

TÜRKİYE ENDOKRİNOLOJİ VE METABOLİZMA DERNEĞİ BÜLTENİ



Üç ayda bir online yayımlanır

Sayı 73 • Ocak – Şubat – Mart • 2021



CANLI YAYIN

TOPLANTILARIMIZ...

TEMED
Endokrin Akademi

**ENDOKRİN BOZUCU KİMYASALLAR
HAYATIMIZIN NERESİNDE ?**

Prof. Dr. Ayşegül Atmaca
Ondokuz Mayıs Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları
Bilim Dalı, Samsun

Doç. Dr. Özlem Üstay
Marmara Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları
Bilim Dalı, İstanbul

**27 Ocak 2021 Çarşamba
SAAT : 20:00-21:00**

TEMED
Endokrin Akademi

ZOR AKROMEGALİ OLGUSU

Moderatör
Prof. Dr. Sema Yaman
İstanbul Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları
Bilim Dalı (Emekli Öğr. Üyesi)

Doç. Dr. Zafer Değkölçü
Osaka Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları
Bilim Dalı

Doç. Dr. Özlem Selçuk Birlik
İstanbul Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları
Bilim Dalı

Prof. Dr. Savaş Coşkun
Kocaeli Üniversitesi Tıp Fakültesi
Beyin ve Sinir Cerrahisi Anabilim Dalı

**30 Ocak 2021 Cumartesi
SAAT : 14.00**

ENDOKRİN AKADEMİ Online Eğitimlere Devam Ediyor



TEMED TİROİD GÜNLERİ-2 Tiroid Hipofonksiyonu Yönetimi

CANLI YAYIN



**Tarih: 03 Şubat 2021 Çarşamba
Saat : 19.30-20.45**



ABDİBRAHİM Koşulsuz Katkılarıyla



Moderatör

Prof. Dr. Ersin Akarsu
Gaziantep Üniversitesi Tıp Fakültesi,
Endokrinoloji ve Metabolizma
Hastalıkları Bilim Dalı, Gaziantep



**Tiroid Hormon Replasmanı:
Kime, Ne Zaman, Ne Kadar?**

KONUŞMACI

Prof. Dr. Refik Tanakol
Amerikan Hastanesi,
Endokrinoloji ve
Metabolizma Bölümü, İstanbul



**Tıbbi Tedavide Kullanılan İlaçlara ve
Radilyoterapiye Bağlı Guleren
Hipofizidlere Bakış**

KONUŞMACI

Prof. Dr. Dilek Yazıcı
Koç Üniversitesi Tıp Fakültesi,
Endokrinoloji ve Metabolizma
Hastalıkları Bilim Dalı, İstanbul

TEMED
Endokrin Akademi

EĞİTİCİ HIPOFİZ OLGULARI

Prof. Dr. Sema Yarman
TEMED Hipofiz Çalışma Grubu Başkanı
İstanbul Üniversitesi Tıp Fak.
Endokrinoloji ve Metabolizma
Hast. BD Emekli Öğr. Üyesi

Doç. Dr. Sema Çiftçi Doğanşen
Bakırköy Dr. Sadi Konuk Eğitim ve Araştırma Hastanesi
Endokrinoloji ve Metabolizma Hastalıkları
İstanbul

13 Şubat 2021 Cumartesi
SAAT : 14:00

ÖRNEK ENDOKRİNOLOJİ VE METABOLİZMA DERNEĞİ

CANLI

TEMED
Endokrin Akademi

CİNSİYET HOŞNUTSUZLUĞU MULTİDİSİPLİNER YAKLAŞIM

MODERATÖR
Doç. Dr. Özlem Üstay
Marmara Üniv. Tıp Fakültesi
Endokrinoloji ve Metabolizma BD

MODERATÖR
Prof. Dr. Aslıhan Polat
Kocaeli Üniv. Tıp Fakültesi, Psikiyatri AD

Cinsiyet Hoşnutsuzluğu Olan Bireylerde Tanı ve Psikiyatrik Değerlendirme
Dr. Öğretim Üyesi Neşe Yorguner
Marmara Üniv. Tıp Fakültesi, Psikiyatri AD

Endokrinolojik Yaklaşım, Ne Baksak ? Ne Versek ? Ne İzleyelim ?
Doç. Dr. Alev Selek
Kocaeli Üniv. Tıp Fakültesi
Endokrinoloji ve Metabolizma BD

Hukuki Haklar ve Etik Yaklaşım
Mahkeme Sürecine Doğru Yönlendirme
Doç. Dr. Gürkan Sert
Marmara Üniversitesi, Tıp Tarihi ve Etik AD

Doğru Cinsiyete Doğru Ses
KBB Bakış Açısı
Op. Dr. Necati Enver
Marmara Üniv. Tıp Fakültesi,
KBB Hastalıkları AD

Cinsiyet Değişimi Kime? Ne Zaman? Nasıl?
Prof. Dr. Mehmet Bayramiçi
Marmara Üniv. Tıp Fakültesi,
Plastik ve Rekonstrüktif Cer. AD

Öncülerden Deneyimler
Prof. Dr. Miyase Bayraktar
Hacettepe Üniv. Tıp Fakültesi
Endokrinoloji ve Metabolizma BD
Emekli Öğretim Üyesi

20 ŞUBAT 2021 Cumartesi
SAAT : 19:00-21.30

ÖRNEK ENDOKRİNOLOJİ VE METABOLİZMA DERNEĞİ

CANLI

TEMED
Endokrin Akademi

NADİR HASTALIKLAR - GAUCHER HASTALIĞI
Gaucher Hastalığında Farkındalığı
Artırmada Endokrinologların Rolü

Prof. Dr. Refik Tanakol
Amerikan Hastanesi, Endokrinoloji ve Metabolizma Bölümü, İstanbul

Prof. Dr. Fahri Bayram
Erciyes Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları
BD, Kayseri

25 ŞUBAT 2021 Perşembe
SAAT : 20:00-21:00

ÖRNEK ENDOKRİNOLOJİ VE METABOLİZMA DERNEĞİ

CANLI

Pfizer "in hayatınıza katıldığı her an"

TEMED
Endokrin Akademi

DIYABETTE YETERİNCE KONUŞAMADIKLARIMIZ
Artık daha da önemli!

MODERATÖR
Prof. Dr. Serpil Saiman

MODERATÖR - KONUŞMACI
Prof. Dr. Alper Sönmez
Dişabetli Hastalarda Diyabetin İlaçsız Tedavisi

KONUŞMACI
Prof. Dr. Alpaslan Kemal Tuzcu
Dişabetli Hastalarda Diyabetin İlaçsız Tedavisi

KONUŞMACI
Prof. Dr. Didem Özdemir
D Vitamini - Diyabetli Hastalarda Durumu

KONUŞMACI
Prof. Dr. İlhan Yetkin
100 Yılda Diyabet

2 Mart 2021 Salı
SAAT : 19:30 - 22:00

KOÇAK FARMA Her Konuşmacıya Destekli

TÜRKİYE ENDOKRİNOLOJİ VE METABOLİZMA DERNEĞİ

OBEZİTENİN FARMAKOLOJİK TEDAVİSİ

MODERATÖRLER

Prof. Dr. Fahri Bayram
Erciyes Üniversitesi Tıp Fakültesi
Açılış

Prof. Dr. Dilek Yazıcı
Koç Üniversitesi Hastanesi
Açılış

KONUŞMACILAR

Doç. Dr. Sinem Kıyıcı
Sağlık Bilimleri Üniversitesi, Bursa Yüksek İhtisas SUAM
Endokrinoloji ve Metabolizma Hastalıkları Bilim Dalı
Kılavuzlar Işığında Obezitede Farmakolojik Tedavi

Dr. Şeniz Ünal
Klinik Psikolog
Obezite Tedavisinde Psikoterapi ve Yaşam Becerileri Destekleri

Doç. Dr. Emre Bozkırlı
Adana Acıbadem Hastanesi
Kilonun Geri Alınmasının Önlenmesi
Kilo Vermek mi Daha Zor Korumak mı?

Tüm Konuşmacılar Soru Cevap

Moderatörler Kapanış

4 MART 2021 PERŞEMBE TOPLANTI SAATİ 19:30 21:00

Link : <http://zboxstep.com/obeziteakademi4mart>

Şifre : obezite@zboxstep.com

TEMED
Endokrin Akademi

ENDOKRİNOLOJİDE 2021 DİJİTAL
Fark Yaratacak Akademisyenler

27 -28 Mart 2021

İleri İstatistik kursu
Dijital sunum teknikleri
Endokrinoloji ve Teletip

Prof. Dr. Hanefi Özbek

Doç. Dr. Deniz Sezgin

Av. Ayşe Cül Hanyaloğlu

Av. Dr. Gökhan Doğramacı
(Avukat ve Hekim)

27 Mart 2021 / Cumartesi
14:00 - 18:00 İleri İstatistik Kursu

28 Mart 2021 / Pazar
14:00 - 16:00 Dijital Sunum Teknikleri

16:00 - 18:00
Endokrinoloji ve Teletip
Hukuksal ve Mesleki Sorumluluk

KONGRE, KURSLAR VE SEMPOZYUMLAR

42.
TÜRKİYE
ENDOKRİNOLOJİ VE
METABOLİZMA
HASTALIKLARI
KONGRESİ ONLINE
19 - 23 MAYIS 2021



TÜRKİYE
ENDOKRİNOLOJİ VE
METABOLİZMA
DERNEĞİ

Kongremiz
19 - 23 Mayıs 2021
tarihlerinde **Online**
olarak gerçekleştirilecektir.

www.temhk2021.org



DUYURULAR

TÜRKİYE ENDOKRİNOLOJİ VE METABOLİZMA DERNEĞİ DÜNYA OBEZİTE GÜNÜ BASIN BİLDİRİSİ

Obezite tüm dünyada sıklığı giderek artan bir halk sağlığı sorunudur. Obezitenin önlenmesi ve etkin tedavisindeki ilk ve en önemli adım obezite konusundaki farkındalığı arttırmaktır. Dünyanın farklı bölgelerindeki obezite ile ilgilenen kuruluşlar daha güçlü bir ses oluşturmak adına 2020 yılından itibaren 4 Mart tarihini “**Dünya Obezite Günü**” olarak kabul etmiştir. Amaç tüm Dünya’da obezite için etkinlikler düzenleyerek kronik bir hastalık olan obezite konusunda mücadeleyi güçlendirmektir. Türkiye Endokrinoloji ve Metabolizma Derneği (TEMĐ) olarak bizler de ülke çapında farklı etkinlikler düzenleyerek bu farkındalık kampanyasına destek vermekteyiz.

Obezite, 21. yüzyılın en önemli ve yaygın sağlık sorunlarından birisidir. Dünya Sağlık Örgütü (DSÖ)’nün 2016 verilerine göre dünya genelinde obezite sıklığı 1975’ten bu yana çok hızlı bir artışla 3 katına çıkmıştır. Fazla kilolu ve obeziteli bireylerin sayısı dünyada olduğu gibi Türkiye’de de giderek artmaktadır. DSÖ tarafından en son yayınlanan raporda Türkiye, 2 prevalans ile Avrupa’da yetişkin nüfusta obezitenin en yüksek olduğu ülke olmuştur. Çalışmalar devam etmekte olan koronavirüs (Covid-19) pandemisinin tüm dünyada obezite oranlarında ciddi bir artışa neden olacağını göstermektedir. Pandeminin ortaya çıkardığı stres ve kaygı, evde geçirilen zamanın artması, bu sürecin getirdiği sağlıksız beslenme alışkanlıkları ve tedaviye ulaşımındaki güçlükler gibi faktörler obezite oranlarında artış açısından büyük risk oluşturmaktadır.

Obezite diyabet, hipertansiyon, yüksek kan basıncı, kan yağlarında yükseklik, koroner arter hastalığı, inme, çeşitli kanserler, uyku-apne sendromu, karaciğer yağlanması, reflü, safra yolları hastalığı, kısırlık, depresyon, eklem ve hareket sorunları gibi pek çok ciddi sağlık sorununa yol açmaktadır. Yapılan çalışmalar obeziteli bireylerin Covid-19 enfeksiyonuna yakalanma ve Covid-19 hastalığını daha ağır geçirme riskinin de normal kilolu bireylere göre daha yüksek olduğunu göstermektedir. Obezitenin yol açtığı solunum problemleri ve obezite ilişkili ek hastalıklar bu bireylerde zatürre gelişim riskini ve yoğun bakım ihtiyacını arttırmaktadır. Özetle obezite, yol açtığı ciddi sağlık sorunları ile hastaların yaşam kalitesini ve süresini etkilemenin

yanı sıra toplumların sağlık bütçeleri üzerinde de büyük yük oluşturmaktadır.

Obezite, DSÖ tarafından sağlığı bozacak ölçüde vücutta aşırı yağ birikmesi olarak tanımlanmıştır. Sağlıklı bireylerde normal vücut yağ oranı erkeklerde -20, kadınlarda ise %-30 arasındadır. Obeziteye bağlı artan riski belirleyen önemli faktörlerden birisi de yağın vücutta nerede biriktiğidir. Göbek bölgesinde biriken yağ dokusunun obezite ilişkili hastalıklar açısından daha fazla risk oluşturduğu gösterilmiştir. Çok sayıda genetik, çevresel, fizyolojik, biyokimyasal, sosyokültürel ve psikolojik faktör birbiri ile ilişkili olarak obezite oluşumuna neden olmaktadır. Bu faktörler içinde aşırı ve yanlış beslenme ile fiziksel aktivite yetersizliği en önemli nedenler olarak kabul edilmektedir. Yaşamı kolaylaştıran ve enerji harcamayı engelleyen teknolojik ilerlemeler (motorlu taşıtlar, yürüyen merdiven, asansör, internet ve bilgisayar teknolojisi vb.), beslenmenin bir sanayi haline gelmesi, daha dayanıklı ve daha ucuz ürünler elde etmek için doğal yaşamda yeri olmayan besin katkılarının kullanılmaya başlanması (trans yağlar, nişasta bazlı şekerler gibi) ile hazır gıda tüketiminde artış ve hızlı beslenme tarzı dünyadaki obezite sıklığındaki artıştan sorumlu tutulan başlıca faktörlerdir.

Obezite tedavisinde ve önlenmesinde sağlıklı beslenme ve egzersizi içeren yaşam tarzı değişiklikleri ana basamaktır. Gereken ve uygun durumlarda obezite tedavisinde ilaç tedavisi ve cerrahi yöntemler de kullanılabilir. Ne yazık ki günümüzde obezite tedavisinde sağlığı bozan mucize diyetler, bilimsel dayanağı bulunmayan bitkisel tedaviler ve deneysel cerrahi yöntemler gibi yanlış uygulamaların da giderek artan sıklıkta kullanılmakta olduğunu gözlemlemekteyiz. TEMĐ olarak, obezitenin doğru tanı ve tedavisinin yanı sıra yanlış uygulamaların da önlenmesi yönündeki çabalarımızı dün olduğu gibi bugün de kararlılıkla sürdüreceğiz. Obezitenin önlenmesinde toplumdaki farkındalığın artırılması ve bebeklikten erişkinliğe sağlıklı yaşam tarzı alışkanlıklarının benimsenmesi öncelikli hedefler olmalıdır. Bu amaçla toplumun tüm katmanlarını kapsayacak, uygulanması kolay stratejilerin geliştirilmesi ve bunların uygulamaya konulması şarttır.

Kamuoyuna saygıyla duyurulur



ETKİNLİKLERİMİZ

4 Mart Dünya Obezite Günü kapsamında Gazi Üniversitesi Tıp Fakültesi, Endokrinoloji ve Metabolizma Hastalıkları Bilim Dalı ve Zonguldak Bülent Ecevit Üniversitesi Obezite ve Diyabet ve Uygulama Merkezi etkinlikler gerçekleştirmiştir.



Zonguldak Bülent Ecevit Üniversitesi
Obezite ve Diyabet Uygulama ve Araştırma Merkezi



Duyurular

TÜM DUYURULAR

Haberler

TÜM HABERLER

5.Zonguldak Endokrin Günleri Başlıyor

27.03.2021

5.Zonguldak Endokrin Günleri (VEZİG) Sempozyumu - Çevrimiçi -Baparıyla Tanımlanarak 29.03.2021





14 TIP BAYRAMI
MART KUTLU OLSUN



TÜRKİYE
ENDOKRİNOLOJİ VE
METABOLİZMA
DERNEĞİ

Ulusal ve Uluslararası Bilimsel Kongre ve Sempozyumlar

- 19 - 23 Nisan 2021
27th ESE Postgraduate Training Course in Clinical Endocrinology, Diabetes and Metabolism 2021- Online
<https://www.es-hormones.org/es-courses/27these-postgraduate-training-course-in-clinicalendocrinology-diabetes-and-metabolism/>
- 10 - 13 Mayıs 2021
28th European Congress on Obesity – ECO ONLINE 2021
<https://www.eco2021.com/>
- 19 - 23 Mayıs 2021
42. Türkiye Endokrinoloji ve Metabolizma Hastalıkları Kongresi - Online
<http://temhk2021.org/>
- 22 - 26 Mayıs 2021
e-ECE 2021, 23rd European Congress of Endocrinology
<https://www.es-hormones.org/events-deadlines/european-congress-of-endocrinology/e-ece-2021/>
- 9-13 Haziran 2021
57. Ulusal Diyabet, Metabolizma ve Beslenme Hastalıkları Kongresi, Bodrum
<https://www.diyabetkongresi.org>
- 25-29 Haziran 2021
81st ADA Scientific Sessions (virtual)
<https://professional.diabetes.org/scientific-sessions>
- 26 - 29 Ağustos 2021
IOF-WCO-IOF-ESCEO, World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases – Virtual Congress
<https://www.wco-iof-esceo.org/>
- 4-7 Eylül 2021
43rd Annual Meeting of the European Thyroid Association (ETA)-Online Meeting
<https://www.eurothyroid.com/events/43rd-annualmeeting-of-the-eta.html>
- 27 Eylül-1 Ekim 2021
Virtual EASD 2021
<https://www.easd.org/annual-meeting/easd-2021.html>
- 29 Eylül - 3 Ekim 2021
90th Annual Meeting of the American Thyroid Association Westin Kierland Scottsdale, Arizona
www.thyroid.org
- 21 - 24 Ekim 2021
EndoBridge 2021 - Online
<https://www.endobridge.org/>
- 5 - 6 Kasım 2021
16. Hipofiz Sempozyumu Swiss Otel, Ankara
<https://www.hipofiz2020.org/>
- 10 - 14 Kasım 2021
Mezuniyet Sonrası Eğitim Kursu - ENDOKURS 5 Sueno Otel, Antalya
<http://temd.org.tr/>

Üyelerimizden Literatür Seçmeleri

DEVELOPMENT OF PANCREATIC INJURIES IN THE OF COVID-19

C Akkus¹, H Yilmaz², S Mizrak³, Z Adibelli⁴, O Akdas⁵, C Duran⁶

Acta Gastroenterol Belg. Oct-Dec 2020;83(4):585-592. PMID: 33321015

Background and study aims: To investigate the clinical and laboratory characteristics of the cases with high lipase levels in the course of COVID-19.

Patients and methods: Hospital records of all cases, where lipase levels were measured, and the reverse transcriptase-polymerase chain reaction test due to SARS-CoV-2 was found positive, were retrospectively investigated. Of 127 COVID-19 patients tested for lipase, 20 (15.7%) had serum lipase levels above the upper laboratory limit. The patient group with the "high lipase level" was created from these subjects, and the rest constituted the "control" group.

Results: While body mass index (BMI) levels were higher in the high lipase group, ($p=0.014$), the number of those with pre-existing diabetes mellitus (DM) was also found higher in the high lipase group than the controls ($p=0.002$). The history of DM was detected to increase the risk of developing high lipase level 4.63 times higher. Only two patients were diagnosed with acute pancreatitis (AP). While oxygen saturations on admission ($p=0.019$) and discharge ($p=0.011$) were lower in the high lipase group than the controls, amylase ($p<0.001$), C-reactive protein (CRP) ($p=0.002$) and D-dimer ($p=0.004$) levels were found higher. In addition, more patients required the treatment in intensive care unit in the high lipase group, compared to the controls ($p=0.027$). Accordingly, time of hospital stay became also prolonged ($p=0.003$).

Conclusions: Pancreatic injuries or even AP may develop during SARS-CoV-2 infection, especially in those with pre-existing DM. Monitoring of pancreatic enzymes is important in COVID-19 patients, especially with pre-existing DM.

EVALUATION OF COAGULATION PARAMETERS IN PATIENTS WITH PARATHYROID ADENOMA

Murat Alay¹, Berrak Mermit Ercek², Gulcin Miyase Sonmez², Aysegul Sakin³, Rifki Ucler⁴, Saliha Yildiz⁴

Sci Rep. 2020 Nov 5;10(1):19208. PMID: 33154484 PMCID: PMC7645620 DOI: 10.1038/s41598-020-76167-2

Parathyroid adenoma is responsible for 80-85% of cases of primary hyperparathyroidism. Increased fibrinogen levels in patients with adenoma may increase the risk of atherosclerosis and cardiovascular events. The aim of this study was to investigate the relationship between coagulation parameters and parathyroid adenoma. A prospective study included 28 female patients with parathyroid adenoma aged 40-88 years and 27 age-matched healthy controls. The coagulation parameters were assessed for each participant. The mean ages of the patient and control groups were 57.7 ± 10.9 and 53.3 ± 9.31 years, respectively. The mean level of protein S activity was 65.79 ± 13.78 in the patient group and 77.00 ± 15.72 in the control group, and the difference was statistically

significant ($p = 0.013$). The mean fibrinogen levels of the patient and control groups were 338.78 ± 63.87 mg/dL and 304.30 ± 45.67 mg/dL, respectively, and a significant difference was found ($p = 0.041$). However, no significant difference was evident between the two groups with regard to the D-dimer ($p = 0.238$), aPTT ($p = 0.645$), INR ($p = 0.406$), protein C ($p = 0.076$), and AT-III ($p = 0.180$) levels. A positive correlation was observed between adenoma volume and fibrinogen in the patient group ($r = 0.711$, $p = 0.001$). The protein S levels were lower and the fibrinogen levels higher in the patients with parathyroid adenoma.

SALIVARY AND SERUM OXIDATIVE STRESS BIOMARKERS AND ADVANCED END PRODUCTS IN PERIODONTITIS PATIENTS WITH OR WITHOUT DIABETES: A CROSS-SECTIONAL STUDY

Sema Merve Altıngöz¹, Şivge Kurgan², Canan Önder², Muhittin A Serdar³, Uğur Ünlütürk⁴, Metin Uyanık⁵, Nilgün Başkalı⁴, Dimitris N Tatakis⁶, Meral Günhan²

J Periodontol. 2020 Dec 5. Online ahead of print. PMID: 33277933 DOI: 10.1002/JPER.20-0406

Background: Non-invasive methods for periodontitis diagnosis would be a clinically important tool. This cross-sectional study aimed to investigate the association between oxidative stress, glycation, and inflammation markers and periodontal clinical parameters in periodontitis and periodontally healthy patients with type 2 diabetes and corresponding systemically healthy controls.

Material and methods: Sixty-seven periodontally healthy (DM-H, $n = 32$) and periodontitis (DM-P, $n = 35$) patients with type 2 diabetes, and 54 systemically healthy periodontitis (H-P, $n = 26$) and periodontally healthy (H-H, $n = 28$) controls were included. Clinical periodontal parameters, body mass index, fasting glucose, hemoglobin A1c (HbA1c), along with saliva and serum 8-hydroxy-2'-deoxyguanosine (8-OHdG), malondialdehyde (MDA), 4-hydroxy-2-nonenal (4-HNE), advanced glycation end products (AGE), AGE receptor (RAGE) and high sensitivity C-reactive protein (hsCRP) levels were recorded and analyzed.

Results: Salivary 8-OHdG levels were significantly higher in periodontitis compared to periodontally healthy patients, regardless of systemic status ($P < 0.001$). Salivary MDA levels were significantly higher in all disease groups compared to H-H group ($P \leq 0.004$). Serum AGE levels were significantly higher in diabetic groups than systemically healthy groups ($P < 0.001$) and in H-P compared to H-H ($P < 0.001$). Bleeding on probing (BOP) and clinical attachment level (CAL) strongly correlated with salivary 8-OHdG and serum hsCRP ($P < 0.001$). In systemically healthy patients, salivary 8-OHdG was the most accurate marker to differentiate periodontitis from controls (AUC = 0.84). In diabetics salivary 4-HNE and RAGE were the most accurate (AUC = 0.85 for both).

Conclusion: Salivary 8-OHdG alone or in combination with 4-HNE, AGE and RAGE for diabetics, and salivary 8-OHdG alone or in combination with MDA and hsCRP for systemically healthy persons, could potentially serve as non-invasive screening marker(s) of periodontitis.

EFFICACY AND SAFETY OF STEREOTACTIC RADIOTHERAPY IN CUSHING'S DISEASE: A SINGLE CENTER EXPERIENCE

Tugce Apaydin¹, Hande Mefkure Ozkaya², Sebnem Memis Durmaz³, Rasim Meral⁴, Pinar Kadioglu²⁵

Exp Clin Endocrinol Diabetes. 2020 Aug 6. Online ahead of print. PMID: 32767284 DOI: 10.1055/a-1217-7365

Objective: To determine the efficacy and safety of stereotactic RT in patients with Cushing's disease (CD).

Methods: The study included 38 patients [31 patients who received gamma knife radiosurgery (GKS) and 7 patients who received cyberknife hypofractionated RT (HFRT)] with CD. Hormonal remission was considered if the patient had suppressed cortisol levels after low dose dexamethasone, normal 24-hour urinary free cortisol (UFC), and lack of regression of clinical features.

Results: Biochemical control after RT was observed in 52.6% of the patients with CD and median time to hormonal remission was 15 months. Tumor size control was obtained in all of the patients. There was no significant relationship between remission rate and laboratory, radiological and pathological variables except for preoperative UFC. Remission rate was higher in patients with lower preoperative UFC. Time to remission increased in parallel to postoperative cortisol and 1mg DST level. Although medical therapy before RT did not affect the rate of- and time to remission, medical therapy after RT prolonged the time to hormonal remission.

Conclusion: In this current single center experience, postoperative cortisol and 1mg DST levels were found as the determinants of time to remission. Although medical therapy before RT did not affect the rate of- and time to remission, medical therapy after RT prolonged the time to biochemical control. This latter finding might suggest a radioprotective effect of cortisol lowering medication use on peri-RT period.

ASSESSMENT OF NON-TRAUMATIC VERTEBRAL FRACTURES IN CUSHING'S SYNDROME PATIENTS

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Purpose: Hypercortisolism has detrimental effects on bone metabolism with the consequences of bone loss and bone fractures. We aimed to evaluate the frequency of vertebral fragility fractures and to determine the factors associated with Cushing's syndrome (CS).

Methods: A total of 135 patients diagnosed with Cushing's syndrome [108 patients with Cushing's disease and 27 patients with adrenocortical adenoma] and 107 healthy controls were included in this cross-sectional study. The available clinical, laboratory, and radiologic data of patients with CS were recorded, retrospectively. Lateral vertebral radiographs were evaluated for vertebral fragility fractures according to Genant's semi-quantitative method. Bone mineral density (BMD) was determined using a Dual-energy X-ray absorptiometry (DEXA).

Results: Vertebral fragility fractures (VFs) were observed in 75.3% (n = 61) of the patients. The median number of VFs was six (min-max: 2-12). All patients with vertebral fractures had thoracic VF, and 50.7% of the patients had lumbar fragility fractures. Thirty-three (40.7%) patients with vertebral fractures had normal bone densitometry values. Osteoporosis and osteopenia were observed in 16.2% and 40.7% of the patients, respectively. The duration of active disease, the presence of ACTH-secreting pituitary adenoma, and 24-h urinary cortisol did not influence the presence of vertebral fractures. Vertebral fractures were independently associated with age, FSH, LH levels, and lumbar BMD ($R^2 = 68.18\%$, $p = 0.028$). The femoral neck BMD (but not lumbar BMD) was independently associated with age, BMI, and PTH levels ($R^2 = 48.48\%$, $p < 0.001$).

Conclusion: Vertebral fracture frequency was higher in CS patients. Most of the patients with vertebral fractures had multiple fractures. Although low lumbar BMD was associated with VF, patients with CS with normal bone densitometry could experience VF. Vertebral radiograph evaluations as a part of routine evaluation for silent vertebral fractures may help to prevent further fractures in patients with CS.

FTO GENE-LIFESTYLE INTERACTIONS ON SERUM ADIPONECTIN CONCENTRATIONS AND CENTRAL OBESITY IN A TURKISH POPULATION

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The aim of the study was to investigate whether lifestyle factors modify the association between fat mass and obesity-associated (FTO) gene single nucleotide polymorphisms (SNPs) and obesity in a Turkish population. The study included 400 unrelated individuals, aged 24-50 years recruited in a hospital setting. Dietary intake and physical activity were assessed using 24-hour dietary recall and self-report questionnaire, respectively. A genetic risk score (GRS) was developed using FTO SNPs, rs9939609 and rs10163409. Body mass index and fat mass index were significantly associated with FTO SNP rs9939609 ($p = 0.001$ and $p = 0.002$, respectively) and GRS ($p = 0.002$ and $p = 0.003$, respectively). The interactions between SNP rs9939609 and physical activity on adiponectin concentrations, and SNP rs10163409 and dietary protein intake on increased waist circumference were statistically significant (Pinteraction = 0.027 and Pinteraction = 0.044, respectively). Our study has demonstrated that the association between FTO SNPs and central obesity might be modified by lifestyle factors in this Turkish population.

SNPS OF MIR-23B, MIR-107 AND HMGA2 AND THEIR RELATIONS WITH THE RESPONSE TO MEDICAL TREATMENT IN ACROMEGALY PATIENTS

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Introduction: Acromegaly is a chronic disease of increased growth hormone (GH) secretion and elevated insulin-like growth factor-I (IGF-I) levels induced by a pituitary adenoma. HMGA2 (high mobility group A2) and AIP (aryl hydrocarbon receptor-interacting protein) expression levels are related to GH-secreting adenomas, and also a response to Somatostatin Analogs (SSAs). We studied SNPs in miR-107 and miR-23b that related with AIP and HMGA2 genes respectively and control their expression, and also SNP in the 3'UTR of HMGA2 gene. Our aim was to investigate genotype distributions of the studied SNPs, as well as the possible relationship between disease and/or response to SSAs treatment in patients with acromegaly.

Material and methods: Genotypes were determined by qRT-PCR method from DNA materials obtained blood samples of acromegaly patients (141) and healthy individuals (99). The genotype distributions of patients and healthy groups, as well as the relationship between the clinical data of the disease and genotypes were statistically compared.

Results: In acromegaly patients with T-allele, p53 expression ($p=0.049$) was significantly higher. In patients with CT+TT genotype and T-allele who were responder to SSA-treatment Ki-67 index (respectively $p=0.019$, $p=0.020$ respectively) was higher. We did not observe the genotypes for miR-23b and miR-107 polymorphisms in the patients and control group of Turkish population.

Conclusion: The genetic variations of the miRNAs genes related with HMGA2 and AIP genes were not seen in our study. Although there is no relationship between HMGA2-rs1351394 polymorphism and acromegaly disease, T allele was associated with some clinical features related to adenoma in patients with acromegaly.

THE ASSOCIATION OF HISTOLOGICALLY PROVEN CHRONIC LYMPHOCYTIC THYROIDITIS WITH CLINICOPATHOLOGICAL FEATURES, LYMPH NODE METASTASIS, AND RECURRENCE RATES OF DIFFERENTIATED THYROID CANCER

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The influence of chronic lymphocytic thyroiditis (CLT) on clinicopathological features and behavior of differentiated thyroid carcinoma (DTC) is still debated. In the present study, we aimed to evaluate the prognosis of DTC on the presence of CLT. A total of 649 total thyroidectomized patients (379

female, 270 male) with DTC, who had follow-up data for at least 36 months were included. Clinical, histopathological data, preoperative thyroid peroxidase antibody (TPO-ab), thyroglobulin antibody (Tg-ab), thyroid-stimulating hormone (TSH) levels, and presence of recurrent/persistent disease (R/PD) were evaluated retrospectively. Presence of CLT was defined by histopathology. Frequency of CLT was 32% ($n = 208$) among DTC patients. Mean tumor size (maximal diameter) was smaller in CLT group when compared to non-CLTs ($p = 0.006$). Capsular invasion, vascular invasion, tumor stage, risk groups, and R/PD were negatively associated with CLT ($p < 0.01$, $p = 0.04$, $p = 0.03$, $p = 0.02$, $p < 0.01$, respectively). Extrathyroidal extension was more frequent in non-CLT group when compared CLT ($p = 0.052$). Preoperative TSH level was positively associated with lymph node metastasis (LNM) and higher in patients with lateral LNM when compared to central LNM ($p < 0.01$). Central LNM, lateral LNM, stage 4 tumor, and intermediate- and high-risk tumor groups increased the risk of R/PH, 2.5-, 2.9-, 12.7-, 2.3-, and 4.2-fold, respectively. Presence of CLT was independently related with favorable outcomes, as the risk of R/PD was decreased by 0.49-fold. In conclusion, coexistence of CLT was negatively associated with tumor size, capsular invasion, vascular invasion, and tumor stage in DTC. Risk of R/PD was decreased by approximately half in patients with CLT.

TUMOR VOLUME CAN BE USED AS A PARAMETER INDICATING THE SEVERITY OF THE DISEASE IN PARATHYROID CANCER

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Purpose: Parathyroid carcinoma (PC) is a rare cause of hyperparathyroidism. The purpose of this study was to determine whether tumor volume and tumor size are related to disease severity in PC.

Methods: Patients treated for PC at our institution were retrospectively identified. Data were collected about clinical and pathological characteristics, laboratory parameters, tumor volume, recurrence, metastasis, and mortality. Correlation analysis was applied to laboratory parameters, tumor volume and tumor size in parathyroid carcinoma patients.

Results: The study included 20 patients diagnosed with PC in our center and the median follow-up was 33 months. Serum calcium (median 12.5 mg/dl), serum PTH (median 743 pg/mL), and serum ALP (median 298 U/L) levels were found to be increased, and 25(OH)D (median 12.3 ng/mL) and serum phosphorus (median 2.1 mg/dl) levels were decreased. Magnesium level was within normal limits (median 1.9 mg/dl). The median tumor volume was calculated as 5.7 cm³ and median tumor size as 2.5 cm. Significant positive correlations were determined between tumor volume and, calcium, ALP, and PTH, and a significant negative correlation was determined between tumor volume and 25(OH)D value. There were no significant correlations between tumor size and calcium, ALP, PTH, and 25(OH)D.

Conclusions: These results demonstrate that tumor volume affects parathormone, calcium, ALP, and 25(OH)D levels. The morbidity and mortality associated with PC are usually due to PTH secretion and hypercalcemia. Therefore, tumor volume may be a more effective parameter than tumor size when evaluating the severity of the disease.

MOLECULAR ECONOMY OF NATURE WITH TWO THYROTROPINS FROM DIFFERENT PARTS OF THE PITUITARY: PARS TUBERALIS THYROID-STIMULATING HORMONE AND PARS DISTALIS THYROID-STIMULATING HORMONE

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Thyrotropin (TSH) is classically known to be regulated by negative feedback from thyroid hormones and stimulated by thyrotropin-releasing hormone (TRH) from the hypothalamus. At the end of the 1990s, studies showed that thyrotroph cells from the pars tuberalis (PT) did not have TRH receptors and their TSH regulation was independent from TRH stimulation. Instead, PT-thyrotroph cells were shown to have melatonin-1 (MT-1) receptors and melatonin secretion from the pineal gland stimulates TSH- β subunit formation in PT. Electron microscopy examinations also revealed some important differences between PT and pars distalis (PD) thyrotrophs. PT-TSH also have low bioactivity in the peripheral circulation. Studies showed that they have different glycosylations and PT-TSH forms macro-TSH complexes in the periphery and has a longer half-life. Photoperiodism affects LH levels in animals via decreased melatonin causing increased TSH- β subunit expression and induction of deiodinase-2 (DIO-2) in the brain. Mammals need a light stimulus carried into the suprachiasmatic nucleus (which is a circadian clock) and then transferred to the pineal gland to synthesize melatonin, but birds have deep brain receptors and they are stimulated directly by light stimuli to have increased PT-TSH, without the need for melatonin. Photoperiodic regulations via TSH and DIO 2/3 also have a role in appetite, seasonal immune regulation, food intake and nest-making behaviour in animals. Since humans have no clear seasonal breeding period, such studies as recent "domestication locus" studies in poultry are interesting. PT-TSH that works like a neurotransmitter in the brain may become an important target for future studies about humans.

MICROWAVE ABLATION OF SYMPTOMATIC BENIGN THYROID NODULES: SHORT-AND LONG-TERM EFFECTS ON THYROID FUNCTION TESTS, THYROGLOBULIN AND THYROID AUTOANTIBODIES

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Objective: Microwave ablation therapy has been attracting great attention due to its advantages such as low complication rate, good cosmetic results and effective nodule shrinking. Although the effect of thermal ablation therapy on the nodule volume reduction rate has been shown several studies, a limited number of papers have been reported for the effects of microwave ablation (MWA) on thyroid function tests. The aim of this study was to investigate the short- and long-term effects of MWA therapy on thyroid function tests (TFTs), thyroglobulin (Tg) and thyroid autoantibodies in euthyroid patients.

Design, patients and measurements: Demographic data of the patients, TFTs, Tg, thyroid autoantibodies and thyroid

volume of the nodules were recorded before the procedure and follow-up. Any differences in serum thyroid hormone levels were investigated in pre-, post- and 6-month follow-up periods before and after MWA.

Results: The difference between all thyroid hormone levels at pre MWA and 24 h after MWA was statistically significant ($p < .001$). FT3 (4.62) pmol/L and FT4 (10.81) pmol/L median levels increased significantly ($p < .001$), while thyrotropin (TSH) levels decreased at 24 h after MWA ($p < .001$). Thyroid antibodies levels were not statistically different at 6-month ($p > .05$), whereas Tg levels decreased ($p < .001$) compared to pre MWA.

Conclusions: While no significant effect was observed at 6 month, the effect of MWA on thyroid function tests was prominent at 24 h.

CIRCULATING GUT MICROBIOTA METABOLITE TRIMETHYLAMINE N-OXIDE AND ORAL CONTRACEPTIVE USE IN POLYCYSTIC OVARY SYNDROME

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Objectives: Polycystic ovary syndrome (PCOS) is associated with an increased cardiometabolic risk that might not necessarily translate into adverse cardiovascular outcome later in life. Recently, alterations in gut microbial composition have been reported in the syndrome. Microbiota-dependent metabolite trimethylamine N-oxide (TMAO) and its precursors are closely linked with development of atherosclerotic cardiovascular disease, independently of traditional risk factors. We aimed to assess whether TMAO and its precursors are altered in PCOS and to determine potential impact of treatment on these metabolites.

Design: Prospective study.

Patients: Twenty-seven overweight/obese patients with PCOS and 25 age- and BMI-matched healthy control women.

Measurements: At baseline, fasting serum TMAO and its precursors were measured after a 3-day standardized diet. Patients received 3-month OC therapy along with general dietary advice after which all measurements were repeated.

Results: Patients had higher total testosterone (T) and free androgen index (FAI) whereas whole-body fat mass, fasting plasma glucose, insulin and lipids were similar between the groups. PCOS group showed significantly higher serum levels of TMAO and its precursors; choline, betaine and carnitine. TMAO and choline showed correlations with T. After 3 months of OC use, TMAO and its precursors significantly decreased along with reductions in BMI, T and FAI.

Conclusions: This study reports for the first time that TMAO and its precursors are elevated in PCOS which might contribute to increased cardiometabolic risk of the syndrome and that short-term OC use along with lifestyle intervention is associated with reduction of these microbiome-dependent metabolites.

GASTROESOPHAGEAL REFLUX IN ASYMPTOMATIC PATIENTS WITH DIABETES: AN IMPEDANCE STUDY

DIABETES, OBESITY AND GASTROESOPHAGEAL REFLUX

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Introduction: Gastroesophageal reflux disease (GERD) is more frequent in patients with diabetes mellitus (DM). The aim of the present study was to evaluate gastroesophageal reflux (GER) in asymptomatic patients with DM using 24-h pH impedance.

Materials and methods: 19 healthy controls and 35 patients with DM without typical GERD symptoms were enrolled in the study. A 24-h pH-impedance study, esophageal manometry and gastroscopy were performed on all patients with DM. In the control group, an impedance study was performed on all subjects, and gastroscopy and esophageal manometry were performed on those who consented to the procedures. Patients with diabetes were categorized as obese [body mass index (BMI) >30 kg/m²] or non-obese (BMI <30 kg/m²) and both groups were compared with healthy controls.

Results: The mean BMI was similar in the control group (27.3±2.6 kg/m²) and the diabetic group (28.7±5 kg/m²) (p>0.05). Erosive esophagitis was found in 7.5% of the DM group. Esophageal dysmotility was higher in diabetics compared to the control group (45.5 vs. 11%, p=0.04). Neuropathy was found to be an independent risk factor for dysmotility. The mean DeMeester score (DMS) (25.6±32.5 vs. 11.2±17, p=0.01) and bolus exposure time (2.1±1.3 vs. 1.3±1.3 min, p=0.009) were higher in the DM group compared with the control group. The difference was mainly observed between obese diabetics and the control group (p<0.05). The mean DMS, pathologic acid reflux, and esophageal dysmotility rate were higher in patients without complications of DM (p<0.05). BMI was higher in these patients than in patients with complications.

Conclusion: Acid reflux is common in patients with diabetes. GER is associated with the existence of obesity rather than hyperglycemia.

DETERMINANTS OF HIGH-DOSE INSULIN USAGE AND UPPER EXTREMITY MUSCLE STRENGTH IN ADULT PATIENTS WITH TYPE 2 DIABETES

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Objectives: In this study, we aimed to determine the association between upper extremity muscle strength and insulin dose in patients with type 2 diabetes.

Methods: A total of 236 patients with type 2 diabetes under insulin treatment for at least 1 year were included in this

cross-sectional study. Patients were divided into 3 groups based on their total daily insulin dose (TDID): group 1, TDID >2 U/kg/day or >200 units/day; group 2, TDID 1 to 2 U/kg/day or 51 to 199 U/day; and group 3, TDID <0.5 U/kg/day or 50 U/day. High-dose insulin use was defined as total daily insulin dose >2 U/kg or >200 U/day. Muscle strength was measured using a handgrip dynamometer.

Results: High-dose insulin users were younger and had higher measures of generalized and central obesity and glycated hemoglobin. There was no significant difference in muscle strength between the groups. Low muscle strength was seen in 26.7% of all patients. Patients with low muscle strength were older, had lower insulin dose treatment and had better glycemic control than patients with normal muscle strength. Handgrip strength was inversely correlated with age, body mass index and duration of diabetes, but not with TDID.

Conclusions: Patients with type 2 diabetes with high-dose insulin use had similar upper extremity muscle strength measurements with standard-dose insulin users. Studies with more patients are needed to determine the relationship between muscle mass, muscle strength and high-dose insulin use.

THE ROLE OF DIFFERENT MOLECULAR MARKERS IN PAPILLARY THYROID CANCER PATIENTS WITH ACROMEGALY

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Purpose: Prevalence of papillary thyroid cancer (PTC) is increased in patients with acromegaly. We aimed to determine the protein expression of BRAF, RAS, RET, insulin like growth factor 1 (IGF1), Galectine 3, CD56 in patients with PTC related acromegaly and to compare the extensivity of these expressions with normal PTC patients and benign thyroid nodules.

Methods: We studied 313 patients with acromegaly followed in Cerrahpasa Medical Faculty, Endocrinology and Metabolism Clinic between 1998 and 2015. On the basis of availability of pathological specimen of thyroid tissues, thyroid samples of 13 patients from 19 with acromegaly related PTC (APTC), 20 normal PTC and 20 patients with multinodular goiter (MNG) were histopathologically evaluated. Protein expressions were determined via immunohistochemical staining in ex-vivo tumor samples and benign nodules.

Results: The incidence of PTC in acromegaly patients were 6% (n=19). Among patients with PTC, APTC and MNG, all the immunohistochemical protein expressions we have studied were higher in papillary thyroid cancer groups (p<0.01, for all). Between PTC group without acromegaly and APTC, galectin 3 and IGF1 expression was significantly higher in acromegalic patients (p<0.01 for all) while RAS was predominantly higher in PTC patients without acromegaly (p<0.01).

Conclusion: BRAF expression was not higher in PTC with acromegaly patients compared to PTC patients without acromegaly. Galectine 3 and IGF1 were expressed more intensively in APTC. These positive protein expressions may have more influence on determining malign nodules among acromegaly patients.

STANDARDS OF CARE FOR HYPOPARATHYROIDISM IN ADULTS: A CANADIAN AND INTERNATIONAL CONSENSUS

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Eur J Endocrinol. 2019 Mar;180(3):P1-P22. PMID: 30540559 PMCID: PMC6365672 DOI: 10.1530/EJE-18-0609

Purpose: To provide practice recommendations for the diagnosis and management of hypoparathyroidism in adults.

Methods: Key questions pertaining to the diagnosis and management of hypoparathyroidism were addressed following a literature review. We searched PubMed, MEDLINE, EMBASE and Cochrane databases from January 2000 to March 2018 using keywords 'hypoparathyroidism, diagnosis, treatment, calcium, PTH, calcidiol, calcitriol, hydrochlorothiazide and pregnancy'. Only English language papers involving humans were included. We excluded letters, reviews and editorials. The quality of evidence was evaluated based on the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach. These standards of care for hypoparathyroidism have been endorsed by the Canadian Society of Endocrinology and Metabolism.

Results: Hypoparathyroidism is a rare disease characterized by hypocalcemia, hyperphosphatemia and a low or inappropriately normal serum parathyroid hormone level (PTH). The majority of cases are post-surgical (75%) with nonsurgical causes accounting for the remaining 25% of cases. A careful review is required to determine the etiology of the hypoparathyroidism in individuals with nonsurgical disease. Hypoparathyroidism is associated with significant morbidity and poor quality of life. Treatment requires close monitoring as well as patient education. Conventional therapy with calcium supplements and active vitamin D analogs is effective in improving serum calcium as well as in controlling the symptoms of hypocalcemia. PTH replacement is of value in lowering the doses of calcium and active vitamin D analogs required and may be of value in lowering long-term complications of hypoparathyroidism. This manuscript addresses acute and chronic management of hypoparathyroidism in adults.

Main conclusions: Hypoparathyroidism requires careful evaluation and pharmacologic intervention in order to improve serum calcium and control the symptoms of hypocalcemia. Frequent laboratory monitoring of the biochemical profile and patient education is essential to achieving optimal control of serum calcium.

PRIMARY HYPOPHYSITIS: EXPERIENCE OF A SINGLE TERTIARY CENTER

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Purpose: The authors review the clinical outcomes of patients with primary hypophysitis (PH).

Methods: Patients with PH who were followed up between 2007 and 2018 at our clinic were evaluated. Clinical, endocrinologic, pathologic, radiologic findings and treatment modalities were assessed.

Results: Seventeen patients with PH were assessed. The median follow-up was 24 (range, 6-84) months. Histologic confirmation was available in 8 patients (6 lymphocytic hypophysitis, 1 lymphocytic-granulomatous hypophysitis, 1 xanthomatous hypophysitis). None of the cases were diagnosed after pregnancy. Two patients had an autoimmune disease. The most commonly seen symptom was headache. The most common anterior pituitary deficiencies were hypocortisolemia and hypothyroidism. The radiologic findings of the patients at the time of diagnosis revealed various results including space-occupying lesion (41.2%), loss of posterior hypophysis bright spot (47.1%), pituitary stalk thickening (41.2%), uniform contrast enhancement (17.6%), partially empty sella (11.8%), optic chiasm compression (11.8%). The most frequent initial treatment modality was observation. Ten patients who were followed up conservatively had no endocrinologic deterioration; additional treatment was not needed in 8 of these 10 patients. The second most frequent initial treatment modality was pituitary surgery. Five patients received steroid treatment. We found serious adverse effects during steroid treatment in 3 of 5 (60%) patients; unilateral avascular necrosis of the femoral head (n=2), diabetes mellitus(n=1).

Conclusion: Correctly diagnosing PH and giving appropriate treatment is challenging. It is unclear whether active treatment with steroids improves clinical outcomes. The serious adverse effects of steroids are also taken into account. Observation, surgery and/or radiotherapy can be appropriate treatment modalities for selected patients.

G-PROTEIN COUPLED ESTROGEN RECEPTOR EXPRESSION IN GROWTH HORMONE SECRETING AND NON-FUNCTIONING ADENOMAS

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Purpose: To evaluate the expression of G-protein coupled estrogen receptor (GPER1), aromatase, estrogen receptor α (ER α), estrogen receptor β (ER β), pituitary tumor transforming gene (PTTG), and fibroblast growth factor 2 (FGF2) in GH-secreting and non-functioning adenomas (NFA).

Methods: Thirty patients with acromegaly and 27 patients with NFA were included. Gene expression was determined via quantitative reverse transcription polymerase chain reaction (QRT-PCR). Protein expression was determined via immunohistochemistry.

Results: There was no difference, in terms of gene expression of aromatase, ER α , PTTG, and FGF2 between the two groups ($p > 0.05$ for all). ER β gene expression was higher and GPER1 gene expression was lower in GH-secreting adenomas than NFAs ($p < 0.05$ for all). Aromatase and ER β protein expression was higher in GH-secreting adenomas than NFAs ($p = 0.01$). None of the tumors expressed ER α . GPER1 expression was detected in 62.2% of the GH-secreting adenomas and 45% of NFAs. There was no difference in terms of GPER1, PTTG, FGF2 H scores between the two groups ($p > 0.05$ for all). GPER1 gene expression was positively correlated to ER α , ER β , PTTG, and FGF2 gene expression ($p < 0.05$ for all). There was a positive correlation between aromatase and GPER1 protein expression ($r = 0.31$; $p = 0.04$).

Conclusions: GPER1 is expressed at both gene and protein level in a substantial portion of GH-secreting adenomas and NFAs. The finding of a positive correlation between GPER1 and ER α , ER β , PTTG, and FGF2 gene expression and aromatase and GPER1 protein expression suggests GPER1 along with aromatase and classical ERs might mediate the effects of estrogen through upregulation of PTTG and FGF2.

DIABETIC MICROVASCULAR COMPLICATIONS ASSOCIATED WITH MYOCARDIAL REPOLARIZATION HETEROGENEITY EVALUATED BY TP-E INTERVAL AND TP-E/QTc RATIO

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Introduction: The heterogeneity in myocardial repolarization increases the risk of ventricular arrhythmias and sudden death in patients with diabetes mellitus (DM). The Tp-e interval and Tp-e/QTc ratio are found to be useful in the prediction of ventricular arrhythmias. In this study, we aimed to investigate

the Tp-e interval and Tp-e/QTc ratio in diabetic patients with and without microvascular complications.

Materials and methods: This cross-sectional observational study included patients with type 2 DM who presented to the endocrinology outpatient clinic. Diabetic microvascular complications were evaluated. The Tp-e interval, Tp-e/QT ratio, and Tp-e/QTc ratio were also calculated.

Results: A total of 240 patients with type 2 DM (148 patients had microvascular complications) were included in the study. Diabetic neuropathy rate was 30.4%, diabetic nephropathy rate was 38.4%, and diabetic retinopathy rate was 21.7%. Upon comparing patients according to Tp-e/QTc ratio, the median Tp-e/QTc interval of the group of patients with complications was 0.21 (0.19-0.23) and the median Tp-e/QTc ratio of the group of patients without complications was 0.19 (0.18-0.20) ($p < 0.001$). When patients were grouped according to the presence and severity of retinopathy, the Tp-e/QTc ratio was more prolonged in the proliferative retinopathy group [0.27 (0.23-0.30)] than the non-proliferative retinopathy group [0.20 (0.19-0.22), $p < 0.001$]. When patients were grouped according to the presence and severity of nephropathy, the Tp-e/QTc ratio was more prolonged in the macroalbuminuria and microalbuminuria group than the normoalbuminuric group [0.25 (0.21-0.30), 0.23 (0.19-0.24), and 0.19 (0.20-0.22), respectively, $p = 0.002$].

Conclusions: Our study is the first to demonstrate the association of the Tp-e interval and Tp-e/QTc ratio with the presence and severity of microvascular complications in patients with type 2 DM.

ASYMMETRY INDICATES MORE SEVERE AND ACTIVE DISEASE IN GRAVES' ORBITOPATHY: RESULTS FROM A PROSPECTIVE CROSS-SECTIONAL MULTICENTRE STUDY

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Purpose: Patients with Graves' orbitopathy can present with asymmetric disease. The aim of this study was to identify clinical characteristics that distinguish asymmetric from unilateral and symmetric Graves' orbitopathy.

Methods: This was a multi-centre study of new referrals to 13 European Group on Graves' Orbitopathy (EUGOGO) tertiary centres. New patients presenting over a 4 month period with a diagnosis of Graves' orbitopathy were included. Patient demographics were collected and a clinical examination was performed based on a previously published protocol. Patients were categorized as having asymmetric, symmetric, and unilateral Graves' orbitopathy. The distribution of clinical characteristics among the three groups was documented.

Results: The asymmetric group (n = 83), was older than the symmetric (n = 157) group [mean age 50.9 years (SD 13.9) vs 45.8 (SD 13.5), $p = 0.019$], had a lower female to male ratio than the symmetric and unilateral (n = 29) groups (1.6 vs 5.0 vs 8.7, $p < 0.001$), had more active disease than the symmetric and unilateral groups [mean clinical Activity Score 3.0 (SD 1.6) vs 1.7 (SD 1.7), $p < 0.001$ vs 1.3 (SD 1.4), $p < 0.001$] and significantly more severe disease than the symmetric and unilateral groups, as measured by the Total Eye Score [mean 8.8 (SD 6.6) vs 5.3 (SD 4.4), $p < 0.001$, vs 2.7 (SD 2.1), $p < 0.001$].

Conclusion: Older age, lower female to male ratio, more severe, and more active disease cluster around asymmetric Graves' orbitopathy. Asymmetry appears to be a marker of more severe and more active disease than other presentations. This simple clinical parameter present at first presentation to tertiary centres may be valuable to clinicians who manage such patients.

THE EFFECT OF SOMATOSTATIN ANALOGS AND ACROMEGALY ON THE UPPER GASTROINTESTINAL SYSTEM

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Pituitary. 2021 Apr;24(2):184-191. Epub 2020 Oct 19. PMID: 33074400 DOI: 10.1007/s11102-020-01095-3

Purpose: To evaluate the effects of somatostatin analogs and disease activity status on the upper gastrointestinal system in patients with acromegaly.

Methods: One hundred eighty-one patients with acromegaly were retrospectively assessed. The demographic, biochemical, pathologic, and radiologic data of the patients were evaluated. The upper gastrointestinal endoscopies and endoscopic biopsies were investigated. We divided patients into four groups according to the use of somatostatin analogs, and into two groups according to disease activity. We compared the data of patients between groups A, B, C, and D, and controlled/uncontrolled groups separately.

Results: Before and in the peri-endoscopic period, 67 and 27 patients were being treated with octreotide long-acting release (LAR) (group A) and lanreotide autogel (group B), respectively. Twenty-one patients used somatostatin analogs, but they were stopped for various reasons before upper gastrointestinal endoscopy (group C), and 66 patients did not use a somatostatin analog (group D). In the peri-endoscopic period, 103 (60%) patients were responsive to medical and/or surgical treatment and 67 (40%) patients were non-responsive. The rate of gastritis was higher in group A than in groups B and D. The incidence of duodenitis and gastric ulcer was much higher in group D. The rate of gastritis was higher in the controlled group compared to the uncontrolled group.

Conclusion: The study showed that octreotide LAR treatment could be a risk factor in addition to known factors for the development of gastritis in patients with acromegaly.

EFFECTIVENESS OF CABERGOLINE TREATMENT IN PATIENTS WITH ACROMEGALY UNCONTROLLED WITH SSAS: EXPERIENCE OF A SINGLE TERTIARY CENTER

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Purpose: To evaluate the effectiveness of cabergoline and the parameters affecting cabergoline response as add-on treatment to somatostatin analogues (SSA) in patients with acromegaly uncontrolled with SSAs.

Material and method: One hundred and twenty-nine acromegalic patients uncontrolled with SSA who had cabergoline added to their treatment were included in this retrospective study. Patients were divided into the SSAs + cabergoline-responsive (group 1) and non-responsive groups (group 2), and biochemical, pathologic, and radiologic parameters were assessed.

Results: IGF-1 normalization was achieved in 75 of 129 patients (58%) when cabergoline was added to the SSA treatment. Female patients were significantly higher in group 1 compared to group 2 ($p=0.006$). Group 1 had significantly smaller pre- and post-cabergoline tumor size ($p=0.011$, $p=0.007$ respectively), lower levels of IGF-1 in pre- and post-operative period ($p=0.040$, $p=0.001$), and lower levels of IGF-1 in pre- and post-cabergoline treatment ($p<0.001$). Cavernous invasion on sellar magnetic resonance imaging, dural invasion in pathologic examination were not significantly different between the groups. Sellar invasion in pathologic examination was significantly higher in group 1 ($p=0.011$). No significant difference was found in proliferation indices between two groups. The presence of fibrous bodies was significantly lower in group 1 ($p=0.010$).

Conclusion: Cabergoline can be added to the treatment of acromegalic patients uncontrolled with SSAs due to its ease of use and low economic cost, especially in patients with acromegaly who have small adenomas and no fibrous bodies.

UNEXPECTEDLY LOWER MORTALITY RATES IN COVID-19 PATIENTS WITH AND WITHOUT TYPE 2 DIABETES IN ISTANBUL

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Diabetes Res Clin Pract. 2021 Mar 17;174:108753. Online ahead of print. PMID: 33741352 PMCID: PMC7963521 DOI: 10.1016/j.diabetes.2021.108753

Aims: Type 2 diabetes mellitus (T2DM) is a risk factor for severe COVID-19. Our aim was to compare the clinical outcomes of patients with and without T2DM during the first hit of COVID-19 in Istanbul.

Methods: A retrospective population-based study was conducted including all consecutive adult symptomatic

COVID-19 cases. Patients were confirmed with rt-PCR; treated and monitored in accordance with standard protocols. The primary endpoints were hospitalization and 30-day mortality.

Results: Of the 93,571 patients, 22.6% had T2DM, with older age and higher BMI. Propensity Score matched evaluation resulted in significantly higher rates of hospitalization (1.5-fold), 30-day mortality (1.6-fold), and pneumonia (1.4-fold). They revealed more severe laboratory deviations, comorbidities, and frequent drug usage than the Non-DM group. In T2DM age, pneumonia, hypertension, obesity, and insulin-based therapies were associated with an increased likelihood of hospitalization; whereas age, male gender, lymphopenia, obesity, and insulin treatment were considerably associated with higher odds of death.

Conclusions: COVID-19 patients with T2DM had worse clinical outcomes with higher hospitalization and 30-day mortality rates than those without diabetes. Compared to most territories of the world, COVID-19 mortality was much lower in Istanbul, which may be associated with accessible healthcare provision and the younger structure of the population.

POLYCYSTIC OVARY SYNDROME AND BRAIN: AN UPDATE ON STRUCTURAL AND FUNCTIONAL STUDIES

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Context: Polycystic ovary syndrome (PCOS) is the most common endocrine disorder of women in reproductive age and is associated with reproductive, endocrine, metabolic, cardiovascular, and psychological outcomes. All these disorders are thought to be affected by central mechanisms which could be a major contributor in pathogenesis of PCOS.

Evidence acquisition: This mini-review discusses the relevance of central nervous system imaging modalities in understanding the neuroendocrine origins of PCOS as well as their relevance to understanding its comorbidities.

Evidence synthesis: Current data suggest that central nervous system plays a key role in development of PCOS. Decreased global and regional brain volumes and altered white matter microstructure in women with PCOS is shown by structural imaging modalities. Functional studies show diminished reward response in corticolimbic areas, brain glucose hypometabolism, and greater opioid receptor availability in reward-related regions in insulin-resistant patients with PCOS. These structural and functional disturbances are associated with nonhomeostatic eating, diminished appetitive responses, as well as cognitive dysfunction and mood disorders in women with PCOS.

Conclusion: Structural and functional brain imaging is an emerging modality in understanding pathophysiology of metabolic disorders such as diabetes and obesity as well as PCOS. Neuroimaging can help researchers and clinicians for better understanding the pathophysiology of PCOS and related comorbidities as well as better phenotyping PCOS.

PUBLICATION OUTCOME OF RESEARCH PRESENTED AT THE EUROPEAN CONGRESS OF ENDOCRINOLOGY: A WEB SCRAPING-BASED ANALYSIS AND CRITICAL APPRAISAL

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Purpose: The current study aimed to determine the publication outcome of abstracts presented at the 16th European Congress of Endocrinology (ECE 2014).

Methods: All presentations were collected with the web scraping - Python coding from the official website and converted into Google Scholar and PubMed search links with coding. A particular interface was coded to evaluate the results. An online survey was sent to the authors to assess the impact of congress on their publication.

Results: A total of 1205 abstracts from 71 countries were featured at the congress of which, 1145 (95%) were poster presentations (PP), and 60 (5%) were oral presentations. Subsequently, 341 abstracts (28.3%) were published as a full paper. There was no major change from the abstract in 73.3% of full articles whereas 68.9% had at least one minor change. OP had higher conversion rates to publication than PP (65% vs 26.4; $p = 0.01$) and a higher median number of citations than PP (12 vs 6; $p = 0.01$). The median time to publication was 12 months (IQR: 2-24 months). OP was published in journals with a higher median impact factor (IF) than PP (5 vs 2.94; $p = 0.01$). Multi-country collaborative studies turned into more publications than single-country studies (OR: 3.91 95% CI: 2.52-6.06; $p < 0.01$). The congress's potential IF was calculated as 3.18. Among the authors responded to survey, 95% indicated that presenting at the congress was valuable for preparation of their publication.

Conclusions: This first study evaluating the publication outcome of an international endocrinology congress suggests a 28.3% publication ratio with low discrepancy and 3.18 IF for ECE 2014.

RESIDUAL PYRAMIDAL LOBE INCREASES STIMULATED THYROGLOBULIN AND DECREASES ENDOGENOUS THROID STIMULATING HORMONE STIMULATION IN DIFFERENTIATED THYROID CANCER PATIENTS

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Objective: To determine the frequency of pyramidal lobe remnants after total thyroidectomy (TT) and the effect on stimulated thyroglobulin (Tg).

Methods: The study included 1740 differentiated thyroid cancer (DTC) patients who were followed up by our center. The department database was searched to identify DTC patients with residual pyramidal lobe after TT. All postoperative

technetium-99m pertechnetate thyroid scintigraphy images were re-evaluated for pyramidal lobe residue. Serum stimulated Tg and thyroid stimulating hormone (TSH) levels measured within the first 6 months after TT were retrieved from the database.

Results: Pyramidal lobe residue was detected in 10.4% of the patients who underwent TT. Evidence of the pyramidal lobe was present on preoperative ultrasonography in 1.6% of the patients with residual pyramidal lobe. Stimulated Tg in patients with pyramidal lobe residue was significantly higher than that in patients without residue ($P = .01$). Endogenous stimulated TSH in patients with residual pyramidal lobe was significantly lower than that in patients without residue ($P = .036$). In 5.7% of patients with pyramidal lobe residue, a TSH level of >30 mIU/L was not achieved, which was a significantly higher rate than that in patients without pyramidal lobe residue ($P = .034$) and is the level required for maximum radioiodine uptake.

Conclusion: Pyramidal lobe residue was found in almost 10% of DTC patients. The pyramidal lobe is often missed on preoperative ultrasonography. Residual pyramidal lobe increased stimulated Tg and decreased endogenous stimulated TSH. Residual pyramidal lobe may complicate the follow-up of DTC patients.

INFLUENCE OF ETHNICITY ON DIFFERENT ASPECTS OF POLYCYSTIC OVARY SYNDROME: A SYSTEMATIC REVIEW

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This systematic review aimed to assess variations in the clinical presentation and treatment outcomes of patients with polycystic ovary syndrome (PCOS) belonging to different ethnicities. A search was performed for studies comparing various clinical aspects of PCOS in two or more different ethnic groups. After screening 2264 studies, 35 articles were included in the final analysis. In comparison with White women with PCOS (wPCOS), East Asian women with PCOS (eaPCOS) were less hirsute, whereas Hispanic women with PCOS (hPCOS), South Asian women with PCOS (saPCOS) and Middle Eastern women with PCOS (mePCOS) were more hirsute. saPCOS had higher androgen and lower sex hormone-binding globulin (SHBG) concentrations, mePCOS had higher DHEAS concentrations, and hPCOS and Black women with PCOS (bPCOS) had lower SHBG and DHEAS measures than wPCOS. Menstrual disturbances were more frequent in eaPCOS. Both saPCOS and eaPCOS had lower body mass index with increased central adiposity. hPCOS and bPCOS were more obese. saPCOS, mePCOS, hPCOS and bPCOS had a higher prevalence of insulin resistance than wPCOS. bPCOS had a better lipid profile but higher blood pressure and cardiovascular risk. Indigenous Australian women with PCOS were more obese and more insulin resistant with higher androgen concentrations. The clinical phenotype of PCOS therefore shows a wide variation depending on ethnicity.

CLINICAL CHARACTERISTICS AND OUTCOMES OF COVID-19 IN PATIENTS WITH TYPE 2 DIABETES IN TURKEY: A NATIONWIDE STUDY (TURCOVIDIA)

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J Diabetes. 2021 Mar 2;10.1111/1753-0407.13171. Online ahead of print. PMID: 33655669 PMCID: PMC8013711 DOI: 10.1111/1753-0407.13171,

Background: Coronavirus disease 2019 (COVID-19) has been reported to be associated with a more severe course in patients with type 2 diabetes mellitus (T2DM). However, severe adverse outcomes are not recorded in all patients. In this study, we assessed disease outcomes in patients with and without T2DM hospitalized for COVID-19.

Methods: A nationwide retrospective cohort of patients with T2DM hospitalized with confirmed COVID-19 infection from 11 March to 30 May 2020 in the Turkish Ministry of Health database was investigated. Multivariate modeling was used to assess the independent predictors of demographic and clinical characteristics with mortality, length of hospital stay, and intensive care unit (ICU) admission and/or mechanical ventilation.

Results: A total of 18 426 inpatients (median age [interquartile range, IQR]: 61 [17] years; males: 43.3%) were investigated. Patients with T2DM ($n = 9213$) were compared with a group without diabetes ($n = 9213$) that were matched using the propensity scores for age and gender. Compared with the group without T2DM, 30-day mortality following hospitalization was higher in patients with T2DM (13.6% vs 8.7%; hazard ratio 1.75; 95% CI, 1.58-1.93; $P < .001$). The independent associates of mortality were older age, male gender, obesity, insulin treatment, low lymphocyte count, and pulmonary involvement on admission. Older age, low lymphocyte values, and pulmonary involvement at baseline were independently associated with longer hospital stay and/or ICU admission.

Conclusions: The current study from the Turkish national health care database showed that patients with T2DM hospitalized for COVID-19 are at increased risk of mortality, longer hospital stay, and ICU admission.

THE CHARACTERIZATION OF SEX DIFFERENCES IN HYPOLYCEMIA-INDUCED ACTIVATION OF HPA AXIS ON THE TRANSCRIPTOMIC LEVEL

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Cell Mol Neurobiol. 2021 Feb 5. Online ahead of print. PMID: 33544274 DOI: 10.1007/s10571-021-01043-0

Activation of the hypothalamic-pituitary-adrenal (HPA) axis using an insulin tolerance test (ITT) is a medical diagnostic procedure that is frequently used in humans to assess the HPA and growth-hormone (GH) axes. Whether sex differences exist in the response to ITT stress is unknown. Thus, investigations into the analysis of transcripts during activation of the HPA axis in response to hypoglycemia have revealed the underlying influences of sex in signaling pathways that stimulate the HPA axis. We assessed four time points of ITT application in Balb/c mice. After insulin injection, expression levels of 192 microRNAs and 41 mRNAs associated with the HPA, GH and hypothalamic-pituitary-gonadal (HPG) axes were determined by real-time RT-PCR in the hypothalamus, pituitary and adrenal tissues, as well as blood samples (Raw data accession: <https://drive.google.com/drive/folders/10qI00NAAtjxOepcNKxSjNQBjEjBFa6zgHK?usp=sharing>). Although the ITT is commonly used as a gold standard for evaluating the HPA axis, we found completely different responses between males and females with respect to activation of the HPA axis. While activation of several transcripts in the hypothalamus and pituitary was observed after performing the ITT in males within 10 min, females responded via the pituitary and adrenal immediately and durably over 40 min. Additionally, we found that microRNA alterations precede mRNA responses in the HPA axis. Furthermore, robust changes in the levels of several transcripts including *Avpr1b* and *Avpr2* observed at all time points strongly suggest that transcriptional control of these genes occurs mostly via differential signaling in pituitary and blood between males and females. Male and female HPA axis responses to ITT involve a number of sophisticated regulatory signaling pathways of miRNAs and mRNAs. Our results highlight the first robust markers in several layers of HPA, HPG and GH axis involved in ITT/hypoglycemia stress-induced dynamics.

OSTEOPROTEGRIN INTERACTS WITH BIOMARKERS AND CYTOKINES THAT HAVE ROLES IN OSTEOPOROSIS, SKIN FIBROSIS, AND VASCULOPATHY IN SYSTEMIC SCLEROSIS: A POTENTIAL MULTIFACETED RELATIONSHIP BETWEEN OPG/RANKL/TRAIL AND WNT INHIBITORS

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Mod Rheumatol. 2019 Jul;29(4):619-624. Epub 2018 Sep 25. PMID: 30001654 DOI: 10.1080/14397595.2018.1500736

Objectives: We explored the interactions of osteoprotegerin (OPG) with biomarkers of bone turnover and cytokines, including soluble receptor activator for nuclear factor kappa beta ligand (sRANKL), tumor necrosis factor-related apoptosis-induced ligand (TRAIL), and Wnt inhibitors in osteoporosis, vasculopathy and fibrosis related to systemic sclerosis (SSc).

Methods: The study included 46 SSc patients and 30 healthy controls. Skin thickness, pulmonary fibrosis and/or hypertension, digital ulcers, and calcinosis cutis of SSc patients were assessed. We determined bone mineral density (BMD), and OPG, sRANKL, TRAIL, secreted frizzled-related protein 1 (sFRP-1), Dickkopf-related protein 1 (DKK-1), sclerostin in the serum of both patients and controls.

Results: OPG, sclerostin, and sFRP-1 levels were similar between patients and controls ($P > 0.05$). Femoral neck and lumbar spine BMD and vitamin D levels were lower, and the OC, NTX, sRANKL, DKK1 and TRAIL levels were significantly higher, in patients than in controls ($p < 0.05$). In subgroup analysis, patients with higher modified Rodnan skin score (mRodnan) had higher DKK-1, sclerostin, and TRAIL levels ($p < 0.05$); those with diffuse SSc subtype had lower BMD values than those with limited SSc ($p < 0.05$). Skin and pulmonary fibrosis linked negatively with BMD measures.

Conclusion: we showed that sRANKL levels were higher and correlated with bone turnover markers. It may be related to osteoporosis in SSc. The OPG level was unaltered in SSc patients. Higher TRAIL levels associated with skin thickness may indicate vascular dysfunction or injury. Higher DKK-1 and sclerostin levels may be related to a reactive increase in cells and be prominently linked to fibrosis in SSc.

INDOCYANINE GREEN FLUORESCENCE ANGIOGRAPHY-GUIDED TRANSORAL ENDOSCOPIC THYROIDECTOMY AND PARATHYROIDECTOMY: FIRST CLINICAL REPORT

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Photodiagnosis Photodyn Ther. 2020 Dec;32:102028. *Epub* 2020 Oct 16. PMID: 32979545 DOI: 10.1016/j.pdpdt.2020.102028

Background: Indocyanine green fluorescence (ICG) angiography has been used for many purposes including as part of a focused parathyroidectomy technique. Concomitant fluorescence of thyroid tissue may cause challenges defining parathyroid tissue during surgery, since ICG is not a selective fluorescent agent. On the other hand, cosmesis is still a big problem for patients due to the visible neck scars produced by the standard surgical technique. In this study, we described a novel technique to solve both these handicaps.

Materials and methods: Seven patients who underwent ICG fluorescence angiography-guided transoral endoscopic thyroidectomy and parathyroidectomy vestibular approach between February 2018 and July 2019 were included. Serum parathyroid hormone (PTH) levels were measured intraoperatively and on postoperative day 1. Fluorescent images were confirmed with intraoperative quick-PTH levels.

Results: All operations were done successfully without conversion to open surgery. Intense and isolated parathyroid fluorescent images were achieved in all operations. All patients had a 50 % decrease between the baseline and final quick-PTH levels and the final quick-PTH levels were in the normal range in all. One of 7 patients had epistaxis due to nasotracheal intubation. One of 7 patients had seroma on post-operative day 5. None of patients had mental nerve injury, permanent hypocalcemia and temporary or permanent recurrent laryngeal nerve injury.

Conclusion: ICG-guided transoral endoscopic thyroid and parathyroid surgery can be used in select patients to increase operative success in focused parathyroidectomy with excellent cosmetic outcome also noted.

HYPOTHALAMITIS: A NOVEL AUTOIMMUNE ENDOCRINE DISEASE. A LITERATURE REVIEW AND CASE REPORT

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Context: The relationship between the endocrine system and autoimmunity has been recognized for a long time and one of the best examples of autoimmune endocrine disease is autoimmune hypophysitis. A better understanding of autoimmune mechanisms and radiological, biochemical, and immunological developments has given rise to the definition of new autoimmune disorders including autoimmunity-related hypothalamic-pituitary disorders. However, whether hypothalamitis may occur as a distinct entity is still a matter of debate.

Evidence acquisition: Here we describe a 35-year-old woman with growing suprasellar mass, partial empty sella, central diabetes insipidus, hypopituitarism, and hyperprolactinemia.

Evidence synthesis: Histopathologic examination of surgically removed suprasellar mass revealed lymphocytic infiltrate suggestive of an autoimmune disease with hypothalamic involvement. The presence of antihypothalamus antibodies to arginine vasopressin (AVP)-secreting cells (AVPcAb) at high titers and the absence of antipituitary antibodies suggested the diagnosis of isolated hypothalamitis. Some similar conditions have sometimes been reported in the literature but the simultaneous double finding of lymphocytic infiltrate and the presence of AVPcAb so far has never been reported.

Conclusions: We think that the hypothalamitis can be considered a new isolated autoimmune disease affecting the hypothalamus while the lymphocytic infundibuloneurohypophysitis can be a consequence of hypothalamitis with subsequent autoimmune involvement of the pituitary. To our knowledge this is the first observation of autoimmune hypothalamic involvement with central diabetes insipidus, partial empty sella, antihypothalamic antibodies and hypopituitarism.

HYDROXYCHLOROQUINE SULFATE RELATED HYPOGLYCEMIA IN A NON-DIABETIC COVID-19 PATIENT: A CASE REPORT AND LITERATURE REVIEW

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Objective: Hypoglycemia is a serious adverse effect of hydroxychloroquine (HCQ) which is very rare in non-diabetic patients. This case report describes a non-diabetic patient without any other chronic diseases, who experienced mild hypoglycemia related to HCQ used for COVID-19 treatment.

Methods: All etiologies causing hypoglycemia were investigated and a 72-hour fast test was performed.

Results: A 34-year-old male patient was admitted to our hospital with a high fever, cough, and chest pain. The result of his COVID-19 PCR test was positive. He received HCQ for 10 days for the treatment of COVID-19 infection. He experienced fatigue, dizziness, severe headache, weakness and feeling of hunger after discontinuation of HCQ during his isolation at home. Before COVID-19 infection, he never experienced hypoglycemia symptoms. He did not have a history of chronic diseases, drug use, alcohol consumption, or smoking. A 72-hour fasting test was performed. He complained about headache and weakness during the 72-hour test period. The PG level was determined as 49 mg/dl during these symptoms. Concurrent insulin and C-peptide levels were <2 mU/mL and 0.553 ng/mL, respectively. ACTH, cortisol, growth hormones, liver and kidney function tests were normal. HbA1c level was 4.7% (28 mmol/mol) (Normal Range %4,5-5,7).

Conclusion: Hypoglycemia may be observed as an adverse

effect of HCQ used for COVID-19 infection even in patients without chronic diseases and comorbidities. We must be careful while using HCQ for these patients and must warn them about this effect. The warning about hypoglycemia effect of HCQ must be added to COVID-19 treatment guidelines.

AWARENESS, TREATMENT RATES, AND COMPLIANCE TO TREATMENT IN PATIENTS WITH SERUM LDL CHOLESTEROL HIGHER THAN 250 MG/ DL, AND POSSIBLE, PROBABLE, OR DEFINITE FAMILIAL HYPERCHOLESTEROLEMIA

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Purpose: Familial hypercholesterolemia (FH) is a genetic disease characterized by increased levels of low-density lipoprotein cholesterol (LDL-C). It is underdiagnosed and undertreated despite relatively high prevalence and significant association with increased mortality. We aimed to determine treatment status and compliance in patients with LDL-C \geq 250 mg/dL and FH.

Design: Patients older than 18 years old and have a serum LDL-C \geq 250 mg/dL between January 2010 to December 2016 were identified from the hospital database. A phone survey was performed. Demographic features, smoking status, alcohol use, exercise, cardiovascular disease (CVD), use of medication for dyslipidemia, and CVD and high cholesterol levels in the family were questioned. Dutch Lipid Clinical Network Criteria was used to classify patients. The study was registered to Clinicaltrials.gov in July 2020 (NCT04494464).

Results: 1365 patients with a LDL-C \geq 250 mg/dL were identified. Patients that could not be reached and who refused to interview were excluded and the data of 367 patients were analyzed. There were 248 (67.6%) female and 119 (32.4%) male patients and mean age was 50.52 ± 11.66 . LDL-C was \geq 330 mg/dL in 50 (13.6%) and 250-329 mg/dL in 317 (86.4%) patients. Forty (10.9%) patients were classified as definite, 181 (49.3%) as probable and 146 (39.8%) as possible FH. 213 (58.0%) patients were not receiving lipid-lowering treatment, and 162 (76.1%) stated that medication was never recommended previously, 30 (14.1%) had stopped medication him/herself and 21 (9.8%) had stopped medication with the advice of the physician. Among patients with definite/probable FH, 84 (38.0%) had CVD and the rate of lipid-lowering drug use in these patients was 58.3%.

Conclusion: A significant proportion of patients with LDL-C \geq 250 mg/dL were not taking lipid-lowering drugs. Similar with many other studies, diagnosis, and treatment rates of FH patients were very low in our study. Further national studies are required to increase awareness of the disease in both physicians and patients.

SKIN AUTOFLUORESCENCE AND CAROTID INTIMA-MEDIA THICKNESS EVALUATION FOLLOWING BARIATRIC SURGERY IN PATIENTS WITH SEVERE OBESITY

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Purpose: Advanced glycation end product (AGE) is a marker of metabolic memory. Accumulated AGEs in skin collagen measured with skin autofluorescence (SAF) was found to be associated with subclinical atherosclerosis. We aimed to evaluate SAF and carotid intima-media thickness (CMT) and its association with clinical and biochemical parameters in severely obese patients before and after bariatric surgery.

Materials and methods: In this observational study, 432 morbid obese patients evaluated before and after 6 and 12 months of bariatric surgery for metabolic and anthropometric parameters, CMT and SAF. SAF was assessed in the forearm with an AGE Reader.

Results: SAF measurements were higher in diabetic (2.04 ± 0.52 AU) obese patients compared to non-diabetic (1.78 ± 0.40 AU) obese patients ($p < 0.0001$). Although bariatric surgery-induced weight loss resulted in a decrease in CMT in the 6th and 12th months compared to baseline, weight loss and metabolic improvements were not associated with a parallel decrease in SAF measurements. SAF measurements were positively correlated with body mass index ($r 0.527$, $p < 0.0001$), HbA1c ($r 0.362$, $p < 0.0001$), and CMT ($r 0.319$, $p < 0.0001$). Multivariate analysis showed the presence of diabetes (but not BMI, age, and sex) was independently associated with SAF ($R^2 = 7.62\%$), and the presence of diabetes, low-density cholesterol, and systolic blood pressure were independently associated with CMT measurements ($R^2 = 21.7\%$).

Conclusion: Bariatric surgery-induced weight loss and metabolic improvement were found to be associated with improvement in CMT, while skin AGE accumulation was not regressed in the first year of surgery.

ENDOCRINOLOGY OF HIRSUTISM: FROM ANDROGENS TO ANDROGEN EXCESS DISORDERS

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Unwanted sexual hair growth has a considerable negative impact on a woman's self-esteem and quality of life. Excessive growth of terminal hair in women in a man-like pattern is defined as hirsutism and affects up to 1 in 7 women. Androgens secreted by the ovary and adrenal are the main regulator of physiological and pathological alterations of skin hair. Hirsutism is the result of the interaction between circulating serum androgens and hair follicles. Hirsutism is the most commonly used clinical diagnostic criterion of hyperandrogenism and majority of hirsutism cases are due to androgen excess. Over 80% of women with hirsutism will have polycystic ovary syndrome, about 10% will have idiopathic hirsutism, and the remaining will have rare disorders including non-classical congenital adrenal hyperplasia, hyperandrogenism with insulin resistance and acanthosis nigricans, and androgen-secreting neoplasms. Cushing's syndrome, acromegaly, thyroid dysfunction and hyperprolactinemia might be associated with hirsutism as well as the use of androgens, anabolic steroids and valproate. This paper provides an overview of the principal endocrinological aspects of hirsutism including the role of androgens in excessive hair growth and associated androgen excess disorders. Clinical evaluation and management of hirsutism are also discussed.

ANTITHYROID DRUGS IN GRAVES' HYPERTHYROIDISM: DIFFERENCES BETWEEN "BLOCK AND REPLACE" AND "TITRATION" REGIMES IN FREQUENCY OF EUTHYROIDISM AND GRAVES' ORBITOPATHY DURING TREATMENT

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Purpose: Whereas antithyroid drugs (ATD) are the preferred treatment modality for Graves' hyperthyroidism (GH), there is still controversy about the optimal regimen for delivering ATD. To evaluate whether 'Block and Replace' (B + R) and 'Titration' (T) regimens are equivalent in terms of frequency of euthyroidism and Graves' Orbitopathy (GO) during ATD therapy.

Methods: A prospective multicentre observational cohort study of 344 patients with GH but no GO at baseline. Patients were treated with ATD for 18 months according to B + R or T regimen in line with their institution's policy.

Results: Baseline characteristics were similar in both groups. In the treatment period between 6 and 18 months thyrotropin (TSH) slightly increased in both groups, but TSH was on average 0.59 mU/L (95% CI 0.27-0.85) lower in the B + R group at all time points ($p = 0.026$). Serum free thyroxine (FT4) remained stable during the same interval, with a tendency to higher values in the B + R group. The point-prevalence of euthyroidism (TSH and FT4 within their reference ranges) increased with longer duration of ATD in both groups; it was always higher in the T group than in the B + R group: 48 and 24%, respectively, at 6 months, 81 and 58% at 12 months, and 87 and 63% at 18 months ($p < 0.002$). There were no significant differences between the B + R and T regimens with respect to the fall in thyrotropin binding inhibiting immunoglobulins (TBII) or thyroid peroxidase antibodies (TPO-Ab). GO developed in 15.9% of all patients: 9.1 and 17.8% in B + R group and T group, respectively, ($p = 0.096$). GO was mild in 13% and moderate-to-severe in 2%.

Conclusion: The prevalence of biochemical euthyroidism during treatment with antithyroid drugs is higher during T compared to B + R regimen. De novo development of GO did not differ significantly between the two regimens, although it tended to be higher in the T group. Whether one regimen is clinically more advantageous than the other remains unclear.

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