, in high-risk prenatal outpatient care facility at Hospital Universitário Júlio Müller in Cuiabá, MT. **Results**: 32 patients were evaluated, being 22 with GDM and 10 with overt DM. The patients' average age was 31.9 years. Thirteen (40.6%) patients had acanthosis nigricans, 84.3% were multiparous, 4 patients reported fetal macrosomia in previous pregnancies, mean BMI was 33.7 kg/m2 (n = 26). The mean HbA1C at the time of diagnosis was 5.76% (n = 23). In patients with GDM the mean of AST (n = 20) and ALT (n = 8) was 18.3 mg/dL and 15.7 mg/dL, respectively, and in patients with overt DM it was AST = 26.5 mg/dL and 23.1 mg/dL. GGT had no difference between both groups. All patients were negative for HBsAg and anti-HCV. Twenty-three patients underwent abdominal ultrasound of the liver by the same examiner and did not present hepatic steatosis. **Conclusion:** It is noteworthy the grade I obesity revealed by BMI and higher levels of AST and ALT in patients with overt DM, even within normal limits. We hypothesized that the short period of hyperglycemia resulting from insulin resistance during GDM does not occur concurrently with non-alcoholic fatty liver steatosis.

E-PO76 HIGH-DOSE VITAMIN D SUPPLEMENTATION ON TYPE 1 *DIABETES MELLITUS* PATIENTS: IS THERE AN IMPROVEMENT IN GLYCEMIC CONTROL?

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Background: Some studies evaluated the effect of vitamin D (VD) on management of hyperglycemia in type 1 diabetes mellitus (T1DM), but the results remain controversial as they did not maintain stability of insulin dose. **Objectives:** This study aims to analyze the effects of high-dose VD supplementation on glycemic levels of patients with T1DM, maintaining stable doses of insulin. **Patients and methods:** We performed a prospective study, 12-week clinical trial, including 67 T1DM patients, who were supplemented with high doses of cholecalciferol according to participants' VD value. Patients with VD levels below 30 ng/mL received 10,000 IU/day; those with levels between 30-60 ng/mL received 4,000 IU/day. Patients who had not achieved 25(OH)D levels > 30 ng/mL or presented insulin dose variation during the study were excluded from the analysis. **Results:** Only 46 out of 67 patients accomplished the criteria at the end of the study. There was no general improvement in the glycemic control evaluated by HbA1c (9.4 ± 2.4 vs. 9.4 ± 2.6, p = NS) after VD supplementation. A post-hoc analysis, based on HbA1c variation, identified patients who. had HbA1c reduced at least 0.6% (group 1, N = 13 (28%)). In addition, a correlation between HbA1c and 25(OH)D levels at the end of the study was observed (r = -0.3, p < 0.05) and a regression model demonstrated that 25(OH)D was independent of BMI, duration of T1DM and final total insulin dose, being capable of determining 9.2% of HbA1c final levels (Unstandardized B coefficient=– 0.033 (CI 95%:- 0.064 to -0.002), r^2= p= 0<0.05). **Conclusion:** Our data suggests that VD is not widely recommended for glycemic control. However, we found a subgroup that might benefit from this approach.

E-PO77 HYPERGLYCEMIA MANAGEMENT IN PATIENTS WITH COVID-19 IN AN OUTPATIENT SETTING

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Introduction: Diabetes is a relevant risk factor for COVID-19 severity, and well-controlled glucose levels improved outcomes in type 2 diabetes. Social isolation and lack of resources pointed to telehealth as a tool for assistance, including for diabetic patients. **Objectives:** To describe hyperglycemia management in COVID-19 outpatient setting through remote monitoring in a reference center. **Patients and methods:** This is a prospective observational study, in which patients with COVID-19 received medical care in a reference center and were remotely monitored and guided as to insulin use. Patients who already used insulin or that required its use during the follow-up due to COVID-19 infection were included. Insulin adjustments were guided by an inpatient insulin dose calculator called InsulinApp. Clinical data were inserted in a database from April through August 2020 and further analyzed. **Results:** There were 25 patients with median age, weight and BMI of 59 years, 89.5 kg and 29.6 kg/m², respectively. All patients were diabetic (only one had type 1 diabetes) and 78.3% had hypertension. As to prior treatment, 55% used oral antidiabetic agents, 27.8% basal insulin and 27.8% basal-bolus. After COVID-19, 25% started to use oral agents. Median glycemia before enrollment was 277 mg/dL (minimum 139 and maximum 500) and 60% of them were using corticosteroids as part of COVID-19 treatment. Most of the patients (61.1%) required basal-bolus regimen, while 33.3% only basal insulin. Nearly all pre-meal blood glucose levels were below 180 mg/dL, but almost half of the patients could not measure these levels daily due to lack of test strips. On the other hand, most of post-prandial measurements exceeded the aforementioned threshold. No hypoglycemia was reported. Seventeen of these patients underwent chest CT, and 82% of them had typical COVID-19 pulmonary involvement findings. Despite telemonitoring, 16.3% of patients required hospital admission due to infection progression, with a median hospital stay of 2 days. **Conclusion:** In this small group of patients with COVID-19 with prior diabetes and hyperglycemia, we observed that insulin prescription and adjustment through telemonitoring is possible, without hypoglycemia, with adequate control of pre-meal glycemia, but poor post-prandial blood glucose control. However, a major limitation was blood glucose test strips for frequent monitoring, so initiatives that aim telemonitoring for insulin use should address this issue.

E-PO78 IMPACT OF DIABETES DURATION ON COGNITION OF TYPE 2 DIABETES PATIENTS

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Introduction: Type 2 diabetes mellitus (DM2) is a chronic disease, with vascular complications. Individuals with DM2 has two times more risk to have dementia, suggesting it may also be chronic complication. **Objectives:** Assess and quantify cognitive dysfunctions in a population with DM2 and its clinical and laboratory risk factors, especially the diabetes duration. **Methods:** This cross-sectional observational study included adult patients with DM2 of both genders, recruited randomly in consultation at the Endocrinology outpatient clinic. Illiterate, visually or hearing impaired individuals with a history of neurological diseases or using medications that alter cognition were excluded. Socio-demographic data collection, physical examination and cognitive tests and screening test for depression symptoms were carried out [Mini Mental State Examination – MEEM, Semantic Verbal Fluency, Trail Making Test A and B (TMTA/B), Immediate, Late and Recognition Memories, and PHQ9]. Data on past history, clinical and laboratory data were collected from medical records. Statistical analyzes were performed using SPSS software version 22 (IBM). Values of p were significant if < 0.05. It was performed a Spearman's posts Correlation of DM2 duration with cognitive tests and a ROC curve was plotted to determine the cutoff value of DM2 duration versus TMTA and B tests results. Linear regression analysis was performed to determine factors concurrent with DM duration on the TMTA and B tests. **Results:** 287 patients were evaluated, 173 (60.3%) were female and mean age was 61.7 (±9.8) years. Diabetes duration was 13.3 (±10.2) years. The correlation of diabetes duration and cognitive tests was significant with TMTA and TMTB, Immediate and Late Memories tests. In a linear regression analysis, a significant correlation was observed between DM duration and performance on the TMTA and TMTB tests even when adjusted for age, education, score of depression symptoms and severe hypoglycemia. The ROC curve cutoff vale for DM duration was 16.5 years for performance on the TMTA, with a sensitivity of 45.5% and specificity of 71.5% and 14.5 years for the TMTB with sensitivity 51.9% and specificity of 64.8%. **Conclusion:** In this population of patients with DM2, diabetes duration had a negative impact on the cognitive function performance observed in the TMTA and B tests even after adjustments for interfering factors such as education, age, episodes of severe hypoglycemia and symptoms of depression.

E-PO79 IMPROVED INSULIN ADHERENCE AFTER INTRODUCTION OF A SMART CONNECTED INSULIN PEN

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Background and aims: An association between missed insulin injections and its impact on HbA1c levels has been established. The smart connected NovoPen® 6 captures and allows visualisation of insulin injections (date and time of injection and number of units). This has the potential to improve the dialogue between patients and healthcare professionals (HCPs) and eliminate any guessing about doses taken, missed doses and optimal injection time in relation to meals. This non-interventional study investigated whether the use of NovoPen® 6 influenced the behaviour of patients with type 1 diabetes (T1D) in terms of missed bolus dose (MBD) meals. **Materials and methods:** Patients were recruited from 12 Swedish diabetes clinics. At baseline they received a NovoPen® 6 for bolus insulin injections. At each HCP visit, pen data were downloaded at the clinic. Follow-up was after ≥5 HCP visits. Adults with T1D (n = 81) using continuous glucose monitoring (CGM) and NovoPen® 6 for bolus injections were included in the analyses. The frequency of MBD was analysed using the GRID algorithm to detect meals from the CGM signal combined with the injection data. MBD was defined as meals with no bolus injection within -15 to +60 minutes from the start of the meal, as detected by the algorithm. The change in number of MBD meals from baseline to ≥5 HCP visits was analysed using a mixed Poisson model. **Results:** A significant decrease of 43% in the average daily number of MBD meals was observed from baseline to after ≥5 HCP visits (median time in study: 6 months) from 0.74 (95% CI [0.62;0.88]) to 0.42 (95% CI [0.30;0.60]) (p = 0.002). This corresponded to a decrease from 25% to 14% in MBD meals assuming that patients have three main meals per day (0.74/3 = 25%; 0.42/3 =14%). The number of meals detected with a bolus injection was stable, while the number of undetected meals increased from baseline to follow-up. **Conclusion:** These real-world findings confirm that MBD injections is the reality for patients with T1D and that a smart connected pen can support good injection behaviour, leading to less MBD meals. This could potentially lead to better glycaemic outcomes.

E-PO80 INCIDENCE AND RISK FACTORS FOR DIABETIC POLYNEUROPATHY AFTER BARIATRIC SURGERY

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Background: Bariatric surgery (BS) improves glycemic control in patients with type 2 diabetes mellitus (T2DM), but the effect of BS on diabetic polyneuropathy (DPN) is not well known. The purpose of the present study was to evaluate in T2DM patients after BS, incidence, and progression of DPN and to identify risk factors for DPN. **Methods:** Follow-up of DPN in a prospective cohort with 52 severely obese patients with T2DM who underwent Roux-en-Y gastric bypass (59.6%) and sleeve gastrectomy (40.4%). DPN was assessed before and after 6 months of BS using the Michigan Neuropathy Screening Instrument (MNSI) with a cut-off value ≥ 2.5. To evaluate the incidence and progression of DPN, the patients were divided respectively according to the presence (+) or absence (-) of DPN. Patients with other known causes of polyneuropathy were excluded. Bodyweight, stature, BMI, % total weight loss, waist circumference, blood pressure, fasting glucose, glycated hemoglobin, and serum lipids were evaluated before and 6 months after BS. **Results:** Before BS, we found a prevalence of DPN of 34.6% (n = 18) associated with higher fasting glucose (124.0 mg/dL versus 129.0 mg/dL, p = 0.038). After 6 months of follow-up, 61.5% of the cohort experienced diabetes remission, 25.0% showed a partial remission, while 13.5% had non-remission (p < 0.001). In DPN (-) patients, the incidence of post-BS DPN was 5.9% (n = 2) and was associated with higher fasting glucose (83.0 mg/dL versus 127.5 mg/dL, p = 0.021) but not with HBA1C (p = 0.060). In DPN (+) patients, the persistence of DPN after BS decreased to 27.8% (n = 5) and was associated with aging (48 years old versus 55 years old, p = 0.035) and higher serum triglyceride levels (74 mg/dL versus 112 mg/dL, p = 0.009). In multivariate analysis, DPN persistence was independently associated with aging and serum triglyceride levels. The risk ratio of DPN persistence increases 9.5% (95% CI: 3.9%-15.3%, p = 0.001) for each year of age increase over 55 years and 3.5% (95% CI: 0.9%-6.2%, p = 0.009) for each mg/dL increase in the serum triglyceride level over 112.0 mg/dL. **Conclusions:** Incidence of DPN after BS was associated with higher fasting blood glucose and not with HbA1c; DPN persistence decreases after BS and was independently associated with aging and higher serum triglyceride level. We concluded that the incidence and persistence of DPN after BS could be more related to insulin resistance than glycemic control.

E-PO81 INCREASED TIME IN RANGE (TIR) OBSERVED AFTER INTRODUCTION OF A CONNECTED INSULIN PEN

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E-PO82 INVESTIGATION OF HEMIBALISM-HEMICHOREA IN CASE OF UNCONTROLLED HYPERGLYCEMIA RELATED TO DIABETES MELLITUS

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67-year-old, man, kidney transplanted, with DM without glycemic control. Begins to show kinetic movements of the right upper limb. Requested contrast-enhanced MRI of the skull due to suspected Korea. MR showed hyperintensity in T1, T2 and FLAIR and hypointensity in the SWAN in the left putamen, with facilitated diffusion, without mass effect or volume loss. The signal change in the left putamen is probably secondary to calcification, deposit of metals or hemoglobin products, often of metabolic origin. This case demonstrates a possible single clinical-radiological manifestation of diabetes mellitus – hemicorea-hemibalism – and the importance of its early recognition and effective treatment. The hemicorea-hemibalism (HCHB) is a hyperkinetic disorder characterized by continuous, non-standard, involuntary, proximal movements on one side of the body, resulting from the involvement of the contralateral base nuclei. It is a complication of non-ketotic hyperglycemia. Usually the involvement is unilateral. It is more common in women. Its peak incidence occurs in the seventh decade. Although uncommon, it may be the first manifestation of diabetes mellitus or occur after many years of inadequate glycemic control. The pathogenesis is perfusion change induced by hyperglycemia in the nuclei of the base contralateral to hyperkinetic movements changing brain metabolism to an anaerobic pathway leading to loss of GABAergic neurons and disinhibition of the thalamocortical pathway, resulting in hyperexcitability of the motor axis. The diagnosis is clinical and radiological, in which the findings of images are contralateral the neurological abnormalities. The CT scans show hyperdensity in the putamen and in the caudate head, which can be interpreted as acute hemorrhage. The characteristic finding in a T1-weighted MR is of high signal intensity in the putamen with no signs of mass effect, edema or loss of volume. In contrast, the findings in the T2-weighted images are variable, with signal characteristics ranging from hyper and iso- to hypo-intensity. Symptom resolution usually occurs quickly with the restoration of blood glucose to normal levels, although in some cases the symptoms may persist for some time. Recurrence up to 17% of cases, mainly due to a new condition of hyperglycemia or irregular use of drugs.

E-PO83 LEVEL OF KNOWLEDGE ON TYPE 2 *DIABETES MELLITUS* (T2DM) AMONG PATIENTS TREATED IN A TERTIARY CARE OUTPATIENT CLINIC IN THE SOUTHEAST OF BRAZIL

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Introduction: Brazil is the fifth country with the highest number of diabetes cases in the world, which has been increasing significantly over the last 35 years. The prevalence of diabetes in 2019 was 16.8 million people. Despite solid evidences that glycemic control can be optimized, and chronic complications, either macro or microvascular, can be prevented, adherence to diabetes treatment has still been a challenge, especially, for T2DM patients due to many lifestyle changes imposed by treatment itself. Some studies have associated level of knowledge of the patients about diabetes with adherence to treatment and showed that it is an essential subject to be measured. **Objective:** To evaluate the level of knowledge on diabetes in T2DM patients treated in a tertiary care outpatient clinic in southeast of Brazil and their association with sociodemographic, clinical and laboratory variables. **Materials and methods:** This is a quantitative, an analytical and a cross-sectional study. The Diabetes Knowledge Scale Questionnaire (DKN-A) was used to assess the level of knowledge on diabetes of 120 T2DM patients. In addition, we also evaluated the association of the level of knowledge with gender, age, occupation, level of education, presence of complications, pharmacological treatment, fasting plasma glucose (FPG) and HbA1c. The Chi-square and Fischer Exact tests were used for statistical analysis of these data. **Results:** 61.6% (n = 74) of the patients were female, 66.7% (n = 80) were elderly (≥ 60 years), with low degree of education, and 55% (n = 66) did not work. We found that 60% (n = 72) of them do not have satisfactory knowledge about the disease. The mean FPG levels was 181,5 ± 78,4 mg/dL. HbA1c >7% was observed in 82,5% (n = 99) of the patients. The level of knowledge showed significant association with the level of education ($p < 0,001$), occupation ($p = 0.017$), presence of chronic complications related to diabetes ($p = 0.02$) and pharmacological treatment ($p = 0.01$). **Conclusion:** The lack of knowledge about diabetes may influence the poor treatment adherence observed in our patients and may explain the failures in glycemic control (FPG and HbA1c). Therefore, health professionals need to promote educational activities consistent with this target population, to achieve recommended goals for diabetes treatment, looking for a better quality of life for our T2DM patients.

E-PO84 LIFE HABITS AND CARDIOVASCULAR RISK IN PATIENTS WITH T2DM FOLLOWED AT A PRIMARY CARE FACILITY

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Introduction: Type 2 diabetes mellitus (T2DM) is closely related to an increased risk of cardiovascular events and risk reduction strategies should always be pursued. **Objective:** To evaluate life habits and comorbidities in T2DM patients, to identify modifiable risk factors and to estimate 10 year cardiovascular risk (CVR). **Methodology:** Cross-sectional observational study at a primary care facility. Ten year CVR was estimated using "ASCVD risk calculator" application. Numerical data are presented as median (p25-p75). Mann Whitney's test was used to compare numerical data between groups. Spearman's correlation coefficient was used to study the relationship between numerical variables. A p value < 0.05 was considered statistically significant. **Result:** One hundred and fifty two medical records of T2 DM patients were included. Median age was 67 (59-75) years and 65.1% are females. Median T2DM duration was 10 (6-14) years. In 28.2% (43/152), a previous macrovascular event was recorded and these patients were excluded from the following analyzes. Regarding T2DM treatment, 80.2% were on oral antidiabetic agents only, 16.3% were on a combination of oral antidiabetic agents + insulin, and 3.5% used insulin alone. Smoking was present in 13% and physical inactivity in 75%. Median estimated 10-year CVR was 20.5 (9.7-35.4)%. There was no statistically significant difference in CVR according to the presence of smoking habit or physical inactivity, nor according to T2DM treatment. A strong correlation was found between age and CVR ($r = 0.78$; $p < 0.001$) and a weak negative correction was seen between HbA1c and CVR ($r = -0.24$; $p = 0.038$). **Conclusion:** Patients were mostly elderly however disease duration was not very long. The large majority use oral antidiabetic agents alone, which illustrates the low complexity of T2DM patients followed at a primary care facility. Prevalence of sedentary lifestyle draws attention, representing an opportunity for preventive actions of a modifiable CV risk factor. Patients' age was strongly correlated to CVR, illustrating the great influence of this variable in CVR estimation. Finally, a weak correlation was seen between HbA1c and CVR, which may be due to better adherence by high-risk CVR patients to treatment and also to a greater concern on the part of the health team to achieve optimal glycemic control in these patients.

E-PO85 LOW PREVALENCE OF IMMUNIZATION IN PATIENTS WITH DIABETES MELLITUS

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Diabetes mellitus (DM) is a public health problem, with high mortality rates and an increased risk of cardiovascular, kidney and infectious diseases. The prevention of these comorbidities impacts on the patients' survival. In this context, immunizations play an important role in the prevention of infectious diseases and should be recommended for patients with DM. The objective of this study was to estimate the prevalence of immunization in patients with DM at an outpatient clinic of the Unified Health System (SUS) and at private practices in the South of Brazil. We also aimed to assess the influence of the new coronavirus (COVID-19) pandemic on immunization. This was a cross-sectional study. Data was collected using a standard questionnaire during outpatient consultations and review of medical records. We included patients with type I and type II DM, over 18 years old, from private and SUS clinics. All patients signed an informed consent form, and the study was approved by the Ethics Committee. 88 patients were included, with a mean of 55.7 years-old, 30.7% male and with a mean body mass index of 29.5 kg/m². Most of the sample were seen at the SUS outpatient clinic (67.8%), had type II DM (75%), and used insulin (65.9%). The median time since DM diagnosis was 15 years and the mean glycated hemoglobin was 8.4%. Most of patients (72.7%) claimed to have the influenza vaccine annually, 21.6% have had the 3 doses of hepatitis B and only 6.8% have had the Pneumo 23 vaccine. Facing the COVID-19 pandemic, 38.6% believe it has changed the search for vaccination, and 92% said they will immunize against COVID-19 when available. The majority of patients did not receive medical advice to perform the vaccination (40.9%). In conclusion, our study demonstrated a good influenza immunization coverage. However, despite the importance of immunization in chronic comorbidities as DM, both the rate of medical recommendation for immunization and vaccination coverage for other preventable infectious diseases are still below ideal.

E-PO86 MEAN GLUCOSE DURING HOSPITALIZATION IS ASSOCIATED WITH MORTALITY IN PATIENTS WITH TYPE 2 DIABETES AND COVID-19 INFECTION

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Introduction: Diabetes mellitus (DM) is associated with an increased risk of severity and mortality due to COVID-19 infection but the role of hyperglycemia prior and during hospitalization is still controversial. **Objective:** To investigate the association between glycemic control prior and during hospitalization with mortality in patients with DM and COVID-19. **Methods:** This is an observational, retrospective study that evaluated patients with diabetes and COVID19 infection that were admitted to the emergency department, general ward and intensive care unit (ICU), at an University hospital, from March to September 2020. Data were obtained by consulting the electronic medical record of inpatients with a previous diagnosis of diabetes. We analyzed the average of blood glucose levels during the hospitalization period, previous glycosylated hemoglobin (HbA1c) and the clinical outcome of hospital discharge or death. **Results:** 106 individuals were included and all had type 2 DM. Their mean age was 65.61 years (standard deviation: +11.61) and the mean HbA1c was 8.36%. Mean glucose during hospitalization was 174.03 mg/dL and was significantly higher in those that died than others (191.99 + 51.74 mg/dL vs. 158.37 + 43.02 mg/dL respectively; $p = 0.001$). This difference was observed in those admitted to ICU (193.91 + 52.23 mg/dL vs. 162.37 + 36.86; $p = 0.012$) but not in those at the general ward (152.45 + 7.56 mg/dL vs. 156.37 + 46.16 mg/dL; $p = 1.00$). There was a correlation between HbA1c and in-hospital glycemic mean ($p < 0.001$ and $R = 0.625$), but HbA1c was not associated with mortality ($p = 0.471$). **Conclusion:** In-hospital mean glucose levels are associated with mortality in patients with type 2 DM and COVID-19 infection, especially in those admitted to ICU. Although HbA1c levels were linked to in-hospital glucose levels, in this sample HbA1c levels did not differ between those that died and others. It is still necessary to understand if there is a causal relationship between in-hospital glycemia and mortality or if hyperglycemia is merely a marker of clinical severity in these individuals.

E-PO87 MUSCLE INFARCTION IN DIABETIC TYPE 1: CASE REPORT

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Case report: Female patient, 28 years old, type 1 DM 16 years ago, poorly controlled, with diabetic neuropathy and retinopathy. She started pain in the medial aspect of the right thigh, with irradiation to the ipsilateral knee. Physical examination showed an increased volume of the medial region of the thigh with swelling and pain upon palpation. The patient used NSAIDs, gabapentin, duloxetine, venlaflaxine and carbamazepine with little pain control. Tests showed a normal WBC count blood, HbA1c: 14%. Ultrasound (US) revealed thickening and diffuse hyperechogenicity of subcutaneous cellular tissue of the medial surface of the upper proximal third of the thigh, observing anechoic images less than 5 mm. Rheumatological diseases and DVT were discarded, and muscle biopsy showed no alterations. MRI showing T2 hyperintensity compromising the proximal fibers of the sartorius muscle and fibers of the vastus medialis, with enhancement after intravenous contrast administration and densification of the adjacent subcutaneous tissue. DMI was suggested and ASA 100 mg/day in association with amitriptyline. She presented pain relief and improved glycemic control. **Discussion:** Muscle infarction is a rare condition that can occur in individuals with type 1 DM, mainly in those with inadequate glycemic control and prolonged disease. It is more common in females, with an average age between 37 and 43 years. Its pathogenesis is still unknown, possibly being multifactorial. Usually it is associated with diabetic chronic complications. Patients present with swelling and muscle pain with a sudden onset, in the lower limbs, and there may be a locally palpable mass in 34 to 44% of cases. In the laboratory exams, there may be leukocytosis and slight elevation of the enzyme CPK. The exam of choice is MRI, in which are present lesions suggestive of ischemia, isointense edema in T1 and hyperintense in T2, with partial loss of intermuscular adipose tissue. Although histopathology is the definitive diagnostic method, its performance is not a consensus, since there is a risk of haematoma and infection, in addition to the disease having a self-limiting course. Half of the patients presenting new episodes in the same limb or in a contralateral limb. Analgesia and rest are recommended. In addition, anticoagulants and early physical therapy may be suggested. We emphasize the clinical and image of this uncommon condition, avoiding unnecessary delay as well as hastening appropriate treatment.

E-PO88 NAUSEA AND VOMITING ASSOCIATED WITH POOR GLYCAEMIC CONTROL IN A YOUNG MAN WITH TYPE 1 DIABETES

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Introduction: Diabetic gastroparesis is a syndrome characterized by gastrointestinal symptoms such as nausea, vomiting, early satiety, and slowed emptying for solids, in the absence of mechanical obstruction. It is a complication of long-standing type 1 and type 2 diabetes mellitus (DM). Delayed gastric emptying is an under-recognized complication of diabetes and sometimes constitutes a challenge with a difficult clinical approach. **Case report:** 27-year old man, diagnosed with type 1 DM since 6 years old and several hospitalizations from 16 years old due to ketoacidosis and urinary tract infection, complicated with chronic kidney disease and hypertension. He was taking 1,2 ui/kg of total daily dose of insulin, but his glycemic control was poor. In recent months, he had experienced intractable nausea and vomiting, accompanied by dehydration, abdominal pain and weight loss, requiring frequent admission to hospital. He was hospitalized for symptom control and correction of metabolic disorder, being prescribed metoclopramide and ondansetron. His body mass index was 19,97 kg/m^2, glycated hemoglobin was 10%, haemoglobin was 11,7 g/L, no electrolyte change and estimated glomerular filtration rate 37 mL/min/1.73 m^2. An upper digestive endoscopy and an ultrasound of the abdomen showed no obstruction but gastric emptying scintigraphy, found marked slowing of emptying. **Discussion:** Diabetes affects approximately 30% of patients with gastroparesis referred to tertiary centers, with a higher risk in type 1 compared to type 2 diabetes. Few studies show that the prevalence is higher in women and the most common symptoms are nausea and vomiting, and patients with type 1 DM required more hospitalization than type 2 diabetes. Hyperglycemia, autonomic neuropathy, and enteric neuromuscular inflammation and injury are implicated in the pathogenesis of delayed gastric emptying. The available treatment options include nutritional support, improvement of gastric emptying using prokinetics, and in refractory cases, require a venting gastrostomy or jejunostomy or use of gastric electric stimulator. **Conclusion:** This case represents a typical example of diabetic gastroparesis. It is likely that there are many diabetic patients who have this problem and the diagnosis is being missed. Early recognition of gastroparesis, associated with adequate glycemic control, has the possibility of promoting the patient's better quality of life and preventing disease progression.

E-PO89 ORAL SEMAGLUTIDE IMPROVES POSTPRANDIAL GLUCOSE AND LIPID METABOLISM AND DELAYS GASTRIC EMPTYING IN SUBJECTS WITH TYPE 2 DIABETES

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Introduction: Subcutaneous (s.c.) semaglutide, a glucagon-like peptide-1 analogue, improves postprandial glucose (PPG) and postprandial lipid (PPL) metabolism, and delays first-hour gastric emptying (GE), in subjects with obesity and without type 2 diabetes (T2D). **Objective:** To study the effects of once-daily oral semaglutide on PPG and PPL metabolism, and GE, in subjects with T2D. **Patients and methods:** A double-blind, crossover trial (NCT02773381) randomized subjects to 12 weeks of oral semaglutide (dose-escalated to steady-state at 14 mg) followed by 12 weeks of placebo, or vice versa, with 5-9 weeks' washout in between. At the end of each treatment period, assessments included PPG metabolism after a standardized breakfast, PPG and PPL metabolism after a standardized fat-rich breakfast, and GE (by paracetamol absorption test) after a standardized lunch. The primary endpoint was serum glucose AUC from 0-5 hours (AUC0-5h) after the start of a standardized breakfast. **Results:** Fifteen subjects were randomized (13 males, mean age 58.2 years, mean HbA1c 6.9%, mean BMI 30.8 kg/m^2); two withdrew prior to completion. After 12 weeks, fasting glucose levels were significantly lower, and C-peptide levels significantly higher, with oral semaglutide versus placebo ($p < 0.05$). After a standardized breakfast, postprandial glucose was significantly lower with oral semaglutide versus placebo (estimated treatment ratio [95% confidence interval]: 0.71 [0.63, 0.81]; $p < 0.05$); mean postprandial increments (iAUC0-5h/5h) in glucose and postprandial glucagon were also significantly reduced ($p < 0.05$). No significant differences were seen in fasting or postprandial insulin levels. Glucose metabolism results were similar after a standardized fat-rich breakfast. Fasting levels of total-, LDL-, and VLDL-cholesterol, triglycerides (TG), and apolipoprotein B48 (ApoB48) were significantly lower with oral semaglutide versus placebo ($p < 0.05$) after 12 weeks. In addition, postprandial VLDL-cholesterol, ApoB48, and TG, and TG iAUC0-8h/8h, were significantly lower for oral semaglutide versus placebo ($p < 0.05$). During the first hour after a meal, GE was delayed (31% decrease in paracetamol AUC0-1h; $p < 0.05$) with oral semaglutide versus placebo, which may explain at least part of the effect on PPG and PPL. **Conclusion:** Oral semaglutide improved fasting and postprandial glucose and lipid metabolism, and delayed GE, consistent with results seen with s.c. semaglutide.

E-PO90 ORAL SEMAGLUTIDE REDUCES ENERGY INTAKE AND IMPROVES EATING CONTROL IN TYPE 2 DIABETES

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Introduction: Oral semaglutide is the first oral glucagon-like peptide-1 analogue to be approved for treatment of type 2 diabetes (T2D). **Objective:** We studied the effect of oral semaglutide on appetite and energy intake in subjects with T2D. **Patients and methods:** A double-blind, two-period, crossover trial (NCT02773381) randomized subjects to a 12-week period of oral semaglutide (dose-escalated to steady-state at 14 mg) followed by placebo for 12 weeks (with 5-9 weeks' washout in between) or vice versa. Energy intake was measured at the end of each period over 4-days, during an ad libitum lunch, evening meal and evening snack box. Appetite was rated using a visual analogue scale after overnight fast and during standardised 5-hour breakfast and 8-hour fat-rich breakfast tests. Eating and craving control were assessed using the Control of Eating Questionnaire (CoEQ). Body weight changes were assessed and reported for the first period only, due to a possible rebound effect if oral semaglutide was received first. **Results:** Fifteen subjects were randomized (13 males, mean age 58.2 years, mean HbA1c 6.9%, mean BMI 30.8 kg/m^2); two withdrew prematurely. Energy intake was reduced with oral semaglutide versus placebo during the lunch meal, evening meal and evening snack box, leading to total daily energy intake reduction of 5096 kJ (relative difference -38.9%). Palatability ratings after the meal indicated no food aversion with oral semaglutide or placebo. There were no significant differences between oral semaglutide and placebo in overall appetite ratings pre-meal (fasting state) or during a breakfast meal. After the fat-rich breakfast mean postprandial fullness rating was significantly greater with oral semaglutide versus placebo; no other significant differences in appetite ratings were found. CoEQ indicated fewer food cravings and better eating control with oral semaglutide versus placebo. During the first period, mean ± SD body weight loss with oral semaglutide was 2.9 ± 4.3 kg versus 1.2 ± 3.2 kg with placebo, which was attributable to body fat mass loss. **Conclusion:** Once-daily oral semaglutide reduced energy intake in subjects with T2D. Appetite was unchanged, control of eating improved and body weight was reduced.

E-PO91 ORAL SEMAGLUTIDE VS. SITAGLIPTIN: EFFICACY BY BASELINE HBA1C AND BACKGROUND OAD IN PIONEER 3

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Introduction: Oral semaglutide is the first glucagon-like peptide-1 receptor agonist in an oral formulation currently in development for the treatment of type 2 diabetes (T2D). The PIONEER 3 trial compared the efficacy, long-term adverse event (AE) profile, and tolerability of oral semaglutide with sitagliptin as an add-on to metformin ± sulfonylurea in patients with T2D. **Aim:** This exploratory analysis of PIONEER 3 investigated whether baseline glycated hemoglobin (HbA1c) or background oral anti-diabetic agent (OAD) had an effect on the glycemic efficacy of oral semaglutide vs sitagliptin. **Results:** HbA1c was reduced across all baseline HbA1c and OAD groups in all treatment arms; reductions were greater with higher baseline HbA1c. HbA1c reductions were signicantly greater with oral semaglutide 7 and 14 mg vs. sitagliptin in all groups, except for oral semaglutide 7 mg in the HbA1c ≤ 8.0% group. Achievement of HbA1c < 7.0% was greater with oral semaglutide 7 and 14 mg vs. sitagliptin in all groups. In conclusion, oral semaglutide 7 and 14 mg signicantly improved glycemic control vs. sitagliptin across most HbA1c groups, and irrespective of background OAD use.

E-PO92 OUTCOMES IN EARLY RESPONDERS (SUBJECTS ACHIEVING ≥ 5% WEIGHT LOSS AT 16 WEEKS) TO LIRAGLUTIDE 3.0 MG AS AN ADJUNCT TO INTENSIVE BEHAVIOUR THERAPY IN INDIVIDUALS WITH OBESITY IN THE SCALE IBT TRIAL

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Introduction: The European Medicines Agency (EMA) prescribing information for liraglutide 3.0 mg defines a stopping rule for individuals achieving < 5% body weight reduction after 16 weeks' treatment. The SCALE IBT study demonstrated the overall efficacy of liraglutide 3.0 mg for weight reduction as an adjunct to IBT. The present analysis explored the effect of intervention in the subgroup of liraglutide-treated individuals categorised as early responders (ER) who lost ≥5% at week 16. This subgroup corresponded to individuals who would have been eligible to continue treatment after 16 weeks in a real-world clinical setting. **Methods:** The 56-week SCALE IBT trial randomised adults with obesity (BMI ≥30 kg/m²) and without diabetes to liraglutide 3.0 mg or placebo as an adjunct to a Centers for Medicare & Medicaid Services-based programme of IBT (CMS-IBT), including prescribed exercise (escalating to 250 min/week) and diet (1200-1800 kcal/day). This exploratory post-hoc analysis assessed the proportion of liraglutide-treated individuals categorised as ER and describes their outcomes after 56 weeks of treatment. **Results:** Mean characteristics at randomisation (n = 142) for liraglutide 3.0 mg-treated individuals were: 45.4 years old, 83.8% females, 109 kg, BMI 39.3 kg/m². At 16 weeks, 66.9% of these had achieved ≥ 5% weight loss. At 56 weeks, mean weight reduction in this ER subgroup was 10.4%, with 79.9% and 44.2% of this subset achieving weight loss ≥ 5% and ≥ 10%, respectively, and 88.4% of this subset still on drug. Other secondary outcomes are shown in the Table. Adverse events were similar in the ER subset to the overall trial population, the most frequent adverse events were gastrointestinal events reported for 74.7% in the ER subset as compared with 71.1% in the overall liraglutide group and 48.6% in the overall placebo group. **Conclusion:** More than two-thirds of people with obesity receiving liraglutide 3.0 mg as an adjunct to IBT were eligible for long-term treatment according to the EMA prescribing information. Of these, the majority continued on therapy to 56 weeks achieving clinically relevant reductions in body weight.

E-PO93 PERMANENT NEONATAL *DIABETES MELLITUS* WITH KCNJ11 GENE MUTATION: A CASE REPORT

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Case presentation: Infant, female, admitted at 45 days of birth with a history of wailing, respiratory distress and abundant diuresis for 3 hours. On physical examination, poor general condition, mottled skin, sunken fontanel, xerostomy, tachypnea, tachycardia, 98% saturation, lip cyanosis and loss of 220 g in 2 days. One hour after admission, there was worsening of the condition, refractory to the infusion of saline solution and antibiotic therapy, performing orotracheal intubation and adrenaline + dobutamine infusion, with normalization of the capillary refill time, complete remission of the mottled skin and wide pulses. Laboratory tests and arterial blood gas collected at the time revealed glycemia of 839 mg/d and metabolic acidosis. Regular insulin 0,1 ui/Kg/hour was performed, evolving with hemodynamic and ventilatory stability. Continuous Subcutaneous Insulin Infusion (CSII) was installed and after 5 days, sulfonylurea (Glibenclamide) 0,8 mg/kg/day was introduced with tapering from CSII. An allelic variant in the KCNJ11 gene has been identified. **Discussion:** It is necessary to quickly recognize the signs and symptoms of neonatal diabetes mellitus (NDM) in order to avoid complications. In the present report, the infant showed classic signs of diabetes ketoacidosis, severe condition requiring intubation for 2 days and admission to the neonatal ICU for 5 days. The genetic study identified mutations in the KCNJ11 gene, the main cause of permanent NDM (PNDM). This gene encodes the Kir6.2 subunit of the ATP-sensitive potassium channel, which plays an important role in insulin secretion. It is known that this channel is the site of action of sulfonylureas and previous studies have shown that the use of this medications in PNDM results in a glycemic control as good, or even better, than that obtained with insulin therapy. **Final comments:** The present case report demonstrates the serious consequences of hyperglycemia in a patient with undiagnosed NDM, a condition that could have been fatal if not treated in time. It can be concluded that the genetic-molecular analysis and the differentiation between transient NDM an PNDM were important for prognosis and establishment of adequate therapy. Currently, the patient is being followed up with a pediatric endocrine, using Glibenclamide and good glycemic control.

E-PO94 PHENOTYPE OF DIABETIC PERIPHERAL NEUROPATHY IN A SAMPLE OF PEOPLE WITH TYPE 2 DIABETES FOLLOWED IN REFERENCE SERVICE

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Background: Diabetic Peripheral Neuropathy (DPN) is one of the most frequent complications of diabetes, which affects about 50% of patients in this condition. It can be asymptomatic or associated with a characteristic clinic, such as pain, burning and tingling. Its diagnosis is clinical and by exclusion. Once the DPN is recognized, the treatment should aim to improve the symptomatology, when present, as well as to establish prevention and care measures in cases where there is a loss of protective sensitivity, in order to reduce the sequelae and contribute to the quality of life. This study aimed to evaluate not only the frequency of DPN, but also its phenotypic presentation. **Methods:** this is a retrospective study of a convenience sample of clinical data of 100 people presenting type 2 diabetes, followed in a reference service, where was applied the Neuropathic Signs and Symptoms Score (ESN&ECN) to evaluate diagnosis of DPN. **Results:** in 100 people studied, we classified 29% without symptoms, 13% with mild symptoms, 28% with moderate and 30% severe. About the phenotypic presentation of symptoms: 71% had discomfort in the legs and 68% reported burning, tingling and numbness. Feet and calves were the areas with most complaint, in 62%. 51% have higher intensity of symptoms more frequently during the day. 49% woke up in the night because of the symptoms and 58% needed to sit or lie down to decrease the pain. In the total commitment score, we classified: 24% without compromise, 23% as mild, 30% moderate and 23% severe. About the findings of the physical exam, we found: 69% with Aquileu reflex reduced/absent on the right side and 67% on the left; the vibratory sensitivity was reduced/absent by 63% on the right side and 60% on the left. In turn, the painful sensitivity was preserved in 59% people on the right side and 62% on the left. The thermal sensitivity was present in 72% on the right side and 75% on the left. We were able to define 71% of the sample with presence of DPN. **Conclusion:** we found prevalence of DPN above that described in the literature, as well as phenotype of moderate/severe symptoms in more than half of the studied cases. The parameters evaluated by the ESN&ECN was satisfactory to allowed us made not only the diagnosis of DPN, but also its phenotypic description, to evaluate the complaints of the patients and to infer on repercussions in the quality of life, as well as propose preventive and therapeutic drug interventions when indicated.

E-PO95 PREVALENCE OF CHRONIC KIDNEY DISEASE IN ADULTS WITH TYPE 2 DIABETES USING THE EGFR (CKD-EPI) CRITERIA IN BRAZIL. A REAL WORLD EVIDENCE STUDY

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Introduction: Type 2 Diabetes (T2D) is the leading cause chronic kidney disease (CKD) in the United States with previous estimates suggesting close to 40% of patients with T2D having evidence of mild (Stage 2) CKD and approximately 20% having moderate (Stage 3) to severe (Stage 4 and 5) renal impairment. Based on the significant impact of CKD, it is currently recommended to focus on early identification of CKD to allow for treatment directed at slowing or preventing CKD progression. **Objective:** This study was conducted to estimate the prevalence of CKD in the Brazilian population and to identify the clinical profile of these patients. **Materials and methods:** This was a population-based cross-sectional observational study to determine the local prevalence of patients with T2D and CKD from a network of over 70 private clinics in São Paulo, Brazil. The data considered for the retrospective study was extracted from a structured database. Calculation of eGFR was done according to the CKD-EPI Creatinine 2009 Equation, recommended by the National Kidney Foundation. Comorbidities and demographic data were also collected. **Results:** Data from 5182 patients was analyzed. 51.8% had an eGFR below 90 mL/min/m² and were characterized as having a renal dysfunction. 39.5% of patients had mild CKD, 10.7% moderate CKD, 1.2% severe CKD, and 0.4% (20 patients) had terminal renal failure and were on dialysis. Patients older than 65 years old (1,544) had the following prevalence: 16.3% (251 patients) normal renal function, 55.2% (852 patients) mild CKD, 25.1% (388 patients) moderate CKD, 2.8% (44 patients) severe CKD, and 0.6% (9 patients) terminal renal function. Although most patients were taking at least one hypoglycemic drug (86.5%), they did not have their blood glucose level under control (63,2% had HbA1c >= 7,0%). A strong correlation between comorbid diagnosis (arterial hypertension and also old age) and the presence of renal dysfunction was found ($p < 0.05$). **Conclusion:** Renal dysfunction is a very common complication (>50%) in patients with type 2 diabetes and it is highly associated with other comorbidities, particularly with arterial hypertension and in older patients where CKD is much higher (84%). It should always be an important concern for clinicians dedicated to treat patients with type 2 diabetes to focus on early identification of CKD to allow for treatment directed to slow or prevent CKD progression.

E-PO96 PROPORTION OF TYPE 2 DIABETES PATIENTS ACHIEVING HBA1C GOAL AND RELATED FACTORS IN BRAZIL: A REAL WORLD EVIDENCE STUDY

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Introduction: Despite the clinical advances in the management of type 2 diabetes (T2D) over the past few decades, nearly 48% of the patients with T2D do not achieve the ADA recommended glycemic goal of glycated hemoglobin (HbA1c) of < 7.0% in the US. This is the same goal included in the Brazilian Guidelines for the treatment of T2D but, there is a lack of local data for the rate of glycemic goal achievement in Brazil. Clinical Inertia has been reported to be the main cause of inadequate blood glucose control in patients with T2D. **Objectives:** Determine the HbA1c goal achievement among Brazilian T2D patients receiving antidiabetic therapy and investigate its relation to other clinical and demographic covariates. **Materials and methods:** This was an observational, retrospective study using a cross-sectional database analysis from a private network of over 70 clinics in São Paulo, Brazil. This Real Word Evidence study evaluated 1034 patients with T2D, receiving antidiabetic drug therapy for a minimum of 3 months since beginning treatment and had a measured level of basal glycated hemoglobin (HbA1c) of 7.0% or above. The proportion of patients that did not achieve the HbA1c target of < 7.0% was calculated. Demographic and clinical data, including comorbidities and on treatment were gathered and a correlation analysis with the treatment target was performed. **Results:** 60.3% of patients did not achieve the treatment goal after a minimum of three months treatment with antidiabetic drugs. The average treatment period analyzed was 9.9 months (between first and final HbA1c measurements). The HbA1c average baseline and final measurements were 9.9% ± 2.2 and 7.8% ± 1,9, respectively. In the univariate analysis, a statistically significant difference ($p < 0.05$) between patients who achieved the treatment goal and those who did not, was observed in the following relevant clinical variables: age, total cholesterol levels and LDL levels, meaning that older patients, with higher total and LDL cholesterol, were more likely not to be at goal. **Conclusion:** In this real world study, only 40% of patients achieved the glycemic target (HbA1c < 7%) after at least 3 months of treatment with one or more antidiabetic drug and the remaining 60% did not achieve the target of HbA1c < 7%. The average initial HbA1c was 9.9% and the final level was 7.8%. Patients not at goal were older and had comorbidities, which highlight the challenge that represents the management of diabetes in Brazil.

E-PO97 QUALIFICATION OF MEDICAL KNOWLEDGE IN HOSPITAL HYPERGLYCEMIA: INTERVENTION STUDY AT A UNIVERSITY HOSPITAL

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Diabetes is directly and indirectly related to the risk of hospitalization and the increase in hospital stay. Approximately 20% of all hospitalized patients have diabetes and hyperglycemia contributes to the increase in health cost. Data from medical practice shows the importance of knowledge about the disease and recognize that the intervention of a team specialized in diabetes is an important predictor in reducing the length of hospital stay. The aim of this study was to evaluate whether a proposal for medical education in hospital hyperglycemia is able to improve the medical knowledge of preceptors and residents of the internal medicine team at a university hospital. Open "before and after" intervention study, carried out in the internal medicine department of a University hospital. All preceptors and residents physicians were invited to participate. The medical education program was based on theoretical-expository classes, web videos and practical consultations given by an endocrinologist with experience in hospital hyperglycemia during the month of July 2020. The evaluation of the improvement of medical knowledge was done through a questionnaire with 10 specific questions in the area before (June 2020) and after interventions (August 2020). Statistical analysis was performed using SPSS version 20.0 (IBM Corp. Armonk, NY, USA). All participants signed an informed consent form and the study was approved by the research ethics committee of our institution. A total of 63 physicians agreed to participate in the study, 32 of whom were preceptors and 31 were residents. The global average of correct answers before the intervention was 6.9 points (±1.7); after the intervention, the mean was 8.8 points (±1.5); $p < 0.001$. The comparison of medical knowledge on hospital hyperglycemia before the intervention was higher in resident physicians [7.4 correct answers (±1.7)] compared to preceptors [6.3 (±1.5)], $p = 0.006$. After the intervention, the average of correct answers between preceptors and residents was similar. The analysis of individual questions did not show a significant increase in the correctness rate. Medical knowledge in hospital hyperglycemia is extremely relevant at the individual and collective level. A structured medical education program, carried out by specialists, at a university hospital, was able to improve the medical knowledge of preceptors and residents in internal medicine.

E-PO98 REAL-WORLD EFFECTIVENESS OF SEMAGLUTIDE IN EARLY USERS FROM A US COMMERCIALLY INSURED AND MEDICARE ADVANTAGE POPULATION

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Background: With semaglutide's FDA approval in Dec 2017, this study sought to provide real-world evidence on its effectiveness in a cohort of early users. **Objective:** To describe real-world once-weekly semaglutide SC use and its effectiveness in a cohort of early users. **Methods:** Claims and lab result data from a broad national U.S. commercially insured and Medicare Advantage population were used to identify T2DM patients who initiated semaglutide between 12/1/17-6/30/18 (first claim date set as index). Of these, patients who had ≥ 12-month pre-index health plan eligibility as well as ≥ 1 HbA1c result within both ≤ 3 months pre- and ≥ 3 months post-index were selected. Changes in HbA1c were assessed in all patients, GLP-1 naïve patients and GLP-1 naïve patients with a pre-index HbA1c > 9%. **Results:** A total of 107 patients were included overall, with 51 GLP-1 RA naïve patients, inclusive of 25 patients who were GLP-1 RA naïve with HbA1c > 9%. Overall, the average age of patients was 52 years, and 49% were female. Just over half of all patients were prescribed their first claim of semaglutide SC by an endocrinologist. The most common baseline comorbid conditions were dyslipidemia (87%), hypertension (72%), and obesity (53%). A third of patients used insulin prior to starting semaglutide SC overall, this proportion increased to more than half in GLP-1 RA naïve patients with baseline HbA1c > 9%. Semaglutide SC initiation was associated with a significant reduction in HbA1c in all patients (-1.3%), GLP-1 RA naïve patients (-2.0%), and HbA1c > 9% GLP-1 RA naïve patients (-2.9%) (all $p < 0.0001$). Attainment of HbA1c < 7% increased from the pre-index to the post-index period for all patients (22% to 47%), GLP-1 RA naïve patients (12% to 49%), and HbA1c > 9% GLP-1 RA naïve patients (0% to 32%) (all $p < 0.0001$). **Conclusions:** This real-world study is the first analysis in the US to describe real-world effectiveness of semaglutide SC in individuals with T2DM. Early semaglutide SC initiation and HbA1c assessment were associated with clinically and statistically significant reductions in HbA1c and increases in HbA1c target attainment in this preliminary analysis. Additional real-world evidence generation is ongoing that will examine the full breadth of patients prescribed semaglutide SC after this initial, early after-launch cohort as well as allowing for longer follow-up to assess the impact of fully escalated doses and the durability of its effect.

E-PO99 REDUCED RATES OF HYPOGLYCEMIA IRRESPECTIVE OF THE DEFINITION USED WHEN SWITCHING TO INSULIN DEGLUDEC FROM OTHER BASAL INSULINS IN ROUTINE CLINICAL CARE: THE REFLECT STUDY

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Introduction: Hypoglycemia is a frequent event in patients with diabetes treated with insulin and has been linked to impaired glycemic control. Randomized controlled trials have demonstrated that degludec is associated with less hypoglycemia than with other basal insulins at equivalent glycemic control, across a broad spectrum of patients with diabetes. ReFLeCT was a study that evaluated the safety and effectiveness of switching from other basal insulins to degludec in patients with type 1 (T1D) or type 2 diabetes (T2D). **Objectives:** As different hypoglycemia definitions can impact study outcomes, the present analysis of the ReFLeCT study analyzed previous (pre-specified) and updated (post hoc) American Diabetes Association (ADA) hypoglycemia definitions. **Methods:** ReFLeCT was a prospective, observational study conducted across seven European countries. The study comprised a baseline period (4 weeks prior to switching to degludec) and a follow-up period (up to 12 months after switching to degludec). The primary endpoint was the change from the baseline period in the number of overall hypoglycemic events during the 12-month follow-up period. Definitions consisted of documented asymptomatic and symptomatic, pseudo, probable symptomatic, and level 1, 2 and 3 (severe). **Results:** In T1D (n = 556) and T2D (n = 611), the estimated rate ratios across the previous and the updated ADA hypoglycemia definitions were significantly lower during the 12-month follow-up vs. baseline, except for asymptomatic hypoglycemia in T1D. **Conclusions:** Switching to degludec from other basal insulins was generally associated with lower rates of hypoglycemia when using different hypoglycemia definitions in patients with diabetes.

E-PO100 REDUCED RISK OF HYPOGLYCAEMIA AND LOWER HBA1C WITH DEGLUDEC COMPARED TO GLARGINE U300 IN INSULIN-TREATED PATIENTS WITH TYPE 2 DIABETES

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Background and aims: Minimising hypoglycaemia is an important aim of insulin therapy. Long-acting basal insulins, degludec and glargine U300 have been shown to have a lower risk of hypoglycaemia than glargine U100. A head-to-head trial was conducted to evaluate the risk of hypoglycaemia with degludec compared with glargine U300 in insulin-treated patients with type 2 diabetes (T2D). **Materials and methods:** This randomised (1:1) open-label, treat-to-target, multinational trial, included T2D patients ≥ 18 years with HbA1c ≤ 9.5% and BMI ≤ 45 kg/m^2. Patients were previously treated with basal insulin ± oral antidiabetic drugs (excluding insulin secretagogues) and fulfilled at least one criterion that placed them at a risk of hypoglycaemia. **Results:** The rate ratio (RR) of severe or BG-confirmed symptomatic hypoglycaemia with degludec compared to glargine U300 was 0.88 (NS) during the maintenance period and a statistically significant RR of 0.77 was seen during the total treatment period. During the maintenance and total treatment periods, the RR was statistically significant in favour of degludec for severe hypoglycaemia (RR: 0.20 and 0.38, respectively) and for nocturnal hypoglycaemia (RR: 0.63 and 0.57, respectively). The proportions of patients with hypoglycaemia were statistically significant in favour of degludec during both periods for all hypoglycaemic endpoints. **Conclusion:** Degludec showed an overall lower risk of hypoglycaemia compared to glargine U300 accompanied by significantly lower HbA1c.

E-PO101 REDUCTION IN SYSTOLIC BLOOD PRESSURE WITH SEMAGLUTIDE TREATMENT IS NOT DUE TO WEIGHT LOSS ALONE: DATA FROM SUSTAIN 15

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Background: Elevated blood pressure (BP) and excess body weight (BW) are common in type 2 diabetes (T2D). Weight loss (WL) is associated with a reduction in BP. Semaglutide, significantly reduced HbA1c, BW and systolic BP (SBP) vs comparators across the phase 3a SUSTAIN clinical trial programme. **Purpose:** To investigate the contribution of WL to the reduction in SBP associated with semaglutide treatment across SUSTAIN 1-5. **Methods:** SUSTAIN 1-5 included subjects with inadequately controlled T2D, randomised to once weekly, subcutaneous semaglutide 0.5 or 1.0 mg (1.0 mg in SUSTAIN 3), or comparator for 30 or 56 weeks. Comparators were placebo (SUSTAIN 1 and 5), sitagliptin (SUSTAIN 2), exenatide extended release (SUSTAIN 3) and insulin glargine (SUSTAIN 4). Mediation analyses were performed post hoc to quantify the relative contribution of WL (mediator) to the treatment effect of semaglutide on SBP; WL was considered an indirect effect (WL mediated), the effect not mediated by WL was considered a direct effect of semaglutide on SBP (WL independent). Reduction in SBP was also evaluated across weight change categories. **Results:** Across the SUSTAIN 1-5 trials (n = 3,918), mean changes in SBP (baseline 128.8-134.8 mmHg) ranged from -2.6 to -5.1 mmHg and -2.7 to -7.3 mmHg, with semaglutide 0.5 and 1.0 mg, respectively, vs -1.0 to -2.3 mmHg with comparators ($p < 0.02$ vs. comparator for all trials except SUSTAIN 1 [both doses] and SUSTAIN 5 [lower dose]). Mean changes in BW (baseline 89.5-95.8 kg) ranged from -3.5 to -4.3 kg and -4.5 to -6.4 kg with semaglutide 0.5 and 1.0 mg, respectively, vs -1.9 to +1.2 kg with comparators ($p < 0.0001$ vs. comparator for all trials). There were greater reductions in SBP with semaglutide (vs. comparators) across all categories evaluated. In the >4.0 kg WL category, mean change in SBP was -3.0 to -6.8 and -4.4 to -9.3 mmHg with semaglutide 0.5 and 1.0 mg, respectively, vs -4.0 to +1.1 mmHg with comparators. In the 0-4.0 kg WL category, mean change in SBP was -2.0 to -4.8 mmHg and -0.7 to -5.2 mmHg with semaglutide 0.5 and 1.0 mg, respectively, vs. 2.1 to 4.2 mmHg with comparators. For subjects with no WL/BW gain, mean change in SBP was -1.5 to +1.5 mmHg and -5.4 to +1.0 mmHg with semaglutide 0.5 and 1.0 mg, respectively, vs -1.0 to +1.1 mmHg with comparators. **Conclusion:** With semaglutide, greater WL was generally associated with greater reductions in SBP. SBP reduction observed with semaglutide was driven by both WL mediated and WL independent

E-PO102 RENOPROTECTION WITH SEMAGLUTIDE AND LIRAGLUTIDE: DIRECT OR INDIRECT EFFECTS?

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Background: The SUSTAIN 6 and LEADER cardiovascular (CV) outcome trials indicated that the glucagon-like peptide-1 analogues semaglutide and liraglutide may provide renal as well as CV benefits. This post-hoc analysis investigated the degree to which the observed renoprotective effects could be mediated by glycated haemoglobin (A1C), systolic blood pressure (SBP) and body weight (BW). **Methods:** SUSTAIN 6 (N = 3297, NCT01720446) and LEADER (N = 9340, NCT01179048) assessed CV, renal and safety outcomes for semaglutide and liraglutide versus placebo in patients with type 2 diabetes and high CV risk. A prespecified secondary outcome in these trials was a renal composite of new onset persistent macroalbuminuria, persistent doubling of serum creatinine, need for continuous renal-replacement therapy or death due to renal disease. We performed counterfactual mediation analyses of A1C, SBP and BW using absolute values at each trial visit. The direct contribution of semaglutide/liraglutide to time to first renal event was estimated assuming that the mediator values changed to those observed in the placebo group (from baseline to 2 and 3 years in SUSTAIN 6 and LEADER, respectively). In the adjusted model for A1C, both SBP alone and in combination with BW were included as confounders. Due to the limited number of events in SUSTAIN 6, 95% confidence intervals (CIs) could not be calculated. **Results:** In SUSTAIN 6 and LEADER, the rate of a renal event was reduced by 36% (95% CI 12%;54%; P = 0.005) and 22% (95% CI 8%;33%; P = 0.003) in the semaglutide and liraglutide groups, respectively, versus placebo. A1C was estimated to mediate 26% and 25% (95% CI -7.1;67.3) of the benefits of semaglutide and liraglutide, respectively, whereas the contributions of SBP (22% and 9% [95% CI 2.8;22.7]) and BW (-8% and 9% [95% CI -7.9;35.5]) were smaller. In adjusted analyses, the contribution of A1C increased to 36% (SBP as confounder) and 30% (95% CI -4.5;81.1; SBP and BW as confounders) in the semaglutide and liraglutide groups, respectively. **Conclusions:** The renal benefits of semaglutide and liraglutide appear mediated to a modest extent by changes in A1C, SBP and BW, and are therefore likely to be also driven by other, potentially direct, mechanisms.

E-PO103 RESISTANCE TRAINING IMPROVES GLYCEMIC HOMEOSTASIS IN PATIENTS WITH CHRONIC RENAL DISEASE IN STAGE TWO

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Introduction: The glycemic homeostasis in diabetic kidney disease patients could play a significant role in the progression of the chronic kidney disease (CKD). Resistance training (RT) has been effective in controlling glycemia in CKD, but it could be an impairment for this population, whose often present physical intolerance to effort. The RT with blood flow restriction (RT-BFR) is emerging as an alternative for these patients, due to the lower load used. Therefore, we aimed to verify the effect of six months of resistance training with or without blood flow restriction performed by patients with stage two chronic kidney disease on their glycemic homeostasis. **Methods:** Patients with CKD (n = 105) were randomized into control group (CTL, n = 35, 57.51 ± 5.23 yrs), RT (n = 35, 58.00 ± 6.22 yrs), and RT + BFR (n = 35, 58.00 ± 6.51 yrs). RT and RT-BFR groups performed six months of intervention, three times per week in non-consecutive days, adjusting load every two months. Each session included eight exercises, alternating between upper and lower limbs, under professional supervision. Restriction of 50% of the measured systolic blood pressure was applied to each arm and leg for the RT-BFR. Renal function was assessed by estimated glomerular filtration rate (eGFR). Glycemic homeostasis was assessed by fasting blood glucose, glycosylated hemoglobin (HbA1c) and oral glucose tolerance test (GTT). For the statistical analysis, the significant level was set as 5% ($p < 0.05$), and Kruskal-Wallis with Dunn's multiple comparisons test was applied. The study was approved by the local Human Research Ethics Committee and registered on the Brazilian clinical trial registration. **Results:** Although the eGFR decreased in all groups (CTL -8.45; RT -3.70; RT + BRF -3.24), both trained groups presented a lower decrease than CTL ($p < 0.01$), with no difference between them. Blood glucose and HbA1c values decreased in RT (-17.29 mg/dL and -0.55%, respectively) and RT+BRF (-17.40 mg/dL and -0.53%), whereas blood glucose increased in CTL (+2.49 mg/dL) and HbA1c did not variate. Both RT groups presented lower values ($p < 0.01$) than CTL during the GTT curve. By the times 30 and 60 minutes, RT showed lower values ($p < 0.01$) than RT + BFR and by the time 120 minutes, RT + BFR showed lower values ($p < 0.01$) than RT. **Conclusions:** Six months of RT and RT+BFR were similar in improving glucose homeostasis and attenuating the progression of CKD assessed through eGFR.

E-PO104 REVERSAL OF STAGE 2 IMMUNE-MEDIATED *DIABETES MELLITUS* AFTER USE OF RITUXIMAB IN STIFF-PERSON SYNDROME: A RARE CASE REPORT

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Case description: The patient was a 66-year-old woman with a past medical history of normoglycemia. She developed in 2017 sudden involuntary muscle spasms, mainly of the trunk, with frequent falls being diagnosed by the neurologist with Stiff-Person Syndrome after confirmation of high anti-GAD titers (above 2000 IU/mL). During follow-up, in addition to progressive neurological disability, a progressive increase in fasting glycemia and a decrease in Peptide C levels (from 0.85 ng/mL to 0.7 ng/mL) were observed. After several therapeutic failures, rituximab was indicated. A neurological assessment of the glycemic profile was carried out every three months to assess the metabolic response to rituximab. As results we found: fasting glycemia 102 mg/dL, glycated hemoglobin 5.4% and peptide C: 0.7 ng/mL before the infusion of rituximab, and, after 1 month of the infusion, the fasting glycemia decreased to 85 mg/dL and, 4 months later, Peptide C raised to 5.25 ng/mL, and has remained normal since then also with negativation anti-GAD. It is worth mentioning that we observed no changes in weight, level of physical activity or other factors that may interfere with glycemic metabolism. **Discussion:** Rituximab, an anti-CD20 monoclonal antibody, acts on the surface protein of B lymphocytes causing depletion of these cells. In patients with immuno-mediated diabetes mellitus, its use reduced HbA1c levels and the need for insulin due to the preservation of C-peptide levels over 1 year. Furthermore, preservation of Beta cells has also been described, in addition to decreasing the rate of fall of Peptide C. Based on what was observed in this report, there was a dramatic improvement in the neurological response as well as in the glycemic profile observed mainly through Peptide C after treatment with rituximab. This finding may help understanding the therapeutic resources currently available for pancreatic immunomodulation with benefit for patients affected by immuno-mediated diabetes mellitus. **Conclusion:** Stiff-Person syndrome, extremely rare disease, represents a challenge and requires a high degree of clinical therapeutic ability. The present study opens a perspective on the use of rituximab, by describing its action on glycemic metabolism in patients with this condition as well as on the impact of this type of immunotherapy on imune-mediated diabetes.

E-PO105 SAFETY OF LIRAGLUTIDE VERSUS PLACEBO IN PATIENTS WITH T2D AND CKD IN THE LEADER TRIAL

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Background: We assessed the safety of liraglutide vs placebo (PBO) in patients with chronic kidney disease (CKD) in the LEADER trial. **Methods:** LEADER was a randomized, double-blind, multicenter, placebo controlled cardiovascular (CV) outcome trial assessing CV and long-term safety of liraglutide up to 1.8 mg/day vs. PBO plus standard of care for 3.5-5 years in 9,340 type 2 diabetes (T2D) patients at high risk for CV disease. We stratified participants according to baseline estimated glomerular filtration rate (eGFR) < 60 (with CKD) or ≥ 60 mL/min/1.73 m² (without CKD) and analyzed: serious adverse events (SAEs), SAEs leading to discontinuation, acute renal failure, nausea leading to discontinuation, acute gallstone disease, severe hypoglycemia and foot ulcers. **Results:** Mean eGFR in patients with (n = 2,158) or without CKD (n = 7,158) was 45.7 ± 10.9 and 90.8 ± 21.6 mL/min/1.73 m², respectively. There was no increased risk of SAEs or SAEs leading to discontinuation with liraglutide vs PBO in those with and without CKD; and no conclusive risk of acute renal failure in those with CKD (hazard ratio [HR] 0.82, confidence interval [CI] 0.61;1.10) or without CKD (HR 1.26, CI 0.88;1.79) with liraglutide vs PBO. There was no difference in the risk of nausea leading to discontinuation or acute gallstone disease in patients with and without CKD. Severe hypoglycemia risk was significantly reduced with liraglutide by 37% (with CKD, HR 0.63, CI 0.43;0.91) and non-significantly reduced by 19% (without CKD, HR 0.81, CI 0.59;1.12). Diabetic foot ulcer risk was not increased with liraglutide in those with and without CKD. **Conclusions:** In LEADER, liraglutide was as well tolerated in patients with CKD as in those without CKD.

E-PO106 SCLEREDEMA OF BUSCHKE IN PATIENTS WITH TYPE 1 DIABETES: THREE CASE REPORTS

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Case reports: Case 1 – Male patient, 42 years old, diagnosed with type 1 diabetes (T1D) 31 years ago, currently decompensated. He is hypertensive and has a family history of polyglandular autoimmune syndrome type 2 (PAS-2). In 2019, he presented with induration of skin in the dorsal posterior region and interscapular region, with no erythema or pain at palpation. Scleredema of Buschke (SB) was confirmed by biopsy. Case 2 – Female patient, 45 years old, patient 1's sister, diagnosed with T1D 37 years ago, now also decompensated and presenting complications, besides hypertension. Likewise, in 2019, she presented with acanthosis nigricans in the cervical region and non-pitting edema on the superior dorsal and interscapular regions. Diagnosis of SB was confirmed by histopathological analysis. Case 3 – Female patient, 46 years old, diabetic since she was 17, decompensated since the beginning, presenting with chronic complications and hypertension. She developed a protuberance on the cervical region associated with acanthosis nigricans, extending to the interscapular region. It was discreetly hardened and painless. Histopathological analysis was compatible with SB. **Discussion:** SB is a rare pathological condition of connective tissue. It is divided into 3 types. Type 1: associated with bacterial or viral infections. Type 2: associated with paraproteinaemias. Type 3: associated with diabetes mellitus (DM), more commonly type 2, but it can also occur on type 1. This disease is characterized by non-pitting edema that appears mostly on cervical, deltoid and dorsal regions, but there can be systemic involvement as well. SB is related to poor glycemic control and metabolic alterations such as obesity and hypertension. The main pathogenesis theory is an abnormal production of extracellular proteins in the skin caused by deregulation of gene expression. Its diagnosis is clinical and histopathological. Histopathological analysis shows thickened dermis with collagen beams and mucopolysaccharides deposits visualized by staining with alcian blue and toluidine blue. **Final remarks:** The reported cases are from patients with long-standing T1D, decompensated, that are hypertensive and subsequently presented with the diagnosis of type 3 SB. Knowing the relationship between SB and DM is extremely important to the medical community to prevent similar cases from being unnoticed and neglected.

E-PO107 SEMAGLUTIDE CONSISTENTLY REDUCES CARDIOVASCULAR RISK IN PATIENTS WITH TYPE 2 DIABETES REGARDLESS OF BASELINE CARDIOVASCULAR RISK LEVEL: POST HOC ANALYSES OF THE SUSTAIN TRIAL PROGRAMME

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Background/Introduction: Semaglutide is a glucagonlike peptide1 analogue for the once weekly treatment of type 2 diabetes (T2D). Treatment with semaglutide led to significant reductions in HbA1c and body weight vs all comparators across the SUSTAIN phase 3a clinical trial programme. In SUSTAIN 6, 3,297 subjects with T2D and established cardiovascular (CV) disease or high CV risk (subclinical evidence of CV disease) were randomised to subcutaneous semaglutide (0.5 or 1.0 mg) or placebo, added to standard of care; the median duration of follow up was 2.1 years. Semaglutide treated patients had a significant 26% lower risk of major adverse CV events (MACE: a primary composite outcome of nonfatal myocardial infarction [MI], nonfatal stroke or CV death) vs those receiving placebo over 2 years (hazard ratio [HR], 0.74 ; 95% confidence interval [CI], 0.58; 0.95). **Purpose:** To assess the consistency of the CV effect of semaglutide across subgroups at different CV risk levels in SUSTAIN 6. Additionally, to examine the risk of MACE in the SUSTAIN 1-5 phase 3a trials, which included subjects at lower CV risk (n = 4,807). **Methods:** In SUSTAIN 6, two post hoc subgroup analyses were performed, each dividing the population into two CV risk levels at baseline: 1) prior MI or stroke (yes/no); 2) CV risk factors vs established CV disease (prior stroke, ischaemic heart disease [including prior MI], peripheral arterial disease, ≥ 50% arterial stenosis [any artery] or heart failure). A post hoc meta-analysis of MACE in the SUSTAIN 1-5 trials was also conducted. **Results:** In SUSTAIN 6, HRs for MACE were consistently below 1.0 across subgroups with no significant interactions. The HR for MACE in the SUSTAIN 1-5 trials was 0.85 (95% CI 0.35 ; 2.06), with the wide CI reflecting the low number of events. **Conclusion:** Consistent CV risk reduction with semaglutide vs comparators was observed across T2D populations at different levels of CV risk at baseline.

E-PO108 SEMAGLUTIDE IMPROVES HEALTH-RELATED QUALITY OF LIFE VS PLACEBO WHEN ADDED TO STANDARD-OF-CARE IN PATIENTS WITH T2D AT HIGH CV RISK (SUSTAIN 6)

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Introduction: Semaglutide is a glucagon-like peptide-1 (GLP-1) analogue for the treatment of type 2 diabetes (T2D). SUSTAIN 6 was a 2-year, randomised, double-blind, placebo-controlled, pre-approval trial evaluating cardiovascular (CV) outcomes with semaglutide in subjects with T2D at high risk of CV events. The Short Form-36 health survey, version 2® (SF-36v2®) is a validated and widely used tool to assess patient-reported health-related quality of life (HRQoL) in a wide range of diseases. **Objective:** The analysis examined the effect of semaglutide vs placebo on HRQoL, measured by SF-36v2® scores, in SUSTAIN 6. Also, the effect of MACE, glycaemic control and weight loss on HRQoL was analysed. **Patients and methods:** In SUSTAIN 6, the SF-36v2® was used to assess subjects' changes in HRQo. The SF-36v2® measures a physical dimension (physical component summary – PCS), and a mental dimension (mental component summary - MCS). The survey comprises 36 items that measure HRQoL across four physical and four mental health domains. A norm-based scoring is used for the SF-36v2®, setting the general population mean to 50 for each domain, with higher and increasing scores indicating better health. **Results:** At baseline, all health domains of the SF-36v2® questionnaire were similar across the four treatment groups. Changes from baseline to week 104 were significantly greater for semaglutide 1.0 mg vs. placebo 1.0 mg both in PCS and MCS scores. Semaglutide 1.0 mg showed significant improvements vs placebo across all PCS and MCS subcategories, except for role: emotional. There was a negative change from baseline in PCS and MCS scores in the pooled subjects from all treatment groups with MACE vs those without, indicating that HRQoL is diminished with MACE. There was a significant difference in SF-36v2® PCS score for subjects without MACE and ≥ 1% reduction in HbA1c in those treated with semaglutide 1.0 mg vs placebo 1.0 mg. A similar trend was observed for PCS scores with semaglutide 0.5 mg vs. placebo 0.5 mg across analysed outcomes, although this only reached significance in those with MACE. **Conclusion:** In SUSTAIN 6, semaglutide 1.0 mg vs. placebo consistently improved HRQoL across both physical and mental domains in people with T2D and high CV risk. A similar, though non-significant, trend was observed for the low-dose comparison.

E-PO109 SIMILAR EFFICACY AND GASTROINTESTINAL TOLERABILITY VERSUS EXPOSURE FOR ORAL AND SUBCUTANEOUS SEMAGLUTIDE

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Objectives: The lower bioavailability of oral semaglutide results in more variable plasma concentrations versus subcutaneous administration. Using populations from the SUSTAIN and PIONEER trials, we investigated if oral administration affects the efficacy and tolerability of semaglutide. **Methods:** Population pharmacokinetic and exposure-response (ER) analyses were based on average semaglutide steady-state concentrations. Response data were from four trials (SUSTAIN 1, 2, 3, SUSTAIN-Japan) of once-weekly subcutaneous semaglutide 0.5 mg and 1.0 mg over 30 weeks (n = 1,552), and six trials (PIONEER 1, 2, 3, 5, 8, 9) of once-daily oral semaglutide 3 mg, 7 mg or 14 mg over 26 weeks (n = 3,003). Graphical and model-based techniques were used to investigate ER relationships for changes from baseline in glycated haemoglobin (HbA1c) and body weight, and proportions of subjects reporting nausea or vomiting. **Results:** Pharmacokinetics were dose-proportional and body weight was the main covariate for exposure for both subcutaneous and oral semaglutide. ER analyses showed greater HbA1c and weight reductions, and more subjects reporting nausea/vomiting with increasing exposure. The main covariate for glycaemic effect was baseline HbA1c (larger HbA1c reductions with higher baseline HbA1c values). Exposure range was wider for oral semaglutide than subcutaneous dosing, but there was considerable overlap between oral semaglutide 7 mg and 14 mg and subcutaneous semaglutide 0.5 mg and 1.0 mg, indicating similar exposures across formulations. ER relationships were similar in SUSTAIN and PIONEER. **Conclusion:** Similar ER relationships were observed for efficacy and tolerability of semaglutide, regardless of administration route, indicating that greater variability in plasma concentrations with oral semaglutide does not impact response.

E-PO110 SLEEP IN CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES

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Background: The role of sleep in glycemic control end general health of type 1 diabetes patients is being well discoursed in literature. For adolescents with T1D, sleep disturbances have been linked with poorer glycemic control, as well as poorer diabetes management. Unfortunately to evaluate the sleep quality and habits related to sleep is If often forgotten in our routine diabetes care. **Objectives:** To investigate school habits, diabetes selfcare and the quality of sleep in a group of patients with DM1 attending a referral service in northwest of Brazil **Methodology:** This is a prospective, cross-sectional study. Data were collected through an interview and the patients were instructed to fill a 5 days sleep log. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), a validated version in Portuguese. The study was approved by *Instituto Para O Desenvolvimento Da Educação Ltda*. (IPADE) ethic board, approval number 3.997.315. Statistical analysis was performed using the IBM SPSS software. **Results:** 47 patients with DM1, aged between 8 and 17 years (Average: 12.98), 53.2% female, 60.9% from public schools, 10.6% were studying full time, 73% were doing activities physical activity regularly and only 1 patient reported chronic diabetes complications. The total sleep duration varied from 5 to 11.3 hours (Mean: 8 ± 1.4 SD), and the mean daily screen time was 5.2 (± SD) hours/day. Sleep quality assessed by PSQI ranged from 1 to 11 with an average score of 5.2. Poor quality of sleep (PSQI ≥6) was observed in 57.4% of the patients, of those, 2.1% presented a scores suggestive of disturbed sleep (PSQI ≥ 10). It was more prevalent among older patients (p: 0.04), and significantly related to the screen duration time around bedtime (p: 0.03). In absolute numbers, there was observed tendency toward a higher HbA1c related to higher PSQI scores (mean Hba1c of 8.67% versus 7.47%, P: 0.12). There was no difference in regard to glucose monitoring habits nor carbohydrate counting or type of treatment among them. **Conclusion:** Poor sleep quality and the mean daily screen time duration was worrisome among this group of patients with DM1, as it could interfere on metabolic control and patient general health. In spite of the general poor sleep quality observed, the total sleep duration was adequate.

E-PO111 SOCIO-ECONOMIC BACKGROUND OF PREVENTABLE DEATHS FROM TYPE 1 AND TYPE 2 *DIABETES MELLITUS* IN GOIÁS

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Introduction: Diabetes mellitus comprises a heterogeneous set of hyperglycemic disorders by presenting insulin deficiency and/or glucagon increase. Type 1 DM is related to genetic factors and is usually expressed at an early age due to the lack of insulin. Type 2 DM, which occurs later in life, has obesity as its main causes and is associated with late complications, such as blindness, renal failure, vasculitis, etc. Type 2 DM is more frequent and accounts for 90% of cases. It consists of a chronic progressive disease with a late diagnosis. In this instance, the central pathophysiological change is insulin resistance due to visceral obesity. **Objective:** Determine the mortality rate from DM and evaluate the socio-economic background of preventable deaths from DM in "Goiás" in the period from 2008 to 2018. **Method:** Ecological observational study. A historical series carried out with data obtained in the Hospital Information System from Unified Healthcare Service (www2.datasus.gov.br/Datasus). **Results:** There were 9736 preventable deaths of Diabetes Mellitus in Brazil from 2008 to 2018. Representing a discrete growth over the last 10 years. The 60-69 age group has the highest number of occurrences, totaling 38.90%. Then, the 50-59 age group represents 23.39% and 70-74 age group, 22.39%. Education level is an important data, however neglected, since 2,987 cases had such information omitted. The school grade level with the most deaths is 1-3 years with 2,256 occurrences, followed by no schooling with 1,602. Furthermore, it is possible to notice that brown population is more affected by mortality due to preventable causes of DM, with 42.60% of deaths, followed by white population with 41.74%. **Conclusion:** Diabetes in the state of Goiás has an increasing number of preventable deaths and the socio-economic background of the affected population is characterized by brown, elderly and poorly educated individuals, which shows the fragility of the health system in caring for marginalized groups. Thus, it is clear the need to invest in primary health care in Brazil and support the Family Health Service Teams in primary care units to combat deaths and complications from diabetes. Furthermore, it is important to highlight the attention and care for the elderly. This age group usually has many comorbidities that hinder the treatment of diabetes and that can lead to death.

E-PO112 STIFF-PERSON SYNDROME IN A PATIENT WITH TYPE 1 *DIABETES MELLITUS* AND HISTORY OF CHRONIC INFLAMMATORY DEMYELINATING POLYNEUROPATHY: CASE REPORT

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Case presentation: S. R. B., male, 20 years old. Diagnosis of type 1 diabetes mellitus 12 years ago, since then with A1c out of target. In 2010, at the age of 10, he was admitted twice with severe weakness, pain, paresthesias, hyporeflexia in the lower limbs and electroneuromyography revealing denervation suggestive of polyradiculoneuritis. Guillain-Barré syndrome was diagnosed; however, due to the persistence of the condition, chronic inflammatory demyelinating polyneuropathy was suggested. He was then treated with human immunoglobulin in-hospital, monthly, for six months, with partial pain improvement. During this period, he was accompanied by Neurology and showed pain in the lower limbs with multiple oral therapies. In 2020, he had 2 hospitalizations in 1 month, complaining of weakness, pain and bilateral spasms in the 4 limbs, associated with stiffness of the entire axial musculature (except cervical) and severe dysphagia. He was then diagnosed with Stiff-Person syndrome (SPS). He did not respond to therapy with benzodiazepines and baclofen. A human immunoglobulin cycle was performed in both hospitalizations with partial but not sustained pain improvement. Then, therapy with rituximab was started, with a dose of 600 mg/semester scheduled for 3 years. It evolved with return of swallowing and lasting improvement of spasms, but remains with flaccid tetraparesis, without ambulation. **Discussion:** DM1 is a chronic disease that is difficult to control and is associated with complications such as diabetic neuropathy (DN) that affects the peripheral nervous system. However, DN is a diagnosis of exclusion and other neuropathies may be present in patients with DM1. Chronic inflammatory demyelinating polyneuropathy is among the most common differential diagnoses of DN. SPS, unlike ND, is characterized by neuromuscular manifestations such as stiffness in the trunk and extremity muscles and painful spasms. In the literature, diazepam and baclofen are among the drugs for the relief of SPS symptoms with better results, but they have not been successful in this specific case. Alternative treatment with rituximab resulted in lasting improvement in spasms. **Final comments:** Non-diabetic neuropathies and SPS, although rare, are related to DM1 and require a high degree of suspicion for its diagnosis, in addition to specific treatments.

E-PO113 TESTOSTERONE AND SHBG LEVELS IN MEN WITH TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW AND METANALYSIS

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Introduction: It is assumed that obesity, which is present in more than 90% of patients with type 2 diabetes mellitus (T2DM), and insulin resistance are associated with lower levels of sexual hormone-binding globulin (SHBG) and a higher peripheral conversion of testosterone (T) to estradiol, leading to a reduction of serum T. Nevertheless, there are divergent findings in the current literature. **Objective:** To assess this hypothesis by performing a systematic review and metanalysis of cross-sectional studies. **Methods:** We registered this study on PROSPERO (CRD42020146561) and followed the PRISMA protocol. We included all cross-sectional studies that compared serum total T (TT), free T (FT) and SHBG levels among men with and without T2DM. The search was performed on PubMed and Embase through their MeSH and EMTREE correspondent terms, respectively. Two independent reviewers collected every eligible title and abstract. All the statistical analyses were performed on R studio, applying Mantel-Haenszel, inverse of variance and random-effect model. Meta-regression and linear regression of possible confusion factors (obesity and age) were analyzed with SHBG and TT data. To correct possible bias, we applied Egger's test, bias test, funnel plot and Trim and Fill analysis. **Results:** We included 16 cross-sectional studies, with 4506 men without T2DM and 2706 with T2DM. The quality of studies was analyzed through the Newcastle-Ottawa Scale (6-9/10, mean of 7.69) and STROBE. We found a mean difference (MD) of TT levels of –0.41 ng/mL [-0.67; -0.15], p = 0.0018, lower in T2DM patients. MD of SHBG and FT levels did not show any statistical difference between groups. However, the MD of FT was statistically significant (MD -0.029 ng/mL [-5.2; -0.6], p = 0.0135) after performing the Trim and Fill analysis, applied to correct publication bias. There was no significant influence of body-index mass (BMI) and age on TT and SHBG data. **Conclusion:** T2DM population presented lower levels of TT when compared to controls, probably due to lower levels of FT.

E-PO114 THE ADEQUACY OF TREATMENT DECISIONS BASED ON INDIVIDUALIZED GLYCEMIC TARGETS IN OLDER ADULTS

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Introduction: The management of diabetes mellitus (DM) in elderly patients is particularly challenging since it requires special care and extra attention. The current recommendation is that glycemic targets should be individualized and more flexible according to the clinical characteristics and life expectancy of each patient. **Objectives:** This study aims to evaluate the adequacy of treatment decisions in elderly patients with DM in accordance with current recommendations for individualizing glycemic targets in primary and tertiary care centers. **Methods:** We developed an observational study including a cohort of patients in regular follow-up at two university hospitals (Hospital de Clínicas de Porto Alegre and Hospital São Lucas da PUCRS) and two basic units (ESF IAPI and UBS IAPI) from Southern Brazil. Patients aged ≥ 65 years old were included, with a diagnosis of type 2 DM and who had at least 2 appointments in the period of 1 year after January 2015. The life expectancy of each patient was estimated according to age and the Deyo-Charlson comorbidity index score (CCIS). The primary outcome was the adequacy of medical management according to individualized pre-established HbA1c targets, which was compared according to the complexity of care. The ideal targets for HbA1c were (1) 7%-7.5% for a life expectancy > 10 years; (2) 7.5%-8% for an expectation of life of 5-10 years; (3) 8%-8.5% for a life expectancy < 5 years. Statistical analyses included the x^2 test for categorical data and the t-test for continuous data. **Results:** A total of 322 patients were randomly selected from primary and tertiary care. Overall, 49.1% and 50.3% of primary and tertiary care patients, respectively, received inadequate medical treatment management. In patients with HbA1c levels above the target, treatment was adequately intensified in 46.3% and 51.2% in primary and tertiary care groups, respectively ($p = 0.57$). In patients with HbA1c levels under the glycemic target, treatment was adequately de-intensified in only 5.9% and 26.2% in primary and tertiary care groups, respectively ($p < 0.01$). **Conclusion:** The changes in DM treatment based on the individualization of glycemic targets occur in a minority of patients and reflect a need for health strategies in order to optimize the therapeutic adequacy in the elderly.

E-PO115 THE IMPACT OF THE COVID-19 PANDEMIC ON THOSE RESPONSIBLE FOR CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES

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Introduction: Caring for children and adolescents with type 1 diabetes mellitus (T1DM) involves daily challenges and can put a psychological strain on those responsible for it. This may be aggravated by the COVID-19 pandemic, due to concerning situations such as the fear of a potentially serious infection for the child and the social isolation, which requires greater attention from parents at home. **Objectives:** This study aims to assess the psychological impact of the COVID-19 pandemic on guardians of children and adolescents with T1DM. **Methods:** This was a controlled cross-sectional study in which an online survey was performed to evaluate the prevalence of mental health disorders, overload related to the pandemic and suffering symptoms related to diabetes care during the COVID-19 pandemic. Parents and guardians of children and adolescents, with and without T1DM, under the age of 18 years were invited to participate in this study. For the primary outcome, mental health disorders were evaluated using the Self-Reporting Questionnaire; suffering related to diabetes care and emotional overload were evaluated in different domains with specific questions. For the analyses, a hierarchical testing strategy was performed. Chi-square tests were used for categorical variables and t-tests for continuous parametric variables. Logistic regressions were used to correct for possible confounders. **Results:** A total of 764 participants were included in the study. Regarding the pandemic period, participants in the T1DM group most often expressed personal concern (84.4% vs. 78.3%, $P = 0.04$), child-related concern (92.6% vs. 86.0%, $P < 0.01$), personal overload (78.2% vs. 65.3%, $P < 0.001$) and child-related overload (75.2% vs. 57.1%, $P < 0.001$) when compared to the control group. A positive screening for mental health disorders during the social distancing was higher in the T1DM group compared to the control group (OR 2.43; 95% CI, 1.70 to 3.47). **Conclusion:** Our findings suggest that the COVID-19 pandemic affect differently adults responsible for children with and without T1D. This may be an alert for extra attention to the caregivers' mental health and the suffering related to diabetes care during the pandemic.

E-PO116 TRABECULAR BONE SCORE IN T2DM PATIENTS AND THEIR ASSOCIATION WITH OSTEOSARCOPENIA AND FRACTURES

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Background: Osteoporosis, sarcopenia and Type 2 diabetes mellitus (T2DM) are increasingly prevalent diseases, in part due to aging populations worldwide. Understanding how T2DM influences bone and muscle metabolism is important to identify and treat people at risk. Our study aimed to evaluate the prevalence of osteosarcopenia and fractures in T2DM patients compared to a paired control group (CG) and their association with Trabecular Bone Score (TBS). **Methods:** Men and women ≥ 50 years with T2DM (T2DMG). Bone densitometry, handgrip strength (HGS), TBS were evaluated; also the T2DMG had physical performance evaluated by gait speed test (GS). **Results:** 177 patients were included in the T2DMG (65.1 years ± 8.2, 114 [64.4%] women), and 146 individuals comprised the CG (68.8 years ± 11.0, 80 [54.7%] women).The prevalence of sarcopenia between groups was higher in T2DMG than CG according to the Foundation for the National Institutes of Health Sarcopenia Project (FNIH) (23 [12.9%] vs. 8 [5.4%] p < 0.030) The prevalence of low muscle strength, (24.4 ± 10.3 kg vs. 30.9 ± 9.15 kg p < 0.001), osteosarcopenia (21 [11.9 %] vs. 3 [2.14%] p = 0.010) and fractures (53 [29.9%] vs. 26 [18.5%] p = 0.019) were higher in the T2DMG compared to the CG. TBS was lower in T2DMG than CG. (1.272 ± 0.11 vs.1.320 ± 0.12 p = 0.001). Mean TBS showed a negative correlation with age (p < 0.001, r = -0.315) and a positive correlation with weight (p < 0.001, r = 0.408); BMI (p = 0.014, r = 0.195). BMD T-scores of all sites (spine p < 0.001, r = 0.559), femoral neck (p < 0.001, r = 0.531) and total hip (p < 0.001, r = 0.564); HGS (p < 0.001, r = 0.400) and GS (p = 0.015, r = 0.273). Mean TBS was associated to osteoporosis and fractures (p < 0.005) in both sexes. Multivariate analysis showed that age, high WC, fractures and osteoporosis were associated with a higher risk of degraded TBS. However, weight, male and BMD of the total femur seem to be variables that provide protection against TBS degradation. We did not found associations of osteosarcopenia with any variables related to diabetes mellitus. **Conclusion:** T2DM patients had higher prevalence of sarcopenia, osteosarcopenia and non-vertebral fractures when compared to CG associated with degradation of bone microarchitecture assessed by TBS. Osteosarcopenia is still a little-known condition that needs further studies, especially in patients who are at higher risk for musculoskeletal diseases such as patients with T2DM.

E-PO117 USE OF BIG DATA ALGORITHMS TO CHARACTERIZE PATIENTS WITH T2D ON BASAL INSULIN (BI) WHO ADD A GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONIST (GLP1RA) AND PREDICT THEIR A1C RESPONSE

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Machine learning allows extensive analysis of big complex data. This study had two aims: 1) characterize patients on BI who add a GLP1RA and 2) identify predictors of ≥ 1% decline in A1C. Patients with T2D who were prescribed BI for ≥ 90 days but not GLP1RA for 180 days beforehand (in the US IBM Explorys database between 2010 and 2016) were included (N = 80,019). For the A1C analysis, A1C readings ≤ 180 days before, and 180-360 days after initiating GLP1RA were required (N = 8,731). Logistic regression with 23 pre-specified variables, and subsequent hypothesis-free machine learning models, with 155,000 additional variables covering clinical, claims and billing data addressed both aims. GLP1RA initiators were characterized by a BI duration of >180 days (vs ≤ 180 days) estimated odds ratio (OR) 5.87 (95% CI: 5.49-6.27), receiving oral antidiabetic drugs(s) OR 1.70 (1.64-1.77) and co-medication(s) (both vs. none) OR 3.22 (2.96-3.50), a BMI > 30 kg/m^2 (vs. < 30 kg/m^2) OR 1.93 (1.84-2.03), age < 75 years (vs. ≥ 75 years) OR 3.63 (3.37-3.92) and private insurance (vs. non-private) OR 2.2 (2.10-2.31). Variable selection via machine learning confirmed the importance of these variables. Baseline A1C was the only strong predictor of ≥ 1% decline in A1C, ORs (95% CI) compared with A1C < 7% were 4.99 (3.29-7.57), 7.04 (4.77-10.39), 14.56 (9.98-21.24), 23.21 (15.92-33.85), 36.28 (25.05-52.54), 73.14 (50.32-106.32) for categories 7-<7.5, 7.5-<8, 8-<8.5, 8.5-<9, 9-<10, ≥ 10%, respectively. Machine learning, applying 155,000 variables, confirmed the importance of baseline A1C. On average, patients who improved lowered A1C from 10.0% (interquartile range [IQR]: 8.6-11.0) to 7.7% (IQR 6.7-8.4). Patients with T2D on BI who added a GLP1RA were likely to be < 75 years old and had characteristics of progressed disease. Baseline A1C determined a ≥ 1% decline in A1C, suggesting patients on BI with high A1C would benefit from combination treatment with GLP1RA.

E-PO118 USE OF MEDICINAL PLANTS AS COADJUVANT IN DIABETES TREATMENT: PREVALENCE REVIEW AND ANALYSIS

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Introduction: In view of the high prevalence of diabetes, especially in countries of low or medium development, the use of medicinal plants has attracted the attention of health professionals. Despite being an accessible practice, its effectiveness in the treatment of diabetes is still inconclusive in the literature. The Federal Council of Medicine recognizes phytotherapy as a therapeutic method, whereas the Brazilian Diabetes Society does not recommend its use. **Objectives:** To know the prevalence of consumption of medicinal plants as an adjunct in the treatment of diabetes and the epidemiological profile of these patients. **Materials and methods:** The protocol of this study was approved by the Institutional Research protocol number 36738920.4.0000.0103. Informed consent was obtained from all the 140 patients with diabetes or pre-diabetes aged over 18 that answered the interview via Google Forms. To describe the answers, simple frequency tables and contingency tables were built. The Chi-square test was used to analyze the groups. **Results:** The sample consisted of 39% type two diabetics, 26% type one diabetics, 26% pre-diabetics and 8.6% were unable to inform the type. The female sex predominated and the average age of the group was 50 years. The use of medicinal plants was found in 15.7% of participants after non-medical indication (82%), especially in female type 2 diabetics, followed up at the health center ($p = 0.0028$), while non-users follow up in private offices ($p = 0.0024$). Among users of this practice, 77% of respondents had blood glucose above 140 mg/dL before starting use, 72.7% did not stop the drugs in use, and 73% did not have to correct a drop in blood glucose in the last 7 days after using the plants. However, hyperglycemia was reported at least 4 days a week before use by 77% of them and after use by 45% ($p = 0.031$). The plants most used in order of frequency are cow's feet (40.91%); gorse (22.73%); jambolão, insulin leaf and cinnamon, moringa (9.09%). **Conclusion:** When traced the profile of patients using medicinal plants, we observed that this patient mostly attends at the health center, received a non-medical indication for the use of medicinal plants and reports a reduction in hyperglycemia with use. **Keywords:** Phytotherapy, diabetes mellitus, medicinal plants.

DISLIPIDEMIA E ATEROSCLEROSE

E-PO119 A RARE CASE OF HYPOALPHALIPOPROTEINEMIA

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Case presentation: A 52-year-old female patient had been referred to endocrinology because of her serial dosages of very low high-density lipoprotein (HDL) cholesterol (highest value 5 mg/dL). Her past medical history includes vitamin B12 deficiency in replacement therapy, refractory anemia to elucidate, chronic gastritis and right sensorineural hearing loss, showing no diabetes, hypertension, hypothyroidism or obesity. She is a sedentary, non-drinking, non-smoking patient. In terms of family history, her mother is diabetic and hypertensive, her father is hypertensive and her children are healthy. There is no history of death from premature cardiovascular disease or cases like hers in the family. Her laboratory tests show that HDL levels are extremely low and there is no other alteration of her lipid profile (total cholesterol 94, HDL 2, low density lipoprotein (LDL) 76, serum triglycerides 80). Her carotid doppler ultrasonography did not reveal any significant alteration bilaterally. **Discussion:** Primary hypoalphalipoproteinemia is a genetic autosomal recessive disease defined by levels of HDL cholesterol below the 10th percentile, without any other alteration of the lipid profile. There are many causes to this condition, such as deficiency of ATP-binding cassette transporter A1 (ABCA1), apolipoprotein A-I (apoA-I), lecithin-cholesterol acyltransferase (LCAT) or lipoprotein lipase. During patient evaluation, secondary causes of low HDL levels must be excluded such as smoking, diabetes, obesity, hypertriglyceridemia, sedentarism, male gender, chronic inflammatory syndromes, metabolic syndrome, hyperuricemia. The increased incidence of coronary artery disease associated with the lower levels of HDL cholesterol is not so common in isolated form, but it can be favored when there are other associated comorbidities. The frequency of apo A-I gene mutation was estimated to be 6% and 0.3% in the general population. **Conclusion:** Due to its rarity and different etiological possibilities, it lacks, still, consensus of approach and therapeutic goals to this disease, for instance, LDL and non-HDL levels, when not associated with metabolic syndrome per se. For now, as an isolated disease, the recommendations are periodic clinical follow-up and a healthy lifestyle.

E-PO120 ABNORMAL LOW-DENSITY LIPOPROTEIN SUBFRACTION PROFILE IN A YOUNG PATIENT WITH CONGENITAL GENERALIZED LIPODYSTROPHY UNDER STATIN THERAPY AND PREMATURE CARDIOVASCULAR DISEASE

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Small dense low-density lipoprotein (sdLDL) particles are an emerging cardiovascular risk factor associated with cardiovascular disease (CVD) independently of established risk factors, including standard plasma lipids, in patients with low/intermediate and very-high risk, who might benefit from improved risk assessment. Congenital generalized lipodystrophy (CGL) is a rare autosomal recessive disorder characterized by the near-total loss of subcutaneous adipose tissue soon after birth, resulting in ectopic fat deposition and severe metabolic disturbances. Affected individuals develop severe insulin resistance (IR), diabetes mellitus (DM), hypertriglyceridemia, hepatic steatosis and earlier cardiovascular disease. The aim of this case report was to describe sdLDL profile performed by ion mobility mass spectrometry methodology (CARDIO ID) in a young CGL patient with very high cardiovascular risk. We describe the case of a 31 years old female patient with CGL due a heterozygous mutation in AGPAT2 with DM diagnosed at age 13 and hypertension at age 18. She also had cardiac autonomic dysfunction and moderate increase of the left atrium, left ventricular concentric hypertrophy, and left ventricular dysfunction when she was 22. She presented an acute myocardial infarction due to multivessel coronary disease and underwent the placement of three coronary drug-eluting stents due to multivessel coronary artery disease, during a hospitalization for forefoot amputation at age 29. At this time, she required hemodialysis due to end-stage renal disease. She has been treated with basal-bolus insulin (6 UI/kg/day) and atorvastatin (40 mg/day). Her lab profile was Total cholesterol: 114 mg/dL, c-HDL: 23 mg/dL, triglycerides: 125 mg/dL, c-LDL: 66 mg/dL, A1c:6.4%. The results of her sdLDL was 294 nmol/L (high relative risk: above 219 nmol/L). Her pattern of LDL is type B, which means a predominance of small, dense LDL particles with three times greater risk of CVD. In conclusion, these lipoprotein fractions may be useful to detect residual CV risk and guide more aggressives therapies in patients on c-LDL targets evaluated by standard assessment.

E-PO121 ATYPICAL ABETALIPOPROTEINEMIA IN ADULT PATIENT

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Case Presentation: A 50-year-old male patient presented with elevated transaminases in a blood donation test 20 years ago. Further investigation with liver biopsy evidenced nonalcoholic steatohepatitis. Additionally, slight hypercholesterolemia and undetectable low-density lipoprotein (LDL) were identified. Therefore, abetalipoproteinemia was suspected, confirmed with apolipoprotein B dosage. His past medical history included pre-diabetes and arterial hypertension. Ever since, his abdominal ultrasounds have revealed hepatic steatosis and modest splenomegaly. The patient denies steatorrhea, weight change and neurological symptoms such as ataxia, dysarthria, cognitive impairment or polyneuropathy. Fundoscopy and acanthocyte screening test were negative. Serum concentrations of testosterone and other steroidal hormones, vitamins A, E and K were normals. Patient awaits for genetic study for diagnostic confirmation. **Discussion:** Abetalipoproteinemia is a serious type of familiar hypobetalipoproteinemia characterized by persistently low levels (below 5%) of apoB and LDL cholesterol with estimated prevalence of less 1/1,000,000. It's an Autosomal Recessive Disease caused by mutations of the MTTP genes. Usually, abetalipoproteinemia manifests itself in early childhood with diarrhea and growth retardation due to malabsorption of fat but there may be found other signs such as loss of deep tendon reflexes, decrease in proprioceptive and vibratory sensation in the distal part of the lower limbs, muscle weakness, dysmetria, ataxia, spastic gait, pigmented retinopathy, lordosis, kyphoscoliosis, anemia and acanthocytosis. Moreover, the patient may be deficient in fat soluble vitamins (A, B and K). The lack of vitamin E in the body is responsible for some manifestations of this pathology including pigmented retinopathy, areflexia, spastic gait and reduced proprioception and vibratory sensation. Deficiencies of steroidal hormones can also occur. **Conclusion:** Mostly, abetalipoproteinemia is a disease identified in childhood because of its symptoms. However, the patient was diagnosed at age 30. Although presented with hypocholesterolemia and undetectable levels of apoB, which characterize this pathology, the patient does not have other common manifestations such as steatorrhea, neurological symptoms, acanthocytosis and reduced levels of fat soluble vitamins. And he has three children with probable heterozygosity (LDL about 30 mg/dL).

E-PO122 DIFFERENTIAL DIAGNOSIS OF SEVERE HYPERCHOLESTEROLEMIA IN A PATIENT WITH LIVER DISEASE: A CASE REPORT

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Case presentation: A 41-year-old female was admitted in May/2020 for etiological investigation of a 2-year history of chronic abdominal pain, weight loss, asthenia, jaundice and itching, associated with diffuse skin papules and nodules, predominantly in the limbs and face. Skin biopsy performed in Sep/2010 was suggestive of xanthomas. Although ursodeoxycholic acid had been prescribed in Dec/2019, the patient reported irregular use followed by drug discontinuation. During hospitalization laboratory exams disclosed severe hypercholesterolemia (total cholesterol levels of 1,409 mg/dL, LDL of 1,290 mg/dL), elevated aminotransferases, alkaline phosphatase, direct bilirubin, IgG and positivity for antimitochondrial antibodies. The imaging exams excluded extra-hepatic biliary obstruction. A presumptive diagnosis of primary biliary cholangitis (PBC) was assumed but the association with familial hypercholesterolemia (FH) could not be excluded. The patient denied the occurrence of xanthomas in other family members and family or personal history of premature cardiovascular events. Evaluation of clinical atherosclerotic cardiovascular disease resulted negative and genetic testing for FH was undertaken. Treatment with ursodeoxycholic acid, bezafibrate and statins was started. One month after the beginning of this treatment, total cholesterol decreased to 594 mg/dL and LDL to 491 mg/dL, with similar values found after 3 months. Sanger sequencing did not show any mutations while evaluation of possible deletions or duplications by MLPA are underway. **Discussion:** Approximately 75% of patients with PBC present with hypercholesterolemia due to increased levels of Lipoprotein-X and reduced functional LDL receptors in injured hepatocytes. Severe hypercholesterolemia may be seen in PBC patients with xanthomas and advanced disease. As opposed to most phenotypes of FH, the risk for cardiovascular disease in patients with primary PBC is generally not increased. Diagnostic criteria have been proposed in an attempt to standardize the diagnosis of FH, such as the Dutch lipid clinic criteria, however these were not applicable to this patient due to the concomitance of liver disease, demanding genetic testing evaluation to exclude FH. **Final comments:** In similarity to FH, patients with PBC may present with severe hypercholesterolemia and should be screened for risk factors for cardiovascular disease. Appropriate treatment of the underlying disorder will usually lead to a favorable response

E-PO123 FAMILIAL PARTIAL LIPODYSTROPHY AND BREAST CANCER: AN UNUSUAL ASSOCIATION

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Introduction: Familial partial lipodystrophy, Dunnigan variety (FPLD) is a rare autosomal dominant disease characterized as progressive and variable loss of fat from the extremities, trunk, associated with metabolic changes such as dyslipidemia, insulin resistance, and systemic arterial hypertension (SAH). Low levels of leptin may in part explain some of the metabolic changes in patients with FPLD. We reported the case of a patient with a clinical diagnosis of familial partial lipodystrophy and an unusual presentation of breast cancer. **Case report:** A 38-year-old female patient, born and raised in Presidente Prudente – SP with regional loss of subcutaneous fat and muscle hypertrophy from the arms, legs, abdomen and buttocks followed by a progressive fat accumulation on the on the face, chin, neck and pubic region since childhood. She had a positive family history (maternal aunt) for the phenotypical manifestations of the disease and a history of parental consanguinity. By the age of 20, liposuction of the neck was performed for esthetic purposes. At the age of 22, she was diagnosed with hypertriglyceridemia and hypertension and since then she has undergone irregular pharmacological treatment. In 2019, she visited the outpatient clinic, reporting a nodule in her right breast and the following laboratory tests were performed: total cholesterol: 265 mg/dL, HDL: 36 mg/dL; triglycerides: 860 mg/dL; insulin 54 mcUI/mL; fasting glucose 118 mg/dL; HbA1c: 5,6% and leptin: 1,2 ng/mL (4,7 a 23,7 ng/mL). On physical examination, the patient had weight: 59.7 kg; height: 164 cm; body mass index (BMI) of 22.2 kg/m^2, blood pressure of 130 x 70 mmHg. Body composition assessed by the bioelectrical impedance showed total fat mass of 8.5 kg; percentage of body fat 14.2%; muscle mass of 28.7 kg; waist-hip ratio of 0.83. As she was not on any drug treatment, a prescription of metformin and fibrate was performed. She was referred to breast biopsy, and later submitted to a quadrantectomy for Nottingham grade III non-special invasive breast carcinoma. **Conclusion:** We reported the case of a patient with familial partial lipodystrophy with hypertriglyceridemia, hypertension, impaired fasting glucose and a diagnosis of breast carcinoma. In the literature there is only one report of the association of breast carcinoma with FPL, since breast tumors are related to high values of leptin, a hormone whose values are suppressed in patients with lipodystrophy.

E-PO124 GOAL ATTAINMENT IN CARDIOVASCULAR PREVENTION IN DIABETES: RESULTS OF THE BRAZILIAN DIABETES STUDY

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Background: Cardiovascular disease (CVD) is the leading cause of death in individuals with type 2 diabetes (T2MD). Achievement of strict lipids, blood pressure, and glycemic targets for those at higher risk of CVD stands as a compelling strategy to tackle their elevated residual CV risk. This study explored how often individuals with T2DM reach the proposed targets for their respective CV risk groups. **Methods:** The study was designed in an observational, cross-sectional manner, conducted with participants from the Brazilian Diabetes Study (BDS), a prospective cohort of CV risk assessment in T2DM. Volunteers were interviewed for inclusion in the study; followed by a single scheduled appointment for exam and data collection. Considering the "Brazilian guidelines on prevention of cardiovascular disease in patients with diabetes", patients were classified as low-intermediate, high, and very high CV risk. The LDL-C, blood pressure, and glycated hemoglobin (HbA1c) targets set for each risk group were considered. **Results:** A total of 1,000 patients (57 ± 7.9 years, 59% males) were included. Considering the total sample, 32.2% had T2DM for more than 10 years, and 876 and 124 patients were classified as high risk and very high risk, respectively. The main risk factor among very high patients was the occurrence of previous acute coronary syndrome (12.4%). Regarding blood pressure control, 18.8% reached the blood pressure goals (<130/80 mmHg) and 78% of diagnosed hypertensive subjects were in use of any antihypertensive drugs, of which 63% and 18% were taking angiotensin II receptor blocker or angiotensin converting enzyme inhibitors, respectively. Regarding glycemic control, 40% reached the stricter HbA1c target (<7%) and 59.5% had HbA1c levels <8%, while 14.7% were poorly controlled (A1c ≥10%). LDL-C targets were achieved by 15% and 6.3% of the high-risk (<70 mg/dL) and very high-risk (<50 mg/dL) groups, respectively, and the frequency of statin use was 35% in the high-risk group and 76% in the group very high risk. Use of high-intensity statins included only 11% and 32%, and association of ezetimibe to statins occurred in 2.3% and 5.9%, of high and very risk patients, respectively. From the total of evaluated patients, 1.1% met all blood pressure, glycemic, and lipid targets. **Conclusion:** A minority of patients reached their risk-based lipid, blood pressure, and glycemic targets. It is evident, thus, that the CV prevention of these individuals has been insufficient.

E-PO125 HYPERCHOLESTEROLEMIA WITH GENERALIZED XANTHOMAS IN A PATIENT WITH PRIMARY BILIARY CHOLANGITIS: CASE REPORT

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Case presentation: G. C. L. S., 32 years old, female, housewife. In the follow up with gastroenterology due to the diagnosis of primary biliary cholangitis (PBC), in a liver transplantation protocol. Five months ago, xanthomas appeared on her hands, arms, face, dorsal region and gums, with severe local pain and limited movement. Body examination: BMI: 17 kg/m²; xanthomas on the palms of the hands, upper limbs, face, gums, buttocks, trunk and back; mucocutaneous jaundice. Initial exams: total cholesterol: 1,361; LDL: 1,292; HDL: 11; TG: 289; GGT: 1,992; FA: 1,197; TGP: 182; TGO: 133; total bilirubin: 10.99, indirect bilirubin: 0.23; direct bilirubin: 10.76. **Discussion:** Hypercholesterolemia is a common feature of PBC and other forms of cholestatic liver disease. The mechanism of hyperlipidemia in cholestatic disorders is different from those in other conditions because unusual lipoprotein particles, such as lipoprotein-X, may accumulate and levels of HDL are typically high. Hypercholesterolemia affects approximately 75% of patients with PBC, but is not associated with an increased risk of atherosclerosis. Patients may show xanthelasma, xanthomas in neck, trunk, shoulders, axillae, palms, soles, tendon sheaths, bony prominences, and peripheral nerves. Serum cholesterol levels may exceed 1,000 mg/dL in patients with xanthomas. The efficacy of drug therapy for PBC in lowering cardiovascular morbidity and mortality is uncertain. Ursodeoxycholic acid and obeticholic acid may be used in the management of PBC, and these drugs also reduce lipid levels. In early-stage, fibrate therapy is associated with reductions of total serum cholesterol, non-high density lipoprotein cholesterol, and triglycerides but without increases in serum alanine aminotransferase or alkaline phosphatase. On the other hand, statins are excreted into bile and its levels may accumulate in patients with primary biliary cholangitis and might lead to toxicity. Thus, statins should be avoided in patients with significant cholestasis. Pharmacologic treatment of dyslipidemia often leads to improvement in xanthomas caused by hyperlipidemia. **Final comments:** The reported case shows that the dyslipidemia secondary to PBC has limited the treatment options and liver transplantation proves to be the best option. However, in these cases, with such paramount signs and symptoms and compromised quality of life, an individualized decision is needed regarding the use of available therapies, pondering risks and benefits.

E-PO126 LIPID PROFILE IN HIV POSITIVE PEOPLE IN VOLTA REDONDA – RJ

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This search analyzes the lipid profile of HIV-positive people (Human Immunodeficiency Virus) living in the city of Volta Redonda - RJ. The sample to be considered is referring to people seen at the Infectious Diseases Center (CDI) of the Municipality. This is a cross-sectional search based on secondary data, which had as inclusion criteria the medical records of people infected with HIV in 2018, residents of the municipality, both sexes, over 18 years of age. This search was approved by the Research Ethics Committee of the University Center of Volta Redonda - UniFOA, under the registration of CAAE nº 14393118.2.0000.5237. 154 (100%) records of infected people were analyzed, but only 34 (22.07%) were included in the search due to the lack of more recent or incomplete laboratory data. For that, some clinical data were selected, such as total cholesterol, LDL and HDL. The mean values of 187 mg/dL, 118 mg/dL and 41.5 mg/dL were found for men and 185 mg/dL, 110 mg/dL and 42 mg/dL for women for total cholesterol, LDL and HDL, respectively. Such results demonstrated that, for this small sample, the values found are in accordance with the reference values, although some studies have already suggested that ART (antiretroviral therapy) interferes with the concentration of these clinical data. Thus, this search reveals the need for greater medical follow-up and updating the clinical tests of HIV-positive people.

E-PO127 UNEXPECTED LOW MORBIDITY AND MORTALITY OF COVID-19 INFECTION IN PATIENTS WITH CGL

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Introduction: Congenital Generalized Lipodystrophy (CGL) is a rare disease, characterized by the abnormal distribution of body fat. It is associated with serious metabolic complications, such as dyslipidemia, diabetes mellitus and ectopic fat deposit. Therefore, CGL patients have high atherosclerotic and infectious diseases morbidity and mortality. They present low leptin levels, a hormone produced by adipose tissue, which modulates the inflammatory response. Severe SARS-COV2 infection (COVID-19) has been reported in epidemiological studies with diabetes, obesity and cardiovascular disease. Until now, there are no COVID-19 cases reported in literature on CGL patients. **Objective:** To evaluate the prevalence of COVID-19 infection in CGL patients and its association with severity, clinical features and metabolic control. **Materials and methods:** A cross-sectional study in a referral lipodystrophy service in Ceará, carried out between July and August/2020. All patients in follow-up have been scheduled by telephone to attend the routine clinical assessment and were invited to participate. After signing the informed consent form, they answered a structured questionnaire about health care and respiratory symptoms in the last 3 months. Swab, total IgM/IgG antibodies for COVID-19, A1c and lipid profile were collected. Medical records were reviewed to evaluate the metabolic control before the pandemic period. The data were expressed as medians (25th percentile and 75th percentile). The study was approved by the Research Ethics Committee. **Results:** Twenty one of the 25 CGL patients in follow-up attended the evaluation. The median age was 20 years old (10-32 yo), 13/21 (62%) were female and 16/21 (76%) had diabetes. The COVID-19 prevalence was 43% (9/21), in the evaluation of total IgM/IgG antibodies titers. One patient had a positive swab and one patient with 7 yo died of complications related to COVID. Comparing the COVID and non-COVID groups, the frequency of diabetes was 78% (7/9) and 75% (9/12); triglycerides levels before-after the pandemic were 121 mg/dL-142 mg/dL and 286 mg/dL-480 mg/dL respectively. No worsening of the other metabolic parameters was observed. **Conclusion:** High prevalence of COVID19 infection in CGL subjects with low morbidity and mortality, despite the several metabolic abnormalities presented in this population. The absence of adipose tissue acting as a reservoir of viral replication and the hypoleptinemia could be potential involved mechanisms.

ENDOCRINOLOGIA BÁSICA

E-PO128 POSSIBLE ROLE OF MIR-200C IN THE ATYPICAL EXTERNAL GENITALIA DEVELOPMENT IN 46,XY DSD PATIENTS

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Introduction: Although great advances in the DSD diagnosis have been done with the introduction of NGS and genome arrays methodology, a great number of the DSD patients still have an unknown etiology. Interestingly, 46,XY DSD patients with the same molecular defect may present a variable phenotype, suggesting that other factors are involved in the sex development process, causing or modulating phenotypes. **Objectives:** To analyze the plasma expression of miR-200c in 46,XY DSD patients with atypical genitalia and male controls. **Methods:** Blood sample were obtained from 18 46,XY DSD patients and 38 male controls. Expression of miR-200c and reference miR-23a were measured by RT-qPCR, and analyzed by 2-ΔΔCt. Patients: Patients and controls were divided in prepubertal (PP) group, characterized by testicular volume < 3 mL or basal Testosterone levels < 30 ng/dL and post pubertal (PostP) group. External Masculinization Scores (EMS) of 46,XY DSD patients were calculated based on data of medical records. Patients genitalia were classified according to the EMS into poorly virilized (PVG, score < 5, PostP n = 5, PP n = 1) and strongly virilized (SVG, score ≥ 5, PostP n = 7, PP n = 5) genitalia. **Results:** ANOVA analysis of PostP PVG, SVG and controls showed a statically significance of p = 0.0013, revealing a differential expression of miR-200c among those groups. Higher mean of miR-200c was observed in the PostP SVG in relation to PostP. Tukey's post test revealed a statistically significance in miR-200c expression between SVG and PVG (p = 0.010). PostP 46,XY DSD patients had higher miR-200c expression than PP 46,XY DSD patients (p = 0.041). Moreover, PostP PVG patients presented similar expression values of miR-200c of PP controls and PP 46,XY DSD. Five out of six PP 46,XY DSD were classified as SVG, and no statistical difference was observed against PP controls. **Conclusion:** In several tissues, a negative feedback loop in which miR-200c inhibits ZEB1 expression has been demonstrated, and it has been associated with modulating the epithelial-mesenchymal transition. High ZEB1 levels/low miRNA 200c levels were observed in the genital skin of adult male subjects and rats with hypospadias, reinforcing a potential role of miR-200c in the hypospadias development. Our findings provide novel insights into the circulating miR-200c, which may represent a new strategy for 46,XY DSD research, and contribute to further understanding the process of male external genitalia development.

ENDOCRINOLOGIA FEMININA E ANDROLOGIA

E-PO129 CAN 25 OH VITAMIN D INFLUENCE *IN VITRO* FERTILIZATION RESULTS?

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Introduction: The 25 OH vitamin D (25OHD) is a steroid hormone mostly produced in the skin, after sun exposure, having as its best-known function the maintenance of the calcium homeostasis and the mineralization of bones. However, its receptors are also present in the ovaries, placenta, and uterus, raising the possibility that it has an active role in the reproductive process. The prevalence of vitamin deficiency (<20 ng/mL) is high in women of reproductive age, but pregnancy levels above 30 ng/mL are recommended. **Objective:** Correlate the results achieved by in vitro fertilization (IVF) with serum levels of vitamin D. **Patients (materials) and methods:** The study is longitudinal and retrospective, involving the medical records of women who performed IVF from December 2013 to June 2017. The cases of previous radio/chemotherapy, polycystic ovarian syndrome, and ovarian surgery were excluded. The 633 patients were divided into groups according to serum vitamin D concentration in ng/mL: <20 (n = 90); 20-30 (n = 233); >30 (n = 310). **Results:** In the group with 25OHD less than 20 ng/mL, 46.7% of the patients did not become pregnant. In the one with 25OHD between 20-30 ng/mL, this percentage was 46.4%. In the group with 25OHD greater than 30 ng/mL, it was 51.9%. The prevalence of biochemical pregnancy among groups <20, 20-30 and >30 ng/mL were 2.2%, 4.7%, and 5.8%, respectively, while the percentages of abortions (6-20 week) were 8.9%, 4.3%, and 5.2%. More live births were found in mothers whose vitamin D was between 20 and 30 ng/mL (44.6%) when compared to the results obtained with levels lower than 20 ng/mL (42.2%) and in those with concentrations higher than 30 ng/mL (37.1%). In the chi-square test, no statistical difference was observed in the results (p = 0.06). When analyzing the 257 patients with positive outcomes, in the group of 25OHD less than 20 ng/mL (n = 38), 63.1% of the born was over 38 weeks old. In one of 20-30 (n = 104), the percentage was 59.6%. Among those with concentrations >30 (n = 115), the value of 76.5% was found. The chi-square test detected significant variation between the results of live births with less than 38 and more than 38 weeks between groups (p = 0.026). **Conclusion:** Although it reinforces the noncorrelation between serum vitamin D and the pregnancy rate in IVF, it points to the possibility that the increase in the levels of 25OHD is associated with a greater frequency of pregnancy to term. Further studies are needed to confirm the hypotheses.

E-PO130 EVALUATION OF THE AORTA SIZE INDEX (ASI) OF PATIENTS WITH TURNER SYNDROME ACCOMPANIED IN A TERTIARY HOSPITAL IN THE FEDERAL DISTRICT

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Introduction: Turner syndrome (ST) is characterized by alteration of the sex X chromosome, the majority with a 45 k0 karyotype. Short stature is one of the first manifestations of TS, being one of the reasons for seeking medical care. Congenital and acquired cardiovascular changes can occur in up to 50% of patients with TS, and aerial dissection is a manifestation of increased mortality. Predictive factors for detecting Turner syndrome diseases can be detected to decrease the risk of cardiac complications in these patients. **Objectives:** To evaluate the main clinical and laboratory characteristics that can influence the diameter of the ascending aorta in patients with Turner syndrome. **Methods:** Cross-sectional, retrospective observational study, based on a survey of medical records of about 30 patients with Turner Syndrome treated at the Endocrinology Clinic of a tertiary hospital in the Federal District. They will be reduced as variables of age, karyotype, treatment with Staging Hormone (GH) and estrogen replacement therapy, presence of hypertension, hypothyroidism and dyslipidemia correlated with a change in aortic size (ASI). The statistics would be using the program SPSS version 22.0 for Windows. **Results:** We observed a significant difference in patients with heart disease and ASI value (p = 0.04). The regression analysis showed a tendency for the presence of heart disease as a predictor of aortic size (p = 0.073). Hypertension, obesity, the use of rhGH and the use of TH E2 do not represent variables statistically used as predictive factors for aortic diameter. **Conclusion:** The presence of heart disease in patients evaluated with TS was the only clinical feature that affected the value of ASI and the early detection of cardiac complications is important to reduce morbidity and mortality and improve the quality of life of these patients.

E-PO131 GESTATIONAL *DIABETES MELLITUS* CARE GROUP: PRELIMINARY RESULTS OF THE MULTIDISCIPLINARY PRENATAL CARE WITH A HOSPITAL PROTOCOL

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Gestational diabetes mellitus (GDM) is one of the most common complications of pregnancy; around 18% of pregnant women receive this diagnosis in Brazil. GDM is associated with increased risk of developing maternal and fetal adverse outcomes and treatment is associated with reduced rates of these events, even for women with mild hyperglycemia. A multidisciplinary approach is recommended for GDM management. The objective of this study is to analyze the quality of the Multidisciplinary Prenatal Care with an optimized protocol in a University Hospital and the rate of pregnancy adverse outcomes related to hyperglycemia. This is a prospective cohort. Pregnant women with diabetes are referred for high-risk prenatal care in our University Hospital; all patients receive specialized treatment and women with GDM are invited to participate in our care protocol. Obstetrician, endocrinologist, nurse, nutritionist, physical educator and psychologist are part of the specialized care for pregnant women with diabetes in our care protocol. After delivery, we review medical records to collect data on obstetric outcomes. This study was approved by our research ethics committee. The prenatal care protocol was initiated in July 2019 and had to be stopped in February 2020 due to the COVID-19 pandemic. During this period, 114 women was referred to our specialized prenatal care, and 69 women has completed the prenatal period before pandemic. Of them, 60 (87%) had a diagnosis of GDM and were included in our protocol. Mean age of these women was 31.9 years-old, and mean body mass index was 32.7 kg/m2. The majority of them (74.6%) was treated with diet and exercise; 22% received metformin and 3.4% human insulin. 13.6% developed gestational hypertension and 6,7% preeclampsia; 64.4% of women had cesarean delivery. The median gestational age at delivery was 38 weeks/3 days, and 26.8% of newborns was born less than 37 weeks. Other adverse neonatal outcomes was neonatal hypoglycemia in 19%, shoulder dystocia in 6.3%, hospitalization at neonatal intensive care unit in 12.8% and large for gestational age in 20% of the newborns. In conclusion, our data demonstrated a rate of adverse outcomes slightly above those described in the international clinical trials. Therefore, it is recommended that women with GDM perform prenatal care with a multidisciplinar team and that specialized centers monitor the rates of adverse events in order to improve health care during pregnancy.

E-PO132 RANDOM DIAGNOSIS OF KLINEFELTER SYNDROME IN AN ADULT PATIENT DURING AN INVESTIGATION FOR INFERTILITY

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Case presentation: A 38-year-old man attended the endocrinological consultation to investigate infertility with tests for evaluation. He brought hormonal dosages (total testosterone, hydroxi-vitamin D, TSH, T4, FSH, LH and prolactin), lipid profile, bone densitometry, glucose, calcium, creatinine, creatine kinase, ferritin, AST, ALT and blood count. The results showed increased levels of FSH (41.57 IU/L), LH (21.4 IU/L) and ferrentin (351.3 ng/mL), total testosterone (284.09 ng/dL) and other tests showed no changes. On physical examination, gynoid-like flaccidity and peripheral fat deposits were found. Moreover, the patient denies changes in his libido. A spermogram was requested which showed azoospermia. Then, the karyotype was asked, revealing Klinefelter syndrome (47,XXY). The conduct was to carry out genetic counseling and a testosterone replacement prescription every 12 weeks. **Discussion:** Klinefelter syndrome is the most common sex chromosome condition in men, and affects about 1 in 650 newborn boys. It results from an extra X chromosome (47,XXY), which occurs in about 90% of the cases. The main clinical findings, present in almost all individuals with this condition are small testes (that produce a reduced amount of testosterone), azoospermia and increased gonadotropins, remarkably follicle stimulating hormone (FSH). Nevertheless, other findings, such as gynecomastia, pubertal delay, reduced amount of facial and body hair, micropenis, tall stature, psychiatric illness, metabolic syndrome, among others, can be found with different frequencies according to each population. However, some cases have so mild clinical features that they remain undiagnosed even in adulthood, such as the one presented in this report. Despite the decreased testosterone production, sperm are found in up to 50% of the men with Klinefelter syndrome. Thereby, advances in assisted reproduction made it possible to these patients to conceive their own children, such as testicular sperm extraction with intracytoplasmatic sperm injection. **Conclusions:** This report illustrates how challenging the diagnosis of Klinefelter syndrome can be, without major clinical features. It is important, nonetheless, to the clinician to consider this condition as a possible diagnosis even in elderly patients, due to the fact that up to 75% of men with Klinefelter syndrome remains undiagnosed. **Keywords:** Infertility; chromosomal syndromes.

E-PO133 TREATMENT OF MALE HYPOGONADOTROPHIC HYPOGONADISM OF IDIOPATHIC ORIGIN TARGETING THE RECOVERY OF FERTILITY PRESENTATION OF A CASE

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Case presentation: Male patient, 36 years old, diagnosed with idiopathic hypogonadotropic hypogononism at the age of 18, based on the non-responsive LHRH test, absence of olfactory manifestations and MRI with Kallmann protocol without evidence of any changes. Other normal hormonal stimulus tests ("megatest"). Injectable testosterone replacement was then started with good growth response (from 168 to 179 cm) and normal pubertal development. He then continued with testosterone treatment and regular follow-up until he was 34 years old. On this occasion, he showed interest in having children. He then started with treatment for this. First with weaning from testosterone and then with the use of human chorionic gonadotropin (HCG) 1,000 IU 3x/week, in addition to betafolitropin 75 IU/2x week dose, to stimulate spermatogenesis. After 6 months of treatment, the patient presented the first positive spermogram (however oligospermia), and was then referred to a specialized in-vitro fertilization clinic with his wife for joint monitoring. The entire treatment was paid for by the patient himself, who is currently with average testosterone levels of 180 pmol/L. **Discussion:** Hypogonadotrophic hypogonadism is characterized by failure of the gonadal function secondary to the secretion of gonadotropins, isolated or associated with other deficiencies. Classically, isolated hypogonadotrophic hypogonadism (HHI) has always been considered an irreversible condition. However, spontaneous reversal has been observed in 8% to 13% of patients, mainly in partial cases, after interruption of androgen replacement, especially when stimulated with HCG and betafolitropine. However, it must be remembered that the reversal is not always definitive. The mechanisms that lead to reversion are not fully known. It has been suggested that continuous exposure to androgens may work as a priming and certain genes appear to be more susceptible to reversion (FGFR1, GnRHR, TAC3/TACR3 and others). **Final comments:** The reported case represents a successful treatment of reversal of hypogonadotrophic hypogonadism, probably partial. It is currently awaiting its evolution, whether temporary or not. And it serves as a stimulus for attempts in similar cases, an incentive for doctors who deal with these diseases and a hope for patients who wish to conceive.

E-PO134 TURNER SYNDROME WITH SRY GENE: CASE REPORT

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Case report: Female patient, 16 years old, diagnosed with Turner Syndrome (TS) at 5, confirmed by karyotyping at 6, 45, X0 with the SRY gene. Classic signs present: short stature, high arched palate, barrel chest, fanned ear, absence of the 3rd right pododactyl and the 3rd and 4th left pododactyls. She started treatment with human growth hormone (HGH) when she was 5 and used it regularly until she was 11, when she lost medical monitoring due to family problems. Currently, she is looking for help to initiate pubertal induction. She is 154 centimeters tall, weighs 66,6 kilograms and is on Tanner stage 1 (breast) and stage 5 (pubic hair). **Discussion:** TS has global incidence of 1/2,500 girls and is characterized by total or partial monosomy of the X chromosome. The karyotype can be homogeneous or mosaic. In addition, structural chromosomal alterations can occur in the X or in the Y. From the patients with TS 50% to 60% present karyotype 45, X, 30% present some structural alteration in the X and 10% present Y lineage whether it is complete or in fragments. This fact is the main reason why it is so difficult to diagnose TS, especially in cases of mosaicism where the phenotype can be atypical. The management of the most common signs and symptoms can be considered simple, primarily based on the hormone therapy. However, in the presence of the Y chromosome, it gets more severe, seeing that the risk of developing gonadal tumors such as gonadoblastoma and dysgerminoma is increased up to 30%. Ninety percent of gonadoblastomas have Y chromosomal material and prophylactic gonadectomy is recommended. Thus, the detection of TS must be precocious including, besides the standard karyotype, an active and specific search of Y chromosomal material (the most common being sex-determining region Y (SRY), Y specific centromeric alpha satellite DNA 3 (DYZ3) and testies specific protein Y-linked (TSPY)), sometimes cryptic. The treatment, as previously mentioned, is based on hormone replacement, aiming to increase the final stature and assure the development of secondary sex characteristics as similar as possible to the physiological maturing. **Final remarks:** The patient described presents increased risk of developing gonadoblastoma due to her karyotype. For the moment she started using topic estrogen and is being monitored regularly. It was recommended that she undergoes prophylactic gonadectomy and the family agreed to this decision.

E-PO135 XX MALE: A CASE REPORT

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A 42-year-old-man with no previous diseases presented to the medical clinic with decreased sexual desire and primary infertility for 10 years. He had no surgical history or use of continuous medications. On physical examination, although he had most of his secondary sexual characteristics preserved such as an android body, a beard, masculine voice and a normal penis, he presented reduced testicles with a varicocele on the left side. He also had a mild gynecomastia without other important changes on the ultrasound. His biochemical tests showed testosterone levels below the normal range needing to introduce an intake of this hormone, which ended up improving his libido. In his semen analysis it was observed a non-obstructive azoospermia and so, to determine the causes of his infertility, a cytogenetic analysis and Y chromosome microdeletion research were requested. The cytogenetic study revealed a chromosomal constitution of 46,XX in all 20 cells analyzed and the Y Chromosome microdeletion investigation revealed the presence of the SRY gene. The testicular disorder of sexual differentiation (46,XX), or the XX male syndrome, first described by la Chapelle *et al.* in 1964, is a rare condition, on which testicular development occurs in the absence of the Y chromosome detected cytogenetically. It affects 1: 20,000 to 25,000 male newborns and is responsible for 2% of male infertility cases. The diagnosis is usually made in adults due to sterility, but it can also be suspected in children with gynecomastia or genital ambiguity. There are several pathogenic mechanisms that explain the etiology of XX men, three of which are the most accepted: the translocation of sequences from the Y chromosome, including the SRY gene, to an X chromosome or an autosome; a mutation in an X-linked gene or autosome, triggering the cascade of testicular differentiation in XX and SRY negative men and a hidden Y chromosome mosaicism limited to the gonadal tissue. A testosterone replacement therapy is indicated in these patients to reduce the symptoms, such as the decreased sexual desire. Also, it is necessary to make a referral to in vitro fertilization or genetic counseling to manage infertility. Both the testosterone replacement and the referral to infertility were performed in the case described. It is essential for specialists to correctly approach infertility cases, since the findings can determine the prognosis and the appropriate treatment to patients.

ENDOCRINOLOGIA PEDIÁTRICA

E-PO136 ACUTE MYOCARDIAL INFARCTION IN A TEENAGER WITH PRIMORDIAL DWARFISM

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Female patient, 17 years old, 17 kg, 80 cm tall, in attendance for primordial dwarfism, diabetes and hypercholesterolemia. She was admitted with typical precordialgia and diaphoresis, arriving at the Emergency Room after 6 hours from the beginning of the pain. She presented electrocardiographic alteration in the lower wall and elevation of markers of myocardial injury, confirming unstable ischemic myocardial syndrome. The patient evolved with complete improvement of the pain after initial measurements and remained in Killip I. The echocardiogram showed a preserved global function of the left ventricle and slight infero-lateral hypokinesia. Coronary cineangiography showed a segmental obstructive lesion of 80% in the middle third of the circumflex artery and a tapering anterior descending artery with parietal irregularities. Right coronary artery and left coronary trunk without obstructive lesions. Coronary angioplasty with pharmacological stent in the circunflex artery was successfully performed. Primordial dwarfism represents a rare and heterogeneous group of genetic diseases characterized by microcephaly and pre and postnatal growth retardation. The primary dwarfism group includes Silver-Russell syndrome, Seckel syndrome, Meier-Gorlin syndrome and microcephalic osteodisplastic primordial dwarfism. It is estimated incidence of 1 case per 1 million births in the USA and Canada. Patients may experience metabolic complications such as dyslipidemia, insulin resistance and early atherogenesis, with increased cardiovascular risk, since the risk of cardiovascular diseases in these individuals is higher than in the population as a whole. It is believed that the presence of severe insulin resistance and the impairment of the growth of the heart and vessels from intra-uterine life increase the risk of cardiovascular events. The presented case is important for the academic-scientific discussion because it is a unique case in the national literature and the fourth case described worldwide. Besides, the clinical reality is that unusual causes of common presentations are rarely considered in daily clinical work. Patients with rare diseases suffer from delays in diagnosis due to lack of knowledge of these conditions, and lack of knowledge is one of the greatest obstacles to rare conditions like this. There is a need to improve recognition of these unusual conditions associated with increased risk of cardiovascular disease.

E-PO137 ALBRIGHT HEREDITARY OSTEODYSTROPHY IN A GIRL WHIT PSEUDOHYPOPARATHYROIDISM: A CASE REPORT

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Universidade Católica de Brasília, Hospital Regional de Taguatinga

Case description: Female patient, 18 years old. Started at eleven years of age with low stature in the Genetic service. Presents a history of parental consanguinity and delayed primary dentition. Normal karyotype was obtained and shortening of 4th and 5th pasterns was observed bilaterally to the radiograph. Analystically, an increase in phosphorus, alkaline phosphatase, and PTH levels was observed, in addition to a vitamin D deficiency and normocalcemia. In the general physical examination showed brachidactyly, short stature, rounded face and centripetal obesity. She was referred to endocrinology for follow-up. Tanner's M5P5 pubertal stage was observed. Menarche at twelve years old. Radiography revealed bone age compatible with chronological age. Echography of Thyroid gland, pelvic and renal without changes; normal echocardiogram. Skull MRI without calcifications. Dermatological examination showed seborrheic dermatitis and pityriasis alba. No ophthalmologic alterations. **Discussion:** First described by Albright in 1942, Albright's hereditary osteodystrophy (AHO) is a rare condition that encompasses a set of phenotypic characteristics, commonly present in patients with pseudopseudohypoparathyroidism (PPHP) or pseudohypoparathyroidism (PHP), which are caused by mutations or epigenetic alterations in the GNAS gene, which encodes the alpha subunit of the G protein (Gsa), conditioning a decrease in Gsa expression or function. In the report exposed the patient presented classical signs of AHO such as obesity, rounded face, short stature and brachydactyly; and findings present in the PHP as hyperphosphatemia, increased PTH and of alkaline phosphatase, subclinical hypothyroidism and vitamin D deficiency; The phenotype of AHO, associated with the laboratory alterations found, is suggestive of PHP, being necessary genetic study to determine its classification. **Conclusion:** Albright's osteodystrophy hereditary (AHO) is a rare, variable inheritance disease, in most cases autosomal dominant, whose phenotype includes rounded face, obesity, short stature, cutaneous calcifications and brachydactyly. In these cases it is essential to perform a complete investigation of phosphorus-calcium metabolism and hypothalamic hormones, due to the suspicion of a concomitant endocrine disorder. This case report demonstrates the importance of biochemical and phenotypic findings in the diagnosis of pseudo-hipoparthyroidism associated with Albright's hereditary osteodystrophy.

E-PO138 ASSOCIATION OF OSTEOCHONDRITIS DISSECANS OF THE KNEE AND HYPOPHOSPHATEMIC RICKETS: A CASE REPORT

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Case presentation: Female, 18 years-old, non-consanguineous parents, whose father had hypophosphatemic rickets (HR). She was born by normal delivery, Apgar 9/10 and without any trauma. Due to the paternal illness, the patient was followed up every two months. When she was 12 months-old, she had calcium: 9.4 mg/dL; phosphorus: 2.7 mg/dL; phosphaturia: 173 mg/24 h; alkaline phosphatase: 1458 U/g; PTH: 93 mg/dL; phosphate reabsorption rate: 70%. She started treatment with jolie and calcitriol. At 24 months, jolie was replaced by k-phos, adding calcium carbonate when PTH or alkaline phosphatase were elevated. X-ray of bone age at puberty showed a slight advance, opting for non-intervention. When she was 15, she reported pain in her knees. Imaging exams showed osteochondritis dissecans of knee (ODC) in the medial femoral condyle bilaterally. Initially, she did follow-up without restricting the load, without a satisfactory response. Currently, she follows a conservative treatment. Evolution showed improvement in pain, but without remission of the condition. In this case, good results were observed with classic management: the patient did not present bone deformities and reached a height compatible with her family target. **Discussion:** HR is a rare disorder whose treatment is a great challenge, with sparse information on final height and long-term complications. With an early treatment, important consequences are prevented. The recommended therapy is the replacement of phosphate and 1,25-vitamin-D, although long-term results are not fully known. ODC is a cause of pain and functional limitation, occurring when there is a displacement of a fragment of hyaline cartilage with the subchondral bone, with no associations described with HR. This paper reports a clinical case of a patient with both diagnoses. **Conclusion:** The etiological association of HR with ODC has a rare description in the literature. The case presented draws attention to the description of this association, contributing to the adequate management of both disorders.

E-PO139 BECKER'S NAEVUS SYNDROME – CASE REPORT

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Introduction: Becker's naevus syndrome (BNS) is characterized by the presence of Becker's naevus (a cutaneous hamartoma with hypertrichosis and hyperpigmentation) associated with ipsilateral breast hypoplasia and other dermatological, skeletal or muscular disorders. **Case report:** 12-year-old girls with hyperpigmentation on the right leg noticed at 9 years of age. At 10 years of age, at the beginning of puberty, it was observed right breast hypoplasia, as well as ipsilateral hypertrichosis, hypercromia and skin thickening. At 12 years of age she presented menarche with intense metrorrhagia that lasted for 28 days. Scoliosis and uneven fat distribution were also found. Skin biopsy of the right inner thigh showed typical microscopic alterations associated with Becker's naevus. **Discussion:** Becker's naevus syndrome is a rare androgen-dependent condition that must be considered in females with unilateral breast hypoplasia and skin hypertrichosis and hyperpigmentation. Differential diagnosis must be made with hormonal alterations associated with hyperandrogenism. Regarding the treatment of breast hypoplasia, the use of antiandrogen such as spironolactone has been suggested.

E-PO140 CENTRAL PRECOCIOUS PUBERTY (CPP) IN A FOUR YEAR OLD GIRL: A CASE REPORT

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Case description: J. M. M. A., female, four years old, born by surgical delivery due to cephalopelvic disproportion, at term, with 3.715 kg and 49 cm. Exclusive maternal lactation up to six months. Mother presented menarche at eleven years old. She started a telarche at three years and ten months without an axillary odor, pubarche and menarche. On physical examination, pubertal stage of Tanner M2P1. She has a bone age x-ray compatible with 6 years and 10 months with final height prediction: 145.1 cm and target height: 156.2 cm. Pelvic ultrasound revealed a uterine volume of 2.5 mL, higher than expected for age; right ovary with 0.6 mL, left ovary with 1.5 mL and body/neck ratio > 1, a condition that suggests persistent gonadotrophic stimulation. Contrasted resonance of Sella turcica without changes. Laboratory tests showed LH of 2.33 mUI/mL (ICMA), FSH of 4.3 mUI/L (ICMA) and Estradiol of 56 pg/mL, confirming the diagnosis of central precocious puberty. Pubertal block with a GnRh agonist and return for follow-up in three months was indicated. **Discussion:** The main diagnostic element in central precocious puberty (CPP) in girls is the pubertal development before the age of eight with the presence of breasts (telarca) with or without pubic or axillary hair. The imaging examinations necessary in the diagnosis of CPP include hand and left wrist radiography to assess bone age through the Greulich Pyle atlas, pelvic ultrasonography to characterize uterine volume and ovarian follicle sizes, and pituitary magnetic resonance imaging (sella turcica). Laboratory diagnosis is performed by basal LH dosage. In the present case report the patient presented telarca as a clinical sign of early puberty, advanced bone age with prediction of final height below the target stature, basal LH increased and uterine and ovarian volumes increased for age, therefore, the diagnosis of central precocious puberty was performed. **Conclusion:** The case report described ratifies the importance of an early and assertive diagnosis of the disease. The treatment with GnRH agonist is the treatment of choice in idiopathic form, when there is no identifiable anatomical cause, and has as main objectives the regression of secondary sexual characters, the regression of gonadotropin levels to pre-puberal stages and no progression of bone age with gain of final height, besides avoiding psychosocial problems in case of early menarche.

E-PO141 CLINICAL AND GENETIC FEATURES OF FAMILIES WITH MATERNALLY INHERITED CENTRAL PRECOCIOUS PUBERTY

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The clinical recognition of familial central precocious puberty (CPP) has significantly increased in the last years. This fact can be related to the recent descriptions of genetic causes associated with this condition, such as loss-of-function mutations of two imprinted genes (MKRN3 and DLK1), which cause paternally inherited CPP. However, no genetic abnormality has been described in families with maternally inherited CPP so far. Therefore, our objective is to characterize the clinical and genetic features of families with maternally inherited CPP. We analyzed clinical and genetic features of children with familial CPP. No brain MRI alterations were detected in the selected patients. MKRN3 and DLK1 pathogenic mutations were excluded. Molecular analysis by next-generation sequencing (NGS) was performed in selected cases. We studied 177 children from 141 families with familial CPP. Paternal inheritance was evidenced in 44 families (31%), whereas 58 (41%) had maternally inheritance. Indeterminate inheritance was detected in the remaining families. Maternally inherited CPP affected mainly female patients (69 girls and two boys). Thelarche occurred at mean age of 6.1 ± 1.9 years. Most of girls had Tanner 3 (41%) and Tanner 4 (35%) breast development at first evaluation. One boy had additional syndromic features (macrosomia, autism, bilateral eyelid ptosis, high arcade palate, irregular teeth and abnormal gait). The pedigree analysis of patients with maternally inherited CPP revealed the following affected family members: 42 mothers, 10 grandmothers, 11 sisters, 12 aunts, and 11 female cousins. Most of the families (41) had two affected consecutive generations, while eight families had three affected generations. No consanguinity was referred. Ongoing molecular analysis using NGS revealed two rare heterozygous variants in the boy with syndromic CPP and three affected family members with precocious menarche (mother, maternally half-sister, and maternally aunt): a frameshift deletion (p.F144fs) in MKKS; and a missense variant (p.P267L) in UGT2B4, which codes a protein involved in estrogen hydroxylation and is related to menarche timing in genome-wide association studies. Maternally inherited CPP was diagnosed mainly in girls, who had thelarche at mean age of 6 years old. Dominant pattern of inheritance was more prevalent, with direct maternal transmission in 72% of the studied families. New candidate genes might be implicated with maternally inherited CPP.

E-PO142 DETECTION OF ADRENAL ACTH IN A CHILD WITH CUSHING'S SYNDROME (CS) BY BILATERAL ADRENAL HYPERPLASIA

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CS is a rare disorder in childhood and may occur due to primary adrenal hyperplasia that has several etiologies (McCune-Albright syndrome, PPNAD, macronodular hyperplasia and others). The demonstration of the presence of ACTH in the adrenals is a finding that is still poorly understood in these disorders. In this paper we describe a male patient, 3 years and 7 months old, with a previous diagnosis of Autism spectrum disorder, who presented weight gain (12 kg in 10 months), irritability, acne, facial hair, hypertrichosis and arterial hypertension that are difficult to control. In addition to the findings above, physical examination revealed violet streaks on the thighs, acantosis nigricans, full moon facies, malar rash, pubic hair (P2 on the Tanner scale) and blood pressure above p98 + 12 for age. His investigation showed hypokalemia, hypercortisolism at all times (morning, afternoon and midnight), suppressed ACTH and abdominal CT scan with topical adrenals showing small nodules, smaller than 0.5 cm, bilateral. Thus, bilateral adrenalectomy was indicated, obtaining total removal on the left and partial removal on the right (90% resection). The anatomopathological examination was compatible with diffuse and nodular bilateral adrenal hyperplasia, absence of malignancy, with the adrenals weighing 4 g and 5 g and both with cortical nodules, the most important being 1 on the right and 3 on the left, with approximately 0.3 cm of yellowish-brown color. Abnormal adrenal pigmentation has not been identified. In immunohistochemistry, positive ACTH was observed bilaterally. After infectious complications, pancreatitis and a period of parenteral nutrition, the patient progressed with a reduction in Cushing's stigmas, weight loss, 2 cm growth and significant improvement in systemic arterial hypertension, being discharged with corticosteroids in a physiological oral dose and no antihypertensive drugs. The description of this case calls attention to the inclusion of CS in the differential diagnosis of arterial hypertension in this age group and the detection of ACTH in the adrenals, possibly contributing to the diagnosis of primary macronodular adrenal hyperplasia among the other rare forms of these disorders (McCune-Albright syndrome , pigmented micronodular hyperplasia associated with the Carney complex and others), whose definitive diagnosis can be established by detecting the respective associated mutations.

E-PO143 DOPPLER ASSESSMENT OF THE UTERINE ARTERIES IN GIRLS FOR THE DEFINITION OF PUBERTAL STAGE

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Introduction: Pelvic ultrasonography (US) is a quick, non-invasive and low-cost method, and doppler analysis facilitates assessment of flow impedance measurement in the uterine vascular tree. The pulsatility index (PI) reflects blood flow impedance in the vessel distal to the sampling point and has been suggested as a parameter to define pubertal development. **Objective:** To evaluate the PI of the uterine arteries and US measurements of uterus and ovaries in girls with different pubertal stages. **Patients and methods:** Cross-sectional study in girls with normal pubertal development. US and Doppler assessed PI of the uterine arteries (defined as the difference between the peak systolic flow and end-diastolic flow divided by the mean maximum flow velocity), endometrial thickness, uterine and ovarian volumes. Clinical data such as the age of menarche, pubarche and thelarche were recorded. All the US exams were performed with the same equipment by the same radiologist. Statistical analyses were performed in SPSS, with KS, Kruskal-Wallis test, Spearman correlation and ROC curve. **Results:** One hundred and seven girls aged 7-15 years (mean 11.14 ± 1.7) who performed 140 pelvic US were included (Tanner 1 = 21.4%, Tanner 2 = 24.3%, Tanner 3 = 25.7%, Tanner 4 = 14.3%, Tanner 5 = 14.3%). Mean age of thelarche, pubarche and menarche were 10 ± 1.2, 10 ± 1.3 and 12.4 ± 1.0 years, respectively. Prepubertal girls (Tanner 1) had median PI significantly higher than girls in initial puberty (Tanner 2 and 3 grouped) and in late puberty (Tanner 4 and 5 grouped), respectively 6.20 (5.15-7.45) vs. 3.95 (3.10-5.45) vs. 2.50 (2.17-3.32), $p < 0.05$ for all the comparisons. ROC curve analysis demonstrated that the PI is able to identify the onset of puberty with an area under the curve of 0.8 (EP 0.05), $P < 0.0001$, and a cutoff point of IP = 4.55 presents a sensitivity of 0.8 and a specificity of 0.77 to identify the onset of puberty. We found a strong negative correlation between PI and uterine volume ($rs = -0.73$, $p < 0.0001$), endometrial thickness ($rs = -0.69$, $p < 0.0001$) and right ($rs = -0.65$, $p < 0.0001$) and left ($rs = 0.64$, $p < 0.0001$) ovarian volumes. **Conclusion:** We found an increased PI in the prepubertal phase and a reduction during pubertal development, reflecting a progressive increase in blood flow to the uterus, which can be a valuable non-invasive tool to confirm the onset of puberty.

E-PO144 MAIN RISK FACTORS FOR DEVELOPING IDIOPATHIC CENTRAL PRECOCIOUS PUBERTY: A CASE-CONTROL STUDY

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Introduction: The course of puberty can be determined by a series of endogenous and exogenous factors, such as environmental endocrine interferers. While soy and cow-milk are pointed as risk factors, exclusive breastfeeding (EBF) has a possible protective effect. **Objective:** Evaluate the main risk factors associated with precocious puberty (PP). **Methods:** We performed an observational, retrospective, case-control study. A total of 217 subjects were divided into two groups: 99 patients diagnosed with PP composed the case group and 118 patients without the diagnosis of PP (had gone through normal onset of puberty) were the control group. **Results:** Our control group had a higher presence of EBF > 6 months, which was an important protective factor for PP (OR: 0.5; IC95%: 0.3-0.9, p < 0.05) and also correlated negatively with the onset of puberty (r = -0,2; p = 0,022). Oppositely, the use of soy was significantly higher in PP group, being pointed as an important risk factor for the development of this condition (OR: 3; IC95%: 1,5-6, p < 0.001) and positively correlating (r = 0,2; p < 0,001) with age of puberty. Starting age and duration of soy exposition differed between both groups (p < 0.05), suggesting longer duration of consumption and earlier exposition to soy-based foods can influence the early onset of puberty. Duration of soy intake (years) correlated with bone age (r = 0,446; p = 0,009), suggesting a higher period of soy intake is associated with rapid bone maturation. A logistic regression model was developed and a logistic regression was performed to ascertain the effects of duration of EBF and use of soy on the likelihood that participants develop PP. The logistic regression model was statistically significant [x^2 (2) = 20,715, p = <0.001]. The model explained 12.2% (Nagelkerke R2) of the variance and correctly classified 62.5% of cases. EBF was associated with a reduction of likelihood of having PP [OR = 0,187 (CI = 0,055-0,635); Wald = 7,222, p = 0,007], while soy intake increased the likelihood of having this condition [OR = 3,505 (CI) = 1,688-7,279, Wald = 11,319, p = 0,001]. **Conclusion:** Our data found the use of soy as a risk factor for developing PP and suggested that earlier start of consumption and longer duration of intake can aggravate the progression of disease. Additionally, EBF was pointed as a protective factor.

E-PO145 MUCOPOLYSACARIDOSIS TYPE IIIA: A CASE REPORT

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A 3 years old female patient reported recurrent upper airway infection. At 2 years of age, delayed speech development, hyperactivity and sleep disturbance were also noted. These child's health problems motivated her mother to seek specialized medical care. On physical examination, the patient presented an infiltrated face, thick lips, hirsutism, clawed hands, slight knee contracture. The abdominal ultrasound evaluation demonstrated moderate hepatomegaly and mild splenomegaly. The transthoracic echocardiogram was normal. In view of the clinical history and physical examination findings, an investigation was performed for mucopolysaccharidosis, which revealed an increase in urinary glycosaminoglycans (due to an increase in heparan sulfate) and a low activity of the sulfamidase enzyme in leukocytes, thus confirming the diagnosis of Mucopolysaccharidosis (MPS) IIIA. The treatment consisted of palliative measures, such as controlling hyperactivity and sleep disturbance. Therefore, risperidone, periciazine and melatonin were prescribed. In addition, a multidisciplinary team was requested for monitoring the patient, consisting of physiotherapy, speech therapy, occupational therapy, otolaryngologist, pulmonologist, neurologist and geneticist. This case study addressed a complex and rare situation, MPS IIIA, belonging to the group of genetic diseases of lysosomal deposit, which has an incidence of 1.16 per 100,000 births. It is the result of a deficiency in the activity of heparan-N-sulfatase, an enzyme involved in the degradation of heparan sulfate, resulting in the accumulation of this glycosaminoglycan in lysosomes and impaired cellular and organic functions. Characterized by the progressive degeneration of the central nervous system, presenting cognitive decline, behavior change, sleep disorders and loss of motor function. A coarse face, thicker and harder skin, hirsutism, musculoskeletal changes and hepatosplenomegaly can be observed. Upon clinical hypothesis, the definitive diagnosis is confirmed by analyzing the activity of the specific enzyme for the type of MPS III in blood serum, fibroblasts or leukocytes. Finally, early diagnosis can help to improve palliative care and life expectancy. Advances are needed in clinical research regarding treatment of MPS IIIA, for which there is still no effective therapy and it significantly compromises the child's quality of life affected by the disease and their families.

E-PO146 NOONAN SYNDROME – CASE REPORT

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I. C. G., 11 years old, was referred to the Neuropediatrics at 2 years and 8 months due to irritation, aggression and delayed speech. In the consultation, phenotypic traits were observed, such as ocular and breast hypertelorism, divergent strabismus, anomalous ocular implantation, large forehead, low ear implantation, pectus carinatum, short stature, delayed speech and hyperactivity. Normal skull CT, EEG and karyotype. He had a heart murmur in the pulmonary focus and right branch block on the ECG, mild pulmonary stenosis on the echocardiogram. He was referred to Endocrinopediatrics at age 8 due to short stature, where he closed the clinical diagnosis of Noonan Syndrome (NS). IGF-1, IGFBP3 and GH stimulation test with clonidine were normal. He started treatment at 10 years old with 0,15 U/kg/day of somatotrophin. In 6 months there was an improvement in the growth rate (VC) (6.7 -> 8.0 cm/year). Treatment continued, followed up. SN is one of the most frequent syndromes of Mendelian inheritance, of an autosomal dominant character, with an estimated incidence of 1:1,000 to 1:2,500 live births and similar distribution between the sexes. Described in 1963 by cardiologist Jacqueline Noonan, who reported 9 patients with pulmonary stenosis, short stature, ocular hypertelorism, mild mental deficiency, cryptorchidism and skeletal malformations. The PTPN11, SOS1, RAF1, KRAS and SHOC2 genes were related to the syndrome's etiology and are responsible for the RAS/MAPK2 signaling pathway. The cause of short stature remains unclear. Studies that evaluated the GH/IGF1 axis in these patients showed contradictory results. The response to GH secretion stimulus tests is usually normal. Levels of low IGF1 or at the lower limit of normality and normal or high GH secretion suggest some degree of GH insensitivity in SN. The diagnosis is clinical, based on the criteria of Van der Burgt (1994). The use of growth hormone (hrGH) to treat short stature in NS is still controversial, although several studies have shown an increase in VC by 3-4 cm/year. The dose ranges from 0,1-0,15 U/kg/day. Patients with mutations in the PTPN11 gene (about 50% of cases) may be less responsive to hrGH. The variety and phenotypic overlap and its attenuation with age are elements that hinder and delay the diagnosis of NS. Early and correct diagnosis aims at a multidisciplinary approach and improving the quality of life of these patients.

E-PO147 PREDICTIVE FACTORS FOR THE TREATMENT RESPONSE WITH RECOMBINANT HUMAN GROWTH HORMONE IN SHORT STATURE CHILDREN AND ADOLESCENTS BORN SMALL FOR GESTATIONAL AGE

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Introduction: Children born below two or more standard deviations from average in weight or height for a given gestational age, are defined as Small for Gestational Age (SGA). From 10% to 15% of these children will not achieve spontaneous growth recovery after birth and remain short in adulthood and can benefit from therapy with recombinant human growth hormone (rhGH). **Objectives:** Evaluate the outcome of rhGH therapy in children and adolescents born SGA in a population and identify predictive factors for treatment response. **Methods:** Observational longitudinal design, in which data were collected from records of 318 SGA patients with short stature under treatment with rhGH. The variables analyzed were: age, bone age, pubertal stage, weight and height at birth, gestational age, prediction of final height, target height and growth speed. From the entire sample, 75 patients reached final height and were evaluated. The final height and final height standard deviations data were collected and the differences from initial to final height standard deviations were calculated and considered the final outcome. Categorical variables were reported as absolute and percentage values, and continuous variables as means and standard deviations (SD). Values of p were significant if < 0.05. **Results:** Among the 75 patients, 60% were female and 40% were male. 74.7% underwent pubertal block at some point during treatment and 64% were pubertal at baseline. The mean chronological age at baseline was 11,4 ± 1,8 years and bone age was 10,6 ± 1,9 years. The mean initial height was 132,3 ± 11,2 cm and the mean duration of treatment was 3,4 ± 1,6 years. The mean differences from initial to final height standard deviations were 1,1 ± 1,1 SD. There were positive correlations between treatment response and years of treatment. The baseline height standard deviations showed an inverse correlation with the treatment response. The baseline prepubertal stage showed a better response as well. The multivariate analysis identified a correlation between the initial height standard deviations and treatment response, after adjustment for numbers of years of treatment and pubertal stage. **Conclusions:** The treatment for short stature in this SGA population with rhGH showed significative results, having been identified as predictive factors for better response: the pubertal stage at the beginning of the treatment, the initial height and the length of treatment.

E-PO148 SURGICAL APPROACH OF ATYPICAL GENITALIA ACCORDING TO ADULT PATIENTS WITH DIFFERENCES OF SEXUAL DEVELOPMENT

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Introduction: Differences of sexual development (DSD) define congenital diseases in which there is an atypical development of chromosomal, gonadal or anatomical sex, and may present varying degrees to genital atypia. There has been a discussion about the ideal time for surgical approach of atypical genitalia, because some non-governmental entities argue that the surgical approach should be delayed until adulthood after the patient's consent. **Objective/methodology:** To analyze the perspectives of adult DSD patients followed at a reference center in São Paulo on the surgical approach to correct atypical genitalia, through a semi-directed interview. **Results:** Thirty-seven adult patients with atypical genitalia were interviewed. Patients' mean age was 36 years. 70% of them had atypical genitalia diagnosed at birth. The patients' median age at the genitoplasty approach was 5 years (1 to 35 years). The median time interval between the beginning of the follow-up at the referral center and the surgical procedure was 1.9 years. When asked about the ideal period/age for genitoplasty, 72.2% considered the childhood, 16.7% cited when they're teenagers, 8.3% in adulthood and 2.8% didn't know. The discomfort reported by the patients related to atypical genitalia decreased after the surgical approach: from 3.8 to 2.9 $p < 0.01$ (on a scale of 1 "without discomfort' to 4 "extreme discomfort"). Insecurity about the appearance of genitalia and functionality during sexual intercourse influences negatively affective relationships. Four (10.8%) patients presented gender dysphoria, all of them with 46,XY DSD, three with partial gonadal dysgenesis (all approached surgically before being admitted to our referral service) and one with 5-alpha-reductase 2 deficiency. **Conclusion:** Most 46,XY DSD patients considered childhood the ideal time to correct their atypical genitalia. An early follow-up in a reference center and an adequate evaluation by a multidisciplinary may influence the positive results associated to the surgical approach of the atypical genitalia in childhood and the low prevalence of gender dysphoria in adulthood.

E-PO149 THE IMPORTANCE OF IDENTIFYING WILLIAMS-BEUREM SYNDROME: A CASE REPORT

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Case presentation: Male child, 17 years old, presented with weight and statural growth retardation at 3 months old. Development stages: performed the first social smile at 5 months, held his head at 6 months, sat down at 8 months, crawled at 18 months, walked at 24 months, spoke at 24 months and developed anal sphincter control at 84 months. A mild pulmonary and aortic valve stenosis was identify at 1.5 years old and a mild aortic and mitral regurgitation, at 3 years old. In the same period, primary hypothyroidism treatment was identified. The PTH was at the upper limit with normal calcemia. Bilateral conductive hearing loss, due to bacterial otitis, was diagnosed at 8 year old. In an investigation for short stature Williams-Beurem syndrome (WBS) was diagnosed at 10 years old by the karyotype and FISH test for Chromosome 7q deletion. He also presented some dysmorphic features, like short nose, thick lips and large mouth. There were no similar familial cases; non-consanguineous parents. **Discussion:** WBS is an autosomal dominant disorder caused by a hemizygous microdeletion of chromosome 7q11.23 which contains about 28 genes. Estimated incidence of 1: 20.000 birth and, due to its rarity, is not properly diagnosed. Common clinical features of this syndrome include: dysmorphic face (wide forehead, short nose, thick lips and large mouth), mild to moderate mental retardation, extroverted personality, short stature, congenital cardiovascular diseases, high blood pressure, dental and musculoskeletal problems. Calcium and thyroid abnormalities may occur. The early identification of the syndrome has a positive influence on neuropsychomotor development and minimizes complications resulting from systemic manifestations. Cardiac evaluation must be early. Monitoring dental problems is essential to prevent endocarditis. Recurrent urinary infections require periodic assessments of kidney function. In adolescents, scoliosis and joint contracture should be investigated. Despite the rarity, it is essential to know the main manifestations of SWB so that the diagnosis and preventive measures are early and provide a better quality of life for patients and their families. **Conclusion:** This case highlights the importance of medical knowledge about WBS, pointing out the clinic with a dysmorphic face, development delay and congenital cardiovascular changes for the identification of the disease. The precocious genetic diagnosis is an important factor in the quality of life of patients.

E-PO150 UNDERSTANDING, COMMUNICATION AND CONCERNS AROUND SEXUAL DEVELOPMENT DIFFERENCES BY MOTHERS' PERSPECTIVES

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Introduction: Differences of sexual development (DSD) define congenital diseases in which an atypical development of chromosomal, gonadal or anatomical sex occurs. The approach involves complex themes: gender designation, genitoplasty, hormonal treatment and fertility. Mothers' understanding optimizes their children's assistance. **Objective/Methods:** To analyze the mothers' understanding about the DSD condition, doubts, concerns, barriers to communication and repercussion in gender, sexual orientation and relationships in a cohort followed in reference centers in São Paulo (SP) and Ceará (CE), through an interview. **Results:** 112 mothers (72 from SP and 50 from CE) were interviewed. Mothers' mean age was 35 y. The satisfaction related to the understanding about their children's condition (on a scale from 1 to 5) was higher in the SP: medians of 4 (SP) and 3 (CE). Significant differences were evidenced between the numbers of mothers who knew the condition's name, 56.3% (SP) and 38.6% (CE); who knew why the children had been affected by it, 38.5% (SP) and 16.7% (CE); and who knew the drugs' function, 89.3% (SP) and 70.4% (CE). 70% to 83% of the mothers referred doubts, mainly related to the diagnosis and their feeling of guilt. Considering only children with atypical genitalia at birth (n:115), the difference was not diagnosed at hospital in 15% (4 from SP and 14 from CE). Pediatricians and obstetricians first communicated to mothers about the atypical genitalia in 73% of the reports. 70% (SP) and 41% (CE) of the mothers considered the first approach inappropriate. 89% of all mothers feel uncomfortable in talking to other people about the DSD condition and 68% experienced negative comments. Around 70% of mothers reported discomfort in exposing their children's genitalia and 64% considered genitoplasty as an urgency. 47% referred that the DSD may influence the gender identity, 65.4% referred it may prejudice relationships and 33.3% believed it may influence on sexual orientation. The concern related to stigma was higher than related to fertility, genitalia appearance, relationships, treatments, gender identity and sexuality. **Conclusion:** Most of the mothers of DSD children, even in reference centers, showed unsatisfaction and lack of knowledge. The health team should be trained and the approach should consider the mothers' perspectives and be appropriate to the cultural context. Educational actions may improve understanding and reduce the DSD stigma.

E-PO151 UNDERSTANDING, COMMUNICATION AND CONCERNS AROUND SEXUAL DEVELOPMENT DIFFERENCES BY PATIENTS' PERSPECTIVES

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Introduction: The approach to Differences of Sexual Development (DSD) patients is complex. It involves discussion on karyotype, gonads, genital phenotypes, hormonal treatment, genitoplasty, sexual activity and fertility. A satisfactory understanding by the patients optimize the follow up and the acceptance of the condition. **Objective/Methods:** To analyze the understanding of DSD patients about their condition, the doubts and concerns, the barriers to communication and repercussion in gender, sexual orientation and relationships in a cohort of patients followed at a reference center, through a semi directed interview. **Results:** 57 patients were interviewed. The mean ages were 36.5 y. Around 90% of all patients concluded at least the high school. Only 50% of all patients knew the condition's name and how they were affected by it. Still 92% knew the treatment. 63% of the patients presented doubts, mainly related to diagnosis. The median level of satisfaction about the condition understanding (on a scale from 1 to 5) was 4. Most of the patients were first informed by doctors (65%) or mothers (27%). The mean age of diagnostic disclosure was 13 y among patients with atypical genitalia. However, 67% of them preferred be first informed in childhood. Around communication, 60% of them reported no dialogue at home about the condition, 82% feel uncomfortable in talking to other people and 57% experienced negative comments related to DSD. Only four 46,XY DSD presented gender dysphoria: 3 with partial gonadal dysgenesis (who were admitted at the reference service after genitoplasty) and one 5-α-reductase 2 deficiency. About affective relationships, 42% of the patients were single and 70% had already experienced sexual activity. The mean age at first sexual activity was 22 y. 72% considered that condition influences negatively on relationships because the stigma, the genitalia appearance, the insecurity in sexual intercourse and fertility. The concern related to stigma was higher among patients with atypical genitalia. The patients' self-evaluation (scale from 0 to 10) about their condition understanding improved after the interview: 6 to 8.9 ($p < 0.01$). **Conclusion:** There is lack of knowledge about DSD among patients even treated in a referral center. The atypical genitalia arouses curiosity and stigma. Educational acts for patients, health team and community are needed to make DSD conditions popular, to improve the understanding and communication and to decrease the stigma.

E-PO152 USE OF GNRH ANALOGUE IN IDIOPATHIC GHD: DATA FROM A SELF-CONTROL STUDY

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Background: Some children with idiopathic growth hormone disease(iGHD) do not achieve parental height. The additional use of aGnRH in those patients remains controversial. **Objectives:** Evaluate the effect of aGnRH addition on predicted height in patients with iGHD in monotherapy with growth hormone (rhGh). **Patients and Methods:** We performed a self-control, longitudinal study with 32 patients diagnosed with iGHD growing below parental height aGnRH was added in treatment during puberty. Their data were compared in three moments: at diagnosis (D), after at least one year treating only with rhGh (G) and after combined treatment (C). Patients with genetical syndrome, chronicle diseases and undergoing corticoid treatment were excluded. **Results:** Of all patients, 12 (37%) were male and 20 (63%) female. The chronological age at the three moments at diagnosis (D), after at least one year treating only with rhGh (G) and after combined treatment (C) were: 10,1 ± 1,9; 11,1 ± 1,8 and 12,2 ± 2,0 years ($p < 0,05$ between all moments); bone age = 10,2 ± 2,3 (D); 11,8 ± 1,2 (G) and 12,1 ± 1,7 (C) years ($p < 0,05$; diagnosis vs. others moments); height = 132 ± 10,8 (D); 140,4 ± 8,1 (G) and 146,7 ± 11,2 cm (C) ($p < 0,05$ between all moments). SD height (chronological age) = -1,0 ± 0,8 (D); -0,7 ± 0,8 (G) and 1-0,4 ± 0,9 (C) ($p < 0,05$; after combined treatment vs. others moments); IGF-1 = 336,5 ± 184,9 (D); 473,2 ± 144,6 (G) and 439,4 ± 191,3 µg/L (C) ($p < 0,05$; diagnosis vs. others moments). Predicted height = 155,8 ± 8,3 (D); 157,2 ± 7,4 (G); 163,6 ± 7,7 cm (C) ($p < 0,05$; after combined treatment vs. others moments) and SD of predicted height = -1,7 ± 0,7 (D); -1,6 ± 0,7 (G); -0,9 ± 0,8 (C) ($p < 0,05$; after combined treatment vs. others moments), respectively. **Conclusion:** Our results suggested that the addition of GnRH analogue in idiopathic GHD could improve predicted height. If those findings remain when our patients with idiopathic GHD reach final height, the use of combined therapy with GnRH analogue could be indicated in these patients.

METABOLISMO ÓSSEO E MINERAL

E-PO153 A CLINICAL CASE OF ACTH INDEPENDENT MACRONODULAR ADRENAL HYPERPLASIA (AIMAH) CUSHING SYNDROME (CS) PRESENTING WITH MULTIPLE FRAGILE SEVERE FRACTURES

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Case: A 24-year-old woman was referred due to vertebrae fragile fractures with 4 cm height reduction. She also presented hypertension, weight gain, spontaneous bruises, proximal muscle atrophy, moon face, truncal obesity and purple striae. Three dexamethasone injections for lumbar pain relief were previously prescribed, all taken after symptoms had already been stablished. Bone densitometry (DXA) showed severely low BMD at the lumbar spine (LS), femoral neck (FN) and total hip (TH). Elevated CTX, undetectable osteocalcin and low intact PTH were also found. MRI showed fractures from T5 to L5. Due to the severe bone fragility fractures, teriparatide was started. A low morning plasma cortisol (4.6 mcg/dL), but elevated midnight salivary cortisol (1,520 ng/dL; reference value < 270 ng/dL), failure to suppress salivary cortisol after 1 mg dexamethasone suppression test (224 ng/dL; reference value < 100 ng/dL) with ACTH of 22 and 12 pg/mL suggested ACTH independent CS. Abdominal CT revealed an adenoma on the left adrenal. AIMAH due to illicit receptor GIP diagnosis was suspected, and functional tests (cortisol and ACTH responses to DDAVP test, Cortrosyn, mixed meal, and oGTT) were performed, with inconclusive results. Left adrenalectomy (ADX) was performed and anatomopathological study showed adrenal hyperplasia, small adrenal nodule and no hyperpigmentation. After the ADX, all CS symptoms improved but recurred after one year. Right ADX was performed, and the patient was put on corticoid substitution therapy. After 18 months of teriparatide, and 15 months of ADX, DXA showed an increase of 7,8% in BMD at LS, 2,4% at FN, and 1,2% at TH. Concomitantly, CTX decreased and osteocalcin increased. **Discussion:** We presented a case of a young female showing multiple vertebrae fractures as the main clinical manifestation of a rare cause of endogenous CS (AIMAH). Teriparatide therapy was used to mitigate bone fragility due to the severity of bone weakness and the atypical cortisol profile exhibited by the patient (i.e., AIMAH). **Conclusion:** There is a gap in the literature on when pharmacological therapy for osteoporosis is appropriate in CS, as well as which one would be best for those showing severe bone fragility. The present case report encourages a multicenter study to delineate the response to severe bone damage related to CS. The diagnosis of AIMAH due to illicit receptors is yet a challenge.

E-PO154 ACTIVE SEARCH OF ADULT PATIENTS WITH PERSISTENTLY LOW SERUM ALKALINE PHOSPHATASE LEVELS FOR THE DIAGNOSIS OF HYPOPHOSPHATASIA

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Introduction: Alkaline phosphatase (ALP) is the main laboratory marker of hypophosphatasia (HPP), a rare disease unknown to most physicians. The prevalence of HPP has been widely discussed in the literature due to the diverse phenotypes of HPP. The purpose of this study was to search for patients with hypophosphatasemia based on previous biochemistry tests and reevaluate them to confirm the diagnosis of HPP. **Methods:** A total of 289,247 biochemical tests for ALP in adults were performed from 2015 to 2019 in two tertiary hospitals in Rio de Janeiro were reviewed (Clementino Fraga Filho University Hospital – HUCFF – and Bonsucesso Federal Hospital – BFH). **Results:** A total of 1,049 patients were identified with ALP levels below 40 U/L, and 410 patients had hypophosphatasemia confirmed by at least two exams. After the active search of medical reports and/or interviews based on structured questionnaires, 398 subjects were excluded due to secondary causes of reduced ALP. The remaining 12 patients were invited to attend the medical consultation at HUCFF, accompanied by at least one first-degree relative. None of the patients had a history or clinical manifestations consistent with HPP. Decreased ALP was confirmed in further laboratory evaluations in all 12 patients, but ALP was within reference values in all relatives. After ruling out secondary causes, persistent reduction in ALP should lead to prompt clinical evaluation, and relatives should also be evaluated for manifestations of this rare but potentially threatening disease.

E-PO155 ADULT WOMAN DIAGNOSED WITH HYPOPHOSPHATASIA: OLIGOSYMPTOMATIC ADULT PHENOTYPE

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Case report: A 32-year-old woman using oral contraceptives (cyproterone and ethinyl estradiol) for 10 years. She presented a fracture of the left ischiopubic 8 months after starting running training of moderate to low intensity. She practiced running half an hour a day, five times a week. She sought an emergency after three months of painful hip condition when a fracture in the same topography was diagnosed with callus formation and adjacent bone marrow edema. The orthopedist opted for conservative treatment and referred to an endocrinologist for probable secondary osteoporosis. In the clinical history, the patient denied previous fractures, denied eating disorders, denied restriction of dairy products, did not present bone deformities, without pulmonary problems, had no history of seizures, or early loss of teeth. We observed persistently low dosages of alkaline phosphatase for 3 years. We don't found cause to justify hypophosphatemia. Dual energy X-ray densitometry showed a lumbar spine Z-score of -3.9. Alkaline phosphatase bone fraction also below the reference value. We investigated the parents and siblings, none of whom had low doses of alkaline phosphatase. **Discussion:** Hypophosphatasia (HPP) is a rare disease and unknown to most doctors. The clinical presentation of the disease is very varied. We know that the more severe the disease, the earlier it appears. In adults, it is often oligosymptomatic. It should always be remembered in young adults with fragility fractures and with persistently low doses of alkaline phosphatase. Most common causes of hypophosphatemia should be excluded. We should investigate nephrolithiasis, nephrocalcinosis and chondrocalcinosis in suspected patients, as these patients commonly have extra joint calcium deposition. In addition, the evaluation of family members is essential. HPP is the last form of rickets and osteomalacia with specific approved treatment. The investigation of family members is essential for early diagnosis and genetic counseling. **Final comments:** In young patients in the reproductive phase, genetic counseling would be important if hereditable recessive forms are identified. The recognition of the disease in asymptomatic or oligosymptomatic people with osteoporosis or fragility fractures would prevent the disastrous use of bisphosphonates, which is associated with worsening of bone mineralization.

E-PO156 - ASSESSMENT OF OSTEOPOROTIC FRACTURE RISK USING NOGG IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Introduction: Chronic obstructive pulmonary disease (COPD) is a preventable and treatable disease that compromises the lungs, and it is related to osteoporosis and also to the risk of fracture. The NOGG allows the identification and early treatment of individuals at high risk for fragility fractures. **Objective:** The present study aimed to assess the risk of fractures in patients with COPD, as well as the indication for early treatment through NOGG. **Patients and methods:** It was a cross-sectional, descriptive and observational study, divided into two groups, one (DG) composed of COPD patients undergoing outpatient follow-up in Aracaju-SE, and another (CG) formed by healthy individuals who do not use medications that interfere with bone metabolism. Data collection was performed by completing a specific form for this study. **Results:** When looking at the total of 87 GD patients, 44 (50.6%) were men, with an average of 66.2 years. The average risk of major osteoporotic fracture in 10 years of clinical FRAX in patients with GD was 7.2% and 3.3% for hip fracture. From the CG, the average rate was 4% and 1.5% for major and hip fractures, respectively. Despite this, no participant in the CG, and only 3 (3.4%) in the GD had treatment indication to avoid major fractures, for hip fracture, the indication occurred in 12 (13.8%) volunteers in the CG and 36 (41.4%) of the GD. When evaluating the NOGG, it was observed that 4 (4.6%) volunteers from the CG and 44 (50.6%) from the GD had treatment indication and 58 (66.6%) volunteers from the CG and 38 (43.7%) of the DG were indicated to perform bone densitometry. However, of all patients, only 9 (10.3%) in the GD and 29 (33.3%) in the CG had already undergone bone densitometry. Despite the recommendations, none of them were using specific medication for osteoporosis, 22 (25.3%) patients in the CG and 5 (5.7%) in the DG were using calcium and 23 (26.4%) in the CG and 2 (2.3%) of the GD used vitamin D. **Conclusion:** The study showed that COPD has a significant impact on bone quality, since comparing NOGG between groups, there was more indication for treatment for GD. When comparing the treatment indication by the two FRAX tools, it was observed that the GD had a higher therapeutic indication by NOGG, however in the CG, this indication was higher by FRAX. The comparison between the groups also showed that COPD increases the risk of fracture.

E-PO157 BILATERAL FEMORAL FRACTURE IN A TEENAGER WITH CUTANEOUS SKELETAL HYPOPHOSPHATEMIA SYNDROME

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Cutaneous skeletal hypophosphatemia syndrome (CSHS) is characterized by the association of epidermal and/or melanocytic nevi, a mosaic skeletal dysplasia, and an FGF23-mediated hypophosphatemia. The mean age of onset of hypophosphatemia is 4 years (range 1-14), and the initial symptoms are bone pain, limb length discrepancy, bone deformities, and impaired mobility. We report a case of rickets in a teenager with cutaneous skeletal hypophosphatemia syndrome who had a bilateral femoral fracture caused by fall from own height. A 14-year-old female with diagnosis of linear nevus sebaceous developed generalized bone pain, impaired gait and stress microfractures in lower limbs. Laboratory tests showed hypophosphatemia, reduced tubular reabsorption of phosphate, elevated alkaline phosphatase and elevated collagen type I C-telopeptide (CTX), which altogether suggested the diagnosis of hyperphosphaturic hypophosphatemic rickets. FGF-23 levels were in the normal range. She was started on phosphate and calcitriol supplementation, with progressive improvement on symptoms and laboratory tests. However, despite the apparent good response, the patient had a complete fracture of the left femur after a fall from own height. Given the coexistence of microfractures in the right femur, she had surgery that included bilateral flexible intramedullary nails. She had intense postoperative pain. This case report illustrates the evolution of this rare disease and may help further characterize and understand its clinical picture.

E-PO158 CHIARI MALFORMATION SECONDARY TO MONOSTOTIC PAGET'S DISEASE IN THE SKULL: CASE REPORT

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Case presentation: A 77-year-old man presented with a 2 years history of progressive weakness in the upper and lower limbs, gait deviation and dysphagia. Physical examination revealed a symmetrical reduction in muscle strength of the 4 limbs, horizontal nystagmus and dysmetria in his right side. Magnetic Resonance showed vertebro-basilar invagination, with discreet caudal migration of the cerebellar tonsils and obex, compatible with Arnold-Chiari malformation. The patient underwent surgery for posterior fossa decompression and resection of the posterior C1 arch. During the intraoperative period, he evaluated with cranial sinking at the insertion site of the left temporal pin. Due to the marked fragility of the skull, a fragment was sent for anatomopathological analysis, which demonstrated the presence of benign bone lesion, with reactive osteoclastic proliferation and extensive bone remodeling, suggestive of Paget's disease of the bone (PDB). Laboratory tests revealed: 25-OH-vitamin D 14 ng/mL, FA 108 U/L (VR 40-129), serum calcium 8.8 mg/dL (VR 8.6-10.6), Cai 1.11 mmol/L (1.11-1.40), P 4.6 mg/dL (VR 2.5-4.6), PTH 22 pg/mL (10-65). Bone scintigraphy showed a marked osteogenic reaction in the skullcap, probably related to DPO, without other areas of anomalous osteogenic activity. Treatment with zoledronic acid, vitamin D and calcium was instituted. **Discussion:** DPO is a metabolic bone disorder characterized by abnormalities in bone remodeling. It is usually polyostotic and the main affected sites are pelvis (92%), spine (53%), femur (42%) and skull (25%). The disease is, in most cases, asymptomatic, diagnosed as an incidental finding in biochemical and imaging exams. Although rare, its association with Chiari malformation has already been described in the literature. The sharp increase in bone resorption, mediated by osteoclasts, and the subsequent increase in bone formation result in an extremely disorganized, mechanically weak tissue, which contributes to the occurrence of deformities such as platybasia, characterized by an abnormal flattening of the skull base, which can consequently lead to the development of vertebro-basilar invagination. **Conclusion:** The report of DPO evolving to Chiari malformation demonstrates the need for an approach to differential diagnoses in patients with neurological manifestations. Early diagnosis and investigation can improve the patient's clinical outcome and prevent future complications.

E-PO159 DOES THE FEMALE DXA DATABASE REFLECT THE REAL PREVALENCE OF SEVERE FRAGILITY FRACTURES IN ELDERLY MEN?

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Objective: To compare bone densitometry of elderly men evaluated using female (F) and male (M) databases and the association with prevalent fractures. **Design:** Cross-sectional study of 28 elderly men, diagnosed with bone fragility based on previous low-impact fractures. **Methods:** Biochemistry evaluation, X-rays of the spine to identify and classify morphometric vertebral fractures (VFx), and bone densitometry (DXA, Prodigy Advance densitometer GE, Software encore V16) of the lumbar spine, femoral neck, total femur, and 1/3 radius. Bone mineral density T-scores at all sites were estimated by F and M databases, without adjustment of weight and ethnicity. **Results:** Mean age was 72.6 ± 5.5 years. All patients had normal values of serum calcium, phosphorus and CTX; 25(OH) D was below 20 ng/mL in 36.7% and PTH was elevated in 16.7%. Forty-six vertebral fractures were identified in 25 patients, and classified according to Genant's criteria as VFx grade 1 (N = 30), grade 2 (N = 5) and grade 3 (N = 11), and 7 patients referred 9 non-vertebral fractures (Non-VFx) at the hip, femur, wrist, shoulder and ribs. A BMD T-score value equal or lower than -2.5 SD at any site defined densitometric osteoporosis in 10 patients (35.7%) using F database, whereas 15 patients (56.3%) had osteoporosis based on M database. The differences of T-scores obtained using M minus F databases were significant at all sites ($p < 0.001$). Comparisons of patients classified as osteoporosis and non-osteoporosis (OP versus non-OP) using M database showed no significant differences in respect to anthropometry, calcium, phosphate, 25(OH)D, PTH, CTX and glomerular filtration; same was true for OP versus non-OP using F database, except for PTH, that was higher in non-OP patients. Thus, none of these variables explained the higher prevalence of non-VFx ($p = 0.04$) and grade 2-3 VFx ($p = 0.008$) found between OP and non-OP classified by M database. On the other hand, patients with severe fractures were similarly distributed in OP and non-OP groups according to F database. **Conclusion:** In a population of elderly men, pre-selected based on previous fragility fractures, the choice of male database in the evaluation of bone densitometry seems more appropriate to identify those with more severe fractures, as compared to the usual comparison with female database.

E-PO160 EFFECTS OF ZOLEDRONIC ACID THERAPY IN POLYOSTOTIC FIBROUS DYSPLASIA ASSOCIATED WITH MCCUNE-ALBRIGHT SYNDROME

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Introduction: Fibrous dysplasia (FD) is a rare bone disorder caused by somatic activating mutations in GNAS, leading to bone pain, deformities and fractures. In the presence of coexisting extra-skeletal features, it is termed McCune Albright Syndrome (MAS). Intravenous bisphosphonates have been used to treat FD and can provide relief of pain and reduction of bone turnover markers (BTM), but their potential effect on disease progression is unclear. **Objectives:** To described the effects of zoledronic acid (ZA) therapy in patients with polyostotic FD/MAS. **Methods:** Records of two patients with FD/MAS treated with ZA were retrieved. ZA was given 5mg per infusion and timing for a subsequent cycle depended on symptoms and levels of BTM. The outcomes included pain relief, changes of BTM and adverse events after infusion. Baseline BTM were expressed as the number of times over the upper limit of the normal range (ULN) and biochemical response was evaluated with percentage change of serum levels of alkaline phosphatase (ALP) and C-terminal telopeptide of type 1 collagen (CTX). **Results:** Patient 1 (P1) was a 31-year-old woman with polyostotic FD/MAS with skeletal involvement of pelvic bones, bilateral femur and left tibia. She presented severe pain in affected bones requiring daily use of opioids and a cane for walking assistance. Patient 2 (P2) was a 32-year-old woman with diffuse skeletal involvement, with severe craniofacial deformity and lower limbs deformities requiring bilateral crutches for ambulation. Despite her high skeletal burden, severe pain was restricted to lower ribs. Both patients presented a past history of precocious puberty and P2 also exhibited uncontrolled GH hypersecretion, hyperprolactinemia and subclinical hyperthyroidism. Baseline ALP levels were 1,5x and 14,7x above the ULN in P1 and P2, and CTX levels were 1,3x and 6,0x above the ULN in P1 and P2, respectively. ZA were administered in cumulative doses of 10 mg in P1 and 20 mg in P2. After treatment, both patients reported significantly improvement of bone pain. ALP decreased by 38% of baseline in P1 and by 71% in P2; CTX levels decreased by 59% and 60% in P1 and P2, respectively. Transient asthenia and mild myalgia were reported by P1 after ZA infusion. **Conclusions:** ZA treatment was well tolerated, provided relief of bone pain and reduction of BTM, which may reflect control of disease activity. Long-term follow-up is required to assess possible effects of treatment on disease progression.

E-PO161 EVALUATION OF THE FEAR OF FALLING IN ELDERLY WITH OSTEOPOROSIS

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Introduction: Osteoporosis is a systemic disease which is related to a high risk of falls and fractures, that can generate a feeling of fear of falling. Fear of falling can have a major impact on the quality of life in elderlies, causing them less confidence and daily activity restriction. **Objective:** Study the fear of falling in elderly women with osteoporosis and the possible correlations with the history of falls and physical performance. **Methods:** This is an observational cross-sectional study which included elderly women over 50 years old, undergoing treatment for osteoporosis and functionally independent. The fear of falling was analyzed using the Falls Efficacy Scale-International-Brazil (FES-I Brazil) and a score > 23 was associated with sporadic history of falls and > 31 associated with history of recurrent falls. Physical performance was evaluated by: Time Up and Go test (TUG), Five Times Sit-to-Stand test (SST), Gait Speed (GS) and Handgrip strength (HGS), in addition – sociodemographic data were collected. Based on the history of falls in the last twelve months, the sample was divided in non-fallers group (NFG) and fallers group (FG). **Results:** 66 elderly women, 72,47 ± 8,13 years were included. The mean age (NFG 72,06 ± 8,59 and FG 72,86 ± 7,77) and BMI (NGF 27,20 ± 4,92 and FG 27,55 ± 5,25) were similar between groups. The mean FES-I score was similar between groups (NFG 28 ± 9,78 and FG 28,06 ± 7,89) as well as the performance and strength tests, with respectively in NFG and FG, TUG (11,73 ± 5,56 vs. 11,48 ± 4,4), SST (14,56 ± 6,54 vs. 15,98 ± 7,81), HGS (18,91 ± 4,26 vs. 19,52 ± 4,59) and gait speed (0,81 ± 0,23 vs. 0,84 ± 0,31), $p > 0,05$ for all. A correlation was observed between age and number of falls (0.49), TUG ($r = 0,51$) and GS (-0.49), $p < 0.005$ for all. Body mass index (BMI) was related to TUG ($r = 0,37$) and GS ($r = -0,38$), $p < 0.05$ for all. **Conclusion:** Women with osteoporosis showed an intermediate score of fear of falling not influenced by the number of falls. Besides, the lack of difference between fallers, the physical performance tests were related with age and BMI.

E-PO162 FAHR SYNDROME: A CASE REPORT

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Fahr syndrome is characterized by bilateral, symmetrical calcification of the basal ganglia and cerebellum. This syndrome may be associated with multiple conditions, including infectious diseases, calcium and phosphate metabolic disturbances, and genetic disorders, or may be idiopathic. Clinical features are variable and may include neuropsychiatric manifestations and movement disorders, such as parkinsonism, chorea, tremor, dystonia, dysarthria, and speech impairment. We report a case of a 65-year-old female patient diagnosed with Fahr syndrome in the context of postsurgical hypoparathyroidism following a thyroidectomy for papillary thyroid carcinoma carried out in 1995. She was admitted with depressed level of consciousness associated with severe hypocalcemia, with total corrected calcium for albumin of 4.34 mg/dL (reference range: 8.4 to 10.2 mg/dL), hyperphosphatemia, with serum phosphate of 8.8 mg/dL (reference range: 2.2 to 4.5 mg/dL), parathyroid hormone of 3.4 pg/mL (reference range: 13.6-48.8 pg/mL), and thus needed critical care and orotracheal intubation. She had a history of nonadherence to calcium and calcitriol supplementation, and her neurological symptoms improved after treatment resumption and normalization of calcium levels (8.9 mg/dL). Fahr syndrome is thought to be underdiagnosed and underreported and often requires a thorough investigation of potential etiologies in order to correctly treat these patients and improve their prognosis.

E-PO163 FAMILIAL ANALYSIS AND GENETIC COUNSELING IN X-LINKED DOMINANT HYPOPHOSPHATEMIC RICKETS

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Introduction: X-linked dominant hypophosphatemic rickets presents a broad clinical spectrum and frequent positive family history. Genetic counseling is important, in addition to identifying family members at risk. **Objective:** To identify individuals with X-linked dominant hypophosphatemic rickets in reference services in the city of Rio de Janeiro; to assess the family history of the identified individuals; to describe the distribution by sex, age and age at diagnosis of the studied individuals. **Material and method:** a multicenter cross-sectional study was undertaken, approved by the Research Ethics Committee of the coordinating center. Convenience sample, identified through hospital records. Inclusion criteria: individuals with a molecular diagnosis of X-linked dominant hypophosphatemic rickets (mutation in the PHEX gene); exclusion criteria: none. Variables: sex, age, age at diagnosis, family history. A descriptive analysis was undertaken, with frequency distribution, measures of central tendency and dispersion. **Results:** Thirteen individuals from 13 families were identified in three reference services; distribution by sex: 5M: 8F; mean age = 15.46 years (± 8.50); median of 15 years (limits of 5 to 35 years). In 38.46% of the cases the diagnosis was made until the age of two and in 76.92% until the age of six; only one diagnosis was made in adolescence and adulthood, respectively. In 38.46% of the sample, the family history was positive, with the majority (4/5) involving two generations. **Conclusion:** The timing of the diagnosis was satisfactory, since the first manifestations occur in the period of ambulation. Positive family history was present in almost 40% of the sample, which emphasizes the need for thorough investigation of family members possibly at risk in order to provide adequate genetic counseling.

E-PO164 GIANT BROWN MAXILLARY TUMOR SECONDARY TO PARATHYROID ADENOMA: A CASE REPORT

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Case: Male, 44 y.o., with right maxillary tumor of progressive growth for 1 year with local and low back pain. Imaging exams: CT/MRI skull and face: right axial expansive lesion (62 x 52 x 46 mm), heterogeneous, multiloculated with bulging of the right orbit inferomedial wall, with a neoplastic aspect. CT pelvis: bone lesions with soft tissue densities in pelvis, heterogeneous L4, with height reduction. Biopsy of the lesion suggesting a brown tumor. Investigation continued with PTH: 998 pg/mL and calcium: 10.4 mg/dL (8.5-10.5 mg/dL), scintigraphy: parathyroid- hyperfunctioning left lower parathyroid and bone- hypercapture, with emphasis on the skull, right scapula, some costal arches, T8, L4, sacroiliac regions, iliac crystals, left pubic branch, left ischium, trochanter of the right femur, proximal third of the left tibia and medial and malleoli right side, DXA Z-score RD -8.0DP. The patient was admitted with severe hypercalcemia (calcium: 14.6 mg/dL), phosphorus 2.4 mg/dL, without neurological symptoms. Parathyroidectomy was performed with histological result of adenoma and a significant reduction in PTH levels (29.9 pg/mL) in the immediate postoperative period. In the 6 months of follow-up, he has normalization calcemia and PTH, significant pain improvement, but without regression of the tumor. **Discussion:** Brown tumor appears in hyperparathyroidism, due to the action of PTH, leading to a replacement of bone tissue by dense connective tissue well vascularized, with fusiform and giant cells, areas of hemorrhage with a large amount of hemosiderin pigments and bone trabeculae, forming a very demineralized and fragile area, with a higher risk of fracture. The histopathological exam does not confirm the diagnosis. After confirmation of the brown tumor by hyperparathyroidism, the cause must be identified and treated. Majority of cases of HPT are caused by adenomas (80% to 85%) and the minority due to hyperplasia of the four glands (15%), with 2% to 4% of multiple adenomas and less than 0.5% caused by carcinoma. Differentiation of adenoma and carcinoma by histological/immunohistochemical study takes into account degree of lesion invasion, number of mitoses, trabecular pattern and evaluation of a panel of markers (parafibromine, galactin-3, PGP9.5 and Ki67). **Final comments:** It is necessary to emphasize the importance of early diagnosis of a systemic disease, hyperparathyroidism, which can evolve with serious complications, increasing morbidity and mortality.

E-PO165 IDIOPATHIC OSTEOPOROSIS IN YOUNG ADULT MAN: A CASE REPORT

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Case presentation: Male, 37 years old, sought care after a shoulder fracture resulting from falling from his own height after a generalized seizure. He performed neurological investigation at the time within normal limits. He reported long-standing chest and lumbar pain and a history of nephrolithiasis. On physical examination, body mass index 30.3 kg/m^2 and a reduction of 6 cm in height in relation to the beginning of adult life. He denied family or personal history of fractures or osteoporosis. Bone densitometry showed a reduction in bone mass in the lumbar spine (Z score -4.0, BMD of 0.807 g/cm^3). Thus, an extensive investigation was carried out to exclude secondary causes of osteoporosis (hypogonadism, hyperparathyroidism, thyroid dysfunction, hypercortisolism, malabsorption syndromes, hypercalciuria, smoking, alcoholism, use of drugs that can cause osteoporosis, such as corticosteroids, anticonvulsants, chemotherapy, thyroid hormones), but all tests were normal, therefore remaining with the diagnosis of idiopathic osteoporosis. The patient used ibandronate 150 mg monthly for at least one year since the diagnosis of low bone mineral density, underwent an adequate calcium diet, muscle reinforcement with a load adequate to his condition and vitamin D replacement. However, despite the treatment, there was no significant improvement in bone mineral density (BMD of the spine prior to treatment of 0.807 g/cm^3 and one year later, 0.773 g/cm^3) and also, the appearance of significant chest pain during the treatment. Thus, when a vertebral fracture was suspected, an X-ray of the cervical, dorsal and lumbosacral spine was requested, which showed a reduction in the height of the vertebral bodies of T1, T3-T4 and T6-T7. In view of the poor densitometric response and the presence of fractures even with ibandronate, bisphosphonate treatment was switched to teriparatide. **Discussion:** Idiopathic osteoporosis is a rare disorder with an incidence of 0.4 per 100,000 people per year, it is very symptomatic and affects mainly young people. In men, up to 40% of osteoporosis cases can be idiopathic, so ruling out secondary causes is essential. **Final comments:** The case presented portrays the extensive evaluation that must be carried out in order to rule out secondary causes of osteoporosis. Furthermore, it breaks the paradigm that only elderly women are affected by osteoporosis by exemplifying such pathology in a young man.

E-PO166 IMPRESSIVELY HIGH BONE MINERAL DENSITY IN A PATIENT WITH METASTATIC PROSTATE CANCER

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Case report: A 76-year-old man was referred to the Densitometry Service in 2019. Dual-energy X-ray absorptiometry (DXA) revealed lumbar spine bone mineral density (BMD) of 3,075 g/cm^2 (T-Score of 15.5 and Z-Score 16.7) and total femoral BMD of 1,390 g/cm^2 (T-Score 2.0 and Z-Score 3.3). He was admitted in the Urology Service in 2016 for investigation of low urinary tract symptoms. He had further history of hypertension, dyslipidemia, gout, tobacco and alcohol addiction. Prostate biopsy diagnosed adenocarcinoma Gleason 8 (4+4) to 9 (4+5 and 5+4) in all samples, with perineural invasion; dosage of prostate-specific antigen at that time was 715 ng/mL. Bone radiographies at the diagnosis of the prostate cancer revealed diffuse blastic lesions in axial skeleton and limbs, confirmed by bone scintigraphy. There was no evidence of metastatic disease in other organs. He was treated with Goserelin, Docetaxel, Zoledronic acid, Diethylstilbestrol and is currently in use of Abiraterone; the patient refused orchiectomy but is under effective chemical castration. The patient did not claim osteoarticular pain out of gout attacks in any of the medical reports. **Discussion:** In routine clinical practice, the main focus of bone densitometry is to identify low bone mass for the diagnosis and monitoring of osteoporosis. Less commonly, elevated BMD can be observed on DXA scanning, usually due to degenerative disease. Nevertheless, other skeletal disorders can also lead to high BMD, as osteopetrosis and sclerotic lesions. Attention to the image and the patient's records can lead to an accurate diagnosis. **Conclusion:** We presented a remarkable case a high BMD in DXA scan due to blastic metastasis. It was notorious how altered was the BMD, the diffuse affection of bone metastasis with no other stricken organ and how the patient was barely symptomatic regarding the osteoarticular involvement. In this case, DXA scanning did provide clinically useful information about the status of metastatic bone lesions in cancer patient undergoing palliative treatment.

E-PO167 INTRINSIC AND EXTRINSIC FACTORS ASSOCIATED WITH FALLS IN WOMEN WITH LOW BONE MINERAL DENSITY

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Introduction: Women with low bone mineral density (BMD) may have an increased risk of falls. **Objectives:** To analyze the intrinsic and extrinsic factors related to falls in osteoporotic women in treatment. **Methods:** A cross-sectional study with community-dwelling women with low BMD in treatment in a tertiary care center. Patients were divided into 3 groups: non-fallers (NF); single fallers (SF); recurrent fallers (≥ 2 falls, RF). BMD by DXA; history of falls, intrinsic [Muscle strength by Five Times Sit-to-Stand Test (5xSST); Gait speed in 4m; risk of sarcopenia – SARC-F; fear of falling - FES-I score]; and extrinsic (checklist of risk factors and protective home falls) factors to falls were evaluated. The results were described as mean ± deviation used ANOVA One-way (parametric) and Kruskal-Wallis (non-parametric) for difference between groups, post hoc Bonferroni ($p < 0.05$). **Results:** We included 144 women (71.6 ± 8.2 years; 26.8 ± 5.3 kg/m^2), divided into 3 groups: NF 60 (49.5%); SF 35 (28.9%); RF 26 (21.5%). The majority had osteopenia (92.9%). Muscle strength was reduced (<12.7s) in the 3 groups NF (14.9 ± 5.3 s); SF (13.5 ± 3.4 s); RF (17.7 ± 8.7 s), worst in the RF ($p = 0.029$). The prevalence of low gait speed (<0.8 m/s) was higher in the RF (35%) compared to NF (13.2%) and RF (12.9%), $p = 0.017$. The FES-I score was similar among groups showing association with history of sporadic falls (38.2%) and recurrent falls (32.7%). The number of falls was associated with gait speed ($p = 0.009$); SARC-F ($r = 0.2484$, $p = 0.006$); irregular floor ($p = 0.042$); support bars on the stairs ($p = 0.048$) and total safety factors ($r = 0.2588$, $p = 0.010$), and with a tendency to be associated with presence of ramps ($p = 0.051$) and support bar in the bathrooms ($p = 0.061$). However, in the multivariate analysis only the presence of ramps relative risk (RR) 0.48 (CI 0.26-0.87, $p = 0.015$); irregular floor RR 1.6 (CI 1.05-2.43, $p = 0.028$) and non-slippery adhesive in stairs RR 2.75 (CI 1.77-4.28, $p < 0.001$), keep the significance. **Conclusion:** Older women recurrent fallers with low BMD showed more intrinsic factor for falls (muscle function and mobility) compared to non-fallers or single fallers. Moreover, the domiciliary environmental has hazards and safety factors associated to the falls.

E-PO168 METABOLIC FACTORS ASSOCIATED WITH CARDIOVASCULAR DISEASE IN HYPOPARATHYROIDISM

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Introduction: Hypoparathyroidism (HPP) is characterized by hypocalcemia and hyperphosphatemia, favoring increased secretion of FGF-23 and decreased synthesis of calcitriol. Usual treatment is based on calcium and vitamin D supplementation, but may contribute to soft tissues calcification, mostly in the kidneys and cardiovascular system. Our main purpose was to evaluate cardiovascular disease (CVD) and association with metabolic disturbances. **Methods:** In this cross-sectional study we selected patients with chronic HPP, >18 years old, glomerular filtration rate (GFR) >30 mL/min/1.73 m^2 and no previous history of myocardial infarction or documented coronary artery disease. Biochemistry: fasting glucose, HbA1c, lipids, calcium, phosphorus, albumin, creatinine, iPTH, 25OHD and FGF-23. Transthoracic echocardiogram and carotid ultrasound were performed by the same operator to detect carotid plaques (CP), carotid vascular intima thickness (IMT), cardiac valve calcification (CVC) and left ventricular hypertrophy (LVH). Patients were classified across CV risk calculators following the European Society of Cardiology, American Heart Association and Brazilian Society of Cardiology. Statistics: linear correlation (Pearson's r or Spearman's rho) and logistic regression. **Results:** Forty-two patients with HPP (95% thyroidectomy), age 55 ± 14 yrs. and 93% female, had disease duration of 9.3 ± 8.7 yrs. None was classified at very high CV risk. Main **Results:** Ca (8.4 ± 0.8 mg/dL), P (4.9 ± 1.1 mg/dL), iPTH (11.9 ± 3.4 pg/mL), 25OHD (44.1 ± 27.5 ng/mL), FGF-23 (36.35 ± 18.46 pg/mL), IMT (right 0.66 ± 0.21 and left 0.68 ± 0.21 mm). Prevalence of both CAP and CVC was 23.7%, and 13.2% for LVH. Significant correlations: age x IMTD ($r = 0.369$; $p = 0.027$), age x IMTE ($r = 0.424$; $p = 0.010$); age x GFR ($r = -0.552$; $p < 0.001$); illness duration x 25OHD ($r = 0.555$; $p < 0.001$). After logistic regression, phosphorus was the only significant variable impacting CVC in univariate analysis (OR 2.862; 95% CI 1.152-7.110; $p = 0.023$), as well in the multivariate analysis (OR 3.073; 95% CI 1.103-8.562; $p = 0.032$). The significant impact of 25OHD in carotid plaque found in the univariate analysis (OR 1.044; 95% CI 1.012-1.077; $p = 0.006$) did not persist in multivariate analysis. Contrary to what is observed in patients with severe renal impairment, FGF-23 was not associated to any CV alteration. **Conclusion:** Hyperphosphatemia should be considered a worrying complication of HPP, as it contributes significantly to CV risk.

E-PO169 MISDIAGNOSIS OF PAGET'S DISEASE (PD) IN A PATIENT WITH BERARDINELLI-SEIP SYNDROME (BSCL)

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Universidade Federal do Ceará

Presentation of the case: A 41-year-old male, born out of third degree consanguineous marriage, was referred to an endocrinology consultation for PD and suspected lipodystrophy. He was diagnosed with diabetes at the age of 17 years, which was controlled with metformin, sulfonylurea and low carb diet. Insulin was started 11 years later. He also had hypothyroidism. At the age of 33 years, he started to present progressive right hip joint pain that irradiated to lower limbs, which improved with the use of non-steroidal anti-inflammatory and became bilateral 5 years later. At that time; skull, lower limbs, upper limbs and hips x-rays were normal as well as alkaline phosphatase levels. Hip CT showed multiple sclerotic focus injuries diffusely, a 2 cm bone cyst on right femoral head and another 3 cm cyst on the left femoral head. Histopathological analysis of iliac crest biopsy revealed signs of increased osteoclastic activity, which suggested the diagnosis of PD. On physical examination, BMI was 22.5 kg/m^2. He had generalized lack of subcutaneous fat with preserved fat in the palms and soles, muscle hypertrophy, phlebomegaly and umbilical hernia. Our investigation revealed normal skull and spine x-rays. Upper limbs x-ray showed radiodense areas and on hip x-ray, bilateral bone cysts on femoral head. Biochemical parameters revealed leptin 0,3 ng/mL, hyperlipidemia (serum cholesterol 188 mg/dL, triglycerides 524 mg/dL, HDL 26 mg/dL), A1C 7,3 %, fasting blood glucose 108 mg/dL and normal alkaline phosphatase level. Molecular analysis identified a AGPAT2 mutation (Type 1 BSCL). **Discussion:** BSCL is a rare disease characterized by the almost total absence of subcutaneous adipose tissue since birth or early childhood caused by mutations of the genes responsible for the adipocyte development. Patients evolve with intense insulin resistance and dyslipidemia. Despite low weight, patients present a tendency to high bone mass, cystic lesions on long bones as well as osseous sclerosis. Histological examination also shows increased osteoclastic activity as well as resorption notches, signs of sclerosis and true cysts, occupied by tissue rich in blood. **Final comments:** Misdiagnosis of PD can occur in BSCL specially in type 1 patients, probably due to cystic lesions. Therefore, the knowledge of this rare disease is important to several medical specialities that study PD; like endocrinologists, orthopedists, rheumatologists and pathologists.

E-PO170 MUTATION PROFILE OF FOUR PATIENTS WITH X-LINKED HYPOPHOSPHATEMIC RICKETS IN A TERTIARY HOSPITAL IN RECIFE-PE

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Instituto de Medicina Integral Professor Fernando Figueira (Imip)

Introduction: Hypophosphatemic rickets is a heterogeneous group of inherited disorders characterized by hypophosphatemia and impaired bone mineralization leading to rickets. The most common inherited form is X-linked hypophosphatemia (XLH) with an estimated prevalence of approximately 4.8 per 100,000. XLH is caused by loss-of-function mutations in PHEX. Loss of PHEX is thought to cause phosphaturia by suppressing expression of NaPi transporters in the proximal tubule. Leg deformity and short stature are the most common consequences of decreased incorporation of PO4 into growing bone and dysregulation of renal 1,25(OH) D synthesis. **Objective:** To describe clinical, laboratorial and mutational profile of patients with X-linked hypophosphatemic rickets in adult patients at a tertiary hospital in Recife-PE, to emphasize the late diagnosis of this disease. Outcomes: We have four patients monitored at the Endocrinology Service with an average age of 39.5 years old (18 y-60 y) 50% of whom are women. All of them have important bone deformities in lower limbs, as well as short stature and bone pain. Half of the patients have a documented mutation in the family. All patients maintain stable and low levels of serum phosphorus, with median value of 2,025 mg/dL (1,6-2,6), and irregularly use of conventional therapy with phosphate and vitamin D replacement in their active form. Captures of target regions were made using probes. New generation sequencing with Illumina technology. Alignment and identification of variants using bioinformatics protocols, using the GRCh37 version of the human genome as a reference. **Discussion:** The diagnosis of XLH is based on clinical manifestations, laboratory and X-ray findings. This disease is usually manifest in childhood, however three of our patients had their diagnosis made in adulthood. Mutational identification is relevant to recognize the population profile and establish differential diagnosis. In addition, it is important by the perspective of modifying the therapeutic approach, due to the possibility of using new immunobiological therapies targeting XLH, which positively impact bone deformities and complications associated with the disease. **Conclusion:** It is noteworthy that most of our patients had their diagnosis established only in adulthood. We emphasize the importance of a patient with hypophosphatemia, vitamin D deficiency and bone deformities, always be evaluated for the possibility of XLH.

E-PO171 ONCOGENIC OSTEOMALACIA: A CASE REPORT

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Clinical case: Female patient, 49 years old, referred to Endocrinology for investigation of muscle weakness for 4 years and hypocalcemia. Previously healthy, she started having pain in her ankles, progressing to her knees, thighs and lower back. Two years ago, it progressed with difficulty walking and started using help of a walker. There was no significant family history, previous trauma or fractures. Calcium replacement was performed due to hypocalcemia, with no clinical improvement. When she was evaluated by endocrinology she was in a wheelchair, with muscle weakness of proximal predominance and diffuse bone pain. Physical exam: muscle strength grade 4 in proximal upper limbs, grade 5 in distal upper limbs and grade 2/3 in proximal lower limbs proximal and grade 4 in distal. Softened teeth. Blood exams (06/2020): Calcium 8.2 mg/dL (8.6-10), phosphorus 1.3 mg/dL (2.7-4.5), 25OHvitamin D 14.5 ng/mL, PTH 76 pg/mL (12-88). It was suspected of hypophosphatemic osteomalacia and requested FGF23 measurement (Fibroblastic growth factor 23). Blood exam (07/2020): Creatinine 0.47 mg/dL, alkaline phosphatase 334 U/L (35-104), calcium 9.0 mg/dL (8.6-10.2), phosphorus 1.1 mg/dL (2.5-4.5), PTH 78.3 pg/mL (15-65), 1.25-dihydroxyvitamin D 15.70 pg/mL (19.9-79.3). FGF23 286.0 kRU/L (26-110). Urinary phosphorus 361 mg/24 h (400-1300). Urinary calcium 18 mg/24 h. It was initiated oral phosphate and calcitriol and image exam was evaluated to identify a FGF23-producing source. The diagnostic suspicion was the tumor-induced osteomalacia (TIO). **Discussion:** The clinical suspicion of hypophosphatemic osteomalacia, in the present case, was made in the presence of hypophosphatemia in a patient with bone pain and muscle weakness. Low levels of calcitriol and high levels of alkaline phosphatase and FGF23, corroborate the diagnosis of TIO. Oncogenic osteomalacia, or TIO, is a rare paraneoplastic syndrome, in which there is a tumor producing phosphaturic factor (most commonly FGF23), resulting in a loss of renal phosphate, inhibition of renal hydroxylation of 25OH vitamin D and decreased bone mineralization. Tumors are usually small, located on bone or soft tissue, at craniofacial sites and on extremities, but can be found anywhere in the body. **Conclusion:** We report a case of a young woman with rapid evolution of muscle weakness and functional limitation due to TIO, reinforcing the need for investigation of bone metabolism in patients with similar conditions.

E-PO172 PANCREATITIS SECONDARY TO PRIMARY HYPERPARATHYROIDISM – CASE REPORT

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Case presentation: Female patient, 27 years old, Caucasian, admitted to emergency care with abdominal pain, starting 5 days ago, meanly in epigastrium and mesogastrium, associated with nausea and vomiting, and history of recurrent nephrolithiasis. On physical examination: painful abdomen on superficial and deep palpation in mesogastrium and left flank, with no signs of peritoneal irritation. Contrast-enhanced CT scan revealed acute necrotizing pancreatitis, which evolved with pancreatic pseudocysts. Laboratory evaluation: amylase: 1380 (RR: 28-100), serum calcium: 13.05 (RR: 8.4-10.2) and PTH: 385 (RR: normal < 58). Elevation of PTH and calcium levels in the presence of pancreatitis suggested secondary etiology related to primary hyperparathyroidism. Cervical CT showed a nodule posteriorly to the left thyroid lobe, measuring 2.1 x 0.9 x 0.7 cm. Scintigraphy indicated parathyroid adenoma. Drug treatment was instituted to control hypercalcemia, with transient improvement. After two months there was clinical and laboratory worsening, and left upper parathyroidectomy was performed, with normalization of calcemia, PTH decreased and clinical recovery. Anatomopathological examination confirmed parathyroid adenoma. **Discussion:** Hypercalcemic pancreatitis is a rare manifestation of hyperparathyroidism and constitutes 1% of all the pancreatitis. Metabolic disorders resulting from increased PTH would be responsible for pancreatic tissue fibrosis, lithiasis, and canallicular occlusions involved in the pathogenesis of acute pancreatic outbreaks. **Final comments:** Primary hyperparathyroidism can be diagnosed in the presence of acute pancreatitis, nephrolithiasis and bone fragility, suggesting that calcium assessment in routine tests, could prevent complications, as here reported.

E-PO173 PARATHYROID CARCINOMA: A CASE REPORT

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Case presentation: A 49-year-old female was admitted to the hospital in January 2020 with severe hypercalcemia - total serum calcium concentration of 15.8 mg/dL (3.95 mmol/L), ionized calcium of 2.36 mg/dL (0.59 mmol/L) and elevated parathyroid hormone (PTH) levels (1,340 pg/mL). She reported previous total thyroidectomy in 2010 due to hyperthyroidism and multiple surgical neck interventions (in 2017, 2018 and 2019) for parathyroid adenoma resections. Apart from hypercalcemia, she presented with nephrolithiasis, nephrocalcinosis and a brown jaw's tumor, which had been resected in 2017. The patient underwent new imaging tests that showed left thyroid bed nodular formations, suspicious cervical lymph nodes and a prevascular mediastinum mass. Review of her last surgical pathology analysis revealed features of parathyroid carcinoma, such as cellular atypia, PTH positivity and lack of parafibromin expression. The patient underwent a new surgical exploration procedure which was complicated by profound bleeding leading to early interruption. Persistent hypercalcemia was treated with high-dose cinacalcet and IV biphosphonates. The patient was, then, subjected to thymectomy and cervical and mediastinal lymph nodes resection. PTH levels decreased to 848 pg/mL and cinacalcet dose was reduced by 60%. Blood was collected for mutational screening of the HRPT2 gene. **Discussion:** Parathyroid carcinoma is a rare condition. Differentiation between adenoma and carcinoma is challenging and based mainly on pathology findings such as local invasion of contiguous structures and lymph nodes and the presence of distant metastases. Most cases of carcinoma are sporadic, but some are associated with gene mutations. One example is the hyperparathyroidism-jaw tumor syndrome, a rare familiar syndrome due to a mutation of the HRPT2 tumor suppressor gene. Surgical treatment offers the highest chance of cure. Refractory cases can be managed with radiotherapy, chemotherapy, immunotherapy or ethanol ablation, besides clinical measures to control hypercalcemia. The results of these different therapies are variable and, in general, less expressive. **Final comments:** The diagnosis of parathyroid carcinoma should be suspected in cases of primary hyperparathyroidism with severe hypercalcemia, very high PTH concentrations and a neck mass. It impacts surgery planning and prognosis. In cases of familial hyperparathyroidism and/or association with jaw tumors a genetic study should be performed.

E-PO174 PARATHYROIDECTOMY HOSPITALIZATIONS BY THE UNIFIED HEALTH SYSTEM IN BRAZIL AND REGIONS BETWEEN 2009 AND 2019

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Introduction: The increasing availability of parathyroid hormone dosage has enabled a greater number of hyperparathyroidism diagnoses. Some patients – when undergoing parathyroidectomy – benefit from increasing bone mass and improving quality of life. However, permanent hypoparathyroidism and recurrent laryngeal nerve damage are complications of such procedure. Therefore, there is a current effort for adequate clinical evaluation, avoiding unnecessary surgeries. This study aims to analyze the epidemiology and the allocation of hospitalization resources by the procedure between Brazilian regions. **Materials and methods:** This is a descriptive epidemiological study on the number of hospitalizations for parathyroidectomy (procedure code: 0402010027) in Brazil based on the database of the Department of Informatics of the Unified Health System (Datasus), administered by the Brazilian Ministry of Health. Data on the number of hospitalizations, the average length of stay, total cost, and average cost were used, by federal regions and states, from 2010 to 2019. **Results:** The Southeast had the most parathyroidectomy hospitalizations (5,042), adding up to almost 62% of all related hospitalizations and about 4 times more than the Northeast, second place (1,309). The North had the lowest number of hospitalizations (188) and the shortest average length of stay (6 days), being home to the states with the longest and shortest average length of stay: Pará with 11.9 and Rondônia with 2.3 days. There was also a reduction in the average length of stay, dropping from 7.4 in 2010 to 5.7 in 2019. There was an increase in the total cost in the country: in 2010 a cost of R$ 701,298.68 was recorded, reaching R$ 1,203,134.57 in 2019. The average cost did not differ significantly across regions; however, the Northeast includes two of the three states with the highest average cost per hospitalization, Maranhão (R$ 1,478.76) and Alagoas (R$ 1,498.79). **Conclusion:** It is evident that there is no homogeneous approach to parathyroidectomy, with divergences in the number of hospitalizations and the average length of stay between regions. The latter may be related to the availability of resources to stabilize patients and to the patient's clinical situation at the time of surgery. Therefore, the establishment of an efficient primary care network in the early diagnosis and control of hyperparathyroidism across the country could imply the reduction of parathyroidectomy hospitalizations.

E-PO175 PRIMARY HYPERPARATHYROIDISM CAUSED BY PARATHYROID ADENOMA: CASE REPORT

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Case presentation: Parathyroid adenoma is responsible for 80% to 85% of cases of primary hyperparathyroidism (HPTP). It is an infrequent pathology (incidence of 1 patient per 1000 examined), which is why it became pertinent to make your report. The case was of a 52-year-old patient, complaining of asthenia, "frequent kidney stones" and "throat sore". Cervical palpation revealed a 1.0 cm nodule in the right lobe of the thyroid. The thyroid ultrasound (USG) indicated a hypoechoic nodule measuring 13 x 07 mm in the right lobe. The scintigraphy of parathyroid glands with sestamibi revealed adenoma of the parathyroid gland in the lower pole of the right thyroid lobe. She has a history of bilateral nephrolithiasis seen on total abdominal tomography. Bone densitometry was normal in the lumbar spine: value -0.5 (reference value (VR): T-score ≥ -1, and osteopenia in the femoral neck: -1.2 (VR): T-score ≥ - 1. The pre-surgical laboratory tests for serum parathormone (PTH) were 172.8 pg/mL (VR: 15.0 to 65.0 pg/mL), of serum ionized calcium 1.54 mmol/L (VR: 1.15 to 1.32 mmol/L) and urinary calcium 398.66 mg/24 h (VR: 42 to 353.0 mg/24 h) and vitamin D-25 serum hydroxy = 20.6 ng/mL (VR: 30, 0 to 100 ng/mL); The patient underwent right lower parathyroidectomy. The anatomopathological analysis found parathyroid adenoma. The values of PTH, serum calcium, and urinary calcium after surgery were respectively: 35.5 pg/mL; 1.16 mmol/L and 190.20 mg/24 h, indicating normalization of the parathyroid after tumor resection. **Discussion:** The clinical picture of HPTP, due to parathyroid adenoma, occurs due to hypercalcemia and increased PTH which can result in nephrolithiasis, osteoporosis, constipation, asthenia, and con convulsions. Despite this, asymptomatic HPTP can be common. Three aspects contribute to the diagnosis of HPTP: elevated intact PTH levels, hypercalcemia, and palpable nodule in the cervical region. Scintigraphy with 99% sestamibi is the test with the best sensitivity and specificity to identify parathyroid adenomas and stands out about USG and magnetic resonance imaging. **Final comments:** The only effective treatment for HPTP is parathyroidectomy. Such a procedure is safe and has a high cure rate and reduced morbidity. It is the most cost-effective strategy in both symptomatic and asymptomatic cases and is generally superior to observation and pharmacological treatment.

E-PO176 REPORT OF 2 CASES OF OSTEOPETROSIS, A RARE DISEASE THAT PREDISPOSES TO MULTIPLE FRACTURES AND IMPACTS ON QUALITY OF LIFE

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Case presentation: A 34-year-old woman reported multiple fractures since childhood due to episodes of falling from her own height. In adulthood after radiography due to an automobile accident, an increase in bone opacity (osteosclerosis) was identified with a diagnosis of osteopetrosis. She had several atraumatic fractures (vertebrae, lower and upper limbs), bariatric surgery in 2013 and fibromyalgia. Family history of a maternal cousin with bone fragility. Laboratory evaluation showed hypocalcemia, hypovitaminosis D, microcytic anemia. The bone mineral density (BMD) Z score was +15.9 SD in L1-L4, +9.7 SD in femoral neck and +14.9 SD in total femur. After replacement of deficiencies, there was an improvement in laboratory tests, with no new fracture. The second patient is a male, 27 years old, with a history of atraumatic fractures since 4 years, including bilateral hip fracture. O osteopetrosis was diagnosed at 24 years. He complained of diffuse pain, and denied similar family history. BMD the Z score was +6.2 SD in L1-L4 and -0.4 SD in radio 33%. **Discussion:** Osteopetrosis is characterized by low activity or development of osteoclasts, with reduced bone resorption, resulting in high BMD, which does not confer resistance to the bone, being extremely fragile. The modification in the mechanism of bone formation and resorption, leads to deformities of the skeleton, dental and mineral homeostasis abnormalities. Intramedular bone expansion can compromise hematopoiesis and cranial nerves. The presentation of the severity of the disease is variable. It is classified as autosomal recessive, autosomal dominant or X-linked. Diagnosis is made by finding generalized osteosclerosis in the radiography, as it is a pathognomonic signal. The request for bone densitometry is not part of the routine diagnosis or monitoring of disease progression. A multidisciplinary approach is required, calcium and vitamin D replacement are treatment for hypocalcemia and secondary hyperparathyroidism. Stem cell transplant is the first line treatment in severe cases of childhood osteopetrosis and corticosteroids are the 2nd option. **Final comments:** Osteopetrosis is a rare disease and should be remembered due to the high rate of fractures and impact on patients' quality of life. There is still no specific treatment for the disease, but a multidisciplinary segment is important for a better approach to the patient.

E-PO177 SEVERE HYPERCALCEMIA SECONDARY TO MINERAL OIL INJECTION: A CASE REPORT

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Case report: A 27-year-old man presented with a 4-year history of weight loss, nephrolithiasis attacks, urinary tract obstructions, and eighteen months of dialytic renal failure. He had asymptomatic warm, firm nodules in subcutaneous tissue over pectoral, gluteus and biceps muscles, where he injected multiple mineral oil and oily veterinary products for aesthetic purposes, for several years, until 2 years ago. Hypercalcemia (15.9 mg/dL, range 8.3 to 10.6), reduced parathormone levels (10 pg/mL, range < 300 for dialytic renal failure), elevated 1,25 (OH)2vitamin D (138 pg/mL, range 19.9 to 79.3) and reduced 25-hydroxyvitamin D (23.3 ng/mL, range, 30 to 60 ng/mL), were noticed. Screening for Vitamin D intoxication, sarcoidosis and malignancy was negative. 18F-FDG PET-CT showed increased metabolic activity in glutei, biceps, triceps, deltoids and pectoralis major regions. Patient was diagnosed with hypercalcemia due to foreign body granulomatous reaction to oily fillers. **Discussion:** The most common non-parathyroid hypercalcemia cause is malignancy, due to skeletal metastasis or production of PTH-rP. Our patient showed no signs of malignancy neither during clinical evaluation, nor during laboratory and imaging examination. Vitamin D-mediated hypercalcemia presents with low PTH levels and might be most caused by exogenous vitamin D toxicity. The patient's levels of 25-hydroxyvitamin D3 were low, and the time of onset of the symptoms was incompatible, since in vitamin D intoxication they tend to be acute. A recently described etiology of vitamin D-mediated hypercalcemia is foreign body reaction due to oily injections for cosmetic procedures. The overactivity of extrarenal 1-alpha-hydroxylase in activated macrophages in granulomas is believed to lead to the pathological 1,25OH-Vitamin D production and hypercalcemia. Similarly to our patient's findings, most cases present with elevated calcitriol levels, suppressed PTH and low/ normal 25-hydroxyvitamin D levels. An important differential diagnosis is sarcoidosis, as it is another granulomatous disease that can present with hypercalcemia. Our patient had neither suggestive clinical picture for sarcoidosis, nor mediastinal lymph nodes or lung involvement. **Final comments:** The medical community must be aware of all possible complications associated with surreptitious aesthetic procedures to educate the general population. Bodybuilders should be aware of this condition and avoid this inadvisable practice.

E-PO178 TENOFOVIR: ONE OF THE MAIN DRUGS USED TO TREAT HIV INDUCES OSTEOMALACIA: REPORT OF TWO CASES

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Presentation of cases: A 32-year-old man with HIV for 8 years, using antiretroviral therapy (HAART) - Tenofovir + Lamivudine + Efavirenz (TDF + 3TC + EFZ). A year and six months ago he had a left femoral neck fracture with complete healing and needed for prosthesis. During evolution, the patient reports a 15 cm reduction in height and significant chest deformity. MRI showed multiple fractures of the lumbar and dorsal spine and ribs. In BMD there was a Z-score -4.5 SD in L1-L4, -2.6 SD in femur neck and -3.6 SD in the total femur. Laboratory tests showed ALP: 267 U/L, Ca: 9.1 mg/dL, PO4: 1.4 mg/dL, PTH 78 pg/mL, 25OHD: 25.7 ng/mL. The calculation of the phosphorus reabsorption rate (PRT) was 89%, other secondary causes of bone loss were excluded. TDF-induced osteomalacia was diagnosed, an HAART was changed, chelated phosphate, calcitriol, calcium carbonate and vitamin D3 were used, with pain improvement and laboratory tests. The second case is a male patient, 18 years old, HIV positive since birth using TDF, 3TC and dolutegravir, he had a femoral shaft fracture during physical therapy for 2 months and has been bedridden since then. There was difficulty in consolidating the fracture and significant muscle weakness. In investigation ALP 798 U/L, PO4 < 1.0 mg/dL, PTH 28 pg/mL, total testosterone 514 ng/dL, 25OHD 28 ng/mL, PRT: 17.48% and it was excluded secondary causes. After receiving HAART, he started chelate phosphate, vitamin D3, and adjustment of dietary calcium. There was a significant improvement in pain, fracture consolidation and he started walking again after treatment. Ten months after the start of treatment and suspension of TDF, there was a gradual increase in phosphate. **Discussion:** The literature suggests that TDF can lead to toxicity of the proximal renal tubule and capable of altering the gene expression of osteoblasts and osteoclasts, which can lead to osteomalacia or Fanconi syndrome. In high doses it can lead to like osteomalacia with normal renal function. The osteomalacia component secondary to the alteration of phosphate metabolism explains the partial improvement observed with vitamin D and the rapid benefit in terms of BMD after discontinuation of TDF, suggesting a return to normal that allows osteoid mineralization. **Comments:** Tenofovir-induced osteomalacia is a rare disease, which must be promptly diagnosed due to subsequent sequelae, treatment is based on withdrawal of the medication, as well as phosphorus and vitamin D supplementation.

E-PO179 THE EFFECT OF ISOMETRIC AND DYNAMIC RESISTANCE TRAINING ON SCLEROSTIN/FGF23/KLOTHO AXIS AND BONE MINERAL DENSITY IN HEMODIALYSIS PATIENTS

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Introduction: Evidence suggests that dynamic (DST) and isometric (IST) strength training reduces bone loss in some clinical conditions. The possible therapeutic role of DST in bone mineral density (BMD) has been poorly investigated in hemodialysis (HD) patients, and so far there are no studies that have evaluated the influence of IST on bone-renal disorder resulting from chronic kidney disease (CKD). This study aimed to compare the effectiveness of DST vs. IST in osteogenesis and the hormonal/humoral mechanisms involved in this process in hemodialysis patients. **Methods:** The HD patients (n = 139) were randomized into three groups: control (CTL n = 60), dynamic strength training (DST n = 66) and isometric strength training (IST n = 67). A first visit was necessary to assess the number of medications, biochemical and anthropometric measurements (Kt/V, creatinine, urea, body mass, height and body mass index). Handgrip strength, BMD and bone-renal markers were assessed before and after the protocol. DST and IST were prescribed for six months, three times a week, on alternate days. Each training session consisted of 3 sets of 8 to 12 repetitions with light to moderate intensities. Both training sessions were prescribed approximately one hour before the dialysis session. The methods and procedures were approved by the local Human Research Ethics Committee and the study was registered on the Brazilian clinical trial registration. All volunteers signed a free and informed consent form. **Results:** Sample loss was greater in the IST group (24%) compared to the DST group (14%). DST reduced the adverse clinical effects of CDK and HD (67%, 24%, 61% for CTL, DST and IST, respectively). DST promoted gains in BMD in different parts of the body, in addition to increasing pro-osteogenic factors (Klotho and calcitriol) and reducing those related to bone loss, such as sclerostin, fibroblast growth factor 23 (FGF-23) and parathyroid hormone (PTH). There was an improvement in the calcium-phosphorus product modulated by DST, while all these benefits did not occur in the IST group ($p < 0.05$). **Conclusion:** These findings suggest that DST promotes biopositive adaptations in bone tissue in HD patients and could be used as a non-pharmacological strategy to improve BMD in the chronic kidney disease patients.

E-PO180 TRABECULAR BONE SCORE (TBS) IN PRIMARY HYPERPARATHYROIDISM (PHP): A USEFUL TOOL?

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Background: PHP often leads to bone loss, even in their asymptomatic presentations. Trabecular Bone Score (TBS) is method of evaluation trabecular bone structure of the spine. The aim of this study was to evaluate TBS measurements in combination with DXA values by searching for more accurate bone fragility risk assessment among PHP patients. **Methods:** From 2017 to 2019, patients with PHP diagnosis prior to surgery were invited to take part in this study. Bone mineral density (BMD) by dual X-ray absorptiometry (DXA) at the lumbar spine, total hip, femoral neck, distal third radius and TBS were determined in patients and controls. Vertebral fracture was defined using Genant method in vertebral images by DXA and vertebral fracture assessment (VFA). **Results:** Patients and controls didn't differ in age, sex, menopausal status or BMI (body mass index). PHP patients presented significant lower BMD values in all evaluated sites compared to controls. TBS measurements were also statistically lower in the PHP patients than controls (mean TBS PHP = 1,233 vs. TBS controls = 1,280, $p = 0.044$). Osteoporosis was observed in 50% of PHP patients and in 26.6% of controls ($p = 0.02$). However, lumbar spine T-Score <-2.5 was observed only in 21.8% of PHP patients. Vertebral fractures were detected in 9 (14%) in PHP group and 4 (6.3%) in controls ($p = 0.24$). The predictive value in detecting vertebral fracture was assessed by the ROC curve analysis, comparing TBS and DXA. The TBS area under the curve (AUC) was higher than DXA AUC in all sites. The AUC of TBS was significant in PHP group (0.75, 95% CI 0.62-0.88, $p = 0.02$) and no significant data in DXA analysis. Besides, ROC curve analysis showed that the TBS value < 1,187 is associated to significant higher risk of vertebral fracture (sensibility 87.5%, specificity 67.3%) among PHP patients ($p = 0.02$). **Conclusion:** TBS, used as a complement to DXA measurements, is a useful tool to better assess fragility risk among PHP patients.

E-PO181 TRABECULAR BONE SCORE AND THE RISK OF FRACTURES IN PATIENTS USING ORAL ANTICOAGULANTS

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The Trabecular Bone Score (TBS) is a method of assessing bone microarchitecture, it complements bone mineral density (BMD) and the FRAX tool in assessing the risk of fractures in 10 years. The aim of this study was to evaluate if the complementary use of TBS added to FRAX changed the estimated risk of fractures, and consequent the indication for treatment in individuals using oral anticoagulants (OAC), such as warfarin, rivaroxaban, apixaban, edoxaban, or dabigatran. Cross sectional study approved by the ethical committee, which included patients of both sexes, older than 18 years, taking OAC (OAC group – OACG) for more than 1 year. BMD and TBS were evaluated by DXA (spine and femur). The FRAX score was calculated with and without TBS. Evaluation of classical risk factors for osteoporosis, lifestyle, clinical and demographic data, and time of use of OAC were captured. The OACG were compared to a control group (CG) of individuals who never used OAC, matched by sex, age, and race. A total of 150 individuals were studied, 100 (60.71 + 7.83 years) in the OACG and 50 in the CG (60.04 + 6.77 years), p = 0.362, majority males (64%). The lifestyle and comorbidities were similar between groups. Past fractures were present in 35% of OACG and 26% of CG (p = 0.353). The mean body mass index of OACG (30.54 kg/m²) was higher than the CG (28.20 kg/m²), p = 0.009. The mean time of anticoagulant use was 55.63 + 56.18 months. The FRAX Brazil with only clinical data was similar between groups: low, intermediate, and high risk in 37%, 52%, and 11% in the OAC use, respectively, and 32%, 60%, and 8% in the CG (p = 0.629) respectively, as well as the FRAX including femoral neck BMD (p = 0.415). However, adding TBS to FRAX showed a higher number of patients at high risk of fractures in the OACG 35% vs. 16% in the CG, p = 0.019. The addition of TBS to FRAX increased the prevalence of high-risk patients in OACG by 66.6% (p = 0.028), but without difference in CG (p = 1,000). This study showed for the first time that the evaluation of TBS in patients in use of OAC added information to the FRAX score, increasing considerably the estimated risk of fractures in these patients, compared to the CG, and further the indication for treatment.

E-PO182 TREATMENT INDICATION FOR OSTEOPOROSIS IN THE ELDERLY BASED ON THE FRAX AND NOGG TOOLS AT PUBLIC SERVICE

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Introduction: Osteoporosis is a systemic disease, characterized by low bone mass and deterioration of microarchitecture causing bone fragility with a higher risk of fracture. Complications of fractures resulting from bone loss lead to skeletal changes, disability and death, making osteoporosis a public health problem. **Objective:** To assess the risk of osteoporotic fracture and treatment for osteoporosis using the FRAX and NOGG tools in the elderly. **Patients and methods:** Descriptive, observational and cross-sectional study, with a quantitative approach and convenience sampling with 534 elderly people. For data collection, a structured questionnaire was used that addressed demographic data, risk factors for osteoporosis and osteoporotic fracture. **Results:** There was a female predominance: 63%. The mean age and BMI were 69.9 ± 7.28 years and 26.5 ± 4.99 kg/m², respectively. The most prevalent risk factors for osteoporosis were sedentary lifestyle (70%) and secondary osteoporosis (22%). The most prevalent chronic diseases were SAH and DM, with 56% and 25.6% of patients respectively. In addition, 50.8% of the patients considered themselves to be non-white and 70% had incomplete primary education. In the analysis using FRAX, 143 patients (26.7%) had an indication for the treatment of. Through NOGG, 95 (17.8%) were at high risk for osteoporotic fractures, with an indication of. In addition, according to ISCD indications, bone densitometry (DXA) would be necessary for 371 (69%) patients. The NOGG tool maintained this indication only for 288 (54%) patients (p < 0.0001). After the indication of treatment using the FRAX tool, the indication of DXA decreased by 61% (p < 0.0001). **Conclusion:** Our data show the NOGG tool is useful to select patients with indication of treatment for osteoporosis.

E-PO183 VITAMIN D3 (D3) SUPPLEMENTATION IN SUBJECTS WITH PRIMARY HYPERPARATHYROIDISM (PHPT): EVALUATION OF SAFETY AND BIOCHEMICAL RESPONSE

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Introduction: PHPT is a disease often associated with vitamin D deficiency, with an associated secondary hyperparathyroidism component. Therefore, it is essential that, in this context, the levels of 25-hydroxyvitamin D (25OHD) remain above 30 ng/mL, avoiding a higher elevation of PTH. However, the safety of 25OHD replacement in such patients is uncertain, given the risk of worsening of hypercalcemia. **Objective:** We aim to evaluate the effectivity of 14,000 UI/week D3 supplements on subjects with PHPT and healthy controls to achieve 25OHD levels above 30 ng/mL and the safety regarding hypercalcemia by analyzing (tCa) and ionized calcium (iCa). **Materials and methods:** We studied 54 patients with PHPT prior surgery and 65 healthy age-and-sex-matched subjects prospectively for 12 weeks with the administration of 14,000 IU of D3 weekly. Exclusion criteria were: creatinine clearance < 45 and use of calcimimetics. We collected blood samples at baseline and the end of the study and used a general linear model with repeated measures approach to investigate the main effect of time and diagnosis, and diagnosis x time interactions. **Results:** At baseline, 25OHD levels were similar in both groups. The mean of tCa and iCa were higher in PHPT than in controls. Diagnosis groups also differed in PTH values, as expected in these populations. The mean values of 25OHD increased over time in both groups (achieving the goal of 30 ng/mL), albeit more intensively among controls. The administration of D3 did not significantly change tCa, iCa, or PTH. See Table 1 for further information. **Conclusion:** Vitamin D3 14,000 UI administered weekly for 12 weeks successfully raised 25OH D levels to a goal of 30 ng/mL without changes in calcemia in PHPT and control subjects, demonstrating the effectivity and the safety of this dosage in these patients. The impact of D3 replacement on 25OHD levels differed between PHPT and controls, with a smaller increase among patients, perhaps as a mechanism against hypercalcemia.

NEUROENDOCRINOLOGIA

E-PO184 CUSHING'S SYNDROME EVOLVING WITH SECONDARY IMMUNODEFICIENCY: A CASE REPORT

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Presentation of the case: Woman, 36 years old, presenting suggestive clinical manifestations of hypercortisolism. She was admitted for investigation and presented, in laboratory screening, elevated serum cortisol, salivary and adrenocor-ticotrofic hormone (ACTH), with new confirmatory dosage latter. With the hypothesis of ACTH-dependent Cushing's syndrome, was requested magnetic resonance of the sella turcica, which showed pituitary microadenoma. During hospitalization, it evolved with sudden dyspnea and reduction of oxygen saturation. The patient was submitted to a computed tomography of the thorax, presenting opacities in diffuse frosted glass, associated with an important increase in the serum dosage of lactate dehydrogenase. Although the research for *Pneumocystis jirovecii* in the sputum was negative, the diagnostic hypothesis of pneumocytosis was suggested and specific treatment was initiated. Simultaneously, the development of leukopenia associated with lymphopenia was noted. The investigation of immunodeficiencies was carried out and a reduction in TCD4 lymphocyte count was observed. After clinical stabilization, a new dosage of serum cortisol, salivary and TCD4 lymphocyte count was performed, with values within normal limits. **Discussion:** Cushing's syndrome is a pathology resulting from prolonged exposure of tissues to high levels of glucocorticoids, either by exogenous administration of these substances, or endogenous hypercortisolism, resulting mainly from excessive production of ACTH by a pituitary adenoma. The patient above presented, besides manifestations compatible with the syndrome, a finding suggestive of immunodeficiency, represented by opportunistic infection by *Pneumocystis jirovecii*, concomitant with the finding of lymphopenia secondary to hypercortisolism, defined after discarding other causes of immunodeficiency. The decline of T lymphocytes in these patients is due to a reduction in the T helper subgroup (CD4+), interfering with changes in both percentage of specific lymphocyte subsets and specific functional activities of the lymphocytes. Glucocorticoids are well known to affect the migration of T cells, leading to a redistribution of blood cells to bone marrow, triggered by increased CXCR4 expression. **Final comments:** The patient presented a clinical picture compatible with immunodeficiency secondary to hypercortisolism due to Cushing's syndrome. **Keywords:** Cushing's syndrome, T lymphocytes, pituitary adenoma.

E-PO185 A RECENT ONSET SELLAR LESION: SELLAR LYMPHOMA

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Primary sellar lymphoma is an extremely rare lesion. The average age of patients with sellar lymphoma is 60 to 70 years. Clinical symptoms include hormonal dysfunction and mass effect, with visual impairment, headache and ophthalmoplegia. For an adequate therapeutic plan, it is important to differentiate the involvement of the pituitary by lymphoma from other pathologies. A 82-year-old man previously hypertensive and diabetic, presenting with a ten years lasting deterioration of cognitive function, in treatment for Alzheimer's disease in the past two years. In the last two months he was presenting episodes of drowsiness interspersed with psychomotor agitation and also developed diplopia. A week ago he noticed eyelid ptosis on the right eye. On physical examination, he presented postural hypotension and bilateral ophthalmoparesis with palpebral ptosis on the right eye. Magnetic resonance imaging showed an expansive 3.1 x 2.7 cm sellar tumor that extended into the sphenoid sinus with involvement of the sphenoid bone and posteriorly to the prE-POntine cistern, compromising the cavernous sinuses bilaterally. He was carrying imaging exams from the past 2 years that did not demonstrate the current lesion. Laboratory investigation showed central hypothyroidism and normal cortisol. He was treated with intravenous hydrocortisone and thyroid hormone replacement. The patient underwent a biopsy of the sellar lesion whose immunohistochemistry panel pointed to the diagnosis of Lymphoid Granulomatosis, with a focus on Diffuse B-Cell Lymphoma. The patient underwent fractional radiotherapy (30 Gy), but developed multiple clinical and infectious complications and died two months after his diagnosis. This case portrays a case of a recent onset sellar lesion with histopathological diagnosis of primary sellar lymphoma.

E-PO186 ACTH PRODUCING MEDIASTINAL TUMOR – CASE REPORT

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Case presentation: Female patient, born in 2000, Jehovah's Witness, at the age of 15 was diagnosed with Cushing's syndrome secondary to ACTH secretion by mediastinal tumor. At diagnosis, ACTH 1,152 pg/mL was found (VR < 46). Turkish seat resonance was normal, and chest tomography described a 4.5 x 3.6 x 3.8 cm mediastinal lesion. Underwent a mediastinal surgical approach in 2015, with clinical and laboratory remission of hypercortisolism. The analysis of the lesion revealed a well-differentiated neuroendocrine carcinoma, with Ki67 5%. Progression of the mediastinal lesion was observed, without an exuberant clinic or laboratory, and a new surgery was performed in 2017, with a remaining macroscopic tumor (R2), due to technical difficulty in resection due to contact with vascular structures. The immunohistochemistry of the resected lesion in this approach showed Ki67 30%, which reflects loss of differentiation. She evolved without exuberant Cushing's syndrome until May 2019, when the clinical condition decompensated due to hypercortisolism, and was submitted to a new hospitalization. She was accompanied by the thoracic surgery and oncology teams. In this he started a follow-up with our team. Ketoconazole was started and PET-DOTATOC was requested. She underwent chemotherapy with Oxaliplatin and Capecitabine. She showed considerable clinical and laboratory improvement. In March 2020, DOTATOC uptake was checked and a somatostatin analogue was started. The patient remains clinically stable, with control of hypercortisolism using Ketoconazole 600 mg and Octreotide. A new surgical approach for mediastinal injury and/or radiation therapy is envisaged. The patient remains under clinical and laboratory surveillance, and bilateral adrenalectomy will be considered in case of worsening. **Discussion:** Ectopic ACTH syndrome is rare but is frequently a severe condition because of the intensity of the hypercortisolism that may be dissociated from the tumoral condition. Patient management is complex and necessitates dual skills, in the diagnosis and treatment of Cushing syndrome and in the specific management of neuroendocrine tumors. Therefore, initial management should be performed ideally by experienced endocrinology teams in collaboration with specialized hormonal laboratory and modern imaging platforms. **Final comments:** The reported case shows a rare location of an ACTH-producing tumor, emphasizing the severity of the presentation and the importance of multidisciplinary management.

E-PO187 BIOCHEMICAL RESPONSE RATES TO FIRST GENERATION SOMATOSTATIN RECEPTOR LIGANTS (SRL) IN ACROMEGALY ACCORDING TO TWO DIFFERENT CRITERIA IN TWO REFERENCE CENTERS FOR PITUITARY DISEASES IN BRAZIL

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Introduction: First generation somatostatin receptor ligants (SRLs) are first-line medical treatment in acromegaly, but both definition and rates of biochemical response vary among studies. Despite guidelines recommendation to measure both random GH (rGH) and IGF-I, the latter is usually considered more relevant for therapeutic decisions when the results are discordant. **Objective:** To evaluate biochemical response rates to SRLs in acromegaly after 12 months of treatment, based on two different criteria (GH + IGF-I or only IGF-I), and compare response rates between two different reference centers for pituitary diseases in Brazil. **Methods:** Considering pre-treatment rGH and IGF-I levels, patients were classified as non-responders (NR), partial responders (PR) and full responders (FR) to 12-months SRL therapy according to the following criteria: [criteria A: GH + IGF-I] normal IGF-I and rGH < 1 ng/mL (FR); ≥ 50% decrease of IGF-I and/or rGH levels (PR); ≤ 50% decrease of IGF-I and rGH levels (NR); [criteria B: only IGF-I] normal IGF-I levels (FR); ≥ 50% decrease of IGF-I levels (PR); ≤ 50% decrease of IGF-I (NR). Comparison of biochemical response rates between Brazilian Center I and II was performed for each classification criteria. **Results:** Total study group consisted of 212 acromegaly patients (59% women, mean age 43.1 ± 13.9 years), 68 from Center I and 144 from Center II. There were no differences between two centers groups in relation to age, gender, tumor size, previous radiotherapy and SRL treatment performed (primary or adjuvant). The proportion of FR, PR and NR by criteria A and B in total study group was 30.2% vs. 49.1%, 52.8% vs. 21.2% and 17% vs. 29.7%, respectively ($p < 0.001$). Considering only criteria A, the proportion of FR, PR and NR from Center I and II was 25% vs. 32.6%, 58.8% vs. 50% and 16.2% vs. 17.4%, respectively ($p = 0.446$). In relation to criteria B, the proportion of FR, PR and NR from Center I and II was 55.9% vs. 45.8%, 16.2% vs. 23.6% and 27.9% vs. 30.6%, respectively ($p = 0.323$). However, comparing criteria A and B, the Center I showed a difference of 30.9% in classification of FR in relation to 13.2% observed in Center II ($p = 0.006$). **Conclusion:** The use of IGF-I as the sole biochemical parameter increased significantly and differently the positive response rates to SRLs in the two centers, whereas the inclusion of GH levels into therapeutic decision might lead to a significant increment on the cost-effectiveness of acromegaly management.

E-PO188 CASE REPORT OF ATYPICAL PRESENTATION OF A HIGH-GRADE WELL DIFFERENTIATED NEUROENDOCRINE TUMOR

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Case presentation: Female patient, 34 years old, searched medical help due to severe somnolence. Capillary blood glucose measured 23 mg/dL. On physical exam painful tumor in the left hypochondrium and epigastrium. Computed tomography (CT) of the abdomen showed a heterogeneous mass in the pancreatic body and tail, compressing the stomach and splenic vessels, compatible with locally advanced G3 neuroendocrine tumor of the pancreas, Ki-67 30%; in addition to liver metastasis confirmed by 68-GaPET CT and biopsy. Laboratory tests showed basal insulin of 34 µUI/mL and pro-insulin greater than 66 pmol/L. It was an insulin secreting tumor, or "insulinoma". An upper endoscopy showed no gastric ulceration or clear invasion. Started on chemotherapy - capecitabine and temozolomide - that improved her hyporexia, abdominal pain and disposition, also controlled the fasting blood glucose and insulin and proinsulin was in decline. Imaging exams demonstrate partial response in the primary tumor and liver metastasis. **Discussion:** Insulinomas are rare neuroendocrine neoplasms from beta cells in pancreatic islets, usually with low proliferative index and indolent behavior. It is the most common pancreatic functioning endocrine tumor, but rare, with about 4 cases per million people. This case is unique because it is a high-grade well differentiated tumor with Ki-67 greater than 20% and produces insulin, which differs from the usual pattern. The Whipple triad is a hallmark of this neoplasm and the serum dosage of insulin is useful for the diagnosis, since the hyperinsulinism is a typical consequence of the malignant presentation. The treatment in benign cases, which are 90% of the presentations, is surgical and the patients submitted mostly present a good resolution. In cases of malignancy such as this one, follow-up with an oncologist must be carried out to decide the proper conduct, also is necessary to search the primary tumor using specific series of imaging tests. **final comments:** Insulinoma should be considered in patients with recurrent hypoglycemia who are not on hypoglycemic therapy. 90% of insulinoma cases represent solitary benign small lesions, which calls attention in the case because it is a high-grade malignant tumor with metastasis. Literature indicates that in cases of metastatic disease the therapeutic decision should be discussed in a multidisciplinary context, in this case chemotherapy was chosen and a perspective of surgery if a good response is achieved.

E-PO189 CUSHING'S SYNDROME CAUSED BY ACTH-SECRETING NEUROENDOCRINE TUMOR OF THE ILEUM: CASE REPORT

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Case presentation: 62 year old male patient, admitted to a large hospital in Belo Horizonte in February 2020 for investigation of progressive weight gain, proximal myopathy and behavior change initiated in December 2019. Report of recent diagnosis of arterial hypertension and diabetes mellitus. In the initial test, hypercortisolism ACTH-dependent and hypokalemia and were observed. In the suppression test with dexamethasone at high doses, cortisol was suppressed by only 16% and the stimulus test with desmopressin showed an increase in ACTH by 63% but cortisol by only 3%; suggesting ectopic ACTH secretion. Corroborating, the pituitary magnetic resonance did not show adenoma. The patient underwent an image exam (68Ga-DOTATATE PET-CT) which showed a focal increase in the uptake of the somatostatin analog in a hypervascular lesion in the small intestine, in the distal ileum; associated with mild mesenteric lymph node enlargement with molecular hyperexpression of somatostatin receptors, suggestive of secondary dissemination. The lesion was resected and the histological and immunohistochemical examination revealed a neuroendocrine tumor in the small intestine segment (positive markers: Ki 67, chromogranin A, synaptophysin, cytokeratins). The patient progressed with improved blood pressure and remission of diabetes mellitus. Endocrine laboratory testing at follow-up examinations confirmed remission of hypercortisolism. **Discussion:** ACTH ectopic secretion syndrome (SAE) accounts for approximately 10-15% of Cushing's syndrome cases. SAE can originate from several tumors and include small cell lung carcinomas (50%), non-small cell lung carcinomas (5%), lung carcinoids (10%), thymic tumors (5%), pancreatic tumors (10%), pheochromocytoma (3%), medullary thyroid cancer (5%) and other carcinoids (2%). Neuroendocrine tumors with ectopic ACTH production are rarely gastrointestinal in origin. Ileal neuroendocrine tumors causing Cushing's syndrome with ectopic ACTH production are extremely rare. Only a few cases have been reported in the literature and one of them was diagnosed at autopsy. We report a rare case of ileal endocrine carcinoma that produced ACTH and induced hypercortisolism in a previously healthy patient. **Final comments:** Neuroendocrine tumor of the ileum causing ectopic Cushing's syndrome is rare. The first line of treatment is surgical excision of the tumor and is associated with complete remission in the vast majority of cases.

E-PO190 EVALUATION OF CARDIOVASCULAR RISK FACTORS IN MEN WITH PROLACTINOMAS BEFORE AND AFTER PROLACTIN NORMALIZATION

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Background: Prolactinomas are pituitary tumors originating from lactotrophic cells corresponding to 40% of the sellar masses. The symptoms are related to disorders of the gonadotrophic axis and mass effects. Recent studies have demonstrated the involvement of prolactin in the metabolic regulation in adipose tissue, in the secretion of insulin and in the immune system, which suggests that the presence of increased or subnormal concentrations of prolactin may be associated with systemic comorbidities. **Objectives:** 1) To describe the clinical characteristics of a sample of male patients diagnosed with prolactinoma undergoing regular follow-up Pituitary Center of Excellence. 2) Assess cardiovascular risk factors before and after treatment of hyperprolactinemia. **Methods:** Retrospective study reviewing electronic medical records and considering clinical, anthropometric and biochemical aspects by reviewing lipidogram, glucose and prolactin tests, and filling out a clinical form. The project was approved by the Research Ethics Committee of FCS-UnB. **Results:** Thirty male patients, aged 39.30 ± 15.83 years, were evaluated, 55.18% of them were between 20 and 39 years old. Macroadenomas corresponded to 88.89% of cases. At diagnosis, half of the sample had obesity and 66.67% had an abdominal circumference (WC) > 102 cm. There was a significant reduction in BMI comparing before (29.80 + 5.97 kg/m²) and after (27.72 + 6.06 kg/m²) normalization of prolactin (p = 0.02), and of WC before (117 + 22.63 cm) and after (110 + 32.53 cm) treatment (p-0.000). **Conclusion:** Our results corroborate the hypothesis that hyperprolactinemia is related to increased cardiovascular risk, due to changes in the metabolic profile of patients. This profile appears to improve after normalization of prolactin and suggests a reduction in cardiovascular risk with appropriate treatment. Thus, it is extremely important to devote attention to the assessment of cardiovascular risk in men with prolactinomas, as the appropriate therapeutic intervention improves the metabolic parameters.

E-PO191 EVALUATION OF GLUCOSE METABOLISM BEFORE AND AFTER NORMALIZATION OF HYPERPROLACTINEMIA

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Introduction: Prolactin (PRL) is involved in the metabolic regulation of the adipose tissue and insulin secretion which suggests that increased concentrations of PRL may be associated with type 2 diabetes mellitus (T2DM). Treatment with dopamine agonists may influence adrenergic tonus and reduce glucose levels. The influence of hyperprolactinemia and its normalization after treatment needs to be clarified. **Objectives:** 1) To evaluate the frequency of T2DM in patients with prolactinomas 2) Assess Metabolic Syndrome Parameters and its correlation with PRL levels. **Methods:** Retrospective study reviewing electronic medical records and considering clinical, anthropometric, and biochemical aspects by reviewing laboratory exams, and filling out a clinical form. The project was approved by the Research Ethics Committee of FCS-UnB. **Results:** 120 patients were evaluated, 90 female, 30 male, aged 33.02 ± 12.05 and 39.3 ± 15.83 years, respectively. All patients had been diagnosed by hormone measurement and neuroimaging. Macroadenomas were identified in 60.71% of the patients, being 51.75% in women and 88.89% in men. The frequency of T2DM was 15.8% and 9.1% had criteria for metabolic syndrome. A strong correlation was observed between PRL and waist circumference in women (0.788; p = 0.002). Triglycerides (TG) correlated with the level of PRL at diagnosis (0.382, p = 0.02) but this correlation was not seen at normalization or in more recent clinical follow up. Patients with PRL levels higher than 200 nd/dL at diagnosis had significantly higher TG even after the PRL normalization (U = 98, p = 0.048). **Discussion:** Patients with prolactinomas have a higher prevalence of T2DM than the general population (15.8 vs. 7.5%). A strong correlation between PRL and TG as well as PRL and waist circumference in women were observed, but no correlation with glycemia or HbA1C suggesting that the higher prevalence of T2DM is due to a worse lipid profile and higher central adiposity. Also, it was shown that patients with higher PRL levels at the time of diagnosis maintained higher TG levels despite the normalization of PRL. **Conclusion:** Hyperprolactinemia due to prolactinomas leads to a higher frequency of T2DM. This frequency is unchanged by the normalization of PRL though there is a correlation between TG levels, waist circumference in women, and PRL. Hence, the treatment of prolactinomas is important not only due to the tumor but also to the metabolic consequences of hyperprolactinemia.

E-PO192 EXTRAGONADAL GERM CELL TUMOR IN THE CENTRAL NERVOUS SYSTEM (CNS) IN A YOUNG PATIENT: A CASE REPORT

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Case report: Patient male, 23 years, diagnosed with CNS germinoma. In 2018, reported headache, paraesthesia and hemiparesis on the right side of the body, diplopia and imbalance when walking. Computed tomography (CT) of the skull was performed, which revealed a single lesion of 3.3 x 3.1 x 3.2 cm in the topography of the thalamus and nuclei of the base on the left with an increase in the nuclei of the base. A stereotactic biopsy of the thalamic-mesencephalic expansive lesion was performed on the left, in which was observed atypical proliferation of intermediate cells with scattered cells with polarized nuclei compatible with germinoma. After surgery, he became a wheelchair due to right hemiparesis. Five months ago, because it was considered unresectable, he started treatment with ifosfamide, cisplatin and etoposide (ICE) followed by radiotherapy (RDT). After 4 cycles, he remastered magnetic resonance imaging of the skull that found a decrease of the lesion to 1.9 x 2 centimeters. Although RDT was programmed, it was not performed, because he had pneumonia with complications and died. **Discussion:** Primary CNS germ cell tumors (GCTs) are extremely rare, less than 5% of brain tumors in young adults. Germinoma is a type of GCT that 80 percent of cases occur in patients younger than 25 years. The male sex is prevalent and its main location is in the pineal region. Surgery is the first therapeutic approach. However, due to location, it was not possible. Then, it was decided to initiate chemotherapy (QT) followed by RDT, which was chosen because this approach is extremely radiosensitive. By associating a QT, it is possible to reduce the doses of radiation, reducing the side effects. But it was not possible to perform a concomitant QT and RDT, because long queue in the public sector. In 85% of the patients the survival of 10 years, however, may present neurological sequences such as visual, auditory and hormonal changes. **Final comments:** Germ cell tumors located in the central nervous system are very rare, with management complications, since there are several histological types cited. Furthermore, the high rate of endocrine and neurological sequelae due to the treatment is worrying. Just as in the case, being of complicated operative access due to its location.

E-PO193 GIANT PROLACTINOMA – CASE REPORT

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Presentation: A 20-year, male patient, reports bitemporal headache, of progressively intensity, since age 15, initially responsive to regular painkillers. At age 18, he started to present blurred vision, initially on the left eye, and later bilateral. The episodes of headache were more intense, frequent and resistant to medication. He also noted enlarged breasts, without galactorrhea, and reduced corporal hair. Physical examination confirmed bilateral gynecomastia and rarefaction of androgenic hair. Pituitary MRI showed a large lesion of supra sellar extension, with increased intensity in T1 and T2, lobulated contours, measuring 3.3 x 4.1 x 5.0 cm, compressing pituitary stalk and optic chiasm, involving the cavernous sinus and the internal carotid, with areas of hemorrhage. Laboratorial evaluations showed: prolactin: 755.66 ng/mL (RV: 2.1-17.7), free T4: 0.62 ng/dL (RV: 0.7-1.48), TSH: 3.83 mUI/L (RV: 0.3-4.5), total testosterone: 91.5 ng/dL (RV: 249-836), cortisol: 2.7 mcg/dL (RV: 6.2-19.4), ACTH: 13 pg/mL (RV < 46), GH: 0.05 ng/mL (RV < 3), IGF-1: 63 ng/mL (RV: 117-323). The diagnosis of giant prolactinoma and panhypopituitarism were done. He was started on cabergoline 0.5 mg three times a week and hormonal therapy with levothyroxine and prednisone. After 10 days, the patient presented clinical improvement, especially with headache reduction. After 1 months of treatment, laboratorially, the serum levels of prolactin and testosterone normalized 9.85 ng/mL, 395.9 ng/mL, respectively. **Discussion:** Tumors larger than 4 cm are considered giant prolactinomas, consisting of 1%-5% of all prolactinomas, with levels of prolactin ranging from 1,000 to 100,000 ng/mL. They usually present tumor mass effect, such as neuro - ophthalmologic symptoms and hypopituitarism. **Final comments:** Giant prolactinomas, although benign tumors, may be aggressive and invasive, compromising near structures and causing severe hormone deficiencies. However, this case shows a satisfactory response to treatment with dopamine agonists, with total restoration of the gonadotrophic axis and improvement of clinical symptoms.

E-PO194 HYPOGONADOTROPIC HYPOGONADISM ISOLATED IN A YOUNG ADULT WITHOUT RADIOLOGICAL ABNORMALITIES AND OLFACT CHANGES: A CASE REPORT

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Case presentation: A 20-year-old male patient sought an endocrinological evaluation complaining of anejaculation that started in adolescence and persisted into adulthood, despite having normal libido. He denied changes in smell and neuro-ophthalmological manifestations. On physical examination, he was in good general condition, with no beard and chest hair and triangular hair distribution in the pubic region; micropenis. Laboratory tests showed: total testosterone: 24 ng/dL (175 to 781); FSH: 0.69 U/L; LH: 0.37 U/L; prolactin: 5.29 ng/mL, with the rest of the pituitary axis within normal limits. Magnetic resonance imaging of the brain with contrast was performed, which showed normal aspects, without changes in the olfactory bulbs. Due to isolated hypogonadotropic hypogonadism, testosterone replacement was indicated and the patient evolved with hair on the beard and chest, weight loss, reduction of peripheral fat and perception of ejaculation with semen, which increased their self-esteem and improved their quality of life. **Discussion:** Hypogonadotrophic hypogonadism (HH) is characterized by failure of gonadal function secondary to deficiency in gonadotropin secretion. It results from organic (congenital or acquired) or functional abnormalities that lead to deficient gonadotropin secretion (LH and FSH), with consequent dysfunction of Leydig cells. Kallmann's syndrome is the most common cause of isolated HH, with an estimated incidence of 1:10.000 men and 1:50.000 women, being characterized by HH (secondary to GnRH deficiency) associated with anosmia or hyposmia, which was not observed in the case described. In humans, mutations in the GnRH receptor gene (GnRH-R) are the first identified genetic cause of isolated HH, with autosomal recessive inheritance. In idiopathic HH, the clinical manifestations are heterogeneous, ranging from the absence of puberty and cryptorchidism to the partial development of secondary sexual characteristics, as described. **Final comments:** This case illustrates the presence of isolated hypogonadotrophic hypogonadism without olfactory and neuro-ophthalmological abnormalities. Thus, it may correspond to an idiopathic case. However, for a better definition, it would be necessary to research mutations.

E-PO195 HYPOGONADOTHROPIC HYPOGONADISM ASSOCIATED WITH HYPERPROLACTINEMIA IN AN OBESE PATIENT

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Case presentation: A male patient attended the endocrinology service referring reduced libido, weight gain and chronic indisposition, without the presence of galactorrhea and he reports that he is sedentary. Diagnostic investigation was started with hormonal dosages and blood count. The results showed normal blood count gonadotropin levels (LH and FSH), reduced total testosterone (113 ng/dL), increased prolactin (98.2 ng/dL) and PSA of 0.23 ng/mL. Then, ultrasonography of abdomen was requested, which showed mild hepatic steatosis. The evaluation was continued through the following exams: prolactin = 91.54 ng/mL; macroprolactin = 87%; prolactin after polyethylene glycol = 71.8 ng/mL; ACTH = 25 pg/mL; IGF-1 = 130 µg/L; FSH = 2.12 IU/L; LH = 1.92 mUI/mL; cortisol = 8.06 mcg/dL; total testosterone = 117.64 ng/dL. Based on his laboratory evaluation, secondary hypogonadism (hypogonadotropic) associated with hyperprolactinemia diagnosis was established. Henceforth, an image evaluation by magnetic resonance of the sella turcica was also requested, which showed a hypocaptive nodular lesion affecting the right lateral portion of the adenohypophysis, measuring about 0.8 x 0.5 cm. From this, the main diagnostic impression was a functioning pituitary microadenoma producing prolactin. Cabergoline was prescribed 0.5 mg weekly and the patient progressed well with improvement in hypogonadic symptoms. **Discussion:** Male hypogonadism is a clinical syndrome caused by androgen deficiency and can be classified into primary forms (due to testicular failure); secondary (caused by hypothalamic-pituitary dysfunctions); late-onset hypogonadism and hypogonadism due to insensitivity of androgen receptors. Low levels of circulating androgens can cause reduced fertility, sexual dysfunction, decreased muscle strength, disturbed lipid metabolism and cognitive dysfunction. **Conclusions:** Hypogonadism is a challenge for diagnostic investigation, as it is a disease that presents with various symptoms and many of them are non-specific. However, in its suspicion, it is necessary to classify it in primary or secondary and search for underlying causes. Moreover, prolactin dosage plays a major role among the acquired causes of hypogonadotropic hypogonadism. **Keywords:** Pituitary, microadenoma.

E-PO196 HYPONATREMIA IN PATIENTS WITH NEUROLOGICAL DISORDERS: A DIAGNOSTIC CHALLENGE

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Case presentation: A 47-year-old male was admitted for resection of an extra axial tumor in the posterior fossa, associated with multiple lytic lesions in the skull. Diagnostic hypotheses were metastatic disease and multiple myeloma. He underwent partial tumor resection on July 13th, 2020, which was extended on July, the 20th. High doses of glucocorticoids were prescribed to reduce the risk of cerebral edema. Pathology report suggested a moderately differentiated plasmacytoma. On July 24th, the patient developed hyponatremia and progressive polyuria, at first with diuresis of 17 L and serum Na+ of 128 mmol/L, reaching a maximum of 39.5 L on July 30th, along with serum Na+ of 137 mmol/L. Laboratorial analysis revealed inappropriately elevated urinary sodium and urinary density. Renal function was preserved and hypothyroidism, hypocortisolism and polyuria secondary to hypercalcemia were excluded. He did not present signs of hypovolemia or dehydration as the volume loss was readily replaced with normal saline. Based on the diagnostic hypothesis of cerebral salt wasting syndrome (CSWS) treatment with oral NaCl 3 g/day was initiated on July 27th, alongside with volume repletion aiming for a neutral fluid balance. On August 6th, the patient's diuresis started to progressively decrease while maintaining normal serum Na+ levels, which allowed gradual reduction of oral salt replacement and interruption of venous fluid replacement. The patient was discharged home on August 11th on NaCl 1 g/day and prednisone 10 mg/day. He measured daily urinary volume until his first return visit on August 21st and the values ranged from 1.5 L to 2 L. Laboratory tests showed normal serum and urinary sodium levels. The doses of NaCl and prednisone were then gradually tapered. **Discussion:** When facing a patient with hyponatremia and a neurological disorder, two diagnostic hypotheses must be considered: syndrome of inappropriate diuresis (SIAD) and CSWS. The later is known to be a considerably less common condition, but the discrimination between them can be difficult since the main difference is the volemic status, which is often not easy to determine. CSWS is a transient condition that if not properly conducted can have severe consequences. **Final comments:** Etiological diagnosis of hyponatremia in patients with neurological disorders can be challenging. It is always important to consider SIAD and CSWS in an attempt to distinguish between them as treatment strategies may differ significantly.

E-PO197 HYPOPITUITARISM AFTER NEUROSURGERY DUE TO MENINGIOMA: CASE REPORT

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Case presentation: Male patient, 63 years old, diabetic, presented in January 2019 a history of headache and anosmia. On April 22, a magnetic resonance imaging of the skull was performed showing an expansive extra-axial, medial lesion with supra orbital extension to the left and posterior to ethmoidal planum. In May, he underwent neurosurgery, later was realized an histopathological analysis of the lesion that confirmed olfactory groove meningioma. It evolved 2 weeks later with persistent hiccups, increased appetite, feeling cold and pollakiuria, electrolytes and hormones were measured, which showed sodium 104 mEq\L (NR: 135-145); cortisol basal 2,55 µg/dL; ACTH 13;TSH 1,4 mUI\mL (NR: 0,5-5); T4 free 0,54 ng\dL (NR: 0,9-2); FSH 14 (NR:1-14) mUI\mL; LH 4,4 mUI\mL (NR: 1,2-9); PRL 14 ng\mL (NR: 2-17), GH 0,2 ng/mL (NR: 0,98-1,22) and low IGF-1. **Discussion:** Hypopituitarism is defined as the partial or total loss of function of the anterior and posterior pituitary, often occurring after neurosurgery and/or pituitary irradiation. Its occurrence is described, in some studies, in about 38%-43% of patients who underwent surgery for tumors distant from the sella region such as meningiomas, gliomas and neurinomas. This case shows the emergence of somatotropin and corticotropin deficiency, acutely, shortly after the resection of the meningioma, in the absence of symptoms of hormonal deficiency previously. However, research in the literature shows that in a significant portion of cases the pituitary dysfunction already existed before surgery, so the assumption of the hypopituitarism-surgery relationship should be questioned in the absence of previous hormonal dosage. **Conclusion:** The present case shows the occurrence of symptomatic hypopituitarism within a few weeks of the postoperative period of a non-pituitary tumor (olfactory groove meningioma). The need for endocrinological assessment in the pre- and post-operative period of non-pituitary tumors is emphasized, in order to determine whether hypopituitarism was already present due to the tumor or whether it occurred only after surgery.

E-PO198 IDIOPATHIC HYPOPHYSITIS: A CASE REPORT

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Case presentation: Hypophysitis is an inflammatory condition of the pituitary gland that can lead to a rare condition of hypopituitarism. Among the causes are identified as the primary, mostly idiopathic. The case presented is a patient, 41 years old, female, two previous pregnancies, regular menstrual cycle, who attended the basic health unit on 07/15/2020, reporting headache for 7 days with progressive worsening and gaining Weight. Denies the use of medications or comorbidities. Patient returns on 08/05/2020 reporting significant improvement in headache and with the following tests: (07/21/2020) TSH: 0.44 microUL/mL (VR: 0.48 to 5.60 microUL/mL); Free T4: 1.03 ng/dL (VR: 0.89 to 1.76 ng/dL); cortisol: 0.9 mcg/dL at 8 am (VR: morning between 7 and 9 am: from 5.3 to 22.5 mcg/dL); After evaluating the exams, a repeat of cortisol and TSH was requested, along with computed tomography of the Turkish saddle, anti-TPO, prolactin, and ACTH. Patient returns with results (08/13/2020): anti-TPO: 28 IU/mL (VR: up to 60 IU/mL), prolactin: 6.7 (VR: pre-menopausal: from 2.80 to 29.20 ng/mL; postmenopausal: from 1.80 to 20.30 ng/mL), free T4: 1.00 ng/dL (VR: 0.89 to 1.76 ng/dL); TSH: 0.96 microUL/mL (VR: 0.48 to 5.60 microUL/mL); cortisol: 6.1 mcg/dL at 08:00 am (VR: morning between 7 and 9 am: from 5.3 to 22.5 mcg/dL); ACTH: 5 pg/mL (VR: up to 46 pg/ml); magnetic resonance imaging of the Turkish saddle (08/24/2020): nodular image in adenohypophysis measuring 3.7 x 3.1 mm, which may represent a pituitary microadenoma and a pituitary stem deviation. Given the improvement in the clinical picture, hormonal normalization, and the pattern of benign evolution of hypophysitis, we opted for serial image monitoring. **Discussion:** Contrary to other causes of hypopituitarism, deficiencies of adrenocorticotropic hormone and thyroid-stimulating hormone (TSH) are common in the early stages of hypophysitis, in which case the patient presented a decrease in TSH and cortisol, with subsequent normalization. The common cause is granulomatous by infiltration, which is the most likely hypothesis, as the patient a favorable evolution with hormonal normalization. The patient did not need complementary treatment. **Final comments:** The diagnosis of hypophysitis is based on the clinical picture, laboratory, and radiological data; although pituitary biopsy is the gold standard for the diagnosis of primary hypophysitis, it should be performed in well-selected cases.

E-PO199 IMPORTANCE OF 24 HOURS AMBULATORY BLOOD PRESSURE MONITORING IN PATIENTS WITH ACROMEGALY

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Introduction: Acromegaly is a rare multisystem disease caused by hypersecretion of growth hormone (GH) and consequently the excess of insulin-like growth factor-I (IGF-I) that leads to multiple comorbidities and premature mortality [1]. Arterial hypertension (AH) is historically mentioned as significantly more prevalent among patients with acromegaly than in general population, although some studies with 24-hour ambulatory blood pressure monitoring (ABPM) suggest that it is overestimated by clinical measurements [2]. **Objective:** To assess the prevalence of AH by ABPM in the cohort of patients with acromegaly diagnosed with AH at the endocrinology service of *Hospital Universitário Clementino Fraga Filho* of *Universidade Federal do Rio de Janeiro* (HUCFF/UFRJ), and also to evaluate the frequency of AH by ABPM among those who do not have AH by clinical measure. **Patients and methods:** Patients over 18 years of age with acromegaly underwent ambulatory blood pressure assessment with a sphygmomanometer and were later referred to the ABPM. Previous diagnosis of AH and use of anti-hypertensive medication were reported. **Results:** We evaluated 80 patients with acromegaly, 60 had a previous diagnosis of AH and were in use of medications to control blood pressure (50 females and 33 male). From 20 non hypertensive acromegaly patients, six had AH on ABPM (three non dipper, three with abnormal blood pressure on 24 hours). In the group of patients with a previous diagnosis of AH, 18 had controlled blood pressure, 17 had abnormal blood pressure on 24 hours [but four had normal ambulatory blood pressure (BP)], 19 are non-dippers (eight had normal ambulatory BP), 2 had white coat hypertension, 2 had resistant hypertension, one had isolated systolic hypertension and another had isolated diastolic hypertension. **Conclusion:** The use of ABPM in acromegaly is important because it allows the diagnosis of AH in some patients with normal blood pressure in ambulatory measurement and also to allow a better management of drug treatment in patients previously diagnosed with AH. References: [1] Gadelha MR, Kasuki L, Lim DST, Fleseriu M. Systemic Complications of Acromegaly and the Impact of the Current Treatment Landscape: An Update. Endocr Rev. 2019;40(1):268-332. [2] Costenaro F, Martin A, Horn RF, Czepielewski MA, Rodrigues TC. Role of ambulatory blood pressure monitoring in patients with acromegaly. J Hypertens. 2016;34:1357-63.

E-PO200 INFILTRATIVE EDEMATOUS SYNDROME AS A FORM OF PRESENTATION OF PANHYPOPITUITARISM DUE TO HYPOPHYSARY MACROADENOMA

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Case presentation: The present study reports the case of a 56-year-old patient who reports the presence of infiltrative edema through the body, associated with hoarseness and general tiredness. Physical examination showed good general condition, skin pallor, bilateral periorbital edema and the presence of a soft consistency non-pitting edema on the face, upper and lower limbs. Laboratory tests demonstrated: TSH = 4.49 mU/mL; free T4 = 0.41 mg/dL; FSH = 1.11 mUI/mL; prolactin = 17.57 ng/mL; prolactin after dilution = 20.2 ng/mL; estradiol < 15 pmol/L; base cortisol = 0.63 µg; GH = 0.01 mcg/L; IGF-1 = 39 ng/mL; ACTH = 14.9 pg/mL; CPK = 530 U/L and normal renal function. These findings configure the diagnosis of panhypopituitarism, leading to the request of a nuclear magnetic resonance of the sella turcica that revealed the presence of an expansive lesion in sellar and hypersellar situation – suggestive of pituitary macroadenoma –, with compression of the optical chiasma on the left. Computerized visual campimetry demonstrated temporal hemianopsia with a preserved central vision area in the left eye and no response to the stimuli presented in the right eye. Physiological glucocorticoid replacement, levothyroxine, calcium, 25-hydroxyvitamin D was initiated and the referral was made for neurosurgery evaluation. **Discussion:** Hypopituitarism is characterized by the deficiency of one or more pituitary hormones due to decreased activity of the pituitary gland and/or hypothalamus. Although panhypopituitarism indicates the reduction of all pituitary hormones, the term is commonly used to describe patients with adenopophysis hormone dysfunction, being the neuropituitary activity normally maintained. In the case described, the presence of infiltrative edema through the body was highlighted, in addition to indisposition and cutaneous pallor - such manifestations were secondary to the diagnosis of central hypothyroidism, secondary adrenal insufficiency, central hypogonadism and GH deficiency. After the beginning of the hormonal replacement, the patient evolved with disappearance of the symptoms of infiltrative edema and improvement of disposition and hoarseness, being referred for neurosurgery evaluation with an initial diagnosis of panhypopituitarism due to pituitary macroadenoma. **Final comments:** The present case demonstrates the importance of considering hypopituitarism as a possible diagnosis for a patient with generalized infiltrative edematous syndrome.

E-PO201 ISOLATED HYPOGONADOTHROPIC HYPOGONADISM ASSOCIATED WITH INTRASELLAR ARACNHOIDOCELE IN A MALE PATIENT: A CASE REPORT

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Case presentation: A 64-year-old man complains of weight gain, indisposition and a significant reduction in libido, in addition to muscle weakness and loss of lean body mass. He denies headache, visual impairment, gynecomastia and galactorrhea. Laboratory tests showed total testosterone 126.6 ng/dL, LH 1.6 mUI/mL, FSH 3.5 mUI/mL, ACTH 12 pg/mL, basal cortisol 14.4 mcg/dL, IGF-1 110 ng/mL, prolactin 4.53 ng/mL, TSH 3.28 mUI/mL, free T4 1.29 ng/dL. CBC, liver and kidney function tests were normal. Magnetic resonance imaging (MRI) was performed, which showed a herniation of liquoric content inside the sella turcica, causing displacement of the pituitary parenchyma to the sella floor, with no other findings. He denied neurosurgery, pituitary tumor, irradiation, or previous traumatic brain injury. The patient was diagnosed with isolated hypogonadotropic hypogonadism associated with intrasellar arachnoidocele (partially empty sella). After evaluation of the prostate, testosterone was started in a quarterly intramuscular formulation. **Discussion:** Empty sella syndrome (ESS) is associated with isolated hormonal deficiencies, hypopituitarism and panhypopituitarism. Pituitary failure is more common in complete ESS. The prevalence is higher in women, middle-aged, hypertensive, overweight and multiparous, whereas this condition is uncommon in male patients. Most of them are found incidentally (prevalence of 5.5% in the general population), due to the fact that symptoms originating from endocrine dysfunction are rarely observed in adults. In view of the case, secondary causes of ESS were ruled out, being, therefore, a primary cause. Hypoplasia of the sella diaphragm or its absence are possible congenital causes that explain ESS of primary origin. Starting from the quantification of total testosterone, combined with inappropriately normal FSH and LH, hypogonadotropic hypogonadism was diagnosed. The other exams confirmed the isolated involvement of the gonadotropin axis, something unique. The requested MRI clarified clinical presentations, being the gold standard for these cases. Adequate hormone replacement is indicated. **Conclusions:** The diagnosis of ESS is usually made incidentally, using MRI, without overt pituitary dysfunction, with a predominance in females. This case illustrates the possibility of the association of hypogonadotropic hypogonadism in a male patient secondary to ESS. **Keywords:** Empty sella syndrome; hypogonadism.

E-PO202 NECROTIZING PNEUMONIA AS A PRESENTATION OF CUSHING'S DISEASE – CASE REPORT

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Case presentation: Male, 32 years old, smoker, without comorbidities, seek medical attention in Oct/2019 due to fever and productive cough. On admission, present with PA 180 x 100 mmHg, blood glucose 170 mg/dL, presence of violent stretch marks in the abdomen, tachypneic and with thin crackles in upper 2/3 of the left hemithorax. A hypothesis of community-acquired pneumonia was raised, which was chosen for hospitalization, collected cultures and antibiotic therapy initiated with ceftriaxone and azithromycin. Chest X-rays and CTs showed consolidation with bronchograms, excavations and necrosis in the left hemithorax. For diagnostic clarification, negative serology and hormonal dosage were requested: urinary cortisol 2.930 mcg/24 h, free serum cortisol 22.4 mcg/dL, ACTH 86.1 pg/mL, remaining within normal limits. After such changes, MRI evidenced a pituitary macroadenoma of about 27 x 21 x 19 mm. Diagnosed Necrotizing pneumonia secondary to immunosuppression due to excess corticosteroids from Cushing's disease. During hospitalization, he evolved without improvement, with antibiotics being tazocin. Negative blood cultures and bronchial lavage with growth of Klebsiella pneumoniae multi-R. After a long hospital stay, the patient evolved with clinical and imaging improvement, and was discharged in Dec/2019. Cabergoline and ketoconazole started to control hypercortisolism, with an effective response until a transsphenoidal resection in Jan/2020. **Discussion:** Necrotizing pneumonia is a rare and serious lung infection, and early diagnosis and treatment is essential. The main etiological agents are *S. pneumoniae*, *S. aureus*, *H. influenza*, *S. pyogenes* and *K. pneumoniae*. Risk factors include age > 60 years, excess corticosteroids, hospitalization and previous antibiotics. Glucocorticoids alter both cellular and humoral innate and adaptive immunity. Cushing's syndrome is a disease caused by chronic and excessive cortisol secretion by the adrenal glands, which can have a central or adrenal cause. Among its complications, studies show that the infection was responsible for some deaths. Prompt treatment of excess cortisol is crucial to avoid serious complications and reduce mortality. **Final comments:** Excessive corticosteroids cause complications to the body, infections being among the most serious. Thus, its early control is essential. The aim of this study was to report a clinical case of a serious complication associated with immunosuppression caused by hypercortisolism in Cushing's disease.

E-PO203 PANHYPOPITUITARISM IN A TRAUMATIC BRAIN INJURY (TBI) PATIENT: A CASE STUDY

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Description: In 2012, a 31-year-old male patient was sent to the endocrinology team by the internal medicine ward due to abnormal exam results (TSH 1.0 mU/L [0.5-4.0] and total T4 0.3 mg/dL [4.5-12.6]), BP of 100/80 mmHg, and asthenia, drowsiness, edema of the lower limbs, and alopecia. He reported a traumatic brain injury (TBI) resulting from a motor vehicle accident that had occurred in 2011. Pituitary stimulation tests were applied to assess the somatotrophic, thyrotrophic, gonadotrophic and corticotrophic axes, as well as IGF-1, free T4, total testosterone, prolactin (PRL), adrenocorticotropic hormone (ACTH), serum sodium, and urine volume. A head MRI revealed pituitary stalk deviation to the left, reduced anterior and posterior pituitary sizes, and encephalomalacia. In light of the results, panhypopituitarism (PH) with posterior pituitary preservation was diagnosed. The patient's medications and their dosages were therefore adjusted; today, he uses testosterone undecanoate, levothyroxine, GH, and hydrocortisone. **Discussion:** PH is the lack of production or action of at least half of the hormones produced in the pituitary gland. This loss of pituitary function may be the result of genetic or acquired factors. In adults, this loss is most frequently acquired, as in the case of TBI, which has gained etiological importance in cases of PH. The symptomatology provides more information on which pituitary hormones may be compromised. Certain signs of hypopituitarism, such as fatigue, muscle weakness, and changes in mood or overall condition, are similar to consequences of TBI, which may therefore mask a hormone deficiency. Furthermore, neither pituitary function assessment nor serum monitoring of hormones are routine after trauma, resulting in erroneous diagnoses and worsened patient recovery following TBI. **Final comments:** Though our case is of a patient diagnosed early with PH of traumatic cause, TBI is still an underdiagnosed etiology in cases of PH. This case demonstrates the importance of differential diagnosis of coexisting hypopituitarism and TBI, as well as the benefit of continued monitoring to improve patient recovery and quality of life.

E-PO204 PITUITARY APOPLEXY, AN ENDOCRINOLOGICAL EMERGENCY: CASE REPORT

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Case presentation: Z. S. P. G., female, 50 years old, presented to the emergency with complaints of left hemicranial headache, cervicalgia, shoulder pain and dizziness for 1 year. On physical examination, no neurological abnormalities. Campimetry was performed, with normal results. Hormonal exams were normal, except for the prolactin levels (120 ng/mL). Magnetic resonance imaging (MRI) and computerized tomography (CT) were requested, which showed a pituitary tumor with bleeding. Cabergoline was started and, after a month, Duloxetine. A year later, with normal prolactin levels, she stopped using Cabergoline. After 3 months, she presented nausea, peak blood pressure (160/100 mmHg) and intense headache, and so dihydroergotamine was prescribed. A new MRI indicated a lesion measuring 24 x 22 x 20 mm, with slight growth, suprasellar extension and compression of the optic chiasm, suggesting hemorrhagic degeneration or apoplexy. **Discussion:** The temporal evolution of the patient suggests a macroprolactinoma with hemorrhagic degeneration or apoplexy. Pituitary apoplexy is a rare endocrine emergency that can occur due to bleeding or ischemia in the pituitary gland. Its incidence can vary between 0.6% and 16.8% in the general population (2%-7% in pituitary adenomas). In this case, a dopaminergic agonist was used for the treatment of the tumor, which successfully controlled the headache and the prolactin levels. The first MRI suggested a silent apoplexy, since the clinical picture of the patient did not indicate such condition. In the second one, the patient presented a typical picture of apoplexy, including nausea and intense headache. The hormonal exams were stable, which suggested a possible action of the apoplexy itself on the tumor, stabilizing the hormonal secretion. Once the patient did not present signs of indication for transsphenoidal surgery (visual defects and/or reduced level of consciousness), conservative treatment was chosen. **Final comments:** Pituitary apoplexy may have spontaneous improvement with conservative therapy. In this case, due to history of repeated apoplexy, nausea and intense headache, it is important to keep close monitoring for an eventual urgent surgical intervention in case of new bleeding, visual alterations and/or reduced level of consciousness, since these are indicative signs for transsphenoidal surgery. It is important to highlight the importance of continuing conservative therapy in order to avoid invasive procedures and possible sequelae.

E-PO205 PREVALENCE AND CHARACTERIZATION OF GH-SECRETING GIANT MACROADENOMAS IN PATIENTS WITH ACROMEGALY

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Introduction: Acromegaly is a chronic disease associated with GH and IGF-1 hypersecretion, almost invariably caused by a GH-secreting pituitary adenoma. There is little information in the literature in relation to the prevalence of giant macroadenomas larger than 3 cm at diagnosis of acromegaly. **Objectives:** To evaluate the prevalence of giant adenomas at diagnosis of acromegaly in a reference centre for pituitary diseases and to compare the clinical presentation with that in patients harbouring micro or smaller macroadenomas. **Patients and methods:** Retrospective, observational, single-centre study of patients with confirmed diagnosis of acromegaly with available imaging at diagnosis. **Results:** We retrieved data from 161 medical records of patients with acromegaly, with 43 cases excluded due to missing data. The final study group consisted of 118 individuals (62 women, 56 men; mean age at diagnosis 41.9 ± 12.8 yrs) divided in 14 patients (11.9%) with microadenomas, 88 (74.6%) with macroadenomas and 16 (13.5%) with giant macroadenomas. Patients with giant macroadenomas were younger than those with microadenomas (49.3 ± 10.5 vs. 38.6 ± 10.2 yrs; p = 0.008). Hypopituitarism occurred in 62.5% of patients with giant macroadenomas, which was significantly higher than 7% in those with microadenomas (p = 0.001) and 28.4% in those with macroadenomas (p = 0.007). Patients with giant macroadenomas had higher GH levels at diagnosis (37.2 ± 33.2 ng/mL) when compared to patients with microadenomas (10.4 ± 10.3 ng/mL; p = 0.03). Seventy-five percent of patients with giant macroadenomas needed adjuvant treatment with somatostatin receptor ligands (SRL), a higher proportion than that in patients with microadenomas (14%; p = 0.0008) or macroadenomas (40.9%; p = 0.015). Radiotherapy was not indicated in microadenomas, whereas 11.4% of patients with macroadenomas and 25% of giant macros (p = 0.14) were irradiated. There were no differences in relation to sex, duration of symptoms until the diagnosis, prevalence of hypertension and diabetes, and hyperintense T2 signal at imaging among study groups. **Conclusions:** Giant macroadenomas corresponded to 13.5% of GH-secreting adenomas at diagnosis of acromegaly; they were detected at younger ages and were more often associated with hypopituitarism, higher GH levels and adjuvant treatment with SRL.

E-PO206 PREVALENCE OF OSTEOARTICULAR AND RADIOLOGICAL CHANGES IN ACROMEGALY AND ITS ASSOCIATIONS WITH CLINICAL CHARACTERISTICS, PAIN SCORES, FUNCTIONALITY AND QUALITY OF LIFE

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Introduction: Arthropathy and joint pain can occur at 70% of patients with acromegaly at the diagnosis and the most affected sites are knees, hips and shoulders. The studies are inconclusive in showing improvement in the progression of osteoarthritis (OA), pain, quality of life and depressive symptoms with hormonal control of acromegaly. **Objective:** To evaluate the prevalence of radiological arthropathy and its associations with quality of life, functionality, joint pain scores and clinical and psychiatric variables in acromegalic patients followed in a Universitary Hospital. **Methods:** This is a cross-sectional cohort study with 41 patients with acromegaly. Clinical, biochemical and imaging data were collected from medical records, from 2018 to 2020. The WOMAC questionnaire was used to assess pain, stiffness and functionality in inferior limbs, AcroQoL for life quality and BDI-II for depressive symptoms assessment. X-rays of the hands, knees, lumbar spine and hips were analysed by a single radiologist. The severity of osteoarthritis was graded according to the Kellgren and Lawrence classification. **Results:** Patients had an average of 53 y, 56.1% male. The prevalence of lumbar spine OA was 87%, 77.4% in hips, 68.7% in knees, and 38.7% in hands. No significant association between the severity of OA and the applied questionnaires was found. Hypogonadism was significantly associated with higher scores on the total WOMAC index and in the pain domain ($p < 0.05$); the use of cabergoline was associated with AcroQoL score ($p < 0.05$); female gender was associated with higher depression scores ($p < 0.05$), diabetes mellitus was correlated with the severity of lumbar spine OA ($p < 0.01$), and higher IGF-1 levels at diagnosis was significantly correlated with the severity of OA in the knees ($p < 0.05$), but not with OA in other sites. **Conclusion:** Osteoarthritis prevalence in our sample was high; however, not associated with hormonal control. Also, pain and life quality scores were not related to radiological severity. Endocrinologists may be aware that modifiable factors as hypogonadism can be as important as hormonal control in acromegaly for chronic pain management.

E-PO207 PRIMARY EMPTY SELLA SYNDROME IN CHILDHOOD: A RECOGNITION OF A RARE CONDITION AND NEED FOR PRECOCIOUS HORMONAL REPLACEMENT

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Case report: Female patient, born pre-term, related to obstetric complications, presenting APGAR 2, 6, 8 and 8 in the 1st, 3rd, 5th, and 10th minute, respectively. She developed acute otitis media and sepsis from Staphylococcus sp. within the first 7 days of life. Patient presented low weight and height in early childhood and at 3 years old, with -2SD in height and bone age (BA) delay, she underwent a clonidine test, confirming GH deficiency. She performed a computed tomography scan of the sella, suggesting the diagnosis of primary empty sella syndrome. Basal cortisol, prolactin and free T4 tests confirmed anterior hypopituitarism. After GH, glucocorticoid and levothyroxine replacement, patient presented normalization of growth velocity, however, maintained a delay in BA until adolescence. Puberty was induced by estrogen therapy at age of 13 years old. She reached a height of 165 cm, normal neuropsychomotor development, with full replacement of GH, estrogen, progesterone, levothyroxine and prednisone. **Discussion:** The herniation of the subarachnoid space to the Turkish saddle is defined as an "empty saddle". When it results from a specific pathological process (e.g., surgery), it is classified as secondary, being primary (PES – primary empty sella) when there is no process preceding the injury. PES is related to congenital deficiency of the sellar diaphragm, intracranial hypertension, pulsatile cerebrospinal fluid, among others. The estimated prevalence of PES is 5.5%-35% in the general population, affecting 5 women for each man. It occurs less frequently in children, generally associated with pituitary-hypothalamic dysfunction, genetic changes or perinatal complications, as in the case reported. It is asymptomatic for most patients and may be detected incidentally in neuroimaging tests. Symptomatic cases may show headache and changes in visual field. Endocrine disorders are present in less than 20% of cases, with GH deficiency being the most common. The distinction between primary and secondary etiology is based on clinical history. Treatment includes hormone replacement of deficient axes and, if necessary, measures to reduce intracranial hypertension. **Final considerations:** The diagnosis of primary empty sella in childhood should be suspected in the face of delayed weight-height development, pubertal delay, or headache. Once diagnosed, it is essential to assess the pituitary axes and prescribe hormone replacement, in the indicated cases.

E-PO208 PRIMARY NEUROENDOCRINE NEOPLASM OF THE LUNG: CASE REPORT

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Case report: Female, 58 yo, smoker, 2PPD/40y. Five months ago, had multiple lesions on her back, breast and a history of cervical tumor. The biopsy of the left parotid tumor showed extensive small cell neuroendocrine carcinoma (SCNC). Computed tomography of the skull, abdomen and thorax revealed cerebral metastasis with compression of the IV ventricle and Sylvius aqueduct, metastasis to the left parotid space, bilateral renal metastasis, left adrenal, retroperitoneal and right perihilar lymph node chains, and metastasis to the pleura and thoracic wall with lymph node enlargement in the prevascular space and in the supraclavicular chains. In addition, were performed 5 sessions of 400 cGy of palliative radiotherapy for brain metastases and chemotherapy (CTX), cisplatin with etoposide. Currently, the patient is in good condition. **Discussion:** Neuroendocrine neoplasms are subdivided into neuroendocrine tumors (NETs) and SCNC. The SCNC is presented, poorly differentiated high-grade malignancy and can be subdivided into small cell, large cell or poorly differentiated neuroendocrine carcinoma. Approximately 1/3 of SCNC have the primary site in the lungs or thymus and 2/3 in the gastrointestinal tract. The SCNC is the most aggressive type of lung cancer, with extensive disease being frequent due to fast growth and often the initial symptoms are nonspecific or nonexistent. The most affected sites by metastasis are adrenals, liver, bones and brain. Patients with NETs may have symptoms of hormonal hypersecretion, such as hypertension, hypoglycemia or diarrhea. For patients, like this case, without hormonal secretion, we consider the tumor non-functional. The treatment is surgery. Neoadjuvant therapy is ineffective, has a response rate of 19%-22%. In advanced cases, curative surgery isn't indicated, only associated CTX and radiotherapy. First-line CTX treatment includes cisplatin with etoposide – as done for the patient – carboplatin with etoposide or temozolomide. Although the response rates to first-line therapy are 50%-80%, most patients relapse and develop CTX-resistant disease. The use of hormonal suppressants is contradictory for asymptomatic metastatic cases. **Final comments:** The importance of this case is due to the low prevalence and high malignancy of SCNC. Usually they're diagnosed in an advanced stage, so the diagnostic and treatment must be improved. In addition, due to the association with smoking, preventive measures and lifestyle changes should be valued.

E-PO209 RELATIONSHIP BETWEEN ACROMEGALY AND PREGNANCY: A CASE REPORT

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Santa Casa da Misericórdia de Juiz de Fora

Presentation: Female, 34 years old, hospitalized on 01/25/19 due recurrent headache and reduced visual acuity. MRI was performed (01/31/19) with an expansive solid-cystic lesion (2,8 x 2,5 x 1,8 cm) below, intra and suppressing, suggestive of pituitary macroadenoma. Transsphenoidal adenomectomy was performed on 02/02/19 without complications. Anatomopathology demonstrated pituitary adenone and immunohistochemistry showed GH producing cells. Postoperative laboratory tests (02/08/19): cortisol 11.4 mcg/dL (3,7-19,4); IGF-1 637 ng/mL (71-234); T4L 1.06 ng/dL (0,7-1,48); LH 1 mIU/mL (follicular 1,8-11,7); FSH 3.67 mUI/mL (follicular 3,03-8) estradiol 17 pg/mL (follicular 21-251); prolactin 34.73 ng/mL (5,1-26,5). In following, MRI Turkish saddle (10/04/19) showing pituitary reduction on the left (1.5 x 0.9 x 1.6 cm). Report of unscheduled pregnancy on 04/14/19 with development of gestational diabetes mellitus (GDM). Delivery and postpartum without complications, fetal weight 3.5 kg. Turkish saddle MRI on 04/16/20 with increased expansive seal formation and signs of invasion of the cavernous sinus on the right. Laboratory (05/20/20) with IGF-1 786 ng/mL; baseline GH 7.15 ng/mL (0,010-3,607)/post-TOTG: 8.39/6.54/6.58/6.29 mcg/L (<1); prolactin 63.71 ng/mL; basal cortisol 12 mcg/dL (3,7-19,9); TSH 1.46 MUI/mL; T4L 0.88 ng/dL; HbA1c6.1% (4,5-5,6); metformin was started and treatment with a somatostatin analogue(lanreotide) was proposed. **Discussion:** Acromegaly is a rare disease, with GH-secreting pituitary adenomas accounting for 95% of cases. Transsphenoidal surgery is considered the therapy of choice and the objectives include normalization of IGF-1, GH reduction, tumor reduction and clinical improvement. Dopaminergic agonists and somatostatin analogs are the main options for drug treatment. Although uncommon, pregnancy in women with acromegaly can progress normally and, whenever possible, treatment should be postponed to the postpartum period. In this case, pregnancy evolved without complications, as did childbirth and the neonatal period, withing GDM as the only complication. The patient remained without therapy during the entire pregnancy, and lanreotide was requested for treatment after delivery. **Final comments:** The likelihood of pregnancy in acromegaly is low but may have a normal course. Attention should be paid to the possible growth of the adenoma and worsening of symptoms. Drug treatment should, whenever possible, be postponed to the postpartum period.

E-PO210 RISK FACTORS ASSOCIATED WITH LONG-TERM REMISSION AND RELAPSE OF HYPERCORTISOLISM AFTER TRANSESPHENOIDAL SURGERY IN PATIENTS WITH CUSHING'S DISEASE

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Introduction: Cushing's disease (CD) is an uncommon disease caused by an ACTH-secreting pituitary adenoma that is associated with increased morbidity and high mortality. Transsphenoidal surgery (TSS) is the first line treatment for most patients with CD, which may offer a chance for permanent remission of hypercortisolism (HC). However, surgical failure and relapse might be observed even years after TSS. **Objective:** To study the short- and long-term remission and relapse rates of CD after TSS and to investigate predictive factors of surgical success or failure. **Patients and methods:** Retrospective analysis of CD patients who underwent TSS. Patients with missing or incomplete data, lost to follow-up and with HC due to another etiology were excluded. At short-term, participants were classified as "surgical failure (SF)" when HC persists after TSS and "remission or cure" (RC) when persistent resolution of HC occurred at least 2 years after TSS without need of adjuvant therapy; at long-term, "late relapse" (LR) was defined when HC recurred after a documented period of post-surgical eucortisolism in the "RC" group. **Results:** Forty-seven CD patients (32 women; age at TSS 32 ± 11 yrs; 50% microadenoma, 35% macroadenoma, 15% normal imaging) were studied. The study group was followed up for a mean period of 51 ± 4 months after TSS, which was performed by the neurosurgical team of our institution in 61% of cases and referred from other centers in 39% of cases. At short-term, "RC" was observed in 33 (70%) and "SF" in 14 (30%); at long-term, "LR" occurred in 9/33 (27%) patients of the "RC" group after a median (range) follow-up period of 37 months (24-120 months). The presence of adenoma in the preoperative image, TSS performed in our institution by an experienced neurosurgical team and ACTH-secreting adenoma identified in the pathological examination were associated with better outcomes ($p < 0.05$). **Conclusion:** Identification of an ACTH-secreting adenoma in the preoperative image and in the pathology and neurosurgical expertise in pituitary surgery, were the main factors associated with higher rates of remission of CD after TSS. Late relapse might occur several years after TSS showing the need of permanent follow-up of patients with CD after TSS.

E-PO211 TEMOZOLOMIDE THERAPY IN AGGRESSIVE ACTH-PRODUCING MACROADENOMA: A CASE REPORT

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Case presentation: A 53-year-old diabetic and hypertensive male patient diagnosed with Cushing's disease (CD) in 2012 due to invasive ACTH-producing macroadenoma. He underwent transnasosphenoidal surgeries in 2012 and 2013, radiotherapy treatment in 2014, due to the persistence of CD. After the third surgery in 2017 by transcranial access, he had a minor stroke and was re-evaluated with a new metabolic decompensation. An increased volume in the seal and suprasellar lesion were seen on MRI, but new surgical approaches were no longer possible due to his clinical condition and patient refusal. Cabergoline and ketoconazole were prescribed in high doses getting at 7 g in a week and 1,2 g by day respectively to contain the hypersecretion of ACTH. After this, temozolomide (TMZ) was initiated 5 days per month at a dose of 250 mg for 7 cycles. There was an interruption between the 3rd and 4th cycle due to a decompensation set, in spite of it, a partial tumor reduction was seen. Despite the decrease of tumor's growth, there was no significant decrease in hypersecretion, maintaining high levels of cortisol with intense systemic repercussion, such as diabetes – demanding high doses of insulin – hypertension, heart failure symptoms, edema and weight gain. From the 3rd cycle, an initial containment response was noticed, however, after the 7th cycle, a new MRI image was performed, showing a new relapse of the tumor growth. At the time, a new surgical approach was indicated, but the patient had a new stroke that led him to death. **Discussion:** In CD only 10%-20% results from macroadenoma. Despite tumor resection being first line therapy, it is challenging due to its proximity to neurological structures and invasive pattern, making resection incomplete or recurrences frequently. For CD, it is usually used pasireotide, but we do not have any data about its effect on decreasing tumoral volume and it is also related to worsening hyperglycemia. Studies have shown that TMZ therapy has an expressive benefit on aggressive pituitary tumors (APT), showing a reduction to the adenoma's volume and hypersecretion in almost 47%, making it possible for a new surgical or radiation intervention. **Final comments:** TMZ is an option for APT, however, in this case, despite an initial tumor volume response, there was no response regarding the control of hormonal hypersecretion. It was also noticed that the control over tumor growth was only transient despite the continuity of treatment.

E-PO212 THYROTROPINOMA: CASE REPORT

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Case presentation: Male, 60 years old, hypertensive, diagnosed with hyperthyroidism, using thiamazole 20 mg/day and atenolol 100 mg/day. He complained of headache, dizziness and palpitations, and on physical examination there was tremor of extremities. Negative family history for thyroid disease. Laboratory analysis revealed TSH 46,0 mcUI/mL and T4L 0,99 ng/dL, thyroid USG indicated heterogeneous gland, with mixed and hypoechogenic 0,4 cm nodular formation, submitted to fine-needle aspiration biopsy that resulted Bethesda II. Skull MRI found a pituitary microadenoma. Thiamazole 10 mg/day and atenolol 50 mg/day were recommended, and laboratory tests showed TSH 33 mcUI/mL and T4L 1,56 ng/dL. Thiamazole was removed, and further laboratory tests indicated TSH 15,1 mcUI/mL (VR: 0,4 to 4,3), TSH alpha 4,13 IU/L (VR: <0,70), T4L 3,16 ng/dL (VR: 0,7 to 1,8), PRL 20,53 ng/mL (VR: up to 17), IGF-1 326 ng/mL (VR: 72 to 207). New skull MRI detected enlarged pituitary gland and the therapy of choice was hypophysectomy. Six months after surgery, TSH 2,30, TSH alpha 1,18, T4L 1,41. 2019 skull MRI detected heterogeneous tissue along the pituitary gland. At the time of writing this report, the patient was using a somatostatin analogue 30 mg, intramuscularly, every 28 days as a complementary treatment. **Discussion:** Thyrotropinomas are rare tumors of the pituitary adenoma type. About one third of thyrotropinoma cases receives the pattern of primary hyperthyroidism, as occurred with the patient in this case report. After being diagnosed with a pituitary microadenoma, he progressed to a macroadenoma, which may be related to the natural evolution of the disease and diagnosis at a more advanced stage of the tumor. The first option for the treatment of TSH-secreting pituitary adenomas is surgery, leading to clinical and biochemical remission in most patients. For cases of non-curative surgical resection, clinical drug treatment has been indicated as complementary therapy, the choice of which is the somatostatin analogs. The criteria for defining the cure are not yet well defined in the literature. **Final comments:** Thyrotropinomas are rare pituitary tumors, but they should be suspected in the face of hyperthyroidism associated with inappropriately normal or elevated TSH levels. Early diagnosis is of the utmost importance for carrying out appropriate therapy.

E-PO213 UNUSUAL PRESENTATION OF MULTIPLE ENDOCRINE NEOPLASIA TYPE 1: A CASE REPORT

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Case presentation: A. M. F. A., 49 years, female. In 2007, cytological study of thyroid nodules resulted in papillary carcinoma (PTC), and she underwent total thyroidectomy. Anatomopathological study (AP) confirmed PTC. She evolved with an excellent response to therapy. In 2018, ultrasound due to epigastric pain showed a pancreatic lesion. MRI showed a lesion in the head and body of the pancreas of 8.2 cm. She underwent total gastroduodenopacreatectomy surgery, and AP showed a well-differentiated neuroendocrine tumor (NET). Before surgery, tests were collected for multiple endocrine neoplasia (MEN-1): IGF-1 of 450 ng/mL; elevated late night salivary cortisol (LNSC), calcium, and PTH. MRI showed a 0.5 cm intrasellar nodule. Genetic study resulted in c654+1G>T mutation in heterozygosity in the MEN-1 gen. It was found 3 family members with the same condition. She presents 2 other positive LNSC for hypercortisolism. She also presented 1mg dexamethasone suppression test (DST) positive for hypercortisolism, and two 8 mg DST positive for ectopic ACTH syndrome. She has facial plethora, proximal muscle weakness and easily bruising. **Discussion:** Multiple endocrine neoplasia type 1 (MEN1) is characterized by the occurrence of tumors of the parathyroid glands, the pancreatic islet cells, and the anterior pituitary. Thyroid disease can be seen in over 25% of MEN1 patients and it can be detected incidentally during parathyroid surgery in MEN1 patients. Studies suggest that MEN1 gen is not etiologically related to the oncogenesis of the PTC. The elevated IGF-1 was measured before the surgery and could indicate acromegaly. The most common cause is a somatotroph adenoma of the anterior pituitary. Other very rare causes of acromegaly are excess secretion of GH-releasing hormone (GHRH) by hypothalamic tumors, ectopic GHRH secretion by NET, and ectopic secretion of GH by NET. The patient is waiting for the result of another IGF-1, so she can be investigated for the one of those etiologies. Although DST suggest Cushing's syndrome (CS) and ectopic ACTH syndrome, one may doubt their results due to the her lack of intestinal absorption due to the surgery. However, she has 3 positive LNSC for CS and has compatible clinical manifestations. Currently awaiting for urine free cortisol. **Final comments:** Therefore, the patient had a rare presentation of MEN1, opening with the diagnosis of PTC. It is currently under investigation for another rare condition: IGF-1 and ACTH co-secretion.

E-PO214 VOLUMINOUS PITUITARY MACROADENOMA ASSOCIATED WITH HYPOPITUITARISM IN A PATIENT WITH SEXUAL DYSFUNCTION: A CASE REPORT

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Case presentation: A 55 years old male patient refers hair loss in thoracic region for 7 months, sexual dysfunction, indisposition, fatigue and amaurosis in right eye. He denied other complaints. On physical examination, showed rarefaction of thoracic and axillary hair, pallor and dry skin. In biochemical analysis, free T4 = 0.39 (0.54-1.24 ng/dL), TSH = 2.91 (0.38-5.33 µUI/mL), LH = 0.30 (1.24-8.62 µUI/mL) FSH = 2.04 (1.1-8 µUI/mL) and total testosterone < 10 (175-781 ng/dL), without further changes. In view of the laboratory findings, a contrast-enhanced magnetic resonance imaging of the sella turcica was requested, which showed a voluminous solid expansile lesion inside the seal cavity with regional bone remodeling and suprasellar growth pattern. A diagnosis of clinically non-functioning pituitary macroadenoma was given, with central hypothyroidism, central hypogonadism and optic chiasm compression. **Discussion:** Pituitary macroadenoma is a benign tumor located in the pituitary gland with a size that exceeds 10 mm. This tumor can be functional, associated with hormonal hypersecretion, or clinically non-functional, when it does not secrete hormone or its production is insufficient to produce clinical signs. Usually, the manifestations of non-functioning pituitary macroadenoma result from the compression of structures, mainly campimetric alterations, headache and panhypopituitarism. Neuro-ophthalmologic complaints occur due to compression of the optic chiasm and are frequent in macroadenomas. Compression on the pituitary gland can generate hormonal deficiencies. The erectile dysfunction results from the decrease in testosterone levels, due to the impaired production of gonadotropins, characterizing the hypogonadotrophic hypogonadism, which also curves with a decrease in hair, a reduction in libido, infertility, loss of muscle mass, besides other metabolic alterations. This dysfunction, however, is more commonly found in cases of hyperprolactinemia, as occurs in prolactinomas. **Final considerations:** Although erectile dysfunction has several possible causes and is not the most common clinical sign of a clinically non-functioning pituitary macroadenoma, it is necessary to pay attention to this etiology, especially in patients with other complaints that may be related to hypopituitarism or chiasmatic compression – as in the case reported –, emphasizing the importance of correlating clinical, laboratory and imaging data to make an early diagnosis.

OBESIDADE

E-PO215 BLOOD PRESSURE CONTROL AFTER BARIATRIC SURGERY AND LOSS OF EXCESS OF BODY WEIGHT

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Introduction: Obesity is a known risk factor for hypertension. Bariatric surgery (BS) advantages on improvement of weight loss and blood pressure (BP) are well established. However, it is not well defined if high BP improvement is independent of weight loss in post-operative period. **Objective:** To evaluated high BP treatment before and after BS and its correlation with weight loss. **Methods:** It was analyzed retrospectively clinical and data of hypertensive patients submitted to BS (gastric bypass (GB) or sleeve gastrectomy (SG). Data were analyzed using SPSS version 17.0. A p value < 0.05 was considered statistic significant. **Results:** All 25 patients were female, mean age was 51.8 +/- 9.0 years, mean pre-operative weight was 123.8 +/- 20.5 kg and mean pre-operative body mass index (BMI) 46.4 was +/- 7.1 kg/m². All patients were using anti-hypertensive drugs (AHD) before surgery. At a pre-operative period, patients were taken mean 1.8 classes of AHD and 3.3 number capsules a day. At 12 months after surgery, number of classes of AHD was correlated to total weight loss (r = 0.5; p = 0.008), excess of body weight (EBW) loss (r = -0.5; p = 0.004) and BMI (r = 0.4; p = 0.02). Number of capsules of AHD was correlated to total weight loss (r = 0.5; p = 0.006); excess of body weight (EBW) loss (r = 0.57; p = 0.003) and BMI (r = 0.4; p = 0.01). There was no statistic difference between surgical groups (GP x SG) in classes of AHD or number of capsules a day at 12 months (respective p = 0.5; p = 0. 4). At 12 months of post-operative period, patients who doesn't use any AHD had a lower BMI (30.5 versus 36.1 kg/m², p = 0.012) and weight (79.6 versus 99.4 kg, p = 0.04), a higher loss of EBW (76.5 versus 53.2%, p = 0.001). **Conclusion:** In this small sample of patients, high BP improvement at 12 months of post-operative period was correlated to EBW, BMI and weight loss.

E-PO216 CHILDHOOD BLOOD PRESSURE: INFLUENCE OF NUTRITIONAL STATUS

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Introduction: Blood pressure (BP) in the pediatric age group is one of the major worldwide public health problem and its prevalence has been related to the increase in childhood obesity in the last three decades. In this way, weight is one of the determinants of BP, especially after 5 years old, with a direct relationship between body mass index (BMI), BP levels and cardiovascular mortality. **Objective:** To evaluate the association between overweight and BP levels in schoolchildren. **Material and methods:** This is an observational and cross-sectional study carried out in private and public schools in Feira de Santana, BA. The sample consisted of children randomly and proportionally selected, from 5 to 9 years old from both genders. Measurements of weight and height for calculating BMI were done and also BP by clinical sphygmomanometry. Overweight and obesity were defined as BMIs equal to or greater than the 85th and 95th percentiles for age and sex, respectively. Normotensive was defined as BP < 90th, high blood pressure between ≥ 90th and < 95th, and hypertension as ≥ 95th percentiles. **Results:** It was analysed 527 children (281 [53.3%] were female, 7.3 ± 1.3 years, 407 [77.2%] non-Caucasian). 77 [15%] were overweight and 55 [10.4%] obese. The prevalence of normotensive, high BP and hypertension among the children were 75.9% (n = 396), 9.8% (n = 51) and 14.4% (n = 75), respectively. There was an association between excessive weight and abnormal BP (p = 0,000), with an odds ratio of 1.8. It was noted that in overweight and obese children the average of systolic and diastolic BP was higher and those with normal weight (p < 0,05). **Conclusion:** The prevalence of high blood pressure levels found in this sample of schoolchildren was high, and the excessive weight was an important risk factor. Therefore, the practice of BP measurement should be encouraged among younger age groups with the objective of early detection of changes in blood pressure levels, especially in overweight individuals.

E-PO217 CLINICAL CHARACTERISTICS AND OUTCOMES OF OBESE PATIENTS WITH COVID-19 IN AN OUTPATIENT SETTING

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Introduction: Obesity is associated with increased severity and higher mortality in patients affected by SARS-CoV-2. In addition to the metabolic dysfunction that leads to obesity-related comorbidities, obesity induces adipose tissue inflammation and immune dysfunction, which play an important role in the pathogenesis of COVID-19. **Objectives:** To analyze the clinical profile and outcomes of obese patients with COVID-19 followed at a reference center. **Patients and methods:** This is a prospective observational study, in which patients with COVID-19 received medical care in a reference center and were remotely monitored after the consult. Clinical data and outcomes patients were inserted in a database from April through August 2020 and further analyzed. **Results:** From a total of 1,134 patients with COVID-19, 288 (25.4%) were obese, 59.7% of them were female. Obese patients were older than the non-obese ones (47.5 ± 10.3 vs. 43.6 ± 12.6 years; $p < 0.001$). After initial risk stratification, 53.4% of obese patients were moderate and 11.8% severe. The following comorbidities were more frequent in the obesity group when compared to non-obese patients: hypertension (45.5% vs. 22.6%; $p < 0.001$), diabetes (15.6% vs. 6.7%; $p < 0.001$), dyslipidemia (15.3% vs. 9.7%; $p = 0.009$) and chronic kidney disease (1.0% vs. 0.1%; $p = 0.022$). There was no difference between groups regarding smoking and pulmonary disease. As to COVID-19 clinical presentation, dyspnea and diarrhea were more frequent in obese subjects, while odynophagia, nausea and vomiting were more common in non-obese ones. COVID-19 was confirmed by a positive RT-PCR test in 85.4% of obese patients, and 63.3% of those who underwent chest CT had typical findings for SARS-CoV-2 infection. Assistant physicians in this outpatient setting prescribed antibiotics, ivermectin, corticosteroids and heparin more often for obese patients. Hospital admission (6.6% vs. 3.1%; $p = 0.008$) and use of oxygen therapy (5.1% vs. 2.1%; $p = 0.011$) were more frequent in the obesity group. Disease duration was similar in both groups, but hospital stay was longer in the obesity group. Mortality rate was higher in obese subjects (2.1% vs. 0.7%; $p = 0.049$). **Conclusion:** Obese patients with COVID-19 were older, were mostly classified as moderate or severe, had relevant comorbidities and presented with more dyspnea. Hospital admission and oxygen therapy were more frequently required in obese subjects with COVID-19, and mortality was higher in this group.

E-PO218 EARLY LIFE EVENTS AND DIETARY CONSUMPTION IN ADULTHOOD: ASSOCIATIONS WITH FECAL SHORT-CHAIN FATTY ACIDS IN THE NUTRITIONIST'S HEATHY STUDYVEA FERRE

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Introduction: Environmental factors in early life years can modulate, at least partially, the development of early human gut microbiota and its metabolites. **Objective:** to investigate associations between fecal short-chain fatty acids SCFA in adulthood with type of delivery, duration of breastfeeding, food preferences in the first two years of life, and actual dietary intake. **Patients and methods:** Cross-sectional study conducted with 111 nutrition undergraduates and graduates (<45 years). Early life events (type of delivery, breastfeeding duration, and food preferences in the 1st and 2nd years of life) were recalled. Usual dietary intake in adulthood (energy, total carbohydrate, fructose, sucrose, glucose, total fat, fatty acids, protein, sodium and fibers) was assessed by a validated food frequency questionnaire. Fecal SCFA were quantified using gas chromatography and mass spectrometry. **Results:** Median BMI was 24 (interquartile range IQR 18; 30). Delivery by cesarean was 62% and median duration of breastfeeding was 9.5 months (IQR 3; 11), which were not associated with fecal SCFA in adulthood ($p > 0.05$). In the 1st year of life, participants who reported preference for candy ($p = 0.007$) had lower fecal concentrations of acetate, and preference for salty cracker ($p = 0.031$) and porridge with sugar ($p = 0.047$) had lower fecal propionate. In the 2nd year of life, the preference for fruits was positively associated with butyrate ($p = 0.021$); while negative associations were found by the preferences for: salty cracker with propionate ($p = 0.003$), chocolate milk with propionate ($p = 0.032$) and butyrate ($p = 0.039$), and cheese with acetate ($p = 0.046$). Participants with preference for candy in early life had current higher intake of energy, sodium, protein, total fat, and saturated/monounsaturated/polyunsaturated/trans fatty acids ($p < 0.05$). Preference for porridge with sugar was positively associated with current intake of total fat and saturated/monounsaturated/polyunsaturated fatty acids ($p < 0.05$). **Conclusion:** Type of delivery and duration of breastfeeding were not associated with fecal SCFA in adulthood. Early life preference for foods rich in sugar, fat and sodium were negatively associated with fecal SCFA; and preference for fruits was positively associated with SCFA. The results highlight the importance of food introduction in the modulation of gut microbiota, its metabolites and food habits in adulthood. FAPESP n. 17/10185-9; 19/05450-0.

E-PO219 EFFECTIVENESS OF TESTOSTERONE REPLACEMENT IN OBESE MEN WITH LOW TESTOSTERONE LEVELS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: The use of testosterone replacement therapy in obese men with low testosterone levels has been controversial in relation to weight loss and control of obesity related diseases. **Objective:** To analyze the effectiveness of testosterone therapy for weight loss and prevention of cardiovascular complications in obese men with low serum testosterone levels. **Methods:** A systematic review was conducted according to the Cochrane Methodology of randomized trials comparing testosterone replacement versus non-replacement in obese men with low testosterone levels. Two reviewers independently selected the studies, assessed the risk of bias, and extracted data from the included studies. The main outcomes analyzed were improvement of anthropometric parameters, safety, quality of life, control of complications related to obesity. The databases used were Embase, Medline, LILACS and CENTRAL. Similar outcomes were plotted in the meta-analysis using Review Manager 5.3 software. The quality of the evidence was generated according to GRADE (Grading of Recommendations, Assessment, Development and Evaluation). **Results:** We included 17 studies. The testosterone replacement improved total lean mass (Mean Difference (MD) 1.99, 95% Confidence Interval (CI), 1.53 to 2.46, 332 participants, 5 studies, moderate certainty of evidence), but did not show effect on body weight, BMI and waist circumference (MD 0.24 kg, IC 95%, -0.48 to 0.96, 446 participants, 8 studies; MD 0.15, IC 95%, -0.10 to 0.41, 965 participants, 10 studies; MD -0.35 cm, IC 95%, -1.48 to 0.77, 859 participants, 9 studies, moderate certainty of evidence, respectively). The meta-analyses did not show a clear effect of the intervention on cardiovascular events (Relative Risk (RR) 0.93, 95% CI, 0.34 to 2.58, 562 participants, 7 studies, low quality of evidence), as well as for the quality of life outcomes and metabolic control (high inconsistency between the results of the primary studies). There was no difference in adverse events (RR 1.05, 95% CI, 0.70 to 1.56, 624 participants, 8 studies, moderate evidence). **Conclusion:** testosterone replacement in obese men showed a benefit in the total lean mass, however it did not show benefits in the other anthropometric parameters. Compared to control, this replacement proved to be safe. For cardiovascular events, quality of life, obesity-related complications, the effect of the intervention was uncertain. PROSPERO registry: CRD42017065598. Fapesp 2018/11836-6.

E-PO220 EFFICACY OF EDUCATIONAL TALKS ON NUTRITION AND HUMAN HEALTH ON THE EVALUATION OF NUTRITIONAL DIARIES OF BASIC LEVEL STUDENTS OF PUBLIC SCHOOLS

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Introduction: The prevalence of childhood obesity has increased steadily in the last decades in Brazil, paving the way to the development of hypertension, hypercholesterolemia, diabetes mellitus and cardiovascular damage. Among factors that predispose to the development of obesity is the diet containing highly processed, high energy, low fiber and low polyphenol foods. One way to reduce obesity is introducing healthy eating education in childhood. However, there is a lack of educational interventions that motivate such behavior in occidental countries in general. Methods. This was an intervention study with 5,500 students (9-10 years old) of 27 public schools in a Brazilian town that compared semi-quantitative food diaries (FD) before (March) and after two educational talks (May and October) on nutrition and human health. The year before 1,100 teachers of the schools received 4 obesity classes (2 hours each) in the Endocrine Unity of our medical school (EU). Teachers were taught every time children ate, they should trace a dash in front of the name of the respective food in the roll of the FD. Each signed dash meant that they consumed the food in that moment, no matter the quantity. One hundred and twenty medical students were trained in the EU to give the talks. Children filled in the FD in a Thursday and a week-end day. The contents of the FD were grouped in relation to macronutrients, caloric density, degree of food processing, and kind of cooking. Carbohidrates (CHOs) and lipids described as obesogenic (OBES) were compared against healthful sources (NOBES) of these foods, chiefly based in NOVA and OPAS diets. The analysis of each food group was done for the sum of the diaries of all children and expressed as a percentage of the total number of citations. **Results/Discussion:** After the 2 talks in the schools the % of all solid and liquids CHOs the NOBES increased relative to the OBES: Thursday: NOBES Basal = 32%, 1ST Talk = 33%, 2nd Talk = 36%. OBES (%) = 25%, 1ST Talk = 24%, 2nd Talk = 21%. Weekend day: NOBES Basal =27%, 1ST Talk = 29%, 2nd Talk = 34%. OBES (%) Basal = 27%, 1ST Talk = 26%, 2nd Talk = 22%. As a mean of all citations: minimally-processed meats 46%, ultra-processed and fried meats 42%, and eggs 12%. We conclude educational intervention may be an effective way to childhood obesity prevention.

E-PO221 FOLLOW-UP OF PERIPHERAL POLYNEUROPATHY IN SEVERELY OBESE PATIENTS WITH METABOLIC SYNDROME BUT WITHOUT DIABETES SUBMITTED TO BARIATRIC SURGERY

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Background: Previous studies demonstrate that the metabolic syndrome (MetS) components can be associated with peripheral polyneuropathy (PPN) independent of glycemic status. However, the association between obesity, MetS, and PPN after bariatric surgery is less evident. Our objective was to describe the incidence and progression of PPN in severely obese patients with MetS but without diabetes submitted to BS and to identify risk factors. **Methods:** A prospective cohort study was performed in 239 severely obese patients with MetS but without diabetes who underwent Roux-en-Y gastric bypass (45.6%) and sleeve gastrectomy (54.4%). The Michigan Neuropathy Screening Instrument (MNSI) with a cut-off value ≥ 2.5 was used for defining PPN before and 6 months after BS. To evaluate the incidence and progression of PPN, the patients were divided according to the presence (+) or absence (-) of PPN before BS, respectively. Patients with other known causes of PPN were excluded. MetS was defined using the International Diabetes Federation criteria. **Results:** The prevalence of PPN was 21.3% (n = 51) and it was associated with postmenopausal status (p = 0.019) and higher HbA1c level (p = 0.024). In multivariate analysis, PPN was independently associated with post-menopause. The odds ratio for PPN increased 2.8 times in the post-menopause (p = 0.007). After 6 months of follow-up, MetS improved in 73.9% of patients. In PPN (-) patients, the incidence of post-BS PPN was 3.2% (n = 6) and was associated with higher stature (p = 0.024). However, in multivariate analysis, PPN incidence was independently associated with male gender and serum triglycerides. The risk ratio of PPN was 88.8% lower in females and increases 1.2% (95% IC: 0.1%-2.4%, p = 0.009) for each mg/dL increase in the serum triglyceride level over 127.0 mg/dL. In PPN (+) patients, persistence of PPN after BS was 9.8% (n = 5) and associated with higher prevalence of MetS (p = 0.047). On multivariate analysis, body weight was independently associated with PPN persistence. The risk ratio of PPN persistence increased 2.2% (95% IC: 0.3%-4.0%, p = 0.022) for each kg of bodyweight increase over 111.2 kg. **Conclusions:** PPN prevalence is high in severely obese patients with MetS without diabetes, and decreases after BS. New cases of PPN showed an independent association with male gender and serum triglycerides.

E-PO222 GESTATIONAL WEIGHT GAIN IS ASSOCIATED WITH OFFSPRING BODY COMPARTMENT MEASUREMENTS: THE NUTRITIONISTS' HEALTH STUDY NUTRIHS

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Intrauterine environment can induce metabolic programming that predisposes to adiposity related chronic diseases in adult life. We hypothesized that gestational weight gain may influence body compartments and cardiometabolic profile even in young adults. This is a cross-sectional analysis of 124 female participants of the NutriHS aged 28 ± 5 yrs, submitted to questionnaires, clinical examination, blood sample collection and DXA-determined body composition. Metabolic health was defined by normal blood pressure, plasma glucose and lipid levels. Associations of maternal weight gain with outcomes in offspring were tested using multiple linear regression analysis adjusted for covariables as suggested by Directed Acyclic Graphs. Participants' mean BMI was 25.4 ± 4.7 kg/m² (49.6% overweight/obese); 60% were considered metabolically healthy. 81% of their mothers were eutrophic but the majority had inadequate gestational weight gain according to IOM. Despite no association of maternal weight gain with participants' clinical data, correlations to several DXA measurements (total fat: r = 0.23, p = 0.02, trunk fat: r = 0.24, p = 0.02, android/gynecoid fat ratio: r = 0.22; p = 0.03) were detected. In linear regression model 1, adjusted for pregestational BMI and maternal education level, gestational weight gain was associated with offspring BMI, total fat and android-to-gynecoid fat ratio (β = 0.21, p = 0.04). In model 2, adding adjustment for smoking + alcohol use, gestational weight gain was associated only with offspring BMI (β= 0.24, p = 0.01). **Conclusions:** Our findings of independent associations of maternal weight gain with DXA-determined measurements in young women suggest that weight gain during pregnancy may predict body composition in healthy adults. NutriHS cohort will examine the ability of these measurements in predicting cardiometabolic risk.

E-PO223 GLUCOSE AND ENERGY HOMEOSTASIS AMONG DIFFERENT METABOLIC PHENOTYPES: RESULTS FROM THE NUTRITIONIST'S HEALTH STUDY

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Introduction: Changes in the physiological mechanisms that maintain glucose and energy homeostasis may underlie the development of dysmetabolic phenotypes in lean and obese/overweight individuals. **Objective:** To compare components of glucose and energy homeostasis in women with metabolically healthy normal-weight (MHNW), metabolically unhealthy normal-weight (MUNW), metabolically healthy overweight/obese (MHO) and metabolically unhealthy overweight/obese (MUO) phenotypes. **Patients and method:** Cross-sectional study with 105 women (18-45 years): 30 MHNW, 17 MUNW, 28 MHO and 30 MUO. Metabolic health was defined as the absence of cardiometabolic alterations. The standard mixed-meal tolerance test coupled with indirect calorimetry were performed (assessments at -15, 0, 30, 60, 120 and 180 min). The quantifications were: insulin sensitivity (IS) by PREDIM index; glucose, C-peptide, glucagon and GLP-1 areas under the curve (AUC); total insulin secretion by mathematical modeling; energy expenditure, respiratory quotient, carbohydrate and lipid oxidation rate. **Results:** IS was decreased in MUO compared to MHNW ($p = 0.001$). Total insulin secretion and C-peptide AUC were increased in MUO compared to MHNW ($p = 0.01$), and glucagon AUC was decreased in MUO compared to MHNW ($p = 0.02$). Resting energy expenditure (REE) was increased in obese/overweight compared to lean individuals ($p < 0.001$). When the REE was adjusted by body weight (kcal/kg), the values for MHO and MUO were decreased compare the lean groups ($p < 0.001$). The comparison of the values obtained for the phenotypes (MHNW vs MUNW vs MHO vs MUO) detected a linear trend among them of decreasing IS, glucagon AUC and REE kcal/kg, and an increasing of total insulin secretion and C-peptide AUC (p-trends < 0.05). There were no significant difference for metabolic flexibility, respiratory quotient, oxidation rate of lipid and carbohydrate among the phenotypes ($p > 0.05$). **Conclusion:** In young and non-diabetic women, the presence of excess body adiposity was the main indicator of worsening in the components of glucose homeostasis, although a linear trend was detected in the comparison between the phenotypes considering the order MHNW-MUHNW-MHO-MUO. Lower REE/kg values in the MHO and MUO phenotypes demonstrates the increased risk factor for obesity. BMI is not an ideal indicator of metabolic health. However, even in MHO individuals', physiological adaptations may happen to maintain the metabolic parameters within normal range.

E-PO224 GLUCOSE CONTROL AFTER BARIATRIC SURGERY AND LOSS OF EXCESS OF BODY WEIGHT

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Introduction: Obesity is a known risk factor for diabetes. Bariatric surgery advantages on improvement of weight loss and glycemic control are well established. However, it is not well defined if metabolic function improvement is independent of weight loss. **Objective:** To evaluated metabolic glucose control before and after bariatric surgery and its correlation with weight loss. **Methods:** It was analyzed retrospectively clinical and laboratorial data of diabetic and pre diabetic patient submitted to bariatric surgery – gastric bypass (GB) or sleeve gastrectomy (SG). Data were analyzed using SPSS version 17.0. A p value < 0.05 was considered significant. **Results:** All 22 patients were female, mean age was 51.7 +/- 9.7 years, mean weight pre-operative was 124.1 +/- 21.8 kg and mean BMI was 47.4 +/- 7.9 kg/m^2. All patients were using oral hypoglycemic drugs or insulin before surgery. Mean pre-operative fasting glucose was 144,3 +/- 64,5 mg/d and HgA1c was 6.7% +/- 1.1%. Most patients were submitted to GB (18 versus 4). At 24 months after surgery, HgA1c was positive correlated to total weight loss ($r = -0.54$; $p = 0.009$); excess of body weight (EBW) loss ($r = -0.045$; $p = 0.03$) and number of hypoglycaemic agents ($r = 0.41$; $p = 0.05$). There was no statistic difference between surgical groups (GB x SG) in HgA1c (5.5% versus 5.4%; $p = 0.53$) or fasting glucose (85.5 versus 94.2 mg/dL; $p = 0.26$). Total weight loss was higher in GB group (39.3 versus 24.0 kg; $p = 0.01$) but EBW loss was not (28.7 versus 8.3%; $p = 0.08$). **Conclusion:** In this small sample of patients, glucose control improvement was correlated to total weight loss, EBW loss 24 months after surgery. There was no difference in GB or SG groups.

E-PO225 GUT MICROBIOME IN WOMEN WITH OBESITY, NORMAL WEIGHT, ANOREXIA NERVOSA AND CONSTITUTIONAL LEANNESS

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Introduction: Obesity (OB) is a multifactorial condition associated to cardiovascular disease, diabetes, and other disorders. Anorexia Nervosa (AN) is an eating disorder also multifactorial, characterized by discomfort and preoccupation related to body image, commonly associated to other psychiatric illnesses and high morbimortality. It is important to investigate influencing factors of both conditions, such as the human gut microbiota (GM). People with OB and AN may have distinct gut microbiota in relation to a normal weight (NW) population. The GM can influence changes in weight, eating habits and insulin sensitivity. **Objective:** This cross-sectional study was aimed to explore the GM composition and its association with body mass index (BMI) among women with OB, AN, NW or constitutional leanness (CL). **Methods:** Stool samples were obtained from 77 women with OB (n = 20), AN (n = 18), NW (n = 19) or CL (n = 20), 18 to 40-year-old, and 7 of the 9 hypervariable regions (all except V1 and V5) of the 16S rRNA gene were sequenced by next generation sequencing using Ion Torrent PGM. **Results:** The Proteobacteria phylum was the most abundant in OB individuals ($p < 0.001$), mainly due to *Enterobacteriaceae* ($p = 0.021$) and *Bacillaceae* ($p = 0.038$) families. *Dorea* ($p = 0.042$) and *Butyricimonas* ($p = 0.038$) genera were the most abundant bacteria in OB samples. In comparison with OB samples, women with AN were characterized with risen *Gordonibacter* ($p < 0.001$), *Clostridium* ($p = 0.035$) and *Anaerotruncus* ($p = 0.040$) genera, the latter most abundant also than in NW group. Women with CL presented increased *Roseburia* ($p = 0.039$) when compared to AN group, and *Collinsella* ($p = 0.014$) when compared to subjects in the OB group and reduced *Paraprevotella* ($p = 0.025$). NW samples had most abundance of *Oscillibacter* ($p = 0.047$) and *Akkermansia* ($p = 0.029$) genera, unclassified *Clostridiales* ($p = 0.030$) and *Pasteurellaceae* ($p = 0.021$) families. CL samples showed less abundance than OB samples ($p = 0.035$). It was not found clusters in principal component analysis plot of beta diversity among groups. **Conclusions:** This avant-garde study characterized the GM of Brazilian women according to BMI, differentiating the ones with AN from others with only CL. Despite OB being associated with reduced alpha diversity in other studies, we found a rise diversity in OB participants when compared with CN.

E-PO226 PATTERNS OF INTERNET AND TV USE IN PATIENTS WITH OBESITY IN PRIMARY CARE

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Introduction: It is estimated that in Brazil more than a half of the population is overweight. Increased use of the internet and television (TV) are sedentary behaviors that are increasingly common in leisure, which have the potential to negatively impact health outcomes. **Objectives:** This study aimed to explore the prevalence and patterns of internet and TV use in overweight and obese adult patients in primary care. **Materials and methods:** This is an observational cross-sectional study, with data collected between July 2019 and August 2020. Data collection was carried out after signing the informed consent form. An applicable questionnaire was used to identify the profile of the sample and regarding the use of internet and TV and measurement of anthropometric data (weight and height) of patients treated by primary care. The total population was 581 participants, with volunteers ≥ 18 years of age and primary care users as inclusion criteria. The collected data were tabulated and analyzed using the SPS Statistics program. **Results:** The average age of the participants was 46.7 + 15.8 years, the majority being adults (78.7%) and female (76.4%). The mean BMI was 29.3 kg/m^2 (75.2% of the sample is overweight and 62.8% are sedentary). 82.4% of women are sedentary, while only 17.6% of men are in this condition ($p < 0.001$). 68.73% of the sample used the internet, with a greater emphasis on WhatsApp (45.53%) and YouTube (42.44%). 74.54% of the volunteers who used the internet were overweight and obese, while only 25.46% were eutrophic ($p = 0.045$), with an even stronger relationship in the obese volunteers ($p = 0.01$). In addition, overweight and obesity were also more prevalent in TV users (58.17%; $p = 0.01$). **Conclusion:** The results indicate a positive association between internet and TV use with overweight, however there was no significant relationship between physical inactivity and overweight. Larger studies may show other possible associations with obesity.

E-PO227 PERIPHERAL POLYNEUROPATHY AFTER BARIATRIC SURGERY IN SEVERELY OBESE PATIENTS WITH PREDIABETES AND WITHOUT DIABETES: A COHORT STUDY

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Background: The effect of bariatric surgery (BS) on PPN of obese NoDM subjects deserves further investigation. We aimed to evaluate the incidence and progression of PPN after BS in PreDM and NoDM patients and to identify risk factors for PPN. **Methods:** We performed a prospective cohort study in 150 PreDM and 215 NoDM patients who underwent BS, Roux-en-Y gastric bypass (42.0% and 39.5%, respectively), and sleeve gastrectomy (58.0% and 60.5%, respectively). PPN was assessed before and after 6 months of BS using the Michigan Neuropathy Screening Instrument (MNSI) with a cut-off value ≥ 2.5. The patients were divided according to the presence (+) or absence (-) of PPN before BS to evaluate the incidence and progression of PPN, respectively. Patients with other known causes of PPN were excluded. **Results:** Before BS prevalence of PPN in PreDM was 26.0% and in NoDM 18.1% (p = 0.094). Firstly, we looked at the PreDM group. After 6 months of follow-up, glucose levels normalized in 90.1%. The prevalence of PPN was associated with postmenopausal status (p = 0.017) and aging (p = 0.037). In multivariate analysis, PPN prevalence was independently associated with aging and stature. The odds ratio of PPN increased 3.8% (95% CI: 1.0%-6.6%) for each year of age increase over 41.0 years (p = 0.007) and 3.1% (95% CI: 0.3%-6.0%) for each cm of stature increase over 165.0 cm (p = 0.031). The incidence of post-BS PPN (6.3%) was associated with a higher stature (p = 0.028) and lower serum HDL-C (p = 0.035). In multivariate analysis, PPN incidence was independently associated with lower serum HDL-C. The risk ratio of PPN decreased 4.6% (95% CI: 0.5%-8.6%) for each increase in mg/dL in serum HDL-C over 37.7 mg/dL (p = 0.029). PPN persistence decreased to 15.4% with no association in the evaluated parameters. In NoDM, the prevalence of PPN was associated with postmenopausal status (p = 0.050). The incidence of PPN (4.0%) was associated with lower %TWL (p = 0.010) and higher serum triglyceride (p = 0.019). In the multivariate analysis, lower %TWL was independently associated with PPN incidence. The risk ratio of PPN decreases 17.9% (95% CI: 5.6%-28.6%) for each percent increase in %TWL over 22.9% (p = 0.006). PPN persistence decreased to 17.9% with no association in the evaluated parameters. **Conclusions:** Six months after BS, the incidence of PPN was 4.0% and 6.0% in NoDM and PreDM, respectively. In PreDM, PPN was independently associated with lower serum HDL-C and, in NoDM, with lower %TWL.

E-PO228 PREOPERATIVE WEIGHT LOSS AS A BIOMARKER OF BARIATRIC SURGERY RESULTS

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Objective: To assess whether the amount of weight lost before bariatric surgery is associated with a favorable outcome in postoperative weight loss among patients who undergo laparoscopic Roux-en-Y gastric bypass (LRYGB) and sleeve gastrectomy (SG). **Methods:** Two hundred and fifty-one obese patients who underwent bariatric surgery between 2012 and 2017 were evaluated, of whom 170 patients underwent LRYGB and 81 patients underwent SG. Patients were divided into 4 groups based on the percentage of body weight lost before surgery (group 1, greater than 10%; group 2, 5-10%; group 3, up to 5%; and group 4, neutral or gain). Weight, body mass index (BMI), and excess weight loss were collected in postoperative periods with a follow-up of up to 5 years, along with the variation between the initial BMI and the BMI of the analyzed postoperative period (ΔBMI). **Results:** There was no significant difference in BMI and excess weight loss between groups in all periods analyzed after surgery, regardless of the surgical technique employed. The ΔBMI was statistically significant from time 3 to time 48 months in the LRYGB group and, for those submitted to SG, at time 3, 6, and 12 months. **Conclusion:** Although the BMI and excess weight loss data analyzed alone did not show statistical significance, the analysis of ΔBMI was positive, showing that weight loss before bariatric surgery may predict a better outcome in weight loss during the postoperative period.

E-PO229 PREVALENCE OF EXCESS WEIGHT IN STUDENTS OF PUBLIC MIDDLE SCHOOL IN THE TOWN OF BARBALHA – CEARÁ

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Introduction: Obesity is currently recognized as an important public health problem because it has enormous personal, social and economical costs. It is estimated that almost half of the adult world population will have overweight or obesity by 2030. In this scenario, childhood obesity takes on particular relevance, since the prevalence of overweight in childhood increased substantially worldwide in less than a generation. At the Brazil, this reality has been registered since the age of five years, across all income groups and regions. **Objective:** To assess the prevalence of overweight among elementary school students in the city of interior of Ceará. **Methods:** Students from 6th to 9th grade of a selected school were evaluated in 2019. A random drawing of 10 classes was carried out with representation of all grades of the school. Anthropometric data measured were weight and height and the body mass index (BMI) was calculated. Eutrophy was considered the 3 to 84 percentile of BMI, malnutrition < 3 and excess weight ≥ 85, being 85-97 overweight and ≥ 97 obesity. **Results:** 248 students aged 10 to 15 years were evaluated, predominating the female sex (53,23%). The BMI classification showed that 66,53% of students were eutrophic, 6.85% were underweight, 14,52% were overweight and 12,1% were obesity, being 8.46% with a BMI percentile ≥ 99. Overweight was present in 27,58% of male students and 25,75% of the female and malnutrition in 6,03% of boys and 7,57% of girls. Students with 13-year-old had a higher rate overweight (9,67%), while students in the age group of 15 years did not presented overweight. **Conclusion:** From the analysis performed it was found that an important portion of the students has an excess of weight. Therefore, the acquisition of healthy habits in childhood and adolescence it must be a priority for the political, educational and social sectors. The involvement of these sectors is necessary to achieve better results in the prevention and the treatment of this epidemic. It's also worth mentioning that Public policies for child and adolescent health care in schools and further regional studies for the provision of data should be addressed as priorities.

E-PO230 PREVALENCE OF FISH INGESTION IN STUDENTS OF PUBLIC MIDDLE SCHOOL IN THE TOWN BARBALHA – CEARÁ

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Introduction: Fish have big nutritional relevance, due to the high quality of their protein type, in addition to being sources of lipids, polyunsaturated fatty acids such as omega-3, vitamins and minerals, surpassing in biological value other sources of animal origin, such as beef and milk. According to the Food and Agriculture Organization, the recommendation for the consumption of fish meat is twice a week. Several studies concluded that the recommended intake brings benefits such as reduction of cardiovascular diseases, depression, stroke, and Alzheimer's disease. **Objective:** To evaluate the prevalence of fish intake by public school students in a town of Ceará. **Methods:** Students from 6th to 9th grade of a selected school were evaluated in 2019. A random drawing of 10 classes was carried out with representation of all grades of the school. A simple questionnaire on eating habits was applied and consumption ≤ 1 time a week was considered as category 1, 2-3 a week as category 2, 4-5 as category 3 and >5 as category 4. A Body Mass Index percentile from 3 to 84 was defined as normal, < 3 as underweight and ≥ 85 as above normal (overweight as 85-97 and obese as ≥ 97). **Results:** 248 students aged 10 to 15 years were evaluated. Regarding consumption in general, around 73% of students reported consuming fish up to once a week. Thus, most students in all nutritional diagnoses were listed in category 1: 70,59% of those classified as underweight, 69,70% of normal, 75% of overweight and 90% of obese. **Conclusion:** From the analysis of the data presented, it can be concluded that the majority of the evaluated students do not consume the amount of fish recommended by FAO, regardless of the nutritional diagnosis. Thus, as food choices and also their aversions are influenced by individual preferences, ecological, economic, social and cultural factors, it is necessary to carry out interventionist work in order to promote initiatives to increase fish consumption on this population.

E-PO231 PREVALENCE OF FRUIT AND VEGETABLE INGESTION IN STUDENTS OF PUBLIC MIDDLE SCHOOL IN THE TOWN OF BARBALHA – CEARÁ

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Introduction: The World Health Organization has estimated that the inadequate consumption of fruits and vegetables is among the top ten risk factors for the total amount of diseases worldwide. Intake of adequate amounts (5 or more servings per day) can reduce the risk of cardiovascular disease, diabetes, obesity and some types of cancer. Brazilian studies indicate that about 80% of students have inadequate consumption and that there has still been a reduction in the prevalence of children and adolescents who consume them more than 5 times a week. **Objective:** To evaluate the prevalence of fruits and vegetables intake by public school students in a town of Ceará state. **Methods:** In 2019, students from 6th to 9th grade of a selected school were chosen, with a random drawing of 10 classes and representation from all grades. A simple questionnaire of eating habits was given and consumption of ≤ 4 times a week was considered category 1 and ≥5 was category 2. A body mass index percentile from 3 to 84 was defined as normal, <3 as underweight and ≥ 85 as above normal (overweight as 85-97 and obese as ≥ 97). **Results:** 248 students, aged from 10 to 15, participated in the study. Regarding vegetables, 72,17% of those students reported consumption up to 4 times a week. In this context, 66,66% of obese students, 75% of overweight, 73,93% of normal and 58,82% of underweight were listed in category 1. The profile of fruit intake was diversified: 63,33 % of obese and 64,70% of underweight consume fruit 5 or more days a week. 55,55% of overweight students and 55,75% of normal students reported consuming fruits up to 4 days a week. In what concerns the daily consumption of vegetables and fruits, of all students, 18,95% and 39,92% of the students, respectively, reported this pattern of consumption, and among the obese, 56,66% reported the daily consumption of fruits. **Conclusion:** Most students have a consumption below the recommended level and obese students shown a higher pattern of fruit intake. It should be noted that consumption adopted in this age group has serious implications for growth and nutritional behavior throughout life. Therefore, more educational initiatives are needed to promote adequate intake of these foods.

E-PO232 PREVALENCE OF MILK AND DERIVATIVES INGESTION IN STUDENTS OF PUBLIC MIDDLE SCHOOL IN THE TOWN OF BARBALHA – CEARÁ

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Introduction: From the point of view of public health, milk is highlighted in the human nutrition as an essential food. Milk and derivatives assume this role due to the high biological value of their nutrients, being important the consumption by all age groups. From the age of seven years it is recommended to eat 3 to 5 portions/day, in order to meet the mineral needs and ensure the proper formation of bone mass, in addition to prevent diseases and illnesses in adulthood. **Objective:** To evaluate the prevalence of intake of milk and derivatives by students at a municipal school of the interior of Ceará. **Methods:** Students from 6th to 9th grade of a selected school were evaluated in 2019. A random drawing of 10 classes was carried out with representation of all grades of the school. A simple questionnaire on eating habits was applied and consumption ≤ 1 time a week was considered as category 1, 2-3 a week as category 2, 4-5 as category 3 and >5 as category 4. A Body Mass Index percentile from 3 to 84 was defined as normal, <3 as underweight and ≥ 85 as above normal (overweight as 85-97 and obese as ≥ 97). **Results:** A total of 248 students aged 10 to 15 years were evaluated. Regarding eutrophic and underweight students, the consumption of milk and derivatives was up to 1x/week in 40% and 35,29%, and over 5x/week at 31,52% and 29,41% respectively. In contrast, the overweight and obesity students consumed milk and derivatives more than 5x/week in 44,44% and 43,33%, and up to 1x/week in 36,11% and 30%, respectively. **Conclusion:** In contrast to numerous studies that demonstrate that reducing milk and derivatives in the diet constitutes a risk factor for obesity, our sample revealed that such consumption was not shown to be a protective factor for prevalence of overweight. Our results are in accordance with a recent review published in the *New England Journal of Medicine* that suggests that daily consumption of dairy products is not clearly related to the control of weight. Although overweight students showed a higher standard of intake than eutrophic and underweight students, there is still the need for further investigation of the nutritional pattern. Furthermore, the data showed that the majority of students do not consume milk and derivatives daily, contrary to the recommendations of competent authorities. In all cases, it is essential that food security be ensured in all groups.

E-PO233 PREVALENCE OF SARCOPENIA IN WOMEN AFTER ROUX-EN-Y GASTRIC BYPASS

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Objective: To evaluate the prevalence of sarcopenia in women after Roux-en-Y gastric bypass. **Methods:** An observational, cross-sectional, case-control, single-center study was performed. Women aged 18-65 years who underwent bariatric surgery (BG) with Roux-en-Y gastric bypass ≥ 2 years and had stable weight for at least 6 months, were studied. Control group (CG) consisted of non-operated obese matched women. Body composition (BC) was determined by dual-energy X-ray absorptiometry (DXA). Low lean mass (LLM) was defined as appendicular lean mass index (ALM kg/height m^2) < 5.5 kg/m^2. Physical strength was assessed by dynamometer and sit-to-stand test (SST), and performance by the 5-m gait speed test (GST) and Short Physical Performance Battery Tests (SPPB). Sarcopenia was diagnosed in the presence of LLM plus low strength. **Results:** A total of 120 women (50 ± 9.7 years) were included, 60 in each group. All anthropometric and BC parameters were lower in the BG compared to CG, whereas strength and performance were similar. Women with reduced strength had a higher total fat mass and less physical activity ($p < 0.005$). LLM was found in 35% of BG and 18% of CG ($p = 0.04$), and sarcopenia was 28% in BG versus 16% in CG ($p = 0.12$). Sarcopenic women of CG had worst performance in SST ($p = 0.001$) and SPPB ($p = 0.004$). In multivariate analysis, total lean mass (OR: 1.41, 95% CI [1.18; 1.69], $p < 0.001$) and obesity (OR: 38.2 [2.27; 644.12], $p < 0.001$) were associated with sarcopenia. **Conclusions:** Despite great weight loss, the prevalence of sarcopenia was not increased in women after BG in comparison with non-operated obese women and its presence was influenced by total lean mass and obesity.

E-PO234 QUALITY OF LIFE AND THE IMPACT OF SARCOPENIA IN WOMAN WHO UNDERWENT ROUX-EN-Y GASTRIC BYPASS

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Introduction: Obesity is a worldwide problem associated with several comorbidities and psychological distress that can impair quality of life (QoL). Bariatric surgery is an efficient treatment for severe forms of obesity when lifestyle changes and medications are not effective. Sarcopenia is defined as low lean mass plus low strength. The poor physical performance and consequent poor QoL is a great concern in patients after bariatric surgery. **Objective:** To evaluate QoL in sarcopenic and nonsarcopenic women after Roux-en-Y gastric bypass. Design: Observational, cross-sectional, case-control, single-center study. **Methods:** Women aged 18-65 years from a tertiary academic center, who underwent Roux-en-Y gastric bypass ≥ 2 years and had a stable weight for at least 6 months, composed the bariatric group (BG). Patients not able to perform any of the exams, pregnant or in the postpartum period, disable or with chronic active diseases were excluded. Sarcopenia was diagnosed according to European Working Group on Sarcopenia in Older People 2 criteria, and QoL was evaluated using the Portuguese version of the Medical Outcomes Short-Form Health Survey Study (SF-36) which consisted of 8 domains with scores ranging from 0 to 100. The BG was compared to an age and ethnicity-matched non-operated obese women that formed the control group (CG). **Results:** A total of 120 women (60 BG and 60 CG) completed the evaluation. Sarcopenia was diagnosed in 17 (28%) women from BG and 10 (16%) from CG ($p = 0.12$). The SF-36 scores were better in BG vs. CG in seven domains, as follows: physical functioning (82.6 ± 20 vs. 70.2 ± 19; $p = 0.001$); bodily pain (60.5 ± 21 vs. 48 ± 40; $p = 0.02$), general health (75.2 ± 27 vs. 65 ± 20; $p = 0.002$), vitality (58.8 ± 20 vs. 45.8 ± 21; $p = 0.01$), social functioning (78.4 ± 28 vs. 62.9 ± 29; $p < 0.001$), role emotional (69.5 ± 39 vs. 43 ± 33; $p = 0.003$), and mental health (67.5 ± 25 vs. 57 ± 21; $p = 0.01$); role-physical domain did not differ (63.6 ± 41 vs. 53.3 ± 40; $p = 0.15$). SF-36 scores did not differ between sarcopenic BG and CG women, except for the role-emotional domain that was better in the BG (80 ± 38) vs. CG (65 ± 37) ($p = 0.03$). No differences were observed in the SF-36 domains comparing sarcopenic and non-sarcopenic patients of the BG. **Conclusion:** QoL was better in women with stable weight after Roux-en-Y gastric bypass than in non-operated obese women, and it was not affected by the presence of sarcopenia in this group.

E-PO235 SERUM LEVELS OF 25-HYDROXYVITAMIN D AND GLYCATED HEMOGLOBIN IN OBESE PEOPLE WITHOUT DIABETES IN SOUTHERN BRAZIL: A CROSS-SECTIONAL STUDY

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Background: Hypovitaminosis D is associated with obesity. We assessed whether serum levels of 25 hydroxyvitamin D (25OHD) were associated with classical and no classical cardiovascular risk (CVR) markers in obese candidates for bariatric surgery. **Methods:** Cross-sectional study on 511 grades II and III obese participants without diabetes, no use of antihypertensive medication, median of 33 years of age. 25OHD serum levels and its association with blood pressure, serum glucose and lipids, anthropometric data, physical activity, solar exposition time (SET), and CVR (Cardiac Risk Ratio – CRR – and Framingham 30 years score) measures. Associations were analyzed according to 25OHD quartiles with an ordinal logistic regression model. **Results:** On a global analysis BMI and glycemia were associated with 25OHD quartiles ($p = 0.037$ and $p = 0.017$). SET was increased on higher 25OHD quartiles ($p < 0.001$). On the regression model, only SET and HbA1c were independently associated with 25OHD serum levels ($p < 0.001$) and the CRR was borderline ($p = 0.055$). **Conclusion:** In severely obese individuals in southern Brazil, there is an association between being in the lower quartile of 25OHD with higher levels of HbA1c and an association between being in the lower quartile of serum 25OHD with a greater chance of decreased hours of SET. As an increase in HbA1c is a no classical CVR marker and the p-value for a classical marker, the CRR was borderline, an assessment of the effect of maintaining normal serum levels of 25OHD on HbA1c and CVR of obese people should be sought.

E-PO236 WEIGHT LOSS IN PATIENTS UNDERGOING INTENSIVE AND CONTINUOUS CARE IN A SECONDARY HEALTHCARE SYSTEM

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Introduction: Obesity has been defined for a long time as a condition which was caused by an imbalance between calories consumed and calories expended, and could be controlled only by changing diet. However, nowadays, obesity is recognized as a chronic disease and affects more than 50% of Brazilian population. Therefore, we understand that obesity is multifaceted and to control it is necessary a continuous and multidisciplinary approach. **Objective:** To evaluate weight loss and BMI changes in patients who participated in an intensive and multidisciplinary care program. **Methods:** Retrospective study carried out for a 90 days period during 2019 at a secondary healthcare system. Patients were submitted to 11 weekly group meetings which had educational lectures by a multidisciplinary team (nutritionists, endocrinologists, psychologists, physical educators and nurses) with the objective of stimulating changing eating habits and weight loss. Furthermore, in every meeting the weight, waist circumference, casual blood glucose and blood pressure were evaluated by nurses and nutritionists. The total population were 82 participants and the inclusion criteria were patients aged ≥ 18 years. **Results:** The studied population consisted of 78 women (95,1%) and 4 men (4,9%) with a mean age of 54 years. At the beginning of the study, the mean values of body weight and BMI were 86 kg and 33,7 kg/m², respectively. 23,8% were overweight, 40% had obesity class I, 22,5% had obesity class II, 12,5% had obesity class III and others were eutrophic. 57% had previously consulted a nutritionist, before the study, to treat obesity. At the end of the intervention, the mean body weight was 84,5 kg and the BMI was 33,10 kg/m², showing a difference from the beginning of 2,07 kg ($p < 0,001$) in body weight and 0,79 kg/m² ($p < 0,001$) of BMI. Regarding the classification of obesity, there was also a significant improvement ($p < 0,001$), 2,4% underweight, 1,2% eutrophic, 28,0% overweight, 37,8% obesity class I, 22,0% obesity class II and 8,5% obesity class III. Patients which had a degree of attendance ≥ 75% had greater weight loss ($p = 0,003$). **Conclusion:** The intensive and multidisciplinary approach of obesity proved effective in reducing participants' weight. Results could be more effective if all participants had 100% of attendance at the weekly meetings. Furthermore, larger studies can be carried out in a larger period of time to show the importance of the maintenance of long-term treatment.

OUTROS

E-PO237 A CHALLENGING CASE OF HYPERINSULINEMIC HYPOGLYCEMIA

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Case report: A 36-year old woman, since 2012 presenting symptomatic, moderate and severe hypoglycemia episodes with hyperinsulinemia, without lesion location. She had used oral glucocorticoids for 3 years, in attempt to avoid hypoglycemia, resulting in weight gain (20 kg) and cushingoid features. In 2018 she was hospitalized, with the need of continuous intravenous glucose, and short-acting octreotide resulted in relative improvement of hypoglycemia. She underwent a laparotomy with excision of two pancreatic nodules visualized by transoperative ultrasound, but with no resolution of hypoglycemia and pathological report of normal pancreatic parenchyma. She was given a long-acting somatostatin analogue in 2019, but with unsatisfactory response. Several imaging tests were performed along these years in attempt to locate the insulin-producing tumor (including MRI, echoendoscopy, Octreoscan and PET-CT Gallium-68 DOTATATE), without success. Then, it was decided to excise the head of the pancreas, the only place with a minor increase of radiopharmaceutical concentration on PET-CT. Thus, the patient underwent a duodenal pancreatectomy in 2019, with prolonged hospital stay because of post-surgical complications (biliopancreatic-cutaneous fistula, bloodstream infections, endocarditis and septic pulmonary embolism); during hospitalization, the patient did not present symptomatic episodes of hypoglycemia, with occasional hyperglycemia. The pathological report identified only a focus of low-grade pancreatic intraepithelial neoplasia. Some months after hospital discharge, it was noticeable the recurrence of severe hypoglycemia, unrelated to food intake, alternated with harsh hyperglycemia. Laboratorial tests identified hyperinsulinemic hypoglycemia again. Clinical management with acarbose and GLP-1 analogue reduced glycemic variability and symptoms with discrete improvement of hypoglycemia intensity. **Discussion:** Persistent hyperinsulinemic hypoglycemia is mainly caused by pancreas tumor (insulinoma) or pancreatic beta-cell hyperplasia. The localization and small size of most insulinomas complicate the diagnosis and surgical treatment. There are different methods of preoperative localization, with individual sensitivity up to 95%, and negative results can be distressful, with poor surgical outcomes. **Final comments:** This represents a strenuous case of hyperinsulinemic hypoglycemia, unresolved despite several investigative and therapeutic approaches.

E-PO238 ASSOCIATION BETWEEN VISCERAL ADIPOSE TISSUE THICKNESS AND NONALCOHOLIC FATTY PANCREAS DISEASE

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Introduction: The Nonalcoholic fatty pancreas disease (NAFPD) is the fatty replacement of pancreatic parenchyma, being often associated with obesity, metabolic syndrome, type 2 diabetes mellitus, and aging. The visceral fat is drained by the port system and is related to the metabolic syndrome, being an important risk factor for pancreatic fat infiltration. Ultrasonography has been used both to quantify NAFPD and to measure the thickness of visceral fat. **Objective:** To evaluate the association between visceral fat tissue thickness and NAFPD. **Method:** Over an 18-month period, a sample of 576 individuals was evaluated. The visceral fat thickness and the degree of NAFPD were evaluated by ultrasonography. We subdivided the NAFPD into normal, mild (grade I), moderate (grade II), and severe (grade III). The ROC (Receive Operator Characteristic Curve) was used to find the cut-off point of the visceral fat thickness that determines the degree of NAFPD. **Results:** Male: 217 (37.7%), female: 359 (62.3%), and average age: 65.07 ± 8.27 years. Cut-off point of visceral fat thickness: Mild NAFPD: 129 (22.4%), moderate NAFPD: 75 (13.0%), and severe NAFPD: 40 (6.9%). Normal Pancreas = 3.53 cm; mild NAFPD = 4.29 cm, moderate NAFPD = 5.04 cm, and severe NAFPD = 5.78 cm. **Conclusion:** The thickness of visceral fat measured by ultrasonography is a useful method and seems able to predict the risk of NAFPD. **Keywords:** Visceral fat; nonalcoholic fatty pancreas disease; ultrasound.

E-PO239 ATYPICAL MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 PRESENTATION: CASE REPORT

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Case report: Female patient, 48 years old, hypertensive, hypothyroidism after radiotherapy due to papillary carcinoma in 2008, in February 2018 presented hypoglycemic crisis performing an abdomen MRI which showed an expansive hypovascularized and heterogeneous lesion, with lobulated contours involving the head and body of the pancreas, partially exophytic measuring 8.2 x 8.1 cm, with pancreatectomy being performed, the histopathological analysis of the lesion confirmed insulinoma, evolving with diabetes after surgery. One year later this patient sought medical care for complaints of cramps, adynamia, paraesthesia in hands and foots. Laboratory tests were requested that showed phosphorus 2,9 mg\dL (RV:2,5-4,5), calcium 8,9 mg\dL (RV: 8,5-10), magnesium 1,9 mg\dL (RV: 1,3-2,7), PTH 128 pg\mL (RV: 12-88) and calcium in 24 hour urine 240 mg, confirming primary hyperparathyroidism (HPT). A genetic study was carried out that showed variant c.654 + 1 G> T in heterozygosis, confirming multiple endocrine neoplasia type 1 (MEN-1). Patient denies family history of MEN 1. **Discussion:** MEN 1 has a prevalence of 0.001% to 0.25%, is an autosomal dominant syndrome of almost complete penetrance with a gene located on chromosome 11 (11q13), consists of the combination of tumors at the level of the parathyroid, pituitary and endocrine portion of the pancreas, requiring the presence of two of these manifestations for diagnosis. Most of the cases are hereditary being a sporadic minority like that of the present case, there is also a different presentation compared to the literature, considering that the first manifestation was not HPT, as well as the occurrence of insulinoma that is present in about 4% of the cases of MEN 1. The genetic study is fundamental for diagnostic confirmation, being indicated for patients with clinical diagnosis or suspected Wermer's syndrome, as in the present case. **Conclusion:** It is a rare case of multiple endocrine neoplasia type 1 with atypical presentation, with initially gastrointestinal and later parathyroid involvement, in a patient without a family history of MEN 1.

E-PO240 CASE REPORT: ADRENAL ONCOCYTIC NEOPLASM – RARE ADRENOCORTICAL SUBTYPE

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C. M. S. M. O., female, 42 years old. In 2013, she underwent abdominal computed tomography to evaluate nephretic colic and incidentally found a small right adrenal nodule. Due to a new episode of pyelonephritis complication in 2018, she performed another imaging scan, showing a result of a 7 cm and 36 grams tumor. Performed adrenalectomy, without prior hormonal exams. The anatomopathology showed less than 5% of neoplasia with clear cells, necrosis 2% of the neoplasia, solid growth pattern with large nests and thick trabeculae, low histological grade (4 mitoses/50 field of great increase), angiolymphatic invasion, focal venous invasion, Pt3 staging, free margins. The presence of intravascular neoplastic embolization and sinusoidal invasion with areas of necrosis was confirmed, besides Bisceglia and col with a higher criterion (venous invasion) and two lower (presence of necrosis tissue and sinusoidal invasion). Test results: Ki-67 positive < 1%, anti-KI67/Clone MIB-1. Such reports classify the tumor as malignant. Thus, the extraction surgery was indicated. Currently, in use of mitotane and levothyroxine. Primary oncocritical neoplasms of the adrenal are rare and asymptomatic, usually discovered incidentally, most are non-functional benign tumors. It's impossible to differentiate the benignity of the tumor through its characteristics in the image, so the differential diagnosis is through surgical excision. After removal, therefore, anatomopathological analysis is essential. There is no specific risk factor and the pathogenesis remains unknown. Studies suggest that the excess of mitochondrial proliferation can compensate the presence of toxic substances, others believe that the mitochondria possess their own DNA, so it can codify their own proteins and thus suffer a process of genomic mutation. Adrenalectomy is considered the appropriate treatment. Mitotane monotherapy is an effective treatment for early disease, when inoperable and for high tumor burden by its property of limitation growth and bioactivity of adrenal tissue because of its probable generation of oxidative stress. Patients with early advanced disease and high tumor burden should combine therapy of mitotane and cytotoxic drugs. It can also be used in post-operative. Since the first description in 1986, there are about 200 cases worldwide, with a rate of 20% malignancy. The great problem of the oncocytic tumor is the low capacity to predict its biological behavior and establish a prognosis.

E-PO241 ESTROGEN-SECRETING ADRENOCORTICAL TUMOR IN A POSTMENOPAUSAL WOMAN: A CHALLENGING DIAGNOSIS

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Adrenocortical carcinoma (ACC) is highly malignant in adults and mostly produce cortisol and androgen. Estrogen-secreting adrenocortical carcinomas are extremely rare, tend to be larger and have worse prognosis compared with other types of ACCs. We report the case of a 58-year-old woman with an estrogen-secreting ACC. The patient presented with bilateral breast enlargement and postmenopausal genital bleeding. After evaluation by a Gynecologist, the patient was submitted to a hysterectomy, with no improvement of breast enlargement. There was no history of exogenous steroids use. She was referred to hormonal assessment by an Endocrinologist, who observed high estradiol (818 pg/mL) and testosterone (158 ng/dL) levels and no suppression of cortisol after an overnight dexamethasone test (12.5 mcg/dL). These hormonal findings indicated an adrenal tumor with mixed secretion. The gonadotropins levels were abnormally low (FSH 0.3 mU/mL; LH 0.7 mU/mL) for a menopause woman. Radiological assessment showed a tumor measuring 12 cm in the right adrenal. The patient underwent an open right adrenalectomy and pathological examination revealed an ACC with a Weiss' score of 6. The final tumor classification was pT2N0M0 and the patient received additional adjuvant mitotane therapy. She also received replacement therapy with prednisone and fludrocortisone for adrenal insufficiency during mitotane therapy. Three months after surgery, the bilateral breast enlargement improved and the estradiol level was 53 pg/mL. However, she did not tolerate the gastrointestinal adverse effects of mitotane and the drug was withdrawn after 23 months. The patient remained in good health without any local recurrence or metastasis at 5 years after treatment, when estradiol (81 pg/mL) and testosterone (170 ng/dL) increased levels were detected. A retroperitoneal nodule measuring 1.8 x 1.2 cm was shown in the abdominal nuclear magnetic resonance and patient was submitted to a second surgery. The pathological finding was a recurrence of the estrogen-secreting ACC. After the second procedure, patient achieved normal estrogen and androgen serum levels and since then she has been followed for 3 years. The overall survival was 8 years after diagnosis. In conclusion, although extremely rare, the diagnosis of an estrogen-secreting ACC should be considered as an etiology in postmenopausal women presenting with bilateral breast enlargement, bleeding and increased estrogen secretion pure or prevailing.

E-PO242 EVALUATION OF THE CROSS-SEX HORMONAL TREATMENT EFFECTS ON FEMALE TRANSGENDER PATIENTS

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Gender's Dysphoria (GD) consists of suffering over the incongruence between birth and estimated sex, usually started in childhood and adolescence. Treatment is based on multidisciplinary follow-up associated with the use of cross-sex hormonal treatment (CHT). Such individuals known as transgenders, presents difficulties of professional ascension and are frequently associated with psychiatric pathologies. There are still considerable doubts about the safety of CHT and the psychosocial profile of these patients. The present study aimed to evaluate female transgender patients enrolled in a public hospital in Rio de Janeiro (RJ) through retrospective analysis of 123 records from the Gender Dysphoria outpatient clinic, identifying side effects and social factors. Among the present data, 90 patients were elected for analysis and the onset of Dysphoria was observed under the age of 10 years. Relevant occurrence of discrimination and attempted self-extermination were found 87% and 25.6%, respectively. Frequent use of estradiol via the transdermal route proved to be safe, once there was no occurrence of cardiovascular or neoplastic events. Cross-sex hormonal treatment adequately prescribed and monitored was beneficial in the cases evaluated; however, more studies are needed for further investigation.

E-PO243 IMMUNE-MEDIATED ENOCHIONOPATHIES SECONDARY TO THE USE OF IPILIMUMAB AND NIVOLUMAB: A CASE REPORT

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F. F. C., male, 66 years, previously healthy. Diagnosed with metastatic bladder urothelial carcinoma in the lung in October 2018. He underwent transurethral bladder resection. From November to December, he made use of antineoplastic with BCG however didn't respond to the treatment. The following year, the patient was included in a research protocol with ipilimumab 3 mg/kg and nivolumab 1 mg/kg, with 2 cycles in May, with an interval of 4 weeks. He needed to stop ipilimumab after 2 cycles due to hepatitis G2, starting with nivolumab 480 mg, 5 cycles for two months. After 10 days of the fifth cycle, the patient sought emergency care with weight loss, polyuria and disorientation, diagnosing diabetic ketoacidosis. Blood glucose greater than 600 mg/dL glycated hemoglobin of 8.2%, peptide C: 0.61 ng/mL, anti-ICA antibodies: less than 0.02 nmol/L, anti-insulin antibodies: less than 0.02 nmol/L, TSH: 3.7 mUI/L, free T4 1.4 ng/dL, cortisol (8h) 12.1 µg/dL, IGF-1 168 ng/mL, RL 2.2; total testosterone 272 ng/dL, Trab: negative, Ac anti-TPO: negative and Ac anti-Tg: negative. On 02/27/2020 he started immunotherapy 480 mg every 4 weeks. In March, he presented postural hypotension, weight loss and episodes of hypoglycemia with difficulty in adjusting the insulin dose. New tests: TSH: 17.41 mUI/L free T4: 0.99 ng/dL; basal cortisol: 5.85 ug/dL. Then, he was hospitalized for 4 days to assess adrenal insufficiency secondary to ipilimumab. He presented vomiting, weight loss and severe postural hypotension. Insulin tolerance test was performed, the result of which showed basal cortisol of 7.3 µg/dL and cortisol in hypoglycemia of 10.3 µg/dL. The last restocking exam in May 2020 showed stable disease -RECIST 3,2 -previous 3,4. The immunotherapy modulate the immune system used in current cancer treatments has brought significant results. However, it often has adverse immunomediated effects that affect healthy body tissues and may promote endocrinopathies. Nivolumab is a monoclonal antibody, which acts under programmed cell death protein 1. Ipilimumab is an anti-cytotoxic T-lymphocyte associated protein 4. Both had a good response against tumour cells. However, studies about the adverse effects are scarcely brought by these medications and what the long-term effects are. Patients using monoclonal antibodies for immunotherapy should be monitored for the measurement of cortisol, TSH, T4l, ACTH and TSH, glycated hemoglobin and rapid glucose test, in order to avoid adverse reactions.

E-PO244 LITHIUM RELATED TO MULTIPLE ENDOCRINE DISTURBANCES: A CASE REPORT

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Clinical case: A 58-years-old female was hospitalized to psychiatric treatment presenting sleepiness, constipation, hypercalcemia and worsening in renal function. The initial exams revealed elevated total serum calcium (11.67 mg/dL), albumin 3.67 g/dL, phosphorous 1.12 mg/dL, intact PTH 385 pg/mL, creatinine 1.7 mg/dL, 25-hydroxyvitamin D 20 ng/mL and sodium 157 mmol/L. Intravenous hydration and zoledronate were initiated to improve symptomatic hypercalcemia. She had bipolar disorder being treated with lithium for more than 35 years, which had been replaced by quetiapine. She also had hypothyroidism diagnosed 25 years ago and metastatic retroperitoneal leiomyosarcoma. She complained of polyuria (9 L/d), polydipsia and nocturnal enuresis in the previous three months. She had no history of nephrolithiasis or fragile fractures. After zoledronate, polyuria remained despite calcium level improvement. Basal plasma osmolality of 321 mosm/kg, with hypernatremia (Na+: 155 mmol/L) and hypoosmolar urine (128 mosm/kg) prompt the diagnosis of diabetes insipidus dismissing the water deprivation test. After desmopressin the maximum urine osmolality was 166 mosm/kg, confirming the diagnosis of complete nephrogenic diabetes insipidus (NDI). Hydrochlorothiazide and amiloride were initiated with partial improvement of polyuria. Abnormal PTH secretion persisted suggesting primary hyperparathyroidism, in spite of this, parathyroidectomy was not considered due to the clinical conditions. **Discussion:** Lithium is an effective treatment for bipolar disorder, but can adversely lead to endocrine disturbances. Lithium is the most common cause of acquired NDI by decreasing water reabsorption capacity due to reduced aquaporin-2 expression. Hydrochlorothiazide in association with amiloride can be used to treat NDI by inhibiting lithium reabsorption and decreasing urine volume up to 50%. Moreover, lithium may lead to hypercalcemia and hyperparathyroidism, related to insensitivity of calcium-sensing receptor in parathyroid gland. If hypercalcemia persists after lithium withdrawal, cinacalcet is a therapeutic option when surgery is not possible. **Conclusion:** Chronic lithium treatment is related to endocrine disorders development. Polyuria due to lithium related NDI can be masked by polyuria secondary to hypercalcemia.

E-PO245 LIVER DYSFUNCTION MONITORING IN PATIENTS WITH TURNER SYNDROME FOLLOWED AT THE ENDOCRINOLOGY UNIT OF A TERTIARY HOSPITAL IN THE FEDERAL DISTRICT

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Introduction: Turner syndrome (TS) is one of the most common chromosomal abnormalities in females, resulting from the X chromosome's total or partial loss. Liver enzymes increase are frequently found in TS, even though it doesn't always reflect a liver disease. Transient elastography (TE) has been widely used as a non-invasive and reproducible method to evaluate liver fibrosis by liver stiffness measurement (LSM) and liver steatosis by controlled attenuation parameter (CAP). **Objectives:** To evaluate TE as a tool to identify liver dysfunction and its relationship with clinical and biochemical finds in a group of patients with TS. **Methods:** Cross-sectional observational study with a quantitative approach. LSM and CAP were measured by TE and compared to liver enzymes, aspartate aminotransferase (AST), alanine aminotransferase (ALT), bilirubin, alkaline phosphatase (ALP), gamma-glutamyl transferase (GGT), and metabolic profiles. Anthropometric measurements, previous recombinant human growth hormone (rhGH) use, and comorbidities were also considered. **Results:** TS patients had an average age of 28.6 ± 9.1 years, and 42.8% had a 45,X0 karyotype. Overweight was found in 14.3%, and 33.3% were obese. LSM identified fibrosis grade I (F1) in 33.3% and grade II (F2) in 4.8% of patients, related to a higher level of ALT ($p = 0.031$). While CAP identified steatosis grade I (S1) in 4.8%; grade II (S2) in 4.8% and grade III (S3) in 33.3% related to a higher level of ALT ($p = 0.049$), GGT ($p = 0.049$) and triglycerides ($p = 0.04$). The presence or absence of fibrosis was not related to rhGH use in childhood ($p = 0.221$) or the type of karyotype ($p = 0.673$). **Conclusion:** Hepatic changes in TS are frequently silent, with many patients presenting hepatic steatosis and even degrees of fibrosis, with inconsistent previous alteration in laboratory tests and without clinical signs. TE use in the early identification of liver dysfunction appears as a new tool for monitoring indolent liver diseases in TS patients.

E-PO246 PREVALENCE OF HYPOVITAMINOSIS D IN HOSPITALIZED PATIENTS WITH COVID-19

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Introduction: Vitamin D has important functions in addition to calcium homeostasis and bone mineralization, which include stimulating innate immune responses and modulating adaptive immunity. In almost all cells of the immune system there are vitamin D receptors (VDR) and vitamin D3 metabolizing enzymes. Bearing in mind the various effects of 1,25 (OH) 2-vitamin D3 on immune cells, recent studies have reported antiviral effects of vitamin D, hindering viral replication and acting as anti-inflammatory and immunomodulatory factors. Studies have reported low levels of vitamin D (25OHD) in patients with infection for COVID-19. In this context, it is possible that vitamin D has a role in reducing the severity of SARS-COV-2 infection, since important and fatal complications of this disease, such as pulmonary involvement with respiratory distress syndrome or the thrombotic complications, are due, roughly, to deregulated inflammatory processes. The aim of this study was to evaluate the prevalence of hypovitaminosis D (25OHD < 20 ng/mL) in patients with COVID-19 infection admitted to the hospital. **Patients and methods:** cross-sectional and observational study, still ongoing, started in September 2020. All patients > 18 years old, admitted to the hospital with COVID-19 infection had 25OHD measured. The COVID-19 infection was confirmed through the viral detection by reverse transcriptase chain reaction (PCR) obtained from the nasal swab. The 25OHD was collected up to the third day of hospitalization, and measured by immunochemiluminescence and patients classified as sufficient (>30 ng/mL), and deficient (10-30 ng/mL) or insufficiency (<10 ng/mL). **Results:** Until now 51 samples were collected from 26 males (52.5 ± 12.8 yrs) and 25 females (57.4 ± 15.1 yrs), the mean age were (54,8 ± 14,0 yrs) 84,31% declared themselves white and the mean of BMI were 29.50 ± 4.51 kg/cm². The mean level of 25OHD was 19.8 ± 9.13 ng/mL and 29 (56.8%) were 25OH deficient, distributed equally between sex. Seven patients (13.7%) had 25OHD below 10 ng/mL (7.8 ± 1.9 ng/mL). Arterial hypertension and obesity were the most frequently observed comorbidities. **Conclusions:** We observed a prevalence of 56.8% and 13.7% of vitamin D deficiency and insufficiency, respectively, in our hospitalized patients with COVID-19. Most patients presented at least one comorbidity.

E-PO247 PREVALENCE OF RECURRENT GERMLINE MEN1 MUTATIONS AND MUTATIONAL WARM SPOTS IN BRAZILIAN COHORT WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1

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Context: Despite the high number of different germline mutations (~500) reported in the MEN1 gene causing multiple endocrine neoplasia type 1 (MEN1), nine MEN1 variants accounting 20% of the mutations have been defined by Lemos & Thakker (2008) as mutational warm spots. It is unknown if these nine warm spots are equally represented in different populations and geographic areas. **Objectives:** to investigate the occurrence of regional variations of prevalence as of recurrent germline MEN1 mutations as of nine mutational warm spots in a large Brazilian MEN1 cohort. **Methods/Patients:** Overall, 102 unrelated apparently MEN1 index cases were included harboring germline MEN1 mutations identified by Sanger Sequencing (SS) and/or by Target Next Generation Sequencing (t-NGS): t-NGS (59), MLPA (3) and SS (40). **Results:** Recurrent MEN1 mutations corresponded to 12% (8/66) of the all mutation types identified and were present in 44 index cases (43%, 44/102). Five out of the 9 warm spots were found: 3 recurrent (3, 8 and 9 times) and 2 non-recurrent warm spots (c.628_631delACAG, p.T210Sfs*13; c.784-9G>A, IVS4). The five warm spot mutations were found in twenty-two patients (22%; 22/102). The eight recurrent mutations were: 1. c.654+1G>T (IVS3) in 14 cases (13.7%; 14/102); 2. c.249_252delGTCT (exon 2, p.I85Sfs*33, warm spot) in 9 cases (8.8%; 9/102); 3. c.1546_1547insC (exon 10, p.R516fs*15, warm spot) in 8 cases (7.8%; 8/102); 4. c.1579C>T (exon 10, p.R527*) in 3 cases (2.9%; 3/102); 5. c.1243C>T (exon 9, p.R415*, warm spot) in 3 cases (2.9%; 3/102); 6. c.201_201delC (exon 2, p.A68Pfs*51) in 3 cases (2.9%; 3/102); 7. c.685_685delC (exon 4, R229Afs*52) in 2 cases (1.9%, 2/102) e; 8. c.1238T>G (exon 9, p.L413R) in 2 cases (1.9%, 2/102). Genealogies allowed to identify cases with c.201_201delC as family members previously described for us with founding effect. At least 9 apparently unrelated index cases with the c.654+1G>T variant had the same origin suggesting a founding effect to this mutation that is not between the 9 warm spots reported. **Conclusions:** Comparing to the literature, a similar prevalence as of warm spot mutations (22%) as recurrent mutations (43%) was observed. However, only 5 of the 9 warm spots were represented suggesting regional differences by non-occurrence of 4 warm spots and by 2 non-recurrent warm spot mutations. Our data reinforce the occurrence of warm spots, however, regional differences may occur and, in part, are influenced by founding effects.

E-PO248 RETROSPECTIVE STUDY OF THE PREVALENCE OF ENDOCRINE METABOLIC DISEASES IN PATIENTS WITH ACUTE CORONARY SYNDROME SEEN AT A PRIVATE SERVICE IN BELO HORIZONTE/MG

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Introduction: The worldwide prevalence of endocrine metabolic comorbidities, such as type 2 diabetes mellitus (DM), dyslipidemia and obesity, has grown considerably in recent years. Its manifestations predispose to coronary artery disease (CAD), responsible for a high mortality rate from coronary diseases. **Objective:** To assess the prevalence of endocrine metabolic diseases in patients admitted with acute coronary syndrome (ACS) and associate them with cardiovascular risk factors. **Patients (materials) and methods:** We analyzed 241 patients admitted with ACS, in a private service, in Belo Horizonte from January 2018 to April 2019. The variables considered were age, sex, comorbidities (diabetes, dyslipidemia and systemic hypertension arterial pressure), smoking and muscle mass index (BMI). The data were stored, in a database, and used in multiple logistic regression and chi-square test that assessed the significance. **Results:** Of the 241 patients, the average age was 68 years old, with a predominance of Caucasian (70%), men (55%) and non-smokers (82%). Regarding chronic diseases, 42.8% were diabetic, 61.9% dyslipidemic with a predominant BMI of 33.7 kg/m² (grade I obesity) and 79.4% were hypertensive. It was detected that more than 50% of the sample, presented endocrine metabolic diseases, dyslipidemia and obesity, associated with the risk of acute coronary syndrome. In the correlation about the highest risk of death, the following results were obtained: sex ($p = 0.286$), hypertension ($p = 0.326$), dyslipidemia ($p = 0.714$), diabetes ($p = 0.942$), emphasizing that there was a statistically significant age ($p = 0.018$) as a predictor of severity. **Conclusion:** The study showed that the majority of admitted patients with acute coronary syndrome had endocrine metabolic diseases, which are significant risk factors for cardiovascular deaths.

E-PO249 STRATEGIC SELECTION OF SEQUENTIAL SURGICAL THERAPY ACHIEVED THE HIGHEST RESOLUTENESS AND THE LOWEST MORBIDITY IN AN INDEX-CASE WITH DE NOVO MEN1 MUTATION PRESENTING INSULINOMA AS THE FIRST CLINICAL MANIFESTATION OF MULTIPLE ENDOCRINE NEOPLASIA TYPE1

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Description: R. S. M., female, 40 y, referred in 2016 with history of 8y of crisis suggestive of catecholamines excess associated with hypoglycemia (~40 mg/dL) occurring mainly during fasting and that improved after sugar ingestion being eventually combined with neuroglycopenic symptoms. Due to hyperinsulinemic hypoglycemia, CT images were performed and multiple pancreatic neuroendocrine tumors (pNETs) were identified. Additional findings of hypercalcemia due to primary hyperparathyroidism resulted in clinical diagnosis of multiple endocrine neoplasia type 1 (MEN1). 99Tc-SESTAMIBI scintigraphy showed 2 parathyroid glands besides hilar nodule previously seen by octreoscan. 68GaPET/CT defined this last lesion as endobronchial and located multifocal pNETs. Selective intra-arterial calcium injection revealed insulinoma in pancreas tail. Bronchoscopy confirmed endobronchial tumor. Menses were regular with normal pituitary hormones, except for mild hyperprolactinemia (41-61 ng/mL) and microadenoma, without galactorrhea. She had history of surgery for uterine myoma at 29 y (1.5 kg). She harbored a germline MEN1 mutation, in heterozygous, missense (c.851C>A. p.A284E, exon6) absent in parental generation. Due to imminent hypoglycemia-related morbidity, subtotal pancreatectomy was performed revealing several primary pNETs from microadenoma up to 1.8 cm, IHQ + to insulin in the largest one with Ki67 2% and 1 mitosis/10 CGA (NET grade 1; T1pN0M0). Resolution of hypoglycemia was reached without diabetes or exocrine pancreatic deficiency. After 6 months, due to potential malign risk, left lobectomy was performed revealing an atypical and solitary bronchial NET (3 mitosis/10 CGA, Ki-67 ~15-20% and up to 25-35% at the "hot spots" area, T1N0M0; grade 2). After 6 months, due to metabolic morbidities, subtotal parathyroidectomy resulted in normal function of parathyroid stump two years after. **Discussion:** "De novo" mutation occurs in up to 14% in MEN1. Insulinoma is the first and unique manifestation in up to 10% being mainly diagnosed before 40y. A history of hypoglycemia, uterine myoma and multiple pNETs of young age-onset are clues to diagnose MEN1. By indication of multiple surgeries, a chronological strategy of treatment was adopted resulting in the highest resoluteness and lowest morbidity based on, initially, sequential exclusion of fatal hypoglycemia-related risks followed by removal of potential malignancy risks and, finally, correction/prevention of metabolic complications.

E-PO250 WOLFRAM SYNDROME: CASE REPORT

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Case report: Female patient, 20 years old, with a history of consanguineous parents, was diagnosed with type 1 diabetes at 4 years old (2003). In 2015, she presented with progressive low visual acuity, frequent eye pain and mydriatic, slowly photoreactive and pale pupils. When investigating it, the diagnosis of bilateral optic atrophy was set. In June 2016, she had headaches associated with nausea, photophobia, phonophobia and osmophobia. In October 2016, audiometry revealed bilaterally lowered 6k and 8k thresholds. In January 2017, she was diagnosed with diabetes insipidus. In October 2017, suspecting of Wolfram syndrome 1 (WS1), a genetic study was requested and the diagnosis was confirmed. Results showed a pathogenic variant in homozygosis, in the WFS1 gene (4p16.1; c.1941C>A – p.Cys647, exon 8). During evolution, she presented with initial insomnia, auditory and visual hallucinations, psychomotor agitation, cerebellar ataxia, depressive symptoms, suicidal ideation and neurogenic bladder. The patient is still in multidisciplinary follow up. **Discussion:** WS1 is a rare autosomal recessive neurodegenerative syndrome composed by several pathological conditions, mainly diabetes insipidus (DI), diabetes mellitus (DM), optic atrophy (OA) and deafness (D), acromion DIDMOAD. It's prevalence varies from 1-9/1.000.000 inhabitants. There can be psychiatric, urinary and gastrointestinal disturbances. The genetic alteration occurs in the WFS1 gene that encodes for the production of wolframin protein. The wolframine, located in the endoplasmic reticulum (ER), participates in the calcium metabolism, transmembrane transports and protein secretion. A nonsense mutation in that gene promotes a deficit of this protein and, thus, prevents the physiological regulation of the ER, generating its so-called stress state and consequent apoptosis. This protein is found in pancreatic β cells, brain, heart, lungs and placenta, which explains the clinical presentations of the disease. **Final considerations:** This is a classic case of WS1, starting with the development of DM and progressing with OA, neurological symptoms, ID, psychiatric symptoms and neurogenic bladder. The diagnosis is soon confirmed by the WFS1 mutation. Due to the complexity of this disease and its poor prognosis, the diagnosis must be early and the follow-up should be multidisciplinary. It is the duty of all health professionals to pay attention to the possibility of this disease.

TIREOIDE

E-PO251 ACUTE HEART FAILURE AS FIRST PRESENTATION OF A THYROID DYSFUNCTION: CASE REPORT

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Case presentation: M. J. S., 70 years old, female, retired, previously diagnosed with hypertension and diabetes, using oral antidiabetic drugs with no regular follow-up, was referred to our hospital in 12/17/2019 with dyspnea associated to moderate efforts in the last 2 months, aggravated in supine position, which have worsened in the last week, and lower limbs paresia. On examination, she was in moderate distress, tachydispneic even with oxygen at 2L/min by nasal cateter, with rhytmic but hypophonetic cardiac sounds and diffuse crackles in both lungs. On chest CT, she had volumous pleural and pericardial effusions. On echocardiography, she had mild ventricular hypertrophy, normal ejection fraction and approximately 1,200 to 1,500 mL of fluid in pericardial cavity. Due to hemodynamic instability, she was submitted to emergency decompression by pleuropericardic window. An investigation on the etiology of her pericardial effusion was initiated, and tests were ordered to assess: tuberculosis, cancer, collagenoses and endocrinopathies. All tests were normal, except for TSH 57 mU/L and free T4: <0,40 ng/dL. She was initiated on levothyroxyne 50 mcg qid and then had progressive clinical improvement, being discharged on 12/25/2019. She is being followed as an outpatient, and persists in clinical remission. **Discussion:** Hypothyroidism is a clinical syndrome which is characterized by unspecific signs and symptoms which depend on the severity of hormonal deficiency and the duration of the disease. Possible complications include cavitary effusions due to reduction of lymphatic drainage. Pericardial effusion in hypothyroidism rarely causes cardiac tamponade because of its slow installment, but it may occur (as in this case). **Final comments:** We presented here a severe case of hypothyroidism which first manifested as an acute heart failure due to massive pericardic effusion and cardiac tamponade.

E-PO252 AMIODARONE-INDUCED THYROID DYSFUNCTION ON A PEDIATRIC POPULATION

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Introduction: Amiodarone is one of the most frequently used antiarrhythmic agents; however, its use may lead to thyroid dysfunction (hypothyroidism or hyperthyroidism). This alteration is well described within the adult population through specific guidelines, nonetheless few studies have focused on analysing amiodarone use and thyroid gland dysfunction in children. **Objective:** Evaluate amiodarone use in children and possible outcomes on their thyroid gland function. **Methods and materials:** Retrospective study with patients under the age of 14, who have used amiodarone during 2018 in a tertiary hospital. By analysing these patients' medical records, we gathered data on amiodarone dosage, treatment duration and thyroid dysfunction – hyperthyroidism and onset or subclinical hypothyroidism. **Results:** Fifteen patients have used amiodarone, from which eight patients were male, and three patients were presented with Down syndrome. The mean age was 3 years-old (ranging from 0 to 13 years-old). The main reason in prescribing amiodarone was heart arrhythmia, in most cases being supraventricular tachycardia. Ten out of the fifteen cases underwent cardiac surgery, and were prescribed amiodarone in postoperative phase, also for heart arrhythmia. The mean dose of amiodarone used was 129.33 mg (ranging from 30 to 150 mg), and the mean time interval between its usage was 41 days (ranging from 1 to 166 days). Six children were presented with hypothyroidism, from which four were using levothyroxine, two presented with euthyroidism and seven abandoned follow-up treatment or progressed to death. The mean TSH level was 14.02 mU/L (reference: 0.27-4.20 mU/L), while the mean free T4 level was 1.61 ng/dL (reference: 0.93-1.7 ng/dL). No cases of thyrotoxicosis were reported. **Conclusion:** Amiodarone use in children under the age of 14 is frequently associated with hypothyroidism or subclinical hypothyroidism. Further studies are needed to evaluate long-term impact of amiodarone use in children, and to elaborate precise guidelines to monitor this dysfunction on the pediatric population.

E-PO253 AN IN SILICO ANALYSIS OF THE ROLE OF SOD2 RS4880CT GENOTYPE IN THYROID CARCINOGENESIS

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Our group and others have been demonstrating the important role of inflammation in thyroid carcinogenesis and a better understanding of this process is essential. During the inflammatory processes, free radical species are produced from oxidative stress and, in normal conditions, removed by enzymatic and nonenzymatic antioxidants. MnSOD, encoded by SOD2 gene, is the main mitochondrial antioxidant enzyme, fundamental in the dismutation of superoxide radicals and cellular protection from oxidative damage. The rs4880 polymorphism may induce conformational changes in SOD2 protein, which remains retained on the inner mitochondrial membrane. As a result, ROS detoxification capacity reduces and oxidative stress (OS) increases, theoretically favoring tumorigenesis. A recent publication found that CT genotype of SOD2 rs4880 polymorphism was significantly higher in males compared to females PTC patients and was associated with higher stages (III-IV) of PTC. Because in silico studies are instrumental in the understanding of the role of gene variants in the carcinogenic process and may help delineate further investigations, we evaluated the possible morphofunctional and protein stability impacts of rs4880 of the gene SOD2. SNP information was retrieved from the NCBI dbSNP database and the amino acid sequence of the protein was obtained from the Uniprot database. rs4880 was analyzed using PredictSNP1.0 and Provean, in order to estimate the impact of the amino acid substitution on the protein. Additional analysis were performed in MuPRO and I-Mutant2.0, evaluating the impact in the protein stability, and ModPred searching for possible post-translational modifications. The rs4880 was classified as neutral by PredictSNP 1.0 and Provean. ModPred indicated that rs4880 does not cause functional, structural impact and post-translational modifications on the protein. However, MuPRO and I-Mutant2.0 analysis demonstrated that rs4880 may cause decreased stability of Mn-SOD protein (MuPRO, $\Delta\Delta G$ = -1.63; score I-Mutant = 8), resulting in less efficient transport of Mn-SOD to the mitochondrial matrix. We conclude that, although rs4880 causes a decrease in protein stability, there is no evidence of an important direct effect of these SNP on the regulation and activity of the SOD2 protein.

E-PO254 ANALYSIS OF PATIENTS AFTER TREATMENT OF MEDULLARY THYROID CANCER

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Introduction: Medullary thyroid carcinoma (MTC) is a rare malignant neoplasm whose genesis is the parafollicular thyroid cells. Carcinoembryonic antigen (CEA) and calcitonin are biochemical markers for diagnosis and follow-up in the postoperative. The relationship between the preoperative values of these markers and the response to treatment is questioned. **Objective:** Describe the cases of patients with MTC of a tertiary hospital in Rio de Janeiro and correlate calcitonin and CEA values preoperatively with their response to treatment. **Materials and methods**: Retrospective study based on the analysis of medical records of patients treated with MTC of a tertiary hospital in Rio de Janeiro. For statistical analysis, the SPSS program version 26 was used. **Results:** Twelve patients diagnosed with MTC were evaluated in the mean period of 49 months (ranging from 3 months to 168 months). Eight were female and four were male, with a mean age of 58.2 years and extreme ages from 35 to 75 years. No patient had a positive family history for medullary thyroid carcinoma. Eight of twelve patients presented detailed preoperative ultrasound (USG) data. The most sensitive ultrasound finding was calcifications, with four cases being gross calcifications and three microcalcifications. Among the cytological findings, the percentage of Bethesda IV, V and VI was the same and corresponded to 33.3%. Regarding the response to treatment, six presented excellent response and four incomplete structural response. The preoperative mean of calcitonin in excellent response was 625.7 pg/mL (range from 54 pg/mL to 1,524 pg/mL), while in incomplete structural response was 8377.83 pg/mL (range from 41 pg/mL to 24,642 pg/mL). The mean preoperative CEA dosage in excellent response was 197.10 ng/mL (range from 10 ng/mL to 546 ng/mL) and in patients with incomplete structural response was 194.33 ng/mL (range from 34 ng/mL to 491 ng/mL). Preoperative calcitonin and CEA values did not correlate with response to treatment (p = 0.414). **Conclusion:** Preoperative biochemical markers of medullary thyroid carcinoma in the small group studied did not correlate with response to treatment.

E-PO255 ASSOCIATION BETWEEN CHRONIC AUTOIMMUNE THYROIDITIS, THYROID AUTOANTIBODIES LEVELS AND GLUTS AND HEXOKINASES IMMUNOEXPRESSION BY NORMAL FOLLICULAR CELLS WITH DIFFUSE THYROID FDG UPTAKE ON PET

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The most employed tests in the diagnosis of chronic autoimmune thyroiditis (CAT) are the measurement of anti-thyroid peroxidase (TPOAb) and anti-thyroglobulin (TgAb) antibodies. Prior studies that reviewed 18F-Fluorodeoxyglucose (FDG) positron emission tomography (PET) exams found that most of the patients with diffuse 18F-FDG thyroid uptake (DIF) had signs of CAT. Our purpose was to investigate if CAT by histopathologic exam and immunoexpression of Gluts and hexokinases (HK) are associated with FDG diffuse thyroid uptake on PET. Forty-five patients with thyroid nodules for whom thyroidectomy was recommended where either malignancy was suspected (n = 42) or large goiter was present (n = 3) participated in this study. Preoperative 18F-FDG PET and measurement of thyroid antibodies were performed in all patients. DIF was defined as a diffuse cervical FDG uptake in thyroid topography that could demarcate the border of both thyroid lobes. CAT was diagnosed when a density of lymphocytic aggregates of at least moderate degree was accompanied by occasional germinal centers, thyroid follicles of reduced size containing sparse colloid, fibrosis and oxyphilic metaplasia. Immunoexpression by normal thyroid tissue of Gluts 1, 3 and 12 and HK 2 and 3 were assessed by tissue microarray. CAT was diagnosed in 13 of the 45 patients (prevalence, 29%). Presence of DIF and of increased levels of TPOAb were associated with CAT ($p = 0.019$ and $p < 0.001$, respectively). Of the 13 patients with CAT diagnosed in final pathologic exams, 7 had DIF, 8 had increased TPOAb concentrations and 11 had either DIF or increased TPOAb or TgAb concentrations (sensitivity of 54%, 62% and 85%, respectively). Specificity of these tests was 81%, 94% and 69%, respectively. Immunoexpression of Gluts and HK by normal follicular cells was not associated to DIF. Glut 1, Glut 3, Glut 12, HK 1 and HK 3 immunoexpression by normal follicular cells were found in 0%, 7%, 100%, 59% and 100% of thyroid specimens, respectively. None of these biomarkers expression was associated to diffuse thyroid FDG uptake. In conclusion, the presence of DIF is associated with CAT. However, DIF is neither sensitive nor specific enough to confirm or rule out the histopathological diagnosis of CAT. Moreover, this finding was less accurate than the measurement of TPOAb. Gluts 1, 3 and 12 and HKs 2 and 3 expression by normal follicular cells are not associated with DIF.

E-PO256 ASSOCIATION BETWEEN TSH LEVELS AND PREGNANCY OUTCOMES IN WOMEN UNDERGOING IN-VITRO FERTILIZATION

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Introduction: Subclinical hypothyroidism, a condition in which thyroid-stimulating hormone (TSH) levels increase although free thyroxine levels remain normal, is usually associated with negative pregnancy outcomes, either spontaneous or by assisted reproduction. Abortion, fetal and neonatal deaths are perceived more often as maternal levels of TSH increase, and it is recommended that hormone concentrations be kept below 2.5 mUI/L between cycles. **Objective:** To evaluate the pregnancy outcomes in populations of women with different concentrations of In-Vitro Fertilization (IVF). **Patients (materials) and methods:** This is a cross-sectional, retrospective study involving data from the medical records of women undergoing IVF between January 2014 and January 2018. The exclusion criteria adopted were: polycystic ovarian syndrome, ovarian surgery, radio/quimiotherapy and hypothyroidism in previous treatment. The negative outcomes of pregnancy include: biochemical pregnancy, abortion (6-20 weeks) and absence of pregnancy. **Results:** Data were collected from 756 patients with free thyroxine levels between 0.7 and 1.8 ng/dL, divided by clusters, according to the following values of TSH in mUI/L: <0.5 (n = 23); 0.5-1.5 (n = 271); 1.5-2.5 (n = 291); 2.5-5 (n = 159); >5 (n = 12). The relative negative pregnancy outcome percentages for the respective groups were 56.5%, 61.3%, 59.5%, 57.9% and 75%. Analyzing the possibility that the differences happened at random by the Pearson chi-square test, with a 95% confidence interval, it was found that there was no statistical significance to demonstrate a distinction between the results of the groups ($p = 0.781$). Overall, the number of negative outcomes totaled 453 (59.9%), while positive outcomes corresponded to 303 (40.1%), i.e. only the groups with TSH <0.5, between 1.5-2.5 and 2.5-5 mUI/L were above the mean percentage of positive outcomes. **Conclusion:** Despite the speculation about TSH levels for IVF success, the study detected statistical indifference among the groups in question. There is a contrast between the results found and other studies on the subject, making it necessary to discuss conduct and values to be adopted before artificial reproduction.

E-PO257 CASE REPORT: BILATERAL EPIPHYSIOLYSIS IN AN ADULT PATIENT AS CONSEQUENCE OF 35 YEARS WITHOUT TREATMENT OF PRIMARY HYPOTHYROIDISM

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Case presentation: A 46-year-old male patient with reduced libido, fatigue, and pain the groin region for more than 10 years. Three months ago, started with pain in bilateral hip region, which made him unable to walk, without prior history of local trauma, being diagnosed with bilateral epiphysiolysis. Physical examination showed palpable testicles, rare pilification in the genital region and absence of hair in the axillary region. Previous surgery in the cervical region was performed before the age of 11, with no follow-up. He said that after surgery it stopped growing. The complementary tests showed TSH 470 mUI/mL (0.4-4.3), FT4 0.1 ng/dL (0.7-1.8), IGF-1 67.1 ng/mL (94-252), prolactin 104.7 ng/mL (4.04-15.2), total testosterone 165.6 ng/dL (249-836), free testosterone 4.57 ng/dL (2.62-16.7) and vitamin D 22.8 ng/mL (>30). Nevertheless, it was found the absence of thyroid visualization in ultrasonography and low bone mineral mass in bone densitometry. The main hypothesis was primary hypothyroidism, so treatment was initiated with thyroid hormone replacement 1.9 mcg/kg and treatment for bone disorder with vitamin D and calcium replacement. After 5 months from the beginning of the patient's treatment, he presented improvement of libido, fatigue, 14 kg loss and hair growth, and his hormone lab test showed TSH 8.5 mUI/mL (0.4-4.3), FT4 1.0 ng/dL (0.7-1.8), total testosterone 645 ng/dL (249-836) and prolactin 31.9 ng/mL (4.04-15.2). **Discussion:** In this clinical case, patient with primary hypothyroidism probably related to inadvertent thyroid surgical removal when he was 11 years old, without hormone replacement or follow-up for the past 35 years, developed hyperprolactinemia secondary to hypothyroidism and hypogonadism secondary to hyperprolactinemia besides the low bone mineral mass and weakening of the proximal growth plaque leading to hip epiphysiolysis. Final comments It is known that epiphysiolysis affects population between 11 and 15 years, being uncommon after 18 years, atypical causes can be found in about 5% of cases, it stands out the importance of investigation of endocrinological and metabolic causes in these patients.

E-PO258 CASE REPORT: THYROTOXIC HYPOKALEMIC PERIODIC PARALYSIS IN THE EMERGENCY ROOM IN THE WESTERN AMAZON

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Programa de Residência Médica de Clínica Médica do Hospital de Base Dr. Ary Pinheiro, Hospital de Base Dr. Ary Pinheiro, Hospital Estadual e Pronto-Socorro João Paulo II

Case presentation: Patient male, 41 years old, black, born in Novo Aripuanã – AM, from Porto Velho-RO, married, nursing technician, previously healthy. In December 2019, he started a clinical of insomnia, irritability, excessive heat and loss of 12 kg in one month. After consecutive shifts, he presented a sudden and progressive episode of generalized muscle weakness, palpitations and urinary retention requiring probing. On admission, cognitive function, cranial pairs and sensitivity without alterations, grade II muscle strength in the four limbs. HR: 103 bpm, irregular rhythm, ECG with atrial fibrillation. Potassium: 2.3 mEq/L. Intravenous potassium replacement was performed with resolution of the neurological condition at admission. Thyroid enlarged three times, painless, without nodules, mobile to swallow. TSH: 0.01 uIU/mL, free T4: 4.3 ng/dL, and anti-Tg: 515 ng/mL. In the investigation, MRI of the skull and neuraxis was regular, Thyroid scintigraphy (technetium): conserved morphology, enlarged dimensions, thyroid uptake: 22%, suggestive of diffuse hypercapture goiter. USG Thyroid total volume: 31 cm^3, convex contours without nodules. Diffuse increase in vascular flow ("thyroid hell"). **Discussion:** Thyrotoxic hypokalemic periodic paralysis (PPHT), defined by transient episodes of muscle weakness ranging from mild to flaccid paralysis, more common in Asian men. Occurs due to the increased activity and number of Na + K + ATPAase pumps, with sudden intracellular change in potassium. Management with immediate potassium supplementation promotes recovery of motor strength in addition to avoiding serious cardiopulmonary complications. In this case, the condition was triggered by sleep deprivation, installed in an acute and progressive way associated with hypokalemia and signs of hyperthyroidism without previous diagnosis and treatment. There was progressive clinical improvement after potassium replacement, without recurrence after treatment of hyperthyroidism. **Final comments:** A patient with cardiovascular complications due to PPHT, this could have hindered the diagnosis, but it has become an illustrative case for emergency physicians. Finally, when faced with a similar clinic, PPHT must be a differential diagnosis, even if it is not a patient of Asian descent. Despite being a rare disease, it is considered an emergency of serious evolution if left untreated.

E-PO259 CHALLENGES IN THE MANAGEMENT OF GRAVES' DISEASE (GD) COMPLICATED BY DRUG-INDUCED THYROID AGRANULOCYTOSIS TREATED WITH PLASMAPHERESIS IN A PATIENT PROGRESSING WITH PREGNANCY DURING FOLLOW-UP: CASE REPORT AND LITERATURE REVIEW

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A 29 years old, female patient, admitted to an intensive care unit with fever and agranulocytosis. She had been diagnosed with hyperthyroidism by 3 years ago, using tiamazol 80 mg/d. On admission, tiamazol has been discontinued and the patient remained in severe thyrotoxicosis and required plasmapheresis, evolving with a drop in T4L after the procedure. At discharge, she remained stable, under treatment with lithium. During programming radioiodine ablation, she was diagnosed with pregnancy. She used propranolol 120 mg daily in the first trimester of pregnancy. Due to the maintenance of symptoms and the last T4L = 3.63 ng/dL, total thyroidectomy was defined as definitive treatment and scheduled until the end of the 2nd trimester of pregnancy by a multidisciplinary team. The preoperative preparation will be with propranolol, lugol and corticotherapy. A patient diagnosed with decompensated GD presented therapeutic failure and tiamazol induced agranulocytosis. During evolution, therapeutic plasma exchange was performed to control thyrotoxicosis until definitive treatment was established. TPE is an extracorporeal technique that eliminates autoantibodies, immune complexes, cryoglobulins and hormones from the blood. It is a well-accepted adjuvant therapy in the control of hyperthyroidism, presenting safety and efficacy in the face of therapeutic limitations for the patient acting as a bridge until definitive treatment. TPE aims to quickly extract thyroid hormones and haemodilate them by plasma infusion, in addition to introducing albumin and other carrier proteins that serve as new hormone binding sites. Agranulocytosis is a rare adverse effect of ADT more prevalent as the dose of ADT is increased. It requires immediate drug interruption, hospitalization and early start of broad-spectrum empirical antibiotic therapy until the result of cultures. Hyperthyroidism in pregnancy is a serious condition and has complex management. When DAT are contraindicated, thyroidectomy is an alternative and should be performed in the second trimester. Given the need for quick control, the use of corticosteroids and lugol in the short term associated with beta-blockers can be used in preoperative preparation.

E-PO260 CHOLESTATIC HEPATITIS INDUCED BY METHIMAZOLE: A CASE REPORT

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Description: A 65-year old male presenting with asthenia, nausea, pruritus and jaundice was admitted on May 15th, 2020. He had a history of metastatic lung adenocarcinoma diagnosed on February 2020, which he was treating with Carboplatin, pemetrexede and bevacizumabe. On March 2020 he was diagnosed with hyperthyroidism due to toxic multinodular goiter. Laboratory tests: TSH 0.01 mU/L, FT4 2.8 ng/dL, anti TPO and TRAb negatives. Methimazole 30 mg was prescribed. He also had a background of diabetes and alcoholism. Currently taking: propranolol, folic acid, amlodipine, oxybutynin, acyclovir, clexane, insulin. Physical examination: pale skin-mucous jaundice, globally increased multinodular thyroid, mainly at the expense of the left lobe, mobile as he swallowed. Laboratory tests (5/15/20): TSH 0.51 mU/L, FT4 1.3 ng/dL, albumin 3.3 g/dL, total bilirubin 9.37 mg/dL, direct bilirubin 8.93 mg/dL, ALP 934 U/L, GGT 1,400 U/L, AST 364 U/L, ALT 613 U/L. Serology for HBV, HCV, CMV and toxoplasmosis were negative. Cervical US (5/16/20): heterogeneous parenchyma, thyroid lobes with increased dimensions with 41 cm^3. Chest CT (4/22/20): Heterogeneous thyroid with increased dimensions, mainly at the expense of the right lobe with slight contralateral displacement of the trachea. Abdomen US (15/05/20): Liver slightly heterogeneous, without focal lesions. Abdomen CT (5/15/20): Distended gallbladder, with thickening associated with densification of the adjacent adipose planes. After diagnosis of cholestatic syndrome, methimazole was indicated as the cause of canalicular lesions. Conduct: methimazole was suspended and ursacol 300 mg 3 times/day was prescribed. There was an improvement of symptoms and laboratory tests (6/12/20): TSH 1.11 mU/L, FT4 1.52 ng/dL, AST 25 U/L, ALT 39 U/L, GGT 407 U/L, albumin 4.4 g/dL, total bilirubin 1.49 mg/dL, direct bilirubin 0.92 mg/dL, ALP 217U/L. Due to the thyroid's volume and deviation of the trachea and subsequent recurrence of hyperthyroidism, with laboratory tests (7/31/20): TSH 0.22 mU/L, FT4 1.6 ng/dL, thyroidectomy was indicated. **Discussion:** Cholestatic hepatitis induced by methimazole is a rare adverse event which occurs from 2 to 90 days after the onset of medication. Diagnosis is based on the exclusion of other hepatitis and performance of imaging exams to exclude bile obstructions and other causes. Serum levels of bilirubin, ALP and GGT are often elevated. Radioactive iodine ablation or thyroidectomy are alternatives for hyperthyroid treatment.

E-PO261 CONGENITAL HYPOTHYROIDISM: REPORT OF 02 SIBLINGS IN AN OUTPATIENT CLINIC IN BAHIA

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Case presentation: Congenital hypothyroidism may be secondary to a defect in the development of the thyroid, which constitutes most cases, or be of central etiology. Thyroid dysgenesis is responsible for most cases of congenital hypothyroidism, with early diagnosis and treatment of great relevance to the impacts of this condition on the development of the patient. Case 1: A. S. P. P., male, 50 years old, accompanied by a history of significant impairment in the development of gait until he was 17 years old, when he was then diagnosed with congenital hypothyroidism and started replacement with Levothyroxine, progressing with gait development and speech improvement, but with a history of unsatisfactory intellectual development. Evaluated with high TSH levels, with the most recent evaluation showing TSH: 12.612 mg/dL and free thyroxine: 0.79 mg/dL when using levothyroxine. Case 2: C. L. S. P. P., male, 46 years old, accompanied with a history of diagnosis of congenital hypothyroidism around 13 years of age, this being the second case diagnosed in the offspring of which he is a part. The patient is still taking levothyroxine, but still without adequate control, with the most recent evaluation showing TSH: 26.534 mg/dL and free Thyroxine: 0.63 mg/dL. **Discussion:** Congenital hypothyroidism secondary to thyroid dysgenesis, in most cases, occurs in a non-hereditary way, however, there may be mutations in genes related to thyroid development. This case report aims to present the occurrence of congenital hypothyroidism in 02 siblings of the same affiliation, describing clinical developmental findings associated with hypothyroidism. **Final comments:** The onset of symptoms of congenital hypothyroidism brings important aspects of discussion about the evolution of this patient after the initiation of Levothyroxine replacement in adolescence and the behavior of thyroid function, discussing external factors that may interfere with the adequate control of hypothyroidism.

E-PO262 EFFECTS OF MULTIKINASE INHIBITORS TREATMENT ON LEVOTHYROXINE REPLACEMENT THERAPY IN THYROID CANCER PATIENTS

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Introduction: Thyroid cancer patients often have an excellent prognostic and these tumors usually are characterized as slow-growing tumors, but a minority of the patients can show advanced disease. In recent years several discoveries in pathogenesis result in the development of target therapies, among them the multikinase inhibitors (MKI). Among the side effects of these drugs, in patients receiving levothyroxine replacement therapy, MKI may increase the need for thyroid hormone. **Objective:** To investigate the effects of MKI on thyroid replacement therapy in a cohort of thyroid cancer patients. **Material and methods:** Patients with thyroid cancer using MKI followed in a referral center were included. The indications of treatment with MKI were locally or distant metastatic advanced and disease. All patients should have symptomatic and progressive disease that cannot be managed with surgery or local approaches. Regarding hypothyroidism treatment, for those patients with differentiated thyroid cancer (DTC) the goal of TSH was < 0.1 mIU/mL and for those with medullary thyroid cancer (MTC), the normal range of TSH values (0.35-4.9 mIU/mL). The initial levothyroxine dose was calculated considering the patient weight (mcg/kg) and adjusted to reach these goals. The dose of levothyroxine before the start of MKI was considered the basal dose and the maximal dose during the MKI use was the maximal dose. **Results:** 26 patients were included, 11 (42.3%) with DTC and 15 (57.7%) with MTC. First-line MKI treatment for DTC was sorafenib and for MTC was vandetanib. Four patients needed to change to second-line treatment: 2 DTC patients (both used levantinib) and 2 MTC patients (1 used levantinib and 1 used sorafenib). The mean duration of MKI's use was 21 months (P25-75 11-49) and all patients had at least one side effect, being the most common skin reactions (80.7%). After a median of 12 months (P25-75 8-20) of MKI's use, 85% (n = 22) needed increases on the levothyroxine replacement dose with a median dose increase of 38% (P25-75 18-57). Risk factors for more prominent elevation in levothyroxine dose were younger age, longer use of MKI treatment, and more sites of distant metastasis. **Conclusion:** The majority of thyroid cancer patients using MKI need increases in the levothyroxine replacement dose. The monitoring should be done carefully with more frequents TSH dosages in those patients with younger age, longer time on MKI, and more extensive disease.

E-PO263 EPIDEMIOLOGICAL PROFILE OF MORBIMORTALITY FOR THYROTOXICOSIS IN BRAZIL BETWEEN 2008 AND 2018: A PROSPECTIVE STUDY

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Introduction: Thyrotoxicosis rests as a systemic organ involvement caused by hypersecretion of thyroid hormones. Commonly, it is a complication of Grave's disease and is associated with high morbimortality. Borrowed literature states that mortality is between 10%-30%, yet Brazil still lacks data on the subject; furthermore, the studies are not helped by the variable clinical picture and the disparity of access to health in the country. **Objectives:** To analyze the epidemiological profile of thyrotoxicosis's morbimortality in the Brazilian population between 2008 and 2018. **Methods:** This is a prospective descriptive study, which was used secondary data by the Department of Informatics of the Unified Health System (Datasus), reached on 09/07/2020. The research population was patients with thyrotoxicosis during the months of the years 2008-2018 and their proportion in mortality in the same period. The inclusion criteria were: regions, federative units, municipalities, age range from under 1 year to over 80 years, male and female gender, morbidity rate, mortality rate, International Disease Codes (ICD-10) IV (Endocrine nutritional and metabolic diseases) and E05 (Thyrotoxicosis). The exclusion criteria were those that did not correspond to the variables. Excel was used to calculate prevalence and morbimortality. It was not necessary to submit to the Research Ethics Committee. **Result:** Over the study period, a total of 5,979 cases were notified, more than 50% were in the Southeast region (3,500 cases). Most of the hospitalizations took place in the capitals, rating up to 105 times higher when compared to the interior cities. In the wintertime, the hospitalization rates were higher upon a reduction of 18% in the summer. Almost 80% of the affected were women between 20-59. The North region presented the highest mortality rate (65%), and the Southeast region has the lowest death rate (23%), but a reduction of 30% in the occurrence of general mortality did happen, with the elderly being most affected group (20%). **Conclusion:** Gender and age converge with literature. The prevalence of mortality in Brazil seems to be higher than in other countries, especially in the Northern region and inland cities, which shows the disparity of access to health in the country. However, the occurrence of thyrotoxicosis' deaths has been decreasing over the years, which may represent earlier identification of cases and greater access to the health system that leads to better patients' treatment.

E-PO264 FALSE POSITIVE WHOLE-BODY RESEARCH IN PATIENT WITH LUNG ADENOCARCINOMA

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Presentation of the case: Female patient, 69 years old, hypertensive and with previous thyroid carcinoma, classified as low risk by ATA 2015 and with biochemical and structural cure criteria, sought outpatient with cough and progressive fatigue. In investigation, chest computed tomography (CT) identified multiple lung nodules, and the whole-body research (WBR) revealed discrete diffuse radiotracer uptake in the lungs. The patient presented negative thyroglobulin (Tg 0.1, TSH 99.98, anti-Tg 0.9) that did not suggest thyroid metastases, being indicated biopsy whose result was inconclusive. PET-CT identified multiple bilateral hypermetabolic pulmonary nodules, but no new site for new biopsy. Later investigation with CT of the abdomen showed dilation of the bile ducts with abrupt stenosis due to a nodule in the head of the pancreas and a picture of jaundice with acolyzation, choluria and generalized itching. Second lung biopsy performed determined the cause as lung adenocarcinoma with pancreatic metastasis, causing biliary obstruction. Performed percutaneous biliary drainage. It was not possible to perform chemotherapy due to the patient's weakness, culminating in her death. **Discussion:** Thyroid cancer represents about 1% of all types and, among malignant endocrine neoplasms, is the most frequent and presents the highest rate of cure. Thyroid carcinomas are divided into differentiated (TDC), which correspond to approximately 90%, 90% of which are represented by thyroid papillary carcinoma (TPC). The distance metastasis sites that can be listed in patients with TDC are: lung (49%), bone (24%), multiple sites (19%) and other single sites (8%). Patient follow-up after thyroid carcinoma treatment is essential to detect the presence of residual and/or metastatic TDC. The Tg dosage followed by the anti-Tg dosage, and the cervical ultrasound are the initial and primary exams for follow-up, while WBR, PET, CT's are auxiliary in the investigation. They should be analyzed together with laboratory findings. **Final comments:** The case of a patient with multiple lung nodules was reported, which, in WBR, showed discrete diffuse radiotracer uptake in the lungs, however, presented low levels of Tg. Subsequently, the examination was inconclusive and a lung adenocarcinoma with pancreatic metastasis was determined. The objective of this work was to demonstrate a case with a false positive WBR, being then an exam that should be interpreted with caution.

E-PO265 FAMILIAL VERSUS SPORADIC NON-MEDULLARY THYROID CANCER: INITIAL CLINICAL PRESENTATION IS STILL ON DEBATE

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FNMTC (familial non-medullary thyroid cancer) occurs when two or more first-degree relatives are affected by non-medullary thyroid cancer. Controversies about its biological behavior remain in the literature. Thus, we aimed to compare FNMTC versus SNMTC (sporadic non-medullary thyroid cancer) and elucidate if its presentation differs from SNMTC in our population. We analyzed 119 SNMTC and 39 FNMTC patients. And to this end we compared the patients characteristics (age, sex, type of health insurance, type of surgery and time of follow-up), histopathological features (type, tumor size, capsule invasion, angiolymphatic invasion, perineural invasion, and extra-thyroid extension), the presence of lymph node metastasis, and distant metastasis at the diagnosis, and recurrence and final response to therapy reclassification. 56% of FNMTC cases have 2 or more relatives with NMTC (non-medullary thyroid cancer); i.e., their families have 3 or more affected members. And 27 (67%) have a parental-child relationship. When comparing FNMTC versus SNMTC, FNMTC patients were significantly younger ($p < 0.05$) and were submitted to the surgery more recently than SNMTC. No differences in the sex, type of surgery and type of tumors were founded between the groups. Tumor size was smaller in the FNMTC group, but it was not significant ($p = 0.084$). We did not found differences in multicentricity, capsule invasion, angiolymphatic, or perineural invasion neither. Interestingly, we observed more lymph node disease at the diagnosis in the FNMTC than in the SNMTC group (46,2% x 21.8%, $p < 0.05\%$), even though no differences in the distant metastasis were observed. We did not find any difference in the long-term outcome: the response to therapy reclassification was similar in both groups. Even though we cannot exclude ascertainment bias for the younger age in the FNMTC group, our results support the idea that familial non-medullary thyroid cancer tends to be more aggressive than sporadic thyroid cancer. Therefore, they must be carefully evaluated with cervical ultrasound for surgical planning. On the other hand, similar results in the follow-up do not suggest the necessity of a different or more aggressive therapy in this group of patients. Nonetheless, a bigger sample of patients is necessary to confirm this outcome result.

E-PO266 GRAVES' OPHTHALMOPATHY AS A DIFFERENTIAL DIAGNOSIS OF CAROTID CAVERNOUS FISTULA: CASE REPORT

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Introduction: Carotid cavernous fistulas (CCF) are abnormal arteriovenous connections between the cavernous sinus and the carotid arteries. The clinical manifestations include pulsatile proptosis, chemosis, periorbital edema, headache, eye pain, diplopia, glaucoma and visual loss. These symptoms may resemble the clinical picture of Graves' ophthalmopathy (GO) – an inflammatory orbit disorder usually associated with autoimmune thyroid disease. Due to the clinical similarities, these diseases should be considered as differential diagnosis. **Objective:** To report two cases of patients with a clinical condition compatible with Graves' ophthalmopathy, but with a diagnosis of carotid cavernous fistula as the cause of the eye disease. **Case Report:** Two patients with ocular pain, reduced visual acuity, eyelid edema, proptosis, conjunctival hyperemia and chemosis in both eyes. The diagnosis of Graves' ophthalmopathy was considered, with medical imaging (magnetic resonance imaging and computed tomography) compatible with this diagnosis. However, during the investigation, no thyroid disease was noted. After investigation with cerebral angioresonance (case 1) and cerebral angiotomography followed by arteriography (case 2), a carotid cavernous fistula was detected as the cause of the ophthalmopathy. Both patients underwent endovascular treatment to correct the fistula, the first showed therapeutic success and the second died due to procedure complications. **Discussion:** The diagnosis of CCF should be considered in cases of asymmetry eye involvement, in euthyroid patients or in the absence of response to pharmacological treatment. The differential diagnosis is made with imaging exams. The gold standard test for the diagnosis of CCF is the cerebral angiography. The main treatment consists of endovascular embolization of the fistula. **Conclusion:** Although CCF is rare, it should be considered among the differential diagnoses of GO, requiring specific investigation and treatment for this condition.

E-PO267 INVESTIGATION OF THE VARIANTS OF ICAM-1 SUGGESTS AN IMPORTANT ROLE OF RS1799969 IN GRAVES' DISEASE DEVELOPMENT

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A series of in silico tools have brought a new perspective on the contribution of many DNA polymorphisms on the predisposition and development of several diseases. Cell adhesion molecule 1 (ICAM-1) is a glycoprotein present in the membrane of several cell types. ICAM-1 was reported to be overexpressed in Graves' disease (GD) and may play an important role in its pathogenesis since the gene is implicated in the regulation of leukocyte migration by the vascular endothelium. However, its role is hard to analyze because the gene has many variants. ICAM1 has 5173 polymorphisms reported in the literature of which 413 are missense and 82 out of them cause amino acid changes. We employed 13 bioinformatics tools in order to assess the structural, functional and/or stability impact of these 82 SNPs. Thirty-eight percent (n = 31) of the polymorphisms were deleterious according to PredictSNP1; 48.8% (n = 40) SNPs by MAPP tool; 23.2% (n = 19) by SNAP2 tool. PANTHER showed protein function impact in 19.5% (n = 16) of the SNPs. PhD-SNP demonstrated that 29.3% (n = 24) of the SNPs were associated to increased susceptibility to various pathologies; 39.0% (n=32) of the SNPs may affect protein structure according to PolyPhen-1 and 54.9% (n = 45) SNPs may influence protein function (PolyPhen-2). In addition, 62.2% (n = 51) of the investigated SNPs most likely cause conformational changes (Align GVGD) and 53.7% (n = 38) may damage protein structure (PROVEAN). Additionally, 93.9% (n = 77) are capable to decrease ICAM-1 stability and may cause effects in aggregation, degradation and misfolding of proteins. Our data showed that 41.5% (n = 29) of the evaluated ICAM1 SNPs were correlated with structural and functional changes by more than 6 different bioinformatic tools. The rs138380001, rs139053442, rs1799969, and rs375107327 were associated to important alterations in ICAM-1 protein by almost all bioinformatic tools used. Literature confirms an association between the presence of SNP rs1799969 (G241R) and susceptibility to autoimmune thyroiditis and to Graves' ophthalmopathy, perhaps because of ICAM-1 protein role in lymphocyte migration. We suggest that genetic variants that cause structural, functional and stability changes have an impact on the performance of ICAM-1 protein whose overexpression or increased function can contribute to Graves' disease development.

E-PO268 IS METHYLATION OF THE CTLA-4 GENE PROMOTER REGION AN EPIGENETIC MECHANISM OF AUTOIMMUNE THYROIDITIS IN HEPATITIS C?

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Introduction: Cytotoxic T lymphocyte-associated antigen 4 (CTLA-4) is a crucial immune control point receptor that regulates T cell activation. Epigenetic mechanisms, such as DNA methylation and histone modifications, modulate DNA packaging in the nucleus and influence gene expression. Autoimmune thyroiditis may be associated with hepatitis C virus (HCV) infection as well as the CTLA-4 gene. **Objective:** To in silico simulate the methylation of the promoter region of CTLA-4 gene as an epigenetic factor triggering autoimmune thyroiditis by HCV. **Methods:** We analyzed by in silico simulation the hypermethylation scenarios of the CTLA-4 Gene promoter region, aligning CTLA-4 and HCV sequences (genotypes 1, 2 and 3) through BLAST software, and identifying their methylated and unmethylated CpG sites. After the sequences obtained with the alignment of the methylation points by MultAlin program, the consensus sequences obtained were submitted to the BLAST similarity search. The GC content calculation and HCV annotation were performed using ENDMEMO. The MethPrimer was used to identify and locate the methylation CpGi within the HCV genome. **Results:** The location of CTLA-4 on chromosome 2 and the alignment of the amino acid sequences are presented: CTLA-4 and HCV genotype 1, CTLA-4 and HCV genotype 2 and CTLA-4 and HCV genotype 3 are presented, as well as the methylation sites. **Conclusion:** In susceptible individuals, hypermethylation promotes reduced CTLA-4 expression and increases the risk of autoimmune thyroiditis in HCV-infected individuals.

E-PO269 MARINE – LENHART SYNDROME IN CHILDREN: A CASE REPORT

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Presentation of the clinical case: Previously healthy female patient, 10 years and 05 months old, with history of progressive cervical volume increase, for 01 year, without other associated symptoms. The patient was born by normal delivery at 40 weeks, desired pregnancy, without complications. Neonatal screening with sickle cell trait only. Absence of drug/medication use during pregnancy. Adequate neuropsychomotor development. Absence of a family history of thyroid diseases. Ambulatory investigation with thyroid ultrasound (USG) and thyroid function tests started with the following results: Thyrotrophic hormone (TSH) < 0.01 mcUI/mL (0.3-5.5), free thyroxine (T4l): 2,94 ng/dL (0.58-1.64), anti-peroxidase (anti TPO): 2.4 IU/mL (<9.0), triiodothyronine (T3): 2.9 ng/mL (0.94- 2.41), TSH receptor autoantibody (TRAb): 3.33 IU/L (<1.75). USG: hypoechoic images, in the middle third of the right lobe (LD), measuring 1.2 x 0.4 cm and in the middle third of the left lobe (LE) measuring 2.0 x 0.7 cm and in the transition of the LE/isthmus: 2.2 x 0.6 cm. In view of the results, thyroid scintigraphy was requested and therapy with metimazole 10 mg/day was initiated. Technetium-99m pertechnetate scan with: Thyroid gland of slightly increased dimensions, showing hot areas in the middle third of the LD and in the lower half of the LE, which may correspond to areas of functional predominance or nodules. **Discussion:** Hyperthyroidism is the condition in which there is an excess production of thyroid hormones. Graves' disease (autoimmune cause) represents the main cause of hyperthyroidism, even in childhood. Another cause of hyperthyroidism is the functioning thyroid nodules. The association between Graves' disease and functioning nodules is the Marine - Lenhart Syndrome, a rare entity, especially in children. In the literature there are 03 cases published in the pediatric age group, all aged ≥ 15 years. This case report is unique, not only due to the syndrome presented by the patient, but also due to the age of presentation of the syndrome. **Final comments:** Marine-Lenhart syndrome is a rare entity, especially in the pediatric age group, with few cases reported in the literature. We present the rare occurrence of the syndrome in a 10-year-old child. Patient maintains follow-up with normal thyroid function using metimazole.

E-PO270 MICROPAPILLARY THYROID CARCINOMA: INSIGHTS FROM HISTORICAL COHORT AND TREATMENT PERSPECTIVE IN LOW-FUNDED HEALTH CARE SYSTEMS

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Introduction: Micropapillary thyroid carcinoma (mPTC) rising incidence, accompanied by apparently reduced mortality and good prognosis reports, prompted consideration of less aggressive treatment approaches for these patients. In this context, active surveillance emerged as a promising strategy. Notwithstanding, the feasibility and potential impact of these new approaches in Latin America patients, and in low-funded health care systems, remains to be clarified. **Objectives:** To evaluate a cohort of mPTC, and gather insights to an active surveillance strategy for low resource contexts. **Patients and methods:** Consecutive patients diagnosed with mPTC (tumor size ≤ 1.0 cm). Clinical characteristics, interventions and outcomes were described. Response to treatment was defined according to the criteria of the American Thyroid Association (ATA). Patients were classified as incidental or clinical based on the diagnosis of mPTC after or before surgery, respectively. **Results:** In a cohort of 1091 patients with papillary thyroid carcinoma, 258 (23.6%) presented with mPTC. The median age was 48.3 ± 13.6 years and 84.1% were women. All patients underwent total thyroidectomy, and 60.9% received radioiodine. The tumor size was 0.68 ± 0.26 cm, 30.2% were multifocal, 24.8% had lymph node and 0.4% distant metastasis. The characteristics of patients with clinical and incidental diagnosis were similar, differing regarding the proportion of lymph node metastasis (31.0% vs. 10.1%, respectively, P < 0.001). After 5.6 years (P25-75 2.6-9.7) of follow-up, 63.1% patients had an excellent response and 4.2% had persistent structural disease (3.8% cervical). These results occurred, however, at the cost of 10.9% permanent hypoparathyroidism and 7.9% persistent postoperative dysphonia. **Conclusion:** The mPTC cohort displayed excellent evolution at the expense of high rates of surgical complications. Although mPTC represented a significant portion of PTC diagnosis, lymph node metastases and multifocality are frequent findings, even in patients with an incidental diagnosis. In low-funded health care systems, less aggressive treatment approaches, such as active surveillance, may benefit selected patients, potentially preventing surgical adverse outcomes.

E-PO271 MORTALITY FROM THYROID CANCER IN BRAZIL BETWEEN 2009 AND 2018

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Introduction: Thyroid cancer (TC) represents about 2% of malignancies and its incidence has increased in recent years, majorly in women and the elderly. In Brazil, it accounted for 0.4% of deaths from cancer in 2018. Hence, we seek to evaluate the mortality from TC in this country, which allows to reflect on health policies for management of this disease. **Objective:** To describe and evaluate the evolution of the mortality rate by TC in Brazil, between 2009 and 2018, by region, sex and age group. **Methodology:** This was an ecological study based on data from the Mortality Information System (SIM) obtained from the Computer Department of the Unified Health System (DATASUS). The mortality rate (by 105 persons) and number of deaths from TC were searched and a standard population was used to obtain the age-adjusted mortality rate. **Results:** Between 2009 and 2018, there were 7,035 deaths from TC in Brazil, 41% in the Southeast and 29.5% in the Northeast. The North had the lowest percent of deaths (5.9%), but the highest increase (104%). Women accounted for 67.08% of deaths and men, 32.92%. Those over 50 years of age accounted for 89.56% of deaths, with an emphasis on the range of 70-79 years (27.59%). The South (0.41) and the Northeast (0.37) had the highest average mortality rates and the North (0.24), the lowest. However, the age-adjusted rate was higher in the Northeast (0.37), followed by the Midwest (0.35) and North (0.34). The average mortality rate was 0,35 in Brazil, 0,23 among men and 0,46 among women, showing a respective increase of 33%, 26% and 39% in this period. Lastly, the mortality before age 50 was low, increasing gradually from age 50 to 79 and reaching the highest rate above age 80, with an average rate of 5.48. **Conclusion:** The mortality from TC in Brazil has increased in the recent years, mainly in women and the elderly. The influence of the age group on the mortality was noted, as this was higher in the South and Southeast regions, but when adjusted for age, it became higher in the Northeast, Midwest and North, reflecting the unequal access to health in the country. The increase in mortality – in a context of new health strategies and technologies for management of malignancies, such as early diagnosis – suggests that it is necessary to assess the real impact of these actions in reducing mortality from TC, in addition to strategies aimed at the treatment of the most severe forms of the disease, often more related with death.

E-PO272 MORTALITY FROM THYROID CANCER IN BRAZIL, 2001-2017: AN ANALYSIS USING THE INFLECTION POINT REGRESSION MODEL

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Background: Palpable thyroid nodules are common and about 5% are malignant. Thyroid cancer, in turn, is the most common endocrine neoplasia. **Objectives:** To analyze the temporal trend of mortality of thyroid cancer in Brazil between 2001 and 2017. **Patients (materials) and methods:** Ecological time series study involving all deaths from thyroid cancer in Brazil from 2001 to 2017. Brazil, all regions and federative units were used. The mortality crude rate, adjusted by Brazilian population and by world population, was analyzed. Data were collected in the Online Mortality Atlas of the National Cancer Institute José Alencar Gomes da Silva (Inca). For the temporal analysis we used the inflection point regression model (joinpoint regression model). The trend was selected as stationary, increasing and decreasing. The annual percentage variation (APC, Annual Percentage Charge) and average (AAPC, Annual Percentage Variation) were calculated considering a 95% Confidence Interval (95%CI) and a 5% significance. The study is not necessary to have the ethics committee, as it can be used in secondary data in the public domain and there was no individual identification of any patient. **Results:** During the period, 10.279 deaths from thyroid cancer were recorded. Brazil showed an increasing trend in the mortality crude rate (APC: 2.6; 95% CI: 2.1 a 3.2; $p < 0.001$), from 0.27 to 0.39/100.000 and a stationary trend in adjusted rate for the Brazilian population (APC: 0.3; 95% CI: -0.2 a 0.8; $p = 0.2$) and world population (APC: 0.1; 95% CI: -0.5 a 0.7; $p = 0.7$). North (APC: 4.7; 95% CI: 2.8 a 6.7; $p < 0.001$), Northeast (APC: 5.2; 95% CI: 3.8 a 6.6; $p < 0.001$), Southeast (APC: 1.4; 95% CI: 0.3 a 2.6; $p < 0.001$) and South (APC: 1.4; 95% CI: 0.6 a 2.2; $p < 0.001$) showed an increasing trend in the mortality crude rate. North (APC: 2.9; 2.7) and Northeast (APC: 3.4; 3.2) showed an increasing trend, South (APC: -1.3; -1.5) and Midwest (APC: -1.6; -1.8) a decreasing trend in adjusted rate for the Brazilian and world population, respectively. Fifteen (55.55%) showed an increasing trend in the mortality crude rate and six (22.22%) in adjusted rate for the Brazilian and world population. Distrito Federal, São Paulo and Rio Grande do Sul (11.11%) showed a decreasing trend in adjusted rate for the Brazilian and world population. **Conclusions:** The results can contribute to the elaboration of interventions and public policies that provides early diagnosis and timely treatment.

E-PO273 MRNA AND MIRNA EXPRESSION PATTERNS PREDICT BRAF MUTATIONAL STATUS WITH HIGH ACCURACY IN THYROID CANCER: A SUPERVISED MACHINE LEARNING APPROACH

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Introduction: BRAF gene mutations are the most frequent genetic alteration in papillary thyroid carcinoma (PTC). BRAF V600E variant has been associated with a worse prognosis and is currently included as part of the risk stratification evaluation. The Cancer Genome Atlas (TCGA) project identified a unique pattern of differentially expressed genes in BRAF-mutated versus RAS-mutated PTC. To our knowledge, no study evaluated the diagnostic performance of using microRNA or mRNA sequencing (miRNAseq and RNAseq, respectively) expression profiles to predict BRAF V600E mutational status in PTC. **Objectives:** To develop and assess the performance of a diagnostic model constructed using RNAseq or miRNAseq data to predict the BRAF V600E mutational status in PTC samples. **Methods:** Models were constructed using published data available from TCGA. RNA expression was retrieved as upper quartile normalized FPKM counts and miRNA expression as counts per million reads. A supervised machine learning classification model using a gradient boosting machine (GBM) with repeated k-fold cross-validation was constructed in R 4.0 using the caret package. Available data were randomly split between the training (50%) and test set (50%). The model output is the probability for a given sample to belong to the mutated group. Thus, the performance was evaluated using the area under the curve (AUC) for the receiver operating characteristic (ROC) curve constructed using the test set. **Results:** RNAseq, miRNAseq, and BRAF mutational status were available for 484 samples. We identified 294 (60.7%) BRAF mutations: 281 (95.6%) BRAF V600E and 13 non-V600E alterations (2 K601E, 1 P490_Q494del, and 10 BRAF fusions). These 13 samples were excluded from analysis since it is unclear whether they should be classified as mutated or not. The diagnostic model constructed using RNAseq data yielded an AUC of 0.996 (CI 0.990-1.000) and a diagnostic accuracy of 97.9% (CI 95.1-99.9%), providing both high sensitivity (95.8%) and specificity (99.3%). An independent model derived from miRNAseq data yielded an AUC of 0.974 (CI 0.954-0.995) and a diagnostic accuracy of 91.1% (CI 0.87-0.94%). **Conclusion:** Using a machine learning classification model, transcriptomic data from RNAseq and miRNAseq identified BRAF V600E mutated samples with high accuracy. Our results allow to infer BRAF mutational status from transcriptomic data, a unique phenotype that could be further explored for specific therapeutic interventions.

E-PO274 MYOPATHY IN ACUTE HYPOTHYROIDISM: CASE REPORT

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Case report: Female patient, 37 years old, with history of hyperthyroidism due to Graves' disease, required treatment with iodine radioablation, performed with 20 mCi. Two months after treatment, the patient started experiencing severe pain in the lower limbs, upper limbs and lumbar spine, presenting an increase in aldolase levels to 8.3 U/L (VR up to 7.6 U/L), CPK 834 U/L, TSH 0.1 mU/L and FT4 0.45 ng/dL. Due to hypothyroidism, levothyroxine was started. After 3 months of treatment, in use of levothyroxine 88 mcg/d, the patient presented improvement of symptoms, and greater improvements in aldolase levels (4,2 U/L) and CPK (284 U/L). Autoantibody tests (ANA, anti-RNP, anti-SM, anti-Ro, anti-La, Anti-Jo, anti-DNA, anti-centromere, anti-SCL-70) were all negative. Thyroid function was normal but due to the relapse of more intense pain symptoms, T3 4 mcg/day was also prescribed. Since then, the patient has had good laboratory control of thyroid function, aldolase and CPK levels, although complaints of myalgia and fatigue are still present. **Discussion:** In patients with several years of hypothyroidism, musculoskeletal manifestations can occur in 29 to 78% of cases, with these changes being amongst the differential diagnosis of other myopathies. CPK is related to the contractile activity, it is an enzyme aggregated to the calcium channels of the sarcoplasmic reticulum. The pathogenesis of myopathy in the hypothyroid is not well defined, the possible explanations are that the reduction of thyroid hormones would cause a reduction in CPK clearance, or that the thyroid condition would cause a reduction in the functionality of the plasma membrane with a reduction in the bound calcium channels, generating an ineffective compensatory response from the body at CPK level. Clinically, the condition may consist of reduced muscle strength in proximal muscles, weakness, paresthesia, myalgia, up to shallow relaxation of the achilles reflex, cramps. On histopathological examination, there is atrophy of type II muscle fibers, concentration of glycogen and alteration in the oxidative pattern of cells. Neuropathic alterations of sensitive nature are predominant in the electroneuromyography exam. With the establishment of the treatment with levothyroxine treatment, in most cases, there is a regression of these symptoms, accompanied by a decrease in the markers of muscle injury. We highlight the short period of biochemical hypothyroidism (8 weeks) for a florid features of myxoedema.

E-PO275 NATURAL EVOLUTION OF JUVENILE AUTOIMMUNE ACQUIRED HYPOTHYROIDISM: LATE DIAGNOSIS AND TREATMENT

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Autoimmune acquired juvenile hypothyroidism is the most common thyroid disease in children and adolescents, mainly 10 to 11 years old. The clinical manifestation of the disease is usually discreet and insidious and can be noticed only when there is growth failure. We describe a case of a male patient, 30 years old, admitted to the hospital due to infection of upper airways. An endocrinology consult was asked due to short stature without established etiology. In the systems review, he presented asthenia, knee pain, sluggish speech, deep and hoarse voice, constipation, apnea during sleep, dyspnea on minimal effort and orthopnea. In previous history, normal growth until 12 years of age. In addition, alopecia was observed with marked worsening at 15 years of age. Normal neuropsychiatric development. Family history without evidence of short pathological stature. On physical examination: mixedematous facies, height 134 cm, wingspan 139 cm, weight 58 kg, BMI 32.30, universal alopecia, thyroid not palpable, hands and lower limbs with hard edema, absence of genital pilification, presence of pigmented scrotum, testicles measuring 25 cm^3, phallus 11 cm. Complementary exams were important to document the diagnosis and possible etiologies, in addition to investigate complications. Laboratory tests showed free T4 < 0.039 and TSH 155. Other laboratorial findings were normochromic and normocytic anemia, kidney injury and hypertriglyceridemia. Thyroid ultrasound with signs of chronic thyroid disease. The left hand X-Ray showed aged phalanges and carpal bones with delayed bone age. Echocardiogram: LV concentric remodeling and discrete pericardial effusion. In view of the manifestations presented by the patient, a low dose of levothyroxine was started with a weekly dose progression. He was discharged asymptomatic for follow-up at the endocrinology outpatient clinic. After 6 months of treatment, he evolved with improved mobility and weight loss of 5 kg. The new laboratory tests and echocardiogram were normal. Autoimmune acquired juvenile hypothyroidism with diagnosis and treatment at 30 years of age is very rare in today's reality. Some complications are reversible, others are not, such as short stature. Non-diagnosis and non-treatment have physical and psychological repercussions on the patient's life.

E-PO276 NEGATIVE TRAB NORMAL THYROID FUNCTION GRAVES' DISEASE – CASE REPORT

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Case report: P. A. O., 41 yo F, seen by the ophthalmology team of a tertiary hospital in Federal District/Brazil. Patient was seen on July 2019 with complains of right upper palpebral retraction with associated pain and eye watering. Measurements taken with a Hertel exophathalmometer were 18 mm on the right eye, 17 mm on the left eye and 103 mm base measurement with right superior eyelid retraction. Orbital CT scan showed slight increase of the right superior complex and superomedial hyperdensity on the trochlear muscle. At that time TSH level was 0.36, while free T4 was 0.88. Patient received the diangnosis of Graves' orbitopathy. Patient underwent levator aponeurosis disinsertion on September 24th, 2019. She was seen by the endocrinology team in June 2020, had normal thyroid function (TSH 1.76 and free T4 1.24) and negative TRAB (<0.8). She was diagnosed with negative TRAB normal thyroid function Graves' disease. **Discussion:** Normal thyroid function Graves' disease is defined by ophtalmopathy in the absence of previous or current thyrotoxicosis. The diagnosis is made clinically and supported by radiologic findings. Usually patients present with less severe, unilateral or asymmetric disease with less tissue inflammation and less muscle involvement. TRAB has an important role in the disease's pathophysiology, it's absence results in a diagnostic dilemma. TRAB essay varies in sensitivity with the stage of the disease. It correlates with severity and degree of ocular involvement. It is low in patients with normal thyroid function. The reason for the negative TRAB essay in this patient is not clear. Among possible causes are low essay sensitivity, or less severe disease with no systemic TRAB. Other factors may also be associated with ophthalmopathy, such as IGF1 receptors, calquestrin, or XIII collagen. Close follow up is required because some patients may develop detectable TRAB levels and have changes in thyroid function years after initial orbitopathy diagnosis. **Final comments:** Physicians must be aware of the possibility of TRAB negative normal thyroid function Graves' disease, and consider this diagnosis in case of suggestive radiological findings – even in those with normal thyroid function and antibodies. Follow up is key in this patient population.

E-PO277 PAPILLARY THYROID CARCINOMA WITH ATYPICAL EVOLUTION: A CASE REPORT

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Case presentation: A. L. N. F., 51 years old, female. She underwent partial thyroidectomy in 2016 in Bahia due to papillary thyroid carcinoma (PTC). In 2017, during follow-up, a total thyroidectomy was performed associated with right neck dissection. Anatomopathology of the second surgery: classic type of PTC, T3NxMx, 0.9 x 0.8 cm, with extrathyroidal extension. 100 mCi of iodine was performed after surgery. In January 2019, a new neck dissection was performed, with 150 mCi of iodine afterwards. Post-dose whole body scan showed right chest and cervical uptake. The patient evolved with persistent elevated serum thyroglobulin: 500 ng/mL. A cervical US, done in february of 2020, verified multiple nodular and globular images in the right cervical region, extending to level II, III, IV and VI, the largest with 3 cm on its longest axis, which may represent secondary implants and and his serum thyroglobulin increase to 5,000 ng/mL. The presence of extensive tumor in the right cervical area was verified in the body examination, with local deformity. Pathology of the third surgery: infiltrative PTC in fibroadipose and muscular tissue with formation of tumor mass, presence of neoplastic invasion in blood and lymph vessels in the cervical regions III, IV and V, metastatic in 3 of 4 isolated lymph nodes in the cervical region VI. **Discussion:** The clinical and pathological characteristics are associated with a higher risk of recurrence of PTC and mortality are advanced age at diagnosis (above 55 years), size of the primary tumor, the presence of soft tissue invasion or distant metastases. Regarding the histological subtype, several studies have shown a worse prognosis for tall, island and tail cell variants. In addition to traditional risk factors, specific molecular profiles may predict the risk of extrathyroidal extension, even distance lymph node metastasis. Tumors with BRAF V600E mutation had a recurrence rate of 8% compared to 1% of those negative for BRAF. **Final comments:** The reported clinical case raises questions about traditional risk factors for recurrence of papillary thyroid carcinoma, since the patient is young, the initial tumor size was less than 1 cm and the histological subtype had a good prognosis, therefore the most aggressive evolution would be unlikely. In these cases, a broader genetic analysis (when available) could provide a more accurate prognosis of the tumor and thus determine a more aggressive approach, reducing morbidity and mortality.

E-PO278 PERCUTANEOUS ETHANOL INJECTION ON TREATMENT OF THYROID NODULES: A PROTOCOL ASSOCIATING VOLUME REDUCTION AND ESTHETIC APPROACH

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Introduction: Thyroid nodules are mainly related to iodine deficiency, genetic factors, ethnicity, gender and autoimmune diseases. When benign, their treatment was based for a long time only on surgery or aspiration. Recently, less invasive therapies have emerged, such as the percutaneous ethanol injection (PEI), which benefits include low recurrence rates and minor transitory side effects. **Objective:** Analyze the effectiveness of a US-guided PEI protocol for treating solid, cistic and mixed thyroid nodules. **Methods:** Prospective study that evaluated the result of IPE in solid, mixed and cystic thyroid nodules. The treatment was considered satisfactory when there was a 50% decrease in the initial volume of the nodule and/or when there was a reduction of at least 30% and the patient reported esthetic satisfaction regarding the dimensions achieved. **Results:** Data from 98 patients diagnosed with solid, mixed and cystic thyroid nodules (NTs) were analyzed. There were 93 women (94.9%) and 5 men (5.1%), with a mean age of 47.1 ± 17, 0 years at the time of the first session. Patients underwent an average of 2.5 ± 1.6 sessions of PEI, with an average total volume of injected ethanol of 6.9 ± 8.2 mL over a follow-up time of 8.7 ± 9.1 months. A therapeutic success was achieved in 70.4% (69/98 patients) of those submitted to the procedure. Our study also showed a correlation between volume of ethanol injected and nodule reduction ($r = 0.22$; $p < 0.05$) and between initial nodule volume and nodule reduction ($r = 0.7$; $p < 0.0001$). Concerning the side effects of PEI, 62 patients (65.3%) complained of pain related to injection, but it was considered transient and of mild intensity. No serious complications have been reported. **Conclusion:** Our study showed a therapeutic success of IPE in thyroid nodules of 70.4%, considering volume reduction and esthetic satisfaction.

E-PO279 POTENTIAL TARGETS FOR THE HEPATITIS C VIRUS-MEDIATED AUTOIMMUNE THYROIDITIS – SIGNALING PATHWAY MODELLING

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Introduction: The mechanisms by which hepatitis C virus (HCV) infection induces autoimmune thyroiditis (AIT) have been studied. It has been suggested that inflammatory cytokines during HCV infection would change the thyroperoxidase (TPO) signaling cascade and thyroglobulin (Tg) determining autoimmune thyroid disease. **Objective:** To show the signaling pathway, of TPO and Tg, and their potential targets for HCV mediated HCV in individuals with hepatitis C. **Methods:** The mapping of the signaling pathway was based on a review study approach and performed using the automatic annotation server of the Kyoto and Genome Encyclopedia (KEGG). PathVisio is free software for analysis and design of open source routes, was used for the graphic representation of the signaling pathway. **Results:** The contigs were extracted from the KEGG database and their mapped transcription represents the signaling pathway of the main biomolecules that triggers the TA. The action of HCV, or its treatment with interferon-alpha (IFN-α), can trigger AIT that is characterized by the presence of autoantibodies against TPO and Tg. In AIT, autoreactive CD4 + T lymphocytes recruit B cells and CD8 + T cells in the thyroid. The progression of the disease leads to the death of thyroid cells and hypothyroidism. **Conclusion:** The data indicate that HCV infection acts in breaking immunological tolerance, triggering damage to thyroid cells through autoantigen released against TPO and Tg, with activation of several signaling pathways, resulting in IAT and hypothyroidism secondary to cellular apoptosis.

E-PO280 PREDICTOR OF LONG-TERM EVOLUTION FOR DIFFERENTIATED THYROID CARCINOMAS: THYROGLOBULIN LEVELS OR THYROGLOBULIN/THYROTROPHIN RATIO?

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Introduction: Thyroglobulin (Tg) and TSH-stimulated Tg (STg) are considered prognostic markers for the differentiated thyroid carcinomas (DTCs) when measured after the total thyroidectomy (TT) and before the radioactive iodine ablation/therapy (RIT). Because TSH levels likely influences the Tg levels, we hypothesize that the ratio STg/TSH can be used as a prognostic marker for DTCs. **Objectives:** Perform a retrospect study analyzing if the level of the first STg and the ratio STg/TSH, in the patients with DTC, can predict the therapeutic response for the initial therapy in the long term. **Methods:** A total of 181 patients with DTC were evaluated for the dosage of the first TgS and the ratio STg/TSH in 1-3 months after TT and before RIT. The data were correlated with the response for the initial therapy (Excellent/Indeterminate or incomplete). The survival rate in Excellent/Indeterminate response was also considered as an outcome. **Results:** The cases with Incomplete response presented superior concentration of the STg [225.13 ± 585.26 ng/mL versus (vs.) 20.4 ± 192.9 ng/mL; $p < 0.001$] and the STg/TSH ratio (3.01 ± 7.8 vs. 0.27 ± 2.58; $p < 0,001$). The cutoffs of 5 ng/mL for STg and 0.085 for STg/TSH shows sensibility of the 76.7% and 76.9%, and specificity of 79.2% and 82.6%, respectively, to predict the response for the initial therapy. Values below these cutoffs are associated with more time of survival in Excellent/Indeterminate response (140.4 vs. 15.9 and 144.6 vs. 15.9 months, respectively). **Conclusion:** The first TgS and the TgS/TSH ratio represent useful markers for prognostic in the long term for patients with DTCs.

E-PO281 PRETIBIAL MYXEDEMA FOLLOWING RADIOIODINE THERAPY

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Introduction: Pretibial myxedema (PTM), or thyroid dermopathy, is described as a thickening and remodeling of the skin tissue in the pretibial area. Histopathology can differentiate it from other diseases, like chronic dermatitis, lichen myxedematosus, and erythema nodosum. **Objective:** Report three cases of pretibial myxedema following radioiodine therapy. We believe that there is a correlation between 131I therapy, the onset of thyroid dermopathy, and immunoreactivity. **Methods:** Retrospective study in which the record of three patients were analyzed. The research included patients diagnosed with Graves' disease (GD), who were treated with 131I therapy and developed thyroid dermopathy following radioiodine therapy. **Results:** Three patients (two women and one man) developed thyroid dermopathy following 131I therapy. All three cases were diagnosed with hyperthyroidism with inappropriate control of thyroid function using methimazole. The average time between the diagnosis of GD and the performing of 131I therapy was 8,3 years (4-13 years interval), smoking was present in only one of the cases. Presence of Graves' orbitopathy was negative in one of the cases (clinical activity score 0) and present in two cases (clinical activity score 1 and 2). The three cases had a worsening of Grave's orbitopathy following 131I therapy. The thyroid dermopathy initiated after 68,3 months (4-144 months interval) post radioiodine therapy. All patients presented positive TSH-receptor antibodies (TRAb) on dermopathy diagnosis. In all cases patients were evaluated by the dermatology service with confirmation through skin biopsy and histopathology, being opted to treat with topical glucocorticoid. The result was an improvement of the dermatology aspect in all the cases, with full resolution in two cases. **Conclusion:** Although thyroid dermopathy is rare, it can occur following radioiodine therapy. The data and information about this condition are still scarce and more studies are needed to elucidate its precise pathophysiology.

E-PO282 PROLONGED USE OF ANTITHYROID DRUGS AND REMISSION OF GRAVE'S DISEASE

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Introduction: Graves' disease (DG) is the main cause of hyperthyroidism and antithyroid drugs (ATD) present as the main form of treatment Recently, the prolonged use of low dose ATD has been a frequently used option. However, the time of use to obtain maximum remission rates has not been determined yet. **Objectives:** Evaluating the treatment time of GD with low doses of ATD and remission rates. **Materials and methods:** One hundred and eighty-five patients with GD were treated for 18-24 months with ATD, after this period the ATD was suspended and the patients who presented recurrence (n = 81) were divided into three groups according to ATD second cycle of treatment period. The Group 1 (G1), n = 34 patients who used ATD for 2 to 5 years, Group 2 (G2), n = 33 patients who used ATD for 5 to 10 years and Group 3 (G3), n = 14 patients who used ATD for more than 10 years. Furthermore, patients were evaluated for gender, age, smoking habits, thyroid antibodies, initial free TSH and T4, and inflammatory activity of orbitopathy through CAS value (Clinical Activity Score). Continuous variables with abnormal distribution were evaluated with non-parametric tests. The Mann-Whitney test for medians and the chi-square test for proportions was used for proportions. **Results:** In Group 1, the mean age was 58 ± 16 years, with 91% of female patients; TSH at diagnosis was 0.01 ± 0.47mU/L and free T4 was 2.61 ± 2.36 ng/dL and 26% were positive in smokers, mean CAS was 0 ± 1. In Group 2, mean age was 55 ± 15 years, 93% of patients were female, TSH at diagnosis was 0.01 ± 3.09 mU/L and T4 free was 2.46 ± 2.14 ng/dL; 42% were positive smokers, the mean initial CAS was 0 ± 1. In Group 3, the mean age was 57 ± 15 years, 100% of the patients were female, the TSH at diagnosis was 0.01 ± 1.48 mU/L and the free T4 was 1.86 ± 5.14 ng/dL; 21% were positive in smokers, the initial CAS was 1 ± 1. The groups showed no difference between sex, age, initial TSH values and free T4 and CAS. Remission was defined as remaining on euthyroidism or hypothyroidism one year after the suspension of ATD. G1 showed 76% remission; G2 60% remission; and Group 3, 71% remission without statistical difference among groups ($p < 0.05$). **Conclusion:** Prolonged use of ATD increases the remission rate of GD, however there was no benefit after five years of using ATD in low doses compared to remission of DG.

E-PO283 RADIOIODINE TREATMENT FOR RECURRENT GOITER DUE TO THYROID DISHORMONOGENESIS

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Presentation: A 66-year-old female patient had a history of 3 prior thyroidectomy surgeries at her thirties, due to recurrent nontoxic multinodular goiter. She developed hypothyroidism, controlled with levothyroxine 1,25 mcg/kg/day. However, she complained of another progressive thyroid enlargement. She had no deafness, short stature, or other phenotypic changes. Neck ultrasound showed a total thyroid volume of 36 cm^3 (left lobe = 29,6 cm^3). Serum thyroglobulin (Tg) was increased, 442 ng/mL (reference value: 1,4-78 ng/mL). An 131I thyroid scintigraphy was performed to investigate ectopic thyroid tissue, which showed a topic thyroid with diffuse high radioiodine uptake (40% after 24 hours – reference values: 8%-32%). The coexistence of goiter with increased radioiodine uptake, increased Tg and hypothyroidism, lead to the hypothesis of thyroid dyshormonogenesis. Unfortunately, the perchlorate scintigraphy, classically used to confirm this hypothesis, is no longer available. In order to reduce thyroid volume without exposing the patient to another surgical procedure, which would increase the risk of sequelae, we indicated treatment with 15 mCi of 131I. She obtained a progressive decrease in thyroid volume to 6,7cm^3 after 14 months. **Discussion:** Thyroid dyshormonogenesis is the second most common cause of congenital hypothyroidism, approximately 15% of cases, and may be related to syndromic conditions, such as Pendred's syndrome. It is frequently caused by autosomal recessive mutations, which lead to partial defects in the iodide organification, affecting the genes that encode the sodium-iodide transporter, a defect in the Tg production or iodotyrosine deiodinase action, or even in the generation of hydrogen peroxide. Considering that the patient had recurrent goiter after several surgical procedures, high iodine uptake on scintigraphy despite being hypothyroid, the most appropriate hypothesis was thyroid dyshormonogenesis, likely due to an iodide organification defect, as Tg production and iodide uptake were elevated. **Final comments:** We present a case of thyroid dyshormonogenesis, diagnosed from recurrent goiter after several thyroidectomies, elevated serum Tg and high thyroid uptake in 131I scintigraphy, associated with hypothyroidism. Therefore, we utilized the maintained radioiodine uptake hability to treat the thyroid enlargement with radioiodine and save the patient from another surgical procedure.

E-PO284 RANDOMLY DIAGNOSED SUBLINGUAL ECTOPIC THYROID TISSUE IN A PATIENT WITH DECOMPENSATED HYPOTHYROIDISM

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Case presentation: This study reports a case of a 23-year-old female referring fatigue, indisposition, skin dryness and drowsiness. Despite her symptoms, she had been using levothyroxine previously. She underwent a laboratory evaluation that showed primary hypothyroidism (TSH: 33,1 mU/L; T4: 7,6 mg/dL, even while using levothyroxine). Moreover, she had an old ultrasonography that failed to identify thyroid gland. No other findings were identified on physical examination nor laboratory evaluation. Thus, levothyroxine 150 mcg once daily were prescribed and the patient was asked to perform a Technetium-99m thyroid scintigraphy that showed a sublingual thyroid tissue. **Discussion:** The improper descent of thyroid during embryogenesis may cause development of ectopic thyroid tissue in various sites along the path of thyroglossal duct, such as the base of the tongue, anterior tongue, submandibular or sublingual regions, larynx, trachea or even mediastinum. It occurs more frequently in female patients (female:male ratio of 4:1) and more commonly diagnosed during childhood or adolescence, when demand for thyroid hormones is increased. Although the majority of ectopic thyroid cases are asymptomatic, 33% to 62% of all patients may present with hypothyroidism. However, the most common symptoms are related to the growth of the ectopic thyroid tissue, leading to swelling, dysphagia, dysphonia, bleeding or dyspnea. Scintigraphy with technetium-99m is the most significant test in order to detect the presence and the location of ectopic thyroid tissue. Whilst asymptomatic or euthyroid patients do not require any treatment, those with high TSH levels or remarkable swelling should receive replacement therapy, besides symptomatic patients such as the one presented in this report. **Conclusions:** This case illustrates that sublingual ectopic thyroid tissue is a rare developmental abnormality of the thyroid gland and usually asymptomatic. Therefore, management in this case remains conservative, as the treatment depends on the symptoms and thyroid function. Meanwhile, surgical intervention is reserved for severe symptoms or malignancy. That said, the patient described in the present report should be followed-up. **Keywords:** Thyroid dysgenesis; hypothyroidism.

E-PO285 RELATIONSHIP BETWEEN THE PRESENCE OF ANTITHYREOPEROXIDASE ANTIBODY AND THE RESULT OF IN VITRO FERTILIZATION (IVF) PROCEDURES

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Introduction: Autoimmune thyroid diseases are the most prevalent endocrine diseases in women, affecting 2%-4% of this population. This disorder occurs through the action of anti-thyroid antibodies, such as antithyreoperoxidase (anti-TPO). Several studies have sought the relationship between the serum concentration of this antibody and the success rate in vitro fertilization procedures (IVF), but the results are controversial, many associating the presence of this antibody with infertility, others reporting indifference among women with positive and negative anti-TPO. **Objective:** To determine the existence of an association between anti-TPO antibody, positive or negative, and successful pregnancy in women undergoing in vitro fertilization. **Patients (materials) and methods:** This is an observational study, in which the retrospective analysis of data present in medical records and laboratory tests of women undergoing in vitro fertilization from June 2013 to June 2017 was performed. The exclusion criteria were: polycystic ovarian syndrome, ovarian surgery, and/or radio/chemotherapy. Among the negative outcomes for pregnancy were biochemical pregnancy, abortion (6-20 weeks), and not getting pregnant. **Results:** In all, data from 640 patients were analyzed regarding the antibody indexes, being this higher or lower than 15 U/mL. In all, 546 patients showed to have the antibody in lower values than the reference, while 94 were in higher quantities. Among the patients with higher results, 52 (55.3%) were unsuccessful with IVF, while 42 (44.7%) were. Among women with values below 15U/mL, a similar response was observed, showing 333 (61.0%) failure while 213 (39.0%) of cases resulted in a successful pregnancy. Using Fisher's exact test, with a 95% confidence interval, no relationship was identified between Anti-TPO values and IVF outcome ($p = 0.307$). The Fi association test demonstrated a percentage value of relation between the presence of the Anti-TPO antibody and the pregnancy outcome of 4.1%, thus strengthening the hypothesis that the presence of the antibody is indifferent to the results of the procedure. **Conclusion:** The analysis of the results of the sample used showed no relationship between the anti-TPO and the outcome of IVF procedures, reinforcing the thesis of some studies found in the literature regarding the neutrality of the antibody in pregnancy.

E-PO286 STRUCTURAL SIMILARITY BETWEEN THYROID PEROXIDASE [HOMO SAPIENS] AND SARS-COV-2 SPIKE GLYCOPROTEIN A TRIGGERING MECHANISM OF AUTOIMMUNE THYROIDITIS?

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There are reports of autoimmune disease related to SARS-CoV-2 such neurological syndromes and hematological syndromes, and more recently autoimmune thyroid dysfunctions have been described. These reports suggest that SARS-CoV-2 acts as a probable trigger for triggering the autoimmunity process. **Aim:** To evaluate structural similarity between thyroid peroxidase [Homo sapiens] (TPO) and SARS-CoV-2 spike glycoprotein (COVID-19), and to propose this similarity as a likely trigger for autoimmune thyroiditis. **Method:** Using bioinformatics tools, we compare the amino acids (AA) sequences between protein structure of TPO and chain A COVID-19, chain B COVID-19, and chain C COVID-19, accessible in the National Center for Biotechnology Information database, by Basic Local Alignment Search Tool in order to locate the homologous regions between the sequences of AA. **Results:** The homology sequence between the TPO and COVID-19 ranged from 27.0 % (10 identical residues out of 37 AA in the sequence) to 56.0% (5 identical residues out of 9 AA in the sequence). The similar alignments demonstrated relatively high E values in function of short alignment. **Conclusion:** Data suggest a possible pathological link between TPO and COVID-19. The structural similarity of AA sequences between TPO and COVID-19 may present a molecular mimicry suggesting the possibility of antigen crossover between TPO and COVID-19 that might represent an immunological basis for autoimmune thyroiditis associated with COVID-19. **Keywords:** Autoimmune thyroiditis, thyroid peroxidase, SARS-CoV-2, molecular mimicry.

E-PO287 THYROID LYMPHOMA: A CASE REPORT

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Presentation of the case: Woman, 82 years old, referred to a thyroid nodule with about 3 years of evolution and progressive increase in the last year. There was a history of Hashimoto's thyroiditis, hypertension, megaloblastic anemia and previous smoking. In April 2020 thyroid USG there was a description of a solid nodule, located in the middle third of the right lobe with a volume of 12.4 cm^3 (TIRADS 4) and PAAF classified as BETHESDA III. Three months later, the volume of the nodule increased 8-fold (99 cm^3) associated with two suspicious lymph nodes, the largest measuring 1.87 x 1.2 x 2.47 cm. The FNAB was consistent with lymphoid atypia of undetermined significance, immunophenotyping compatible with lymphoproliferative neoplasia B and cervical CT with large expansive lesion measuring 11.8 x 5.5 x 6.3 cm, with deviation of the trachea to the left and invasion of the larynx, in addition to multiple lymph node enlargements. The patient underwent a biopsy of the cervical mass and tracheostomy. The anatomopathological study was compatible with medium to large non-Hodgkin's lymphoma with diffuse architecture, areas of necrosis and foci with a "starry sky" aspect (Burkitt simile). Staging CT scans, as well as bone marrow biopsy, did not show metastases. The mini-chop chemotherapy regimen (dexorubicin + cyclophosphamide + vincristine + dexamethasone) was used as treatment. **Discussion:** Primary thyroid lymphoma is rare and accounts for less than 1% of malignant thyroid diseases. There is a strong association with chronic lymphocytic thyroiditis. The most common signs and symptoms are a rapid enlargement of the thyroid gland, associated with obstructive symptoms, which was the case of this patient. The FNAB in these cases can be doubtful, and the association with immunophenotyping and biomarkers such as AE1, AE3 and ACL can help in the diagnosis, especially regarding the differentiation regarding anaplastic carcinoma. Histopathologically, the most common subtype is diffuse large B-cell lymphoma. Treatment and prognosis will depend on the histological subtype, tumor staging and patient performance. The combination with chemotherapy and radiotherapy is preferable for early stages. Chemotherapy alone is the choice at an advanced stage. **Final comments:** Primary thyroid lymphoma is a rare disease that affects more women, the elderly and has a rapid growth. If diagnosed early, it is potentially curable.

E-PO288 THYROTOXIC CRISIS AS A DIFFERENTIAL DIAGNOSIS WITH ACUTE ABDOMEN

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Case presentation of hyperthyroidism: Female patient, 34 years old, sought care due to diffuse abdominal pain started 10 days ago with progressive worsening. Nausea, vomiting, headache, loss of appetite and face edema were associated. In the three days prior to hospitalization, she developed fever and dyspnoea. Upon admission, she was feverish, drowsy and tachycardic. About 90 days ago she had undergone bilateral salpingectomy due to retro-ovarian abscess. Chest radiography has showed a pattern of pulmonary congestion and an increase in the cardiac area. Computed tomography of the abdomen has showed diffuse reaction changes, pleural effusion and one of the left adnexal cyst, in regression. During hospitalization, she presented episodes of hypertension and psychomotor agitation controlled with medications. She has remained afebrile, however, with tachycardia. Echocardiogram showed ejection fraction of 46% and signs of significant pulmonary hypertension. Pulmonary scintigraphy without alteration. Dosage of free T4 of 5.36 ng/dL and TSH of 0.01 mU/L, repeated and confirmed. After excluding other diagnoses, the diagnosis of thyrotoxic crisis (CT) was concluded. A thyroid ultrasound was requested with characteristic findings: moderate diffuse glandular enlargement and hypervascularization. Received radioactive iodine 131 therapy with 20 mCi. Propranolol and metoprolol were administered as symptomatic of signs and symptoms. She was discharged with outpatient follow-up. **Discussion:** CT can be difficult to diagnose when excess thyroid hormones are previously unknown. The acute abdomen is clinically defined as sudden onset, severe abdominal pain with abdominal defense, most often with surgical indication. Adrenergic symptoms, dyspnoea and fatigue can be present in both situations. The literature brings several case reports of this fearful association, in which a mistake may lead to a dangerous surgical procedure. In the initial evaluation, the patient did not present clinical signs characteristic of CT and a history of thyroid disease. The clarification required diagnostic insight. **Final comments:** Even without a history of thyroid disease, CT participates in the differential diagnosis of abdominal pain, as both may present similar and nonspecific clinical condition. **Keywords:** Thyrotoxicosis; thyroid crisis; abdomen, acute; hyperthyroidism.

E-PO289 THYROTOXIC PERIODIC PARALYSIS DUE TO GRAVES' DISEASE: A CASE REPORT

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Case report: A 36-year-old man was hospitalized in another hospital due to lower limbs (LL) paralysis. His serum potassium (K+) was 1.72 mEq/L (3.5-5.1) and he was also diagnosed with hyperthyroidism, receiving methimazole 20 mg. One month after, he was schedule for an outpatient visit at our hospital. He reported diarrhea, agitation, palpitations, and had a family (mother) history of Graves' disease. Physical exam: hands tremor, a small goiter, with thrill; no signs of ophthalmopathy. First exams: TSH 0.01 mUI/mL (0.35-4.94), T4 6.0 mcg/dL (4.87-11.72), K+ 4.6, TRAb 6.32UI/L (reagent > 1.75), T3 407.5 ng/dL (64-152). Propranolol was added and resting was recommended, due to the diagnosis of thyrotoxic periodic paralysis (TPP) associated with Graves' disease. Two months after, he sought emergency for a new episode of loss of strength, paresthesia in LL, progressing to the upper limbs, with nausea and diarrhea. Exams: TSH < 0.008, free T4 1.27 ng/dL (0.7-1.48), K+ 3.5. He was treated with oral potassium replacement, advised to maintain a potassium-rich diet with low carbohydrate content, and not to perform strenuous exercise. Four months later he went to emergency again due to weakness in the four limbs, K+ 1.8. He improvement after parenteral potassium replacement and methimazole was increased to 30 mg/day. However, in the same hospital internment, he presented a new episode of LL weakness and, again, a low K+. After replacement and correction of hypokalemia, he underwent definitive treatment for hyperthyroidism with 30 mCi of I^{131}. Two weeks after discharge, exams were: T4L 0.93; T3 78.25; methimazole was withdrawn and no further episodes of hypokalemia occurred. **Discussion:** TPP is rare, compromising ~0.2% of patients with hyperthyroidism of any etiology; it is a serious disorder and most often affects men aged 20 to 40 years. Physiopathology is not clear. Usual symptoms consist of generalized weakness, especially on proximal muscles of the legs. Diagnosis is confirmed by the association of hypokalemia with clinical signs of hyperthyroidism. Therapy includes potassium replacement, use of an antithyroid drug and propranolol. Hypokalemia is permanently improved with definitive treatment of the thyroid dysfunction. **Final considerations:** TPP presents a typical clinical picture, as in this case. It is important to recognize this rare and life-threatening condition, which presents a favorable evolution when properly diagnosed and treated.

E-PO290 THYROTOXIC PERIODIC PARALYSIS WITH UNUSUAL CLINICAL PRESENTATION INVOLVING BULBAR AND RESPIRATORY WEAKNESS: A CASE REPORT

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P. D. P., a 48-year-old man, with negative personal medical history, reported multiple episodes of acute muscle weakness precipitated by exercise, associated with dysphagia, for the last four months, with spontaneous resolution. He was presented to the emergency department after recurrence of the signals and symptoms, in addition to acute respiratory failure with requirement endotracheal intubation and invasive mechanical ventilation. Complementary interrogation also indicated a history of extremity tremors, palpitation and 10 Kg unexplained weight loss in the past few months. Laboratory studies revealed significant hypokalemia (2.3 mEq/L), suppressed TSH (0.005 mUI/L) and elevated T4L (7.77 ng/dL). All other tests, including liquor and computed tomography were normal. His clinical presentation and laboratory abnormalities were consistent with thyrotoxic periodic paralysis. The association between periodic paralysis (PP) and thyrotoxicosis is a rare condition that is most reported and studied in Asia, but can occur in non-Asian populations in an incidence estimated to be 0.1 to 0.2 percent among patients with hyperthyroidism. In the majority of cases, hyperthyroidism occurs because of Grave's disease. Thyroid hormone can stimulate Na+-K+ ATPase in skeletal muscle responsive elements to upregulate the transcription of the gene encoding Na+/K+ ATPase. Thyrotoxic patients with PP have been found to have higher sodium pump activity than those without paralytic episodes. Catecholamine can also increase Na+/K+-ATPase activity in skeletal muscle. The enhanced beta-adrenergic response in thyrotoxicosis further increases Na+/K+-ATPase activity. Hyperinsulinemia is also observed in acute attack of TPP, and the release of insulin in response to oral glucose challenge is exaggerated in TPP patients, supporting the idea that insulin participates in the pathogenesis of hypokalemia in TP. Exercise releases potassium from the skeletal muscles, whereas rest promotes influx of potassium. This explains why paralytic attacks occur only during recovery from exercise and resumption of exercise can abort an attack. Exceptional cases of bulbar and respiratory weakness requiring ventilatory support have been reported in TPP. This case report aims to review the main concepts, in literature looking, of this rare complication of hyperthyroidism and present unusual clinical findings of the pathology.

E-PO291 TRABECULAR BONE SCORE IN WOMEN WITH DIFFERENTIATED THYROID CANCER ON LONG-TERM TSH SUPPRESSIVE THERAPY

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Introduction: Thyrotropin stimulating hormone (TSH) suppression in patients with differentiated thyroid cancer (DTC) aims to decrease the growth and proliferation of thyroid cancer cells. However, the effect of TSH suppressive therapy on bone microarchitecture remains undefined. **Methods:** Cross-sectional study included 43 women with DTC undergoing TSH suppressive therapy (sTSH) compared to 20 women also on levothyroxine (LT4) therapy, but with TSH in the low-normal range (nTSH) since the thyroid surgery. Bone mineral density (BMD) was measured by dual-energy X-ray absorptiometry (DXA) and trabecular bone score (TBS) was evaluated using the TBS iNsigth software. The relationship between suppressive therapy-related parameters and bone parameters was investigated. **Results:** The TBS mean values were not significantly different in the sTSH and nTSH groups (1.273 ± 0.12 vs. 1.307 ± 0.14, p = 0.7197). In both groups, postmenopausal women had degraded microarchitecture (TBS 1.216 ± 0.11 vs. 1.213 ± 0.09, p = 0.9333), while premenopausal women had normal microarchitecture (1.328 ± 0.11 vs. 1.401 ± 0.12, p = 0.195). The percentage of all postmenopausal women with degraded TBS was 54.7%, while the percentage of osteoporosis diagnoses was 16.1%. Serum levels of TSH and free thyroxine (FT4), duration of TSH suppression and the dose of LT4 were not independently associated with BMD or TBS. Body mass index (BMI) and menopausal status were the only variables associated with TBS and BMD. **Conclusion:** Long-term TSH suppressive therapy does not seem to be associated with deterioration in trabecular microarchitecture in premenopausal women. However, lower TBS values were observed in postmenopausal women of both groups, even in those with non-suppressive therapy. These data show that treatment with thyroid hormone in DTC can be detrimental to bone quality in postmenopausal women, regardless of whether TSH levels are maintained chronically suppressed or in the low-normal range.

E-PO292 USE OF THERMOGRAPHY IN THE INVESTIGATION OF THYROID NODULES

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Thyroid nodules (TN) are common in the general population, and the clinical significance of diagnosing thyroid nodules is based on excluding the possibility of thyroid cancer, which occurs in 7%-15% of cases. The thyroid gland, owing to its superficial location, is easily accessible via thermography, a noninvasive method of recording body temperature that measures infrared radiation emitted by the body surface. Therefore, this study aimed to evaluate the temperature differences between benign and malignant TN by using thermography. We conducted a cross-sectional study where 147 TN were analyzed. The 147 nodules were divided into two groups: the first group included a convenience sample of 27 malignant nodules (confirmed by histopathology) and the other included 120 benign nodules (confirmed by cytopathology), to maintain the proportionality between benign and malignant nodules found in the general population. All the patients were subjected to ultrasound, fine needle aspiration biopsy, and thermography. The thermographic images were obtained using the FLIR Thermal Camera SC 620, with sensitivity of < 0.04 °C. The patient's neck area was cooled evenly with a flow of air from the ventilator until the temperature reached 31.5 °C. The camera was configured to capture an image every 15 seconds for 5 minutes, resulting in a total of 20 images. The location of the nodule in the images was performed with information from the thyroid ultrasound. A total of 15 points were chosen randomly from the regions identified as the nodule. The images were analyzed temporally considering their initial temperature (It) in image 1, the medium temperature (Mt) in image 10, and final temperature (Ft) in image 20. The temperature delta (ΔT) was calculated (final temperature minus the initial temperature). The analysis of the thermograms showed that the Mt (33.46 °C versus 33.01 °C, p < 0.0001), Ft (33.99 °C versus 33.38 °C, p < 0.0001), and ΔT (2.95 °C versus 1.73 °C, p < 0.0001) were higher in the malignant nodule group than in the benign nodule group. The ROC curve analysis of ΔT demonstrated a statistically significant curve (AUC = 0.967, EP = 0.026; p < 0.0001; 95% CI = 0.916-1.000), and the cutoff point that maximized specificity and sensitivity was the ΔT of 2.38, with a sensitivity of 0.963 and specificity of 0.992. Malignant nodules have higher temperatures than benign nodules on thermographic evaluation.

DISLIPIDEMIA E ATEROSCLEROSE

E-PO293 TREATMENT WITH VOLANESORSEN (VLN) REDUCED TRIGLYCERIDES AND PANCREATITIS IN PATIENTS WITH FAMILIAL CHYLOMICRONEMIA SYNDROME (FCS) AND SEVERE HYPERTRIGLYCERIDEMIA (SHTG) VS PLACEBO: RESULTS OF THE APPROACH AND COMPASS STUDIES

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Introduction: FCS is a rare genetic disease characterized by severe chylomicronemia, sHTG and consequent risk of potentially fatal recurrent and acute pancreatitis (AP). HTG-induced AP has a more severe course, causing worse outcomes. **Methods:** APPROACH randomized 67 FCS patients (66 dosed), fasting TGs ≥750 mg/dL, 1:1 to 52 weeks of weekly VLN (300 mg) or placebo (PBO). COMPASS randomized 114 sHTG patients (113 dosed), fasting TGs ≥500 mg/dL, 2:1 to VLN or PBO weekly for 26 weeks (dosing adjustments allowed at 3 months). Endpoints included % reduction in serum TGs at 13 weeks and TX-emergent pancreatitis. **Results:** Combined COMPASS & APPROACH results showed a significant reduction ($p = 0.0185$) in pancreatitis events (1 event/1 patient – VLN; 9 events/6 patients – PBO). Patients in APPROACH with ≥2 pancreatitis events in 5 years (pre-randomization) suffered no attacks during study TX-period ($p = 0.02$). In APPROACH, VLN-group ($n = 33$) month 3 TGs decreased by 77% and increased by 18% in PBO-group ($n = 33$) ($p < 0.0001$). In COMPASS, VLN decreased TGs 71% ($p < 0.0001$) ($n = 75$) after 3 months, compared with 1% decrease in PBO ($n = 38$). The most common AE with VLN was injection site reactions (average% injections w/≥1 LCRIS: 12% FCS/24% sHTG). Declines in platelet counts led to 5 early terminations in APPROACH, 2 had platelets <25,000/µL; platelet counts recovered to normal after VLN was stopped. COMPASS had no serious platelet events, but 1 potentially related SAE reported as serum sickness occurred 2 weeks after the last study dose. **Conclusions:** VLN treatment reduced TGs and consequent AP risk in FCS and sHTG patients.

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