European Society of Endocrinology
the European hormone society

HELLENIC ENDOCRINE SOCIETY

16th ESE Postgraduate Training Course on Endocrinology, Diabetes and Metabolism

12 – 15 February 2015

Metropolitan Hotel, Athens, Greece

Scientific Programme & Abstract Book

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European Society of Endocrinology
the European hormone society

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Word of Welcome

Dear friends and colleagues,

The European Society of Endocrinology continues its long-standing tradition of educational meetings with the 16th postgraduate course in Athens. These meetings have two major goals. The first is to ascertain that knowledge in Endocrinology, Diabetes and Metabolism are transmitted smoothly and successfully to younger generations of endocrinologists who sooner than later are going to take over the heavy burden of development and expansion of the ESE. The second goal is to bring together students and teachers from all over Europe and beyond, in order to harmonize teaching and practicing traditions in Endocrinology while they will feel at home everywhere in Europe.

This course is part of a series of courses made possible by an unrestricted educational grant from NovoNordisk, for which we want to express our sincere gratitude.

The Hellenic Endocrine Society that celebrates in 2015 half century of life has whole-heartedly embraced this effort.

In this meeting new ideas regarding the structure of teaching have been introduced: sessions are dedicated to distinct areas of Endocrinology, Diabetes and Metabolism and exam simulations intend to intensify the teacher-student interaction.

We hope that we will all enjoy this get-together in science and we are looking forward to receiving new ideas and suggestions for the improvement of the ESE postgraduate courses.

With warm greetings

Jens Bollerslev
ESE Education/PG Course Committee Chair

Jens Sandahl Christiansen
ESE/NN PG Courses Steering Committee Chair

George Mastorakos
Hellenic Endocrine Society President
Local Organizing Committee Chair

GENERAL INFORMATION

Course VENUE

The Course will take place at Metropolitan Hotel, 35 minutes from the airport by taxi and 10 minutes via taxi from the city center.

Metropolitan Hotel

385 Syngrou Avenue
17564 Athens, Greece
Tel: +30 210 947 1000
Fax: +30 210 947 1010
http://www.chandris.gr/metropolitanathens/
e-mail: metropolitan@chandris.gr

Social Events

Lunches and Dinners will be served at Le Trocadero Restaurant located in the lobby area at Metropolitan Hotel.

Certificates

The 16th ESE Postgraduate Course on Endocrinology, Diabetes & Metabolism is granted **15 European CME credits (ECMEC)** by the European Accreditation Council for Continuing Medical Education (EACCME).

Internet Access

WIFI Internet access will be available at the congress venue.

Useful Information

Emergency Telephone: 112
Greece country code: 0030
City of Athens: www.thisisathens.org
Athens Metro: www.ametro.gr
Athens International Airport: www.aia.gr
Transfer information: www.stasy.gr
Museums: http://odysseus.culture.gr/
New Acropolis Museum: www.theacropolismuseum.gr/
Tourist information: www.visitgreece.gr

SCIENTIFIC PROGRAMME Friday 13/02/2015

08:00 **Registration** — AEGEAN SEA BALLROOM

08:45 **Course opening**
Jens CHRISTIANSEN (DK), Jens BOLLERSLEV (N), George MASTORAKOS (GR)

09:00 - 10:30 **Session 1: Diabetes**
Chairs: Jens CHRISTIANSEN (DK), Theodoros ALEXANDRIDES (GR)
The emerging role of GLP-1 pathway in the pharmacotherapy of DM, Sten MADSBAD (DK)
Bariatric surgery as a therapeutic option for DM2, Simona FICA (RO)
Strategies for multifactorial intervention in T2DM, Jens CHRISTIANSEN (DK)

10:30 - 11:00 **Coffee break**

11:00 - 12:30 **Session 2: Calcium/Bone**
Chairs: Bernadette BIONDI (IT), Simeon TOURNIS (GR)
Non-skeletal effects of vitamin D, Marija PFEIFER (SI)
Primary hyperparathyroidism, Jens BOLLERSLEV (N)
Current treatments & perspectives in osteoporosis, Polyzois MAKRAS (GR)

12:30 - 14:00 **Session 3: Pregnancy**
Chairs: Carmen GEORGESCU (RO), George MASTORAKOS (GR)
Challenges from thyroid pathophysiology, Konstantinos B. MARKOU (GR)
Gestational diabetes, Eftychia KOUKKOU (GR)
The role of vitamin D in pregnancy, Konstantinos J. MAVROUDIS (GR)

14:00 - 15:00 **Lunch break**

15:00 - 16:30 **Session 4: Pituitary**
Chairs: Jens BOLLERSLEV (N), Marinella TZANELA (GR)
Workup and diagnosis of a pituitary lesion:
- The endocrinologist's point of view, Stylianos TSAGARAKIS (GR)
- The radiologist's point of view, Matilda PAPATHANASIOU (GR)
Replacement of pituitary hormone deficiencies, Charlotte HOYBYE (SE)

16:30 - 17:30 **Selected cases on diabetes and calcium/bone** — CHIOS ROOM
Moderators: Simona FICA (RO), Irini LAMBRINOUDAKI (GR)
Selected cases on pregnancy and pituitary — DELOS ROOM
Moderators: Murat Faik ERDOGAN (TR), Andromachi VRYONIDOU-BOMPOTA (GR)

17:30 - 18:00 **Coffee break**

18:00 - 19:00 **Selected cases on diabetes and calcium/bone** — CHIOS ROOM
Moderators: Simona FICA (RO), Irini LAMBRINOUDAKI (GR)
Selected cases on pregnancy and pituitary — DELOS ROOM
Moderators: Murat Faik ERDOGAN (TR), Andromachi VRYONIDOU-BOMPOTA (GR)

19:00 - 20:00 **Exam simulation** — AEGEAN SEA BALLROOM
Diabetes, Calcium/Bone, Pregnancy, Pituitary
Examiners: Jens BOLLERSLEV (N), Kalliopi PAZAITOU-PANAYIOTOU (GR)

20:00 **Dinner**

SCIENTIFIC PROGRAMME Saturday 14/02/2015

09:00 - 10:30 — AEGEAN SEA BALLROOM

Session 5: Diabetes
Chairs: Edward JUDE (UK), Dimitris KIORTSIS (GR)
New technologies, J. Hans DeVRIES (NL)
Hypoglycaemia, Asimina MITRAKOU-FANARIOTOU (GR)
Diabetic foot and neuropathy, Edward JUDE (UK)

10:30 - 11:00 — **Coffee break**

11:00 - 12:30

Session 6: Female reproduction
Chairs: Djuro MACUT (RS), Agathocles TSATSOULIS (GR)
Metabolic sequellae of PCOS, Evanthia DIAMANTI-KANDARAKIS (GR)
Hyperandogenemia in reproductive age, Carmen GEORGESCU (RO)
Contraception, Philippe BOUCHARD (FR)

12:30 - 14:00

Session 7: Laboratory support in endocrine practice
Chairs: Enrico PAPINI (IT), Achilles CHATZIIOANNOU (GR)
Pitfalls in hormone measurements, Robin P. PEETERS (NL)
PET scan: Is it useful in endocrinology?, Sofia CHATZIIOANNOU (GR)
Thyroid and neck ultrasound, sonographical case presentations, Murat Faik ERDOGAN (TR)

14:00 - 15:00 — **Lunch break**

15:00 - 16:30

Session 8: Adrenals
Chairs: Charlotte HOYBYE (SE), George P. CHROUSOS (GR)
Cushing syndrome, Richard FEELDERS (NL)
Addison disease, Gregory KALTSAS (GR)
Treatment of congenital adrenal hyperplasia during adult life, Djuro MACUT (RS)

16:30 - 17:30

Selected cases on adrenals and female reproduction — CHIOS ROOM
Moderators: Richard FEELDERS (NL), Neoklis GEORGOPOULOS (GR)

Selected cases on laboratory support in endocrine practice and diabetes — DELOS ROOM
Moderators: Jens CHRISTIANSEN (DK), Robin P. PEETERS (NL), Achilles CHATZIIOANNOU (GR)

17:30 - 18:00 — **Coffee break**

18:00 - 19:00

Selected cases on adrenals and female reproduction — CHIOS ROOM
Moderators: Richard FEELDERS (NL), Neoklis GEORGOPOULOS (GR)

Selected cases on laboratory support in endocrine practice and diabetes — DELOS ROOM
Moderators: Jens CHRISTIANSEN (DK), Robin P. PEETERS (NL), Achilles CHATZIIOANNOU (GR)

19:00 - 20:00 — AEGEAN SEA BALLROOM

Exam simulation
Adrenals, Laboratory support in endocrine practice, Female reproduction, Diabetes
Examiners: Marija PFEIFER (SI), Evanthia DIAMANTI-KANDARAKIS (GR)

20:00 — **Dinner**

SCIENTIFIC PROGRAMME Sunday 15/02/2015

AEGEAN SEA BALLROOM

09:00 - 10:30 **Session 9: Thyroid**

Chairs: Robin P. PEETERS (NL), Gerasimos KRASSAS (GR)
Thyroid replacement, Bernadette BIONDI (IT)
Current development in the management of thyroid cancer, Maria ALEVIZAKI (GR)
Thyroid nodules: current diagnosis and management, Enrico PAPINI (IT)

10:30 - 11:00 **Coffee break**

11:00 - 12:30 **Session 10: Male endocrinology**

Chairs: Ilpo HUHTANIEMI (UK), Dimitrios A. ADAMOPOULOS (GR)
Male hypogonadism, Ilpo HUHTANIEMI (UK)
Male infertility, Dimitrios G. GOULIS (GR)
Endocrine disruption and male gonadal function, George MASTORAKOS (GR)

12:30 - 13:45 **Presentation of abstracts**

Chairs: Agron YLLI (AL), Evangeline VASSILATOU (GR)

1. RADIOTHERAPY - CURE OR CURSE? HODGKIN LYMPHOMA, RECTAL CANCER AND PAPILLARY CARCINOMA: CASE REPORT
Iulia Soare[1], Anca Sirbu[1,2], Andreea Catarina Popescu[1,2], Simona Fica[1,2]

[1] Elias Emergency University Hospital, Bucharest; [2] University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

2. SALIVARY CORTISOL LEVELS IN ALLGROVE SYNDROME
Dr Blertina Dyrmishi[1], Dr Taulant Olldashi[1], Prof Asc Zamira Ylli [2], Prof Agron Ylli [2]

[1] Hygeia Hospital Tirana; [2] UHC "Mother Teresa", Tirana, Albania

3. MOYA MOYA SYNDROMIC DISEASE IN A PATIENT WITH GROWTH HORMONE DEFICIENCY AND HYPERGONADOTROPIC HYPOGONADISM
Athanasia Stoupa[1], Graziella Pinto[1], Philippe Touraine [2]

[1] Necker Children's University Hospital; [2] La Pitié Salpétrière University Hospital, Paris, France

4. ARE CYPRIOT WOMEN EXEMPT FROM THE SYMPTOM-ORIENTED THERAPEUTIC GUIDELINES FOR THE POLYCYSTIC OVARY SYNDROME?
Gyula Petrányi
Private practice, Limassol, Cyprus

SCIENTIFIC PROGRAM Sunday 15/02/2015

5. BREAST NEUROENDOCRINE CARCINOMA ASSOCIATED WITH INVASIVE NEUROENDOCRINE PANCREATIC TUMOUR

Ioana Armasu[1], Iulia Crumpei[1], Ioana Vasiliu [2], Alina-Daniela Belceanu[1], Roxana Stefan[1], Mihai Danciu [3], Constantin Volovat [4], Voichita Mogos[1], Carmen Vulpoi[1]

[1] Department of Endocrinology; [2] Department of Physiology; [3] Department of Morphopathology, University of Medicine and Pharmacy "Gr.T. Popa" Iasi; [4] Department of Oncology, Victoria Hospital Iasi, Iasi, Romania

6. SUDDEN ONSET OF DIABETES INSIPIDUS - THE FIRST SIGN OF A BRAIN METASTASIS

Iulia Crumpei[1], Ioana Armasu[1], Ion Poeata [2], Anca Sava [3], Daniela Boisteanu [4], Dragos Negru [5], Elena Braha [6], Cristina Preda[1], Carmen Vulpoi[1].

[1] Department of Endocrinology; [2] Department of Neurosurgery; [3] Department of Morphopathology; [4] Department of Pneumology; [5] Department of Radiology and Medical Imaging; [6] Department of Genetics, University of Medicine and Pharmacy "Gr.T. Popa" Iasi, Iasi, Romania

7. DOES NELSON SYNDROME STILL EXIST?

George-Sebastian Zmău[1], Iulia Crumpei[1], Mirela Puiu[1], Adina Manolachie[1], Viorel Scripcariu[2], Delia Ciobanu [3], Corina Ursulescu [4], Letitia Leustean[1], Maria-Christina Ungureanu[1], Carmen Vulpoi[1]

[1] Department of Endocrinology; [2] Department of Surgery; [3] Department of Morphopathology; [4] Department of Radiology and Medical Imaging, University of Medicine and Pharmacy " Gr.T. Popa" Iasi, Iasi, Romania

8. AN INCIDENT AND HIGH RISK TYPE 1 DIABETES COHORT - AFTER DIAGNOSIS DIABETES RESEARCH SUPPORT SYSTEM (ADDRESS-2): DESCRIPTION AND COMPARISON OF CLINICAL CHARACTERISTICS AND PRESENTATION OF PATIENTS WITH AND WITHOUT EVIDENCE OF HUMORAL AUTOIMMUNITY

Vassiliki Bravis[1], Akaal Kaur[1], Helen Walkey[1], Ian Godsland[1], Colin Dayan [2], Mark Peakman[3], Polly Bingley [4], David Dunger [5], Nick Oliver[1], Desmond G Johnston[1]
On behalf of the ADDRESS-2 Consortium

[1] Department of Endocrinology, Diabetes and Metabolism, Imperial College London; [2] Cardiff University School of Medicine; [3] Department of Immunology, King's College London; [4] Department of Diabetes and Metabolism, University of Bristol; [5] Department of Paediatrics, University of Cambridge, UK

Biographies & Abstracts

Biographies & Abstracts

Sten Madsbad

Hvidovre Hospital
University of Copenhagen
Copenhagen, Denmark

Sten Madsbad, MD, DMSc is Chief Physician at the department of Endocinology, Hvidovre University Hospital, Copenhagen and full Professor at the Faculty of Health Science, University of Copenhagen, Denmark. He graduated in medicine from the University of Copenhagen, Denmark in 1974 and holds specialisms in Medical Endocrinology and Internal Medicine. He combine his research carreer and medical practice

His research interests include pre-hepatic insulin secretion, hypoglycaemia and insulin resistance in the liver and muscles. During recent years his focus has been on the secretion and effect of incretin hormones in relation to normal physiology, type 2 diabetes and obesity, including the effect of gastric bypass on the diabetic state. He published in 2002 in the Lancet the "proof -of-concept" that GLP-1 based therapy was a clinical reality. At present his research is primarily focusing on the remission of type 2 diabetes after gastric bypass.

Dr Madsbad has published more than 300 original papers, 60 reviews and editorials in peer-reviewed journals, and 40 chapters in textbooks, primarily in the field of diabetes and obesity.

Dr Madsbad has received numerous honours including the Novo Nordisk Foundations lecture for excellent research at Scandinavian Society for the Study of Diabetes in 2007 and the Prize of Hagedorn in 2009. He is past president of the Danish Endocrine society.

The emerging role of GLP-1 pathways in the pharmacotherapy of diabetes mellitus

Sten Madsbad
Professor, Chief physician
Department of Endocrinology
Hvidovre hospital
University of Copenhagen

Incretin-based therapies, which include the injectable GLP-1 receptor agonists and orally administered DPP-4 inhibitors use the antidiabetic properties of potentiating the GLP-1 receptor signaling via the regulation of insulin and glucagon secretion, inhibition of gastric emptying and suppression of appetite. Most physicians start antidiabetic treatment with metformin, but adding a DPP-4 inhibitor or a GLP-1 receptor agonist seems to be optimal since the risk of hypoglycemia is minimal. The DPP-4 inhibitors are weight neutral, while most patients will lose weight during treatment with a GLP-1 receptor agonist. DPP-4 inhibitors reduce HbA1c to a similar level as during treatment with, i.e. sulfonylurea. The short acting GLP-1 receptor agonists are administered twice daily, while the intermediate acting is injected once daily, and the long-acting is for once weekly administration. The short acing GLP-1 receptor agonists have a pronounced effect on gastric emptying rate resulting in a reduction in postprandial glucose excursion during a meal. The intermediate acting and long acting GLP-1 receptor agonists effects on gastric emptying is modest after a few days of treatment. During treatment with the intermediate and long acting agonists the higher concentration of GLP-1 during all 24 hours results in a greater reduction of HbA1c and fasting plasma glucose levels compared with the short acting agonists. The intermediate and long acting agonists differ in relation to efficacy on glycaemic control and weight loss, but in most studies the reduction in HbA1c was greater compared to oral antidiabetic drugs and insulin lantus. The GLP-1 receptor agonists reduce systolic blood pressure with 2-4 mm Hg. More patients will reach an HbA1c below 7% with a GLP-1 receptor agonist than during treatment with a DPP-4 inhibitor. Notably, Incretin-based therapies cover the whole spectrum of treatment from time of diagnosis with lifestyle treatment to combination with basal insulin.

The side effects of DPP-4 inhibitors did not differ from placebo. The adverse events with the GLP-1 receptor agonists are primarily nausea and vomiting, which can be avoided or reduced by a slow up-titration of the dose. The cardiovascular safety of incretin-based therapies will emerged from several ongoing trials. It is still to debate, whether incretin-based therapies increase the risk of pancreatitis.

Biographies & Abstracts

Professor Dr. Simona Fica

Carol Davila University of Medicine, and Pharmacy, Endocrinology Department Elias University Hospital, Bucharest, Romania

Simona Fica is Professor of Endocrinology and Vice-Dean at Carol Davila University of Medicine and Pharmacy, Bucharest, Romania.

In 2003 she established the Endocrinology, Diabetes and Nutritional Disease Department at Elias University Hospital and she has been the Head of this Department ever since. She is Senior Consultant in Endocrinology and Diabetes, with more than 30 years of clinical, educational and research experience.

She became PhD in 1989 and her thesis involved the pathology of polycystic virilizing ovary. Professor Simona Fica is the author of numerous publications in national and international scientific journals, book articles as well as lectures on national and international conferences. Her research interest focuses on obesity and its metabolic consequences, the results of obesity surgery, infertility and polycystic ovary syndrome, neuro-endocrine and pituitary tumors. She was the Project Director of four research grants obtained through national competition, mainly concerning obesity, polycystic ovary syndrome and neuroendocrine tumors.

Between 2010 and 2013 Professor Simona Fica was the President of Romanian Society of Endocrinology and at present she is the Past President. She is member in many other national and international societies; she also represents Romanian Society of Endocrinology at the ESE Council of Affiliated Societies (ECAS). Professor Simona Fica is Associated Editor of "Acta Endocrinologica" - *new series*.

Bariatric surgery as a therapeutic option for type 2 diabetes mellitus

Simona Fica, Carol Davila University of Medicine, and Pharmacy, Endocrinology Department Elias University Hospital, Bucharest, Romania

The incidence of type 2 diabetes mellitus continues to rise worldwide, with enormous costs for individuals as well as for society. The effectiveness of current medical treatment is somehow limited and diabetes control remains suboptimal.

Even from the first half of the 20th century there were sporadic reports of a dramatic improvement in diabetes after some gastrointestinal surgical procedures (partial or total gastrectomy with duodenal exclusion). In 1995, Pories and his team convincingly proved the remission of hyperglycaemia in more than 100 diabetic patients treated with gastric bypass; this was the beginning of a series of research recognizing the effect of gastrointestinal surgery on reversing type 2 diabetes mellitus.

The most commonly performed bariatric surgical procedures nowadays are the Roux-en-Y gastric bypass (RYGB), the laparoscopic adjustable gastric band (LAGB) and laparoscopic sleeve gastrectomy (LSG); the biliopancreatic diversion (BPD) is performed less often due to high postoperative rates of malabsorption and protein-calorie malnutrition.

Regarding the mechanisms involved in diabetes control or remission after bariatric surgery, it is very clear that weight loss has a profound impact on diabetes control and much of the effects of bariatric surgery on glucose homeostasis were attributed to its impact on weight. However, several investigators demonstrated the very rapidly normalisation in glucose metabolism (in a few days), way before the weight loss becomes significant. This suggests that diabetes remission may be due to mechanisms involving the surgical technique, aside from weight loss. The most common hypotheses are: caloric restriction hypothesis, the hindgut hypothesis, the foregut hypothesis, gut microbiota and bile acids hypothesis.

The results of several randomized trials studying the effectiveness of bariatric surgery in type 2 diabetes mellitus (such as Mingrone's study, Schauer's study and Diabetes Surgery Study) show substantial improvement of metabolic control. However, long term randomized, clinical trials comparing the best medical therapy with surgery need to be conducted in patients with type 2 diabetes; such data are necessary to make appropriate benefit – risk calculations for metabolic surgery as a primary therapy for type 2 diabetes.

Biographies & Abstracts

Jens Sandahl Christiansen

Professor of Endocrinology and Diabetology
University Hospital of Aarhus
Aarhus, Denmark

Jens Sandahl Christiansen, MD, is professor at the University of Aarhus, and consultant in the department of Medicine (endocrinology), Aarhus University Hospital. He is the chairman of the district board for organising diabetes care and is involved in the national board for the evaluation of efforts that healthcare professionals are making within Type 2 diabetes.

Dr Christiansen received his MD at University of Copenhagen School of Medicine. He was a house officer at Steno Memorial Hoswpital, and has worked as registrar, senior registrar and consultant at medical departments (endocrinology) at the Copenhagen county hospital and at the University Hospital in Aarhus. He has held a number of academic appointments at the University of Aarhus since 1989 and is currently Professor of Medicine. He is chairman of Aarhus University Hospital's GCP Unit.

His clinical and research interests are GH physiology and consequences of GH deficiency as well as diabetic kidney disease, continuous glucose monitoring and insulin absorption. He has conducted numerous studies and is actively involved in many clinical research projects in the field of endocrinology. Jens Sandahl Christiansen is the co-author on more than 600 publications.

He is currently Editor-in-Chief of Endocrine Connections, member of the European Association for the Study of Diabetes, the US Endocrine Society, the European Society for Endocrinology, the European Society for Pediatric Endocrinology and immediate-past-president of the Growth Hormone Research Society. He was the first treasurer of the European Society of Endocrinology (2006-09).

Dr Christiansen has lectured extensively on topics such as pathogenesis of diabetes, optimal treatment of diabetes, complications of diabetes, the metabolic syndrome, diabetes in adolescents, diabetes in pregnancy, organising diabetes treatment as well as on all aspects of growth hormone replacement therapy.

Dr. Christiansen has been awarded The Dandy Prize, The Hanstedgaard Prize, The Clinical Endocrinology Trust Medal and The Minkowski Medal, and elected Honorary Member of The Polish Society of Endocrinology.

Beyond HbA1c: postprandial glucose control

Management of type 2 diabetes includes lifestyle intervention (diet, smoking and exercise habits), strict blood pressure control, treatment of dyslipidaemia and control of blood glucose. Central in the management of blood glucose regulation is measurement of glycated haemoglobin (HbA1c). This marker of total glucose exposure over a 3-months period provides the physician with a composite picture if numerous peaks and troughs in glucose levels during the preceding week, and has transformed the practice of diabetic medicine during the last 25 years.

However, composite or average markers often conceal details that make the difference between success and failure in clinical medicine (as well as in many other aspects of life). For example, HbA1c measurements alone cannot identify whether fasting glucose levels or postprandial glucose excursions are too high. Self-monitoring of glucose is helpful overcoming some of the limitations in HbA1c measurements, but frequent monitoring is inconvenient and expensive. The development of reliable and inexpensive means for continuous glucose monitoring is highly needed.

While some clinicians continue to emphasise fasting glucose and HbA1c as the cornerstones in the management of glucose control in diabetes, abundant evidence in terms of epidemiological and observational studies over the last decade have indicated, that postprandial glucose levels may have a more important role in outcomes than fasting glucose levels. Thus, several epidemiological studies have shown that postprandial glucose levels appear to be more predictive of mortality and macro vascular disease than fasting glucose.

Biographies & Abstracts

Marija Pfeifer

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Marija Pfeifer is a Professor of Internal Medicine and Endocrinology at the Medical Faculty, University of Ljubljana, Slovenia. She studied, graduated and achieved Master's and PhD degrees at the Medical Faculty in Ljubljana. Her postgraduate education took place at different institutions (in Hamburg-Eppendorf for neuroendocrinology, in London at St. Bartholomew's and Middlesex Hospital, in Hershey Pennsylvania).

Professor Pfeifer's main fields of interest are pituitary diseases, especially GHD and atherogenesis; PCOS - metabolic and vascular derangements, obesity and cellular lipid handling; male hypogonadism, LOH in diabetic patients and CVD; calcium, vitamin D and osteoporosis. She has published in JCEM and Clinical Endocrinology on GHD, and mainly in EJE on PCOS and has written chapters in Slovenian textbooks of Internal Medicine and Endocrinology and edited the Chapters on Endocrine diseases. Professor Pfeifer lectures endocrinology and is a mentor to students and postgraduate students.

She is a Visiting Professor at the Medical Faculty – University of Zagreb (Croatia), representative of the Medical Chamber of Slovenia in UEMS – Section and Board for Endocrinology, member of ESE Executive, Education, NN Steering and Nomination Committees, and the president of the ESE Congress Committee. She organised the last EFES postgraduate Course in Clinical Endocrinology in 2005, co-organised the International PCOS Symposium in Belgrade 2012, was the POC member for ENEA meeting in 2012, for ECE 2013 and 2015, and Head of the POC of the ESE Clinical Update – Madrid 2013. She serves as a member of the International Advisory Board of Lancet Diabetes & Endocrinology and of the Editorial board of Hormones. She is the president of the Slovenian Endocrine Society.

Extraskeletal effects of vitamin D

Vitamin D_3 (cholecalciferol) is a fat-soluble vitamin which can be synthesized in human skin under the influence of ultraviolet beams. Vitamin D_2 (ergocalcipherol) is formed in a similar way in plants. Both forms are metabolized in the liver to 25-OH vitamin D, which is used to determine a patient's vitamin D status. 25-OH vitamin D is activated in the kidneys to its active form, 1,25-$(OH)_2$ vitamin D or hormone D which binds to its nuclear vitamin D receptor with high affinity. Many other cells in the body can activate 25-OH vitamin D to its active form where it can induce its multiple pleiotropic effects.

Vitamin D, the sunshine vitamin is phylogenetically a very old compound having been present in simple organisms without skeleton for millions of years. Its primary function, acting as a cytokine, has been the defence against microbial invaders from the external environment. Thus, vitamin D can be synthesised by monocytes-macrophages where it modulates the innate immune response by inducing the synthesis of endogenous antibiotics like cathelicidine that kills bacteria. Vitamin D also interacts with and controls the cytokine production by activated T and B lymphocytes to modulate the acquired immune response. The more advanced function of vitamin D is that of a hormone, reserved for species with skeleton where it serves as a circulating regulator of calcium, phosphorus and skeleton homeostasis.

There are additional important biological functions of vitamin D - the maintenance of muscle strength and size, stimulation of insulin production in the beta-cells, effects on myocardial contractility, and suppression of renin secretion from kidneys. It decreases cellular proliferation of both normal and cancer cells and induces their differentiation.

There is a growing epidemic of vitamin D deficiency (25-OH vitamin D less than 50 nmol/l) and insufficiency (25-OH vitamin D less than 75 nmol/l) in the general population. Severe vitamin D deficiency causes rickets or osteomalacia. Observational population studies imply that subjects with lower levels of 25(OH) vitamin D are at an increased risk to develop type I and type II diabetes, multiple sclerosis, rheumatoid arthritis, hypertension, cardiovascular heart disease, and cancers (colon, prostate, breast, non-Hodgkin lymphoma and others) as compared to subjects with optimal levels of vitamin D. Vitamin D can induce apoptosis and prevent angiogenesis; thereby reducing the potential for the malignant cell to survive. The results of numerous intervention studies with vitamin D are discordant. Some meta-analyses have shown that vitamin D insufficiency and deficiency are significantly associated with all-cause and cardiovascular mortality but others have disputed these findings. Randomised controlled trials (VITAL) are underway to show the impact of vitamin D replacement on the incidence of cancer and cardiovascular events.

Vitamin D is indispensable in the treatment of osteoporosis and in the prevention of falls. Optimal vitamin D levels are 75-150 nmol/l. In the absence of sun exposure at least 1000 IU of cholecalciferol is required daily or 7000 IU weekly to maintain normal vitamin D level. To achieve normal levels higher dosages of vitamin D (2000 IU daily) are needed for a month or two. Patients with the 3rd degree chronic renal disease (creatinine clearance < 60 ml/min) require an active form of vitamin D (alfacalcidol or calcitriol).

Biographies & Abstracts

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Specialist in internal medicine and medical endocrinology, authored ca 210 publications in peer-reviewed journals including several reviews. Member of the Executive Board for the European Society of Endocrinology and chair of ESE Educational Committee.

Jens Bollerslev

Primary hyperparathyroidism

The clinical presentation of primary hyperparathyroidism (PHPT) has changed dramatically in Western societies after increased accessibility to biochemical analyses. Thus, the diagnosis is today often made by change in patients without specific symptoms. Operative treatment is always an option and recommended in patient with markedly increased calcium levels or typical symptoms. However, the vast majority of patients in the modern Western clinic do not present organ related symptoms and their calcium levels are only slightly increased, or even within the upper limit of normal. Several consensus development conferences have discussed management of these patients with mild, borderline PHPT during the last twenty years, the most recent just published a few month ago.

In developing countries in The Middle East, Asia and Latin America, patients still present with classical symptoms, severe hypercalcaemia, osteitis fibrosa and prevalent fractures. The female preponderance is much less pronounced in these areas and the presentation and severity of the disease related to vitamin D deficiency. With the recent change in socio-economic status in these areas, the clinical presentation of PHPT has drifted towards the more non-classical presentation with non-specific symptoms raising the same discussion on treatment indications.

As disease severity in PHPT seems to be related to vitamin D deficiency and as the true calcium level might be masked by low levels, patients might be repleted with vitamin D during work-up and in preparation for surgical treatment. Only few studies have so far addressed the question, however the first randomized, controlled study of pre-surgical Vitamin D treatment in PHPT published in 2014 showed safe and beneficial effect of Vitamin D on PTH levels and BMD.

Polyzois Makras
MD, PhD

Polyzois Makras is consultant Endocrinologist at the Department of Endocrinology and Diabetes of 251 Hellenic Air Force & VA General Hospital, Athens, Greece. He received his MD from the University of Thessaloniki, Greece in 1994, and he was trained in Internal Medicine and Endocrinology in Athens. He received his PhD Degree from the University of Thrace, Greece and he served as a clinical fellow at the Department of Endocrinology and Metabolic Diseases of the Leiden University Medical Center, the Netherlands. Since 2006 he has been continuously engaged in research in disorders of calcium and bone metabolism as well as in orphan diseases (mainly Langerhans Cell Histiocytosis). Current General Secretary of the Hellenic Society for the Study of Bone Metabolism; he is member of numerous medical and scientific societies and of several editorial boards. Between 2010-2013 he was member of the committee for the diagnostic and therapeutic guidelines of osteoporosis and primary hyperparathyroidism in Greece. Recipient of several awards and distinctions, he has more than 50 publications.

Current treatments and perspectives in osteoporosis

During the last decades much has been learned about the pathophysiological mechanisms underlying osteoporosis and this has led in the development of several pharmacological compounds to minimize the risk of fragility fractures. Bisphosphonates (BPs) still remain as the first line treatment not only because of their efficacy, safety, and ease of administration but also due to their low cost. The long-term effects of BPs on the skeleton changed our perception regarding the duration of therapy, and consequently osteoporosis is probably the only chronic disease with time restrictions in the administration of treatment. Denosumab is a potent inhibitor of bone resorption and is effective in reducing the risk of all clinically important fractures. Its different mechanism of action widely introduced the significance of the cellular and molecular pathways in bone physiology. Other efficient antiresorptive treatment options include SERMs and strontium ranelate with the latter claiming an additional stimulating effect on cells of the osteoblast lineage. Teriparatide is currently the only available bone-forming agent and is a unique approach to osteoporosis treatment. However, antiresorptive medication is definitely needed as a sequential therapy to maintain bone accrual and gains in terms of anti-fracture effect. Different parathyroid hormone peptides and/or alternative forms of delivery are currently under investigation and represent potential candidates in the group of osteo-anabolic agents. Cathepsin K inhibitors, namely odanacatib, as well as sclerostin inhibitors, namely romosozumab and blosozumab, are currently in a phase III stage of evaluation. More specifically, the results of the odanacatib study have been recently presented and a significant anti-fracture efficacy was evident at all skeletal sites; however, the approval of the agent is at the time of writing still pending. The exciting fact in those new medications is the provided evidence that bone resorption and bone formation can be uncoupled, thereby offering an advantage over currently available anti-osteoporotic treatment.

Biographies & Abstracts

Professor Konstantinos B. Markou

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Pr. Kostas B. Markou was born in Kalavryta, Greece and studied Medicine at the University of Athens. He received his training as an Endocrinologist at the respective department of Evangelismos General Hospital Athens. After that he started working at the Dep. of Internal Medicine/Dep. of Endocrinology at the University Hospital of Patras Medical School, along with the founder of that clinic Pr. AG. Vagenakis.

His main clinical and research interest is the clinical research of thyroid disorders and especially the effects of stable Iodine -127 in thyroid function in conditions of both, Iodine Deficiency and pharmaceutical dosage of Iodine, the study of the absorption of levothyroxine and the study of Iodine intake in pregnancy. In addition, he has clinical research on the effects of exercise on the development and puberty of high level athletes.

He has a longstanding clinical and teaching experience on thyroid endocrinopathies. He is founding member and team leader of the Programme for the Study and Eradication of Iodine Deficiency in Azerbaijan, Uzbekistan and Georgia, organized by "Iodaction group" under the auspices of the University of Patras, the Ministry of External Affairs and the Ministry of Education. His research interest focuses on the same subjects and he has presented and published a significant number of scientific papers. He is the Greek Representative to the WHO International Council for Confronting Iodine Deficiency Disorders (ICCIDD).

Challenges from thyroid pathophysiology

The need to support the newly formed organization in parallel with the need to meet the increased metabolic needs and maternal health results in significant adaptations in the physiology of thyroid function during pregnancy. These adaptations, dictated by the physiological changes that characterize pregnancy, result in the increase of the levels of TBG, the increase of thyroid hormone synthesis (1.5 times that before pregnancy) and the suppression of TSH levels by the end of the first trimester. Therefore, the normal range of thyroid hormones during pregnancy differs from that outside pregnancy.

Hypothyroidism is common in pregnancy (~ 3%) and when untreated, is associated with poor pregnancy outcome. Levothyroxine needs are increased during pregnancy. A rapid normalization of TSH and monitoring of TSH levels every 4-6 weeks are mandatory. Levothyroxine should be administered in the morning 30-60 minutes before breakfast and at least 4-6 hours before taking iron and calcium supplements.

Hyperthyroidism is not uncommon during the reproductive life of women and should be treated before pregnancy. Antithyroid drugs can be used during pregnancy. The goal of treatment is to maintain the levels of thyroid hormones in the upper normal range.

Isolated hypothyroxinaemia of pregnancy does not require treatment. However, it is recommended that iodine sufficiency is restored.

Dr Eftychia Koukkou

Dr Eftychia Koukkou was born in Mytilene, Greece and studied Medicine at the University of Athens. She received her training as an Endocrinologist at the respective department of Evangelismos General Hospital. After that, she worked at the Department of Diabetes and Endocrinology at St Thomas' Hospital in London for five years. Her main clinical and research interest is Diabetes in Pregnancy and at the time she was running the "Diabetic pregnancy clinic", along with the founder of that clinic Pr Cl Lowy. After returning in Greece, she started working at the Endocrine Department of "Elena Venizelou" maternity Hospital in Athens where she is now head of the Department. She has a longstanding clinical and teaching experience on endocrinopathies in pregnancy and in particular Diabetes in Pregnancy. Her research interest focuses on the same subject and she has presented and published a significant number of scientific papers.

Gestational diabetes

Gestational diabetes is the diabetes which is first presented or diagnosed in pregnancy. It is the most common endocrinopathy in pregnancy, with a prevalence between 3-15% depending on the population studied. Apart from ethnicity, risk factors for the development of GDM are family history of T2DM, obesity, excessive weight gain in pregnancy, older age, history of PCO, multiparity and history of LGA previous baby. The diagnosis is made using a two or one step approach; -a 50g Glucose challenge test followed by an Oral Glucose Tolerance Test with 100 gr glucose load, or a 75gr Oral Glucose Tolerance Test. Gestational Diabetes on pregnancy affects both the mother and the offspring. For the mother, GDM consists a "stress test" and women who are diagnosed with gestational diabetes have increased risk of developing T2DM. Moreover, uncontrolled GDM increases the risk for proeclampsia and premature labour. Concerning the offspring, GDM is associated with macrosomia, premature delivery, RDS and the development of neonatal and childhood obesity and T2DM. Traditionally, the treatment for GDM is insulin administration, along with dietary advice and mild exercise, where appropriate. Oral antidiabetics, such as metformin and glibenclimide, have also been used recently, but they are not yet universally approved.

Biographies & Abstracts

Konstantinos J. Mavroudis

Dr Konstantinos Mavroudis had been Consultant and head of the department of Endocrinology, Diabetes and Metabolism at the Asklepieion Voulas General Hospital, Athens, Greece and the last three years has been running a private endocrine clinic. He graduated from the Medical School of the Aristoteleion University of Thessaloniki and was trained both in Internal Medicine and Endocrinology at the teaching Hospital "Laiko", Athens, and obtained his MD Degree from the University of Athens. Subsequently he worked at the Department of Medicine, Section of Endocrinology, University of Manchester, Hope Hospital and after that he had worked at the Department of Endocrinology, Alexandra Hospital, Athens, for 17 years. He had been member of the Executive Committee of the Hellenic Endocrine Society for many years and its representative in UEMS, section of Endocrinology, for 7 years. He is member of numerous medical and scientific societies and member of the Greek committee for the guidelines on osteoporosis and hyperparathyroidism. His main clinical interests include Metabolic Bone Diseases and Thyroid.

The role of vitamin D in pregnancy

There is an association between Vitamin D and reproduction both in males and females. VDR and 1α-hydroxylase (CYP27B1and CYP24A1) are present in various tissues of the reproductive system as well as in decidua and placenta. The $1,25(OH)_2D_3$ is involved in the regulation of placental lactogen and human chorionic gonadotropin expression and secretion, calcium transport in the placenta, decidualization of the endometrium and may contribute to the establishment and maintenance of the feto-placental unit. During pregnancy the vitamin D requirements increase, in order to maintain calcium maternal and fetal needs. The fractional calcium absorption increases to 60% during the 3rd trimester of pregnancy and the $1,25(OH)_2D_3$ concentrations increase up to 2-fold, starting at 10-12 weeks of gestation and reaching a maximum in the 3rd trimester. It is unclear whether 25(OH)D levels increase during pregnancy. A neonate sufficient vitamin D concentrations indicates adequate maternal vitamin D stores. Many studies conducted across Europe, including the Mediterranean regions, have shown a very high prevalence of pregnant populations with vitamin D deficiency. The associations of maternal vitamin D status and offspring bone development comprise a significant public health issue. Maternal hypovitaminosis D during pregnancy has been related to several neonatal and maternal adverse health outcomes. Perinatal outcomes hypothesized to be related to VD include preeclampsia, gestational diabetes, small-for-gestational age, low birth weight, preterm delivery, cesarean section, infectious disease, as well as imprinting on the infant for life chronic diseases. Maternal vitamin D deficiency in pregnancy has been associated with an increased risk of pre-eclampsia, a condition associated with an increase in maternal and perinatal morbidity and mortality. Women with pre-eclampsia have lower concentrations of 25-hydroxyvitamin D compared with women with normal blood pressure and the observed hypocalciuria may be due to a reduction in the intestinal absorption of calcium. There is not enough evidence for an association between maternal intake of vitamin D and risk of type 1 diabetes in the offspring. Maintaining adequate VD serum concentrations within the recommended levels is mandatory during pregnancy. Vitamin D supplementation of 2000 and 4000 IU/d appeared safe in pregnancy, and 4000 IU/d was most effective in optimizing serum 25(OH)D concentrations in mothers and their infants, but the requirements and the function of vitamin D during pregnancy, for both mother and fetus, is still a mystery!

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Stylianos Tsagarakis MD, PhD, FRCP

Dr Stylianos Tsagarakis is the Head of the Department of Endocrinology, Diabetes and Metabolism of Evangelismos Hospital in Athens, Greece. He graduated from the Medical School of the University of Athens. He was trained in Internal Medicine at Athens General Hospital and subsequently he was trained in Endocrinology at St Bartholomew's Hospital in London. In 1990, he obtained a PhD degree from the University of London. His main interests include Neuroendocrinology and Adrenal disorders. He is a member of several professional organizations. Currently he serves as president of the Neuroendocrine Section of the Greek Endocrine Society. He is associate editor of the journal Hormones and member of the editorial board of the Journal of Clinical Endocrinology and Metabolism. He has published more than 100 scientific papers in peer-reviewed journals and book chapters.

Workup and diagnosis of a pituitary lesion: the endocrinologist's point of view

Pituitary lesions are currently diagnosed on the basis of symptoms and signs of hormone excess or deficiency, compression of surrounding structures but, most commonly by the wide application of sensitive brain imaging techniques (CT, MRI). During the past several years the latter setting has led to an increasing recognition of pituitary and para-sellar lesions. Although the etiology of a pituitary lesion covers a wide range of pathologies, most lesions are benign adenomas, ranging in size from micro- (< 10 mm) to macro- (>10 mm) adenomas. Micro-adenomas are very common, with a reported incidence of 4-20% in normal individuals. Although the identification of such lesions raises the theoretical risk of hormonal hypersecretion, further screening in the absence of clinical symptoms and signs confers minimal benefit and may not be cost-effective. Although, in the absence of clinical stigmata of Cushing disease or acromegaly, only the measurement of prolactin represents a cost-effective strategy, recent data suggest that a broader hormonal investigation may be more commonly applicable. MRI follow-up of micro-incidentalomas is expensive. Since the majority of micro-adenomas do not increase in size during follow-up, the suggested need for routine application of repeat scans needs careful evaluation. At variance with pituitary micro-adenomas, the incidental discovery of a macro-lesion requires extensive investigation. If the lesion causes hypersecretion of prolactin, GH or ACTH, specific therapy is required. If the lesion compresses the optic chiasm, and there is no evidence of prolactin hyperseceretion, surgical removal is obviously indicated. If no hormonal hypersecretion is found, and if the lesion is in some distance from the optic chiasm, routine surgical removal may not be necessary. Indeed, not all tumors demonstrate a significant increase in size requiring surgical excision. Thus expectant management is a safe option for many patients, given that regular MRI surveillance is recommended. Evaluation for anterior pituitary hormone deficiencies is required in all patients with macro-adenomas and, hormone replacement therapy should be offered as required.

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Dr. Matilda A. Papathanasiou

Dr. Matilda A. Papathanasiou graduated from the Medical School of the University of Ioannina, Greece from where she also received her PhD summa cum laude. She spent three years as a research fellow in the Department of Radiation Oncology at the National Institutes of Health (NIH) in Bethesda MD, USA and moved to Chicago IL where she completed a Residency in Radiology at Cook County Hospital, serving as chief resident in her senior year. She completed her training with a two year fellowship in Neuroradiology at Rush University Medical Center in Chicago IL, USA. She is Board Certified in Diagnostic Radiology by the American Board of Radiology and holds a Certificate of Added Qualification in Neuroradiology by the American Board of Radiology. Dr. Papathanasiou is currently an Assistant Professor in Neuroradiology at the University of Athens Medical School. She is a member of the American Society of Neuroradiology and the European Society of Neuroradiology and has been a member of the Neuroradiology Subcommittee for the European Congress of Radiology since 2010. She has authored/coauthored 35 papers published in international journals and chapters in radiology textbooks. She has three children and enjoys cycling, hiking swimming and traveling in her free time.

Workup and diagnosis of a pituitary region lesion: The radiologist's point of view

In order to analyze a sellar or parasellar mass on MRI we use the following anatomic approach:
First identify the pituitary gland and sella turcica.
Then determine the epicenter of the lesion and whether it is in the sella or above, below or lateral to the sella.
If it is in the sella, determine whether or not the sella is enlarged.
Analyze the signal intensity patterns: is the lesion cystic or solid?
Does it contain any abnormal vessels?
Are there any calcifications?

Clinically there are two categories of indications for imaging the pituitary:

1. pituitary hypersecretion. The differential diagnosis (DD) includes pituitary microadenoma, incidentaloma, artifact

2. hypopituitarism, visual field defect, mass discovered by chance. The DD is broader including pituitary macroadenoma, craniopharyngioma, meningioma, Rathke's cleft cyst, dermoid-epidermoid, germinoma, lymphoma, hamartoma, metastasis, arachnoid cyst, sarcoidosis, tuberculosis, histiocytosis X, lymphocytic hypophysistis, optic chiasm glioma and carotid aneurysm.

Pituitary microadenomas are less than 10 mm in diameter and are located in the pituitary gland. The classic appearance is a lesion slightly hypointense on T1 compared to normal pituitary tissue and slightly hyperintense on T2.

Sensitivity of an unenhanced MRI for detecting microadenomas is ~ 70%. Contrast can reduce the false-negative rate to 15%. It is not always necessary to give intravenous contrast for detecting microadenomas as patients with a negative scan generally receive the same symptomatic treatment as patients with a microadenoma.

The purpose of the scan is to rule out large lesions. In surgical candidates it is necessary to give contrast to localize the lesion as accurately as possible.

Pituitary macroadenomas are over 10mm in size. They are soft, solid lesions, often with areas of necrosis or hemorrhage, as they grow they expand the sella turcica and then grow upwards.

Rathke's cleft cyst is derived from Rathke's cleft epithelium. The cyst is fluid-filled and has very thin walls with only one or two cell layers which secrete fluid, allowing the cyst to grow and compress adjacent structures. Rathke's cleft cysts can occur either in or above the sella. They are usually found between the anterior and the posterior pituitary lobe and they are the most common incidental finding. On MR they display variable signal intensity depending on the cyst content. They can be low on T1/high on T2 when the content is serous or high on T1 when the content is mucinous; they do not enhance.

Craniopharyngioma is also derived from Rathke's cleft epithelium. There is a bimodal age distribution, with the first peak between the ages of 10-14 years, made up almost exclusively of adamantinomatous type, and a second peak in young to middle-aged adults, comprised mostly of papillary subtype. 75%t are suprasellar, the remaining 21% are supra and intrasellar and 4% are intrasellar. The signal intensity varies with the cyst content. The rule of 9's i.e. 90% mixed solid and cystic, 90% enhance 90% calcify, applies to the adamantinomatous type where as the less common papillary type is solid and isointense. Enhancement is seen in the solid portion and in the cyst walls.

Meningiomas of the sellar region account for ~10% of all sellar and parasellar tumors and for 20-30% of all meningiomas. They are solid, isointense to gray matter on T1 and isointense or slightly hyperintense on T2 with homogenous enhancement

Aneurysms. MR images of aneurysms show flow void and heterogeneous increased signal intensity in areas of slower turbulent flow. Flow artifact in the phase encoding direction is a useful sign. Recognizing this pathology is important as a transphenoidal surgical approach will be devastating.

Imaging findings that can help in the DD of pituitary adenomas will be discussed in this presentation.

Biographies & Abstracts

Charlotte Hoybye

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Charlotte Höybye graduated 1986 from Medical School, Aarhus University, Denmark. Certificate as specialist in Internal Medicine 1993 and in Endocrine Diseases 1996. Since 2001 Senior Consultant in Endocrinology, Department of Endocrinology, Metabolism and Diabetology, Karolinska University Hospital, Stockholm, Sweden and since 2004 Head of the Pituitary Section in the department. DMSci 2003 from the Karolinska Institute on the thesis "Endocrine and metabolic aspects of adult Prader-Willi syndrome with special emphasis on the effect of growth hormone treatment". Associate professor in Endocrinology, Karolinska Institute 2007. Main clinical and research interests are within the field of pituitary and hypothalamic diseases.

Hormonal replacement in hypopituitarism

The aetiologies of hypopituitarism are many, the most common being pituitary adenomas and the treatment of them. Deficiency of more than one hormone is most common.

ACTH deficiency is characterised by fatigue, muscle and joint pain, decreased appetite and hypotension. The cortisol response to intravenous injection of ACTH or an insulin tolerance test is used for diagnosis. ACTH deficiency is replaced with hydrocortisone. Usual doses are 15 mg to 20 mg/day divided into two to three doses. Recently, a depot tablet administered once daily has become available. The hydrocortisone dose must be increased during periods of acute stress.

TSH deficiency is characterised by fatigue, coldness, slow thinking and moving, dry skin and weight gain. No stimulation test is needed. TSH deficiency is replaced with thyroxine once daily typically in doses of 100 μg to 150 μg daily. ACTH deficiency should be replaced before T4 therapy.

Gonadotropin deficiency in men is characterised by decreased libido, impotence, infertility and impaired quality of life (QoL); in premenopausal women by oligo-/amenorrhoea, infertility and impaired QoL. In both genders hypogonadism decreases bone mineral density and increases the risk of osteoporosis. Stimulation tests are not needed for the diagnosis. Testosterone is administered as gel or injections, oestrogen as tablets, gel, patches or injections. For induction of fertility injections of gonadotropins are administered in both genders.

GH deficiency (GHD) is characterised by an abnormal body composition, with more body fat than lean body mass, unfavourable metabolic profile, fatigue, decreased physical fitness and poor QoL. GHD is diagnosed as the maximal GH response to stimulation tests (insulin tolerance test, GHRH-Argine test, glucagon) according to international guidelines. GHD is treated with subcutaneous GH injections every evening with a starting dose of 0.10 to 0.15 mg/day gradually increased and adjusted to the IGF-I values generated. Several studies have shown that GH replacement has beneficial long-term effects on body composition, metabolic profile and QoL as well as decreasing the risk of cardio-vascular disease and mortality. There are ongoing studies with formulations for weekly or monthly injections of GH.

ADH deficiency will result in diabetes insipidus. The diagnosis is established with a water deprivation test and treated with vasopressin tablets, intranasal or injections. Copeptin (C terminus of the vasopressin precursor) is an interesting new parameter in the diagnostic work up for diabetes insipidus.

In conclusion, today's replacement of hypopituitarism is physiological and convenient and improves Qol and the associated morbidity and mortality.

Biographies & Abstracts

J. Hans DeVries

J. Hans DeVries obtained board licenses in Internal Medicine and Endocrinology at the VU University Medical Centre, Amsterdam. His PhD thesis was entitled 'Subcutaneous and Intraperitoneal Insulin Delivery in Type 1 Diabetes'. Since 2003 he is a lecturer and consultant in Internal Medicine and Endocrinology at the Academic Medical Center at the University of Amsterdam. As Principal Investigator, and together with his PhD students, he actively publishes in the field of clinical diabetes with now some 150 publications in PubMed. He is a frequently invited speaker at international diabetes and endocrinology meetings, an editorial board member of Current Diabetes Reviews and the Journal of Diabetes Science and Technology, and International Associate Editor of Diabetes Technology & Therapeutics. Among his research interests are insulin and glp-1 therapies, continuous glucose monitoring, the artificial pancreas, glucose variability and glycaemia in hospitalized patients. He is scientific coordinator of AP@home and PCDIAB, consortia attempting to close the loop, funded under the Framework Program 7 of the European Commission.

New technologies in diabetes

J.H. (Hans) DeVries, MD, endocrinologist, Academic Medical Center at the University of Amsterdam

Many gadgets and technical devices are available for people with diabetes.

Should you advise your patients to use a pedometer? Observational data would suggest so, [1], but a meta-analysis of small intervention studies doesn't give convincing proof [2].

How can insulin pumps and continuous glucose monitors be of help? An insulin pump is the best way to accommodate the changing insulin needs during the night and gives one the opportunity to temporarily stop insulin administration in case of unanticipated exercise, which is impossible when using injection therapy. Trials have mainly been done in Type 1 diabetes, but a very recent trial also shows beneficial effects in people with Type 2 diabetes who, despite multiple injection therapy, couldn't reach HbA1c targets [3]. Continuous glucose monitoring results in a lower HbA1c [4] and less severe hypoglycemia [5] in people with Type 1 diabetes. The role of continuous glucose monitoring in diabetic pregnancy is unclear.

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Biographies & Abstracts

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Clinical and Research experience

Associate Professor of Internal Medicine in the Department of Clinical Therapeutics in the University of Athens Medical School, head of the Diabetes and Metabolism Unit.

Research training In Mayo Clinic and the University of Pittsburgh where I completed my studies in the pathogenesis of type 2 diabetes mellitus and impaired glucose tolerance, the physiology of postprandial glucose homeostasis, mechanisms of hepatic glycogen repletion with particular interest on renal metabolism and physiology and pathophysiology of glucose counter regulation. In completing these studies I mastered many research techniques including isotope dilution, indirect calorimetry glucose degradation, glucose clamping and enzymatic assays. In addition to my research experience, I was involved in teaching medical students, residents and junior research fellows.

As a recognition of my contribution to diabetes research and clinical practice I was elected member of the board of the Hellenic Diabetes Association in 1997, and I served as president of the Association in 1998. I served as member of the European Diabetes Policy Group 1998-1999 and as a member of the Council of EASD in 1999. Since 2000 I am participating in the RISC –EGIR study on the study of insulin resistance as a risk factor for cardiovascular disease (a multicenter European prospective study) having served twice at the Steering committee of the EGIR.

I have participated in many national and international advisory board committees Author of more than 80 original papers with more than 4000 citations and an impact factor of 39.

Hypoglycemia

Hypoglycemia is generally defined as a plasma glucose level <70mg/dL (3.9 mmol/L), and severe hypoglycemia represents an event requiring third party assistance. Several responses are elicited as blood glucose level falls, including inhibition of endogenous insulin secretion and stimulation of glucagon and epinephrine secretion that result in a rapid increase in glucose release from the liver. Adrenocorticotropic hormone (ACTH), cortisol, and growth hormone secretion are also increased, leading to a more sustained elevation of blood glucose. These responses occur as the blood glucose levels fall below ~70mg/dL (3.9 mmol/L) prior to symptom onset. As hypoglycemia deepens, neurogenic responses including palpitations, anxiety, tremor, arousal, sweating, and hunger elicit awareness of hypoglycemia. Hypoglycemia unawareness, defined as the failure to sense a significant fall in blood glucose to below normal levels is more likely in individuals with longer duration of diabetes, advancing age, and a history of recent and/or recurrent hypoglycemic events associated with intensive glycemic therapy. The presence of hypoglycemia unawareness increases the risk of severe hypoglycemia. In T2DM the frequency of hypoglycemia increases with use of medications that stimulate insulin secretion (such as sulfonylureas) or with insulin therapy itself. Hypoglycemia can have serious consequences in individuals with T2DM. Hypoglycemic events are associated with cardiovascular and neurological complications, including cardiovascular death, which are thought to stem from the sympathetic response to hypoglycemia.

The brain is highly dependent on glucose for energy, which makes it particularly vulnerable to hypoglycemia. Seizure, coma, and death are well-known neurologic complications of severe, prolonged hypoglycemia in both T1DM and T2DM Although a decline in cognitive function has not been systematically reported in patients with T1DM despite the relatively high rates of hypoglycemia, the same may not be true in T2DM. Older patients with T2DM with episodes of severe hypoglycemia have increased risk for dementia and later cognitive impairment.

Hypoglycemia is associated with reduced quality of life leading to increases in anxiety, depression, healthcare utilization, cost, and poor adherence to treatment.

Prevention of Hypoglycemia may be achieved: **1.** by setting individualized glycemic targets with less stringest goals in those with older age, history of hypoglycemia, longer duration of the disease, established comorbidities or vascular disease, limited self-care skills. **2.** patient education **3.** Self-monitoring; consider use of continuous glucose monitoring to detect unrecognized hypoglycemia

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Biographies & Abstracts

Dr Edward Jude

Consultant Physician, Department of Medicine, Tameside Hospital NHS Foundation Trust, Ashton-under-Lyne, Manchester, UK, Honorary Reader at The University of Manchester and Visting Professor at Manchester Metropolitan University.

Past Chairman of the European Diabetic Foot Study Group a subgroup of the EASD. and Chair of the North West Diabetes Group in the UK. He is also on the Council of the European Wound Management Association.

Having completed his MD at Manchester University Dr Jude completed his specialist training in diabetes and Endocrinology at The Manchester Royal Infirmary. He was appointed as a Consultant Physician at Tameside Hospital NHS Foundation Trust 2001. His main research interest is in diabetic complications including diabetic peripheral neuropathy, Charcot neuroarthropathy, endothelial dysfunction and the diabetic foot.

He has over 100 publications in peer reviewed journals, book chapters and abstracts.

Dr Jude has regularly presented at national and international conferences. He has received grant awards from the UK National Institute of Health Research (NIHR) under the Research for Patient Benefit Scheme (RfPB), the National Institute for Health (USA), Diabetes UK and the European Commission.

Diabetic foot and neuropathy

The most common component in the pathway to amputation is the diabetic foot ulcer. While there have been some strides made in increasing the awareness of the problem of the aetopathogenesis of diabetic foot ulceration, much still needs to be done. By 2025 there will be more than 350 million persons with diabetes in the world. At any one time, up to 7% of at-risk patients with diabetes have a diabetic wound, and that most ulcerations are entirely avoidable, the concept of prevention takes on an entirely new urgency.

Fifteen per cent of patients with diabetes will develop a foot ulcer in their lifetime. Foot complications account for more hospital admissions than any other complication of diabetes, with considerable morbidlity and mortality. People with diabetes are eight to 24 times more likely than those without diabetes to have a lower limb amputated. Around 85% of these amputaltions could be avoided by early detection of foot complications and involvement of a diabetic foot care team.

The main predisposing factors for diabetic foot ulceration are neuropathy, peripheral vascular disease, increased pressures and foot deformities. Appropriate management of these, early detection and patient education can reduce the risk of ulcerations. Timely intervention when the foot is infected can reduce the likelihood of osteomyelitis, amputations and mortality.

Biographies & Abstracts

Professor
E. Diamanti-Kandarakis
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Dr. Evanthia Diamanti-Kandarakis is professor of Internal Medicine- Endocrinology & Metabolism and Chairman of the Third Department of Medicine, Medical School-University of Athens.

She received her MD from Medical School of Athens and her PhD in experimental Endocrinology on the effects of androgens in hypophysectomised rats, from the same University.

She was trained in internal medicine in England (1974-1980), and in Endocrinology& Metabolism in USA (1980-1986).

Her research interests has focused for the last 15 years on clinical, molecular and environmental aspects of metabolic & hormonal abnormalities in Polycystic ovarian syndrome. This work has generated 160 publications and approx.6900 citations. Dr. Diamanti-Kandarakis has been invited by the international academic community as a speaker and has given more than 157 lectures, in Europe, Asia, Africa, North & South America.

Metabolic sequellae of PCOs

PCOS is a heterogenous endocrinopathy, affecting a remarkable proportion of premenopausal women, with a prevalence of 6-9% by NIH criteria, which rises to 15% by Rotterdam criteria. Except for the main disturbances that characterize PCOS, namely anovulation, hyperandrogenism and polycystic ovarian morphology, the metabolic component is now highlighted as an integral part of the syndrome, leading to increased risk for cardiovascular disease in future. One of the most important metabolic sequellae of PCOS is obesity. When present, obesity aggravates the clinical presentation of the syndrome, leading to worsened reproductive and metabolic outcomes in comparison with normal weight women with PCOS. Central adiposity and chronic subclinical inflammation that accompany obesity lead to a clustering of metabolic aberrations, such as elevated androgen levels, FAI, fasting insulin and glucose levels and worsened lipid profile. Even lower levels of vitamin D were detected in PCOS women with abdominal obesity, setting new insights in the multipotent role of obesity in PCOS. Furthermore, elevated triglycerides and decreased HDL levels occur frequently in women with PCOS and are significantly associated with obesity. However, existing data are conflicting and the exact importance of lipid abnormalities has not yet been elucidated. Their role, as well as the effect of adipocytokines, such as leptin and visfatin, are promising areas of research in future. Finally, impaired glucose metabolism and profound insulin resistance characterize PCOS. Whether these derangements occur in PCOS per se or in the context of obesity is still a matter of severe conflict. Various approaches are available in the therapeutic management of PCOS, addressing the various clinical implications of the syndrome. First and foremost, diet and lifestyle interventions remain the optimal therapeutic strategy, improving substantially menstrual abnormalities, hirsutism and metabolic profile of women with PCOS. In addition, another crucial therapeutic target in PCOS is lowering androgen levels, in order to aggravate menstrual irregularities as well as symptoms of hyperandrogenism. Different pharmaceutical compounds, such as OCPs, spironolactone and finasteride are available in our therapeutic quiver. In the future, potential targets that could possibly contribute to the management of PCOS include AGEs and stem cell research. Lowering AGEs, either by nutritional interventions or by possible pharmaceutical compounds has been shown to improve ovulatory function and insulin resistance. Finally, study of stem cells deriving from women with PCOS may be pivotal in the deeper understanding of the pathogenesis of PCOS and the establishment of novel future targeted therapies.

Biographies & Abstracts

Professor Carmen Georgescu

Carmen Georgescu is Professor of Endocrinology at the "Iuliu Hatieganu" University of Medicine and Pharmacy in Cluj-Napoca and Head of the Endocrine Department. She received her medical degree at the "Iuliu Hatieganu" University of Medicine and Pharmacy in 1992 and the PhD in 2001. In 1997, Professor Georgescu was recipient of a postgraduate scholarship at the "Freie Universität" Berlin and in 1997-1999 she was awarded a Deutscher Akademischer Austauschdienst (DAAD) Fellowship at the University of Heidelberg, Germany. Between 2006-2009, she was member of the Romanian Council of Academic Education and Scientific Research and since 2006 she is expert evaluator in Romanian and international research grants competition programs. Professor Georgescu authored more than 100 papers in peer-reviewed journals, 25 books and book chapters and coordinated several research projects in the fields of osteoporosis, insulin resistance and body composition. Her scientific interests are within clinical and translational aspects in areas such as the polycystic ovary syndrome, metabolic bone diseases, particularly osteoporosis, body composition and growth hormone deficiency. In 2002, she was awarded at the EFES Regional Postgraduate Course in Endocrinology in Debrecen, Hungary. Currently, she is member of the Romanian Society of Endocrinology, Romanian Psycho-neuroendocrinology Society, European Society of Endocrinology and German Society of Endocrinology. She is vice-president of the Romanian Association for the Study of Obesity. She serves as peer-reviewer for Clinica Chimica Acta, European Journal of Endocrinology, Clinical Endocrinology, Metabolism etc., and member of the editorial board of Acta Endocrinologica (Buc) and other international journals.

Hyperandrogenemia in reproductive age: beyond infertility

Androgen excess (AE) is common and includes polycystic ovary syndrome (PCOS), the dominant hyperandrogenic clinical condition in reproductive age (≈70%), and idiopathic hyperandrogenism (≈20%), followed distantly by variants of congenital adrenal hyperplasia (CAH), hyperandrogenic insulin-resistant acanthosis nigricans syndrome and androgen-secreting tumors. Beyond infertility and unfavorable reproductive outcomes, AE implies significant metabolic, cardiovascular and psychiatric risks and, occasionally, may unmask a life-threatening clinical condition. Around 60-85% of women with AE harbor hyperandrogenemia. Overcoming methodological challenges in measuring androgen hormones concentrations in the low, female range is critical, however, highly accurate mass spectrometry-based androgen/steroid assessment is costly and not routinely used; the free testosterone index or calculated free testosterone better express hyperandrogenism. In spite of poor correlation between biochemical and clinical hyperandrogenism, it became apparent that metabolic and vascular risk parameters are linked to the severity of hyperandrogenemia. Sex hormone-binding globulin (SHBG), androstendione, DHEA and DHEAS proved to be helpful in the diagnosis of hyperandrogenemia and prediction of the metabolic profile in PCOS patients. As stated at the 2012 National Institute of Health (NIH) consensus meeting, specific identification of the clinical phenotype in PCOS is mandatory in research and clinical care and should be done according to Androgen Excess Polycystic Ovary Disease (AE/PCOS) Consensus Statement 2010 and European Society of Endocrinology (ESE) Position Statement 2014. Phenotypic variability importantly influences the level of cardio-metabolic risk in PCOS. Metabolic dysfunction related to hyperandrogenemia also prevails in non-classic CAH. Obesity, insulinresistance, low bone mass and increased vascular risk are apparent in adult populations with classic CAH, but this seems significantly related to use of synthetic glucocorticoids, and therapeutic strategies in CAH adults are poorly defined. Few studies suggest decreased insulin sensitivity and subclinical atherosclerosis accompanying idiopathic hirsutism, independent of obesity, although further data is needed. Surgical normalization of testosterone in androgen-secreting tumors has no metabolic impact, possibly due to short exposure and tissue receptor down-regulation by very high hormone levels, but data on vascular and metabolic risks related to tumorous androgen production is limited. Potentially, anti-androgen drugs and/or oral contraceptives may unfavorably influence vascular and thromboembolic risk, and dysglycemia, raising the need for an individualized benefit-to-risk ratio evaluation of anti-anti-androgenic therapy and future randomized controlled studies on the topic.

Biographies & Abstracts

Philippe Bouchard

Philippe Bouchard is presently Professor Emeritus of Medicine, at the Pierre et Marie Curie University in Paris (Paris 6).

He is the former Chair of The Department of Endocrinology, and Ob Gyn (GEO), at Hospital Saint Antoine, University Paris 6 (UPMC) and Director of EA 1533 "Genetics of Human Reproduction". Author of more than 300 publications, Philippe Bouchard is former President of the French Endocrine Society, the European Society of Gynaecology, and the French Society for Reproductive Medicine.

His research is related to gynaecological endocrinology and genetics.

He is a member of the National Academy of Medicine, Doctor honoris causa of the University of Liege, and past President of the Board of Endocrinology at the French Ministry of Education (CNU).

Robin P. Peeters MD PhD

Head of Rotterdam Thyroid Center,
Erasmus MC, Rotterdam
The Netherlands
E-mail:
r.peeters@erasmusmc.nl

Robin Peeters is internist-endocrinologist and member of the medical staff of the Department of Internal Medicine, at Erasmus Medical Center, Rotterdam, The Netherlands. He obtained his medical degree at Erasmus University Medical School in 2000 (Cum Laude). Subsequently, he received a stipend from the Netherlands Organization for Health Research and Development ZON-MW to combine his clinical training as an internist with a PhD project. The PhD project, under the supervision of professor Theo Visser, focused on the metabolism of thyroid hormone in health and disease and was completed in 2005, when he received his PhD degree (Cum Laude). In 2009, he finished his clinical training as an endocrinologist and obtained an Erasmus MC Fellowship and a ZON-MW VENI grant to perform a research fellowship in the lab of Douglas Forrest, Chief of the nuclear receptor biology section at the National Institutes of Health, Bethesda, USA.

His principle research interests have been the regulation of thyroid hormone bioactivity in critical illness, the role of thyroid hormone receptor alpha, consequences of genetic variation in thyroid hormone pathway genes, thyroid function and dysfunction during pregnancy, and thyroid cancer.

Currently, he is the Head of the Rotterdam Thyroid Center, which is a tertiary referral center for complex thyroid diseases, and he is Medical Coordinator of the Clinical Endocrinology Ward of the Erasmus MC.

He was a member of the executive committee of the European Thyroid Association, of the educational board of the European Thyroid Association, of the Advisory Committee of the World Thyroid Federation, and National representative for the Netherlands of the International Council for the Control of Iodine Deficiency Disorders. In addition, he is member of the ETA guideline on subclinical hypothyroidism and on the ATA guidelines on the treatment of hypothyroidism and Thyroid and pregnancy.

Dr. Peeters has published more than 90 peer-reviewed scientific publications, and is a member of the editorial boards of Endocrinology, Frontiers in Thyroidology, and the European Thyroid Journal.

Pitfalls in measuring thyroid hormone levels

The production of thyroid hormone is regulated by the hypothalamus pituitary thyroid axis, in which TSH secreted from the pituitary stimulates the thyroid to produce thyroid hormone (TH). High levels of TH lead to a supression of TSH, whereas low levels of TH will increase serum levels of TSH. The relationship between TSH and FT4 is a log-linear one, which means that TSH is a very sensitive marker of thyroid status of the individual.

The majority of TH that is produced by the thyroid is the pro-hormone thyroxine (T4), which is converted in peripheral tissues into T3, the major biologically active form of TH. About 80% of serum T3 is produced in peripheral tissues, whereas the remaining 80% is derived directly from the thyroid. The majority of TH in serum is bound to binding proteins (~75% to TBG, ~12% to albumin and ~ 10% to TTR). The biologically available concentration of T4 and T3, i.e. the free concentration of these hormones, is only 0.03% for the total T4 ~ % for T3.

Equilibrium dialysis and ultrafiltration are the golden standards used for physical separation of serum free T4 from bound T4 prior to analysis of the dialysate or ultrafiltrate. However, assays based on classical equilibrium dialysis or ultrafiltration are laborious, time-consuming, expensive and not widely available. In daily clinical practice, FT4 immunoassays are therefore used but these approaches are liable to error by disrupting the original equilibrium. This is dependent on dilution, temperature, buffer composition, affinity and concentration of the T4 antibody reagent and T4-binding capacity of the serum sample. Although the currently used FT4 immunoassays perform reasonably well under most circumstances, they may lead to a wrong of thyroid disease in specific patients.

The current presentation will discuss a set of clinical cases with different causes of an unreliable results, illustrating the importance of understanding potential pitfalls in thyroid function tests.

Biographies & Abstracts

Sofia Chatziioannou

Associate Professor of Nuclear Medicine, National and Kapodistrian University of Athens Director of PET/CT, Foundation of Biomedical Research of the Academy of Athens

Following the completion of her medical training in Athens University Medical School, she did her residency training in nuclear medicine in Baylor College of Medicine, Houston, Texas, USA and one year of cardiovascular nuclear medicine fellowship in the same Institution. She was then appointed Assistant Professor in Baylor College of Medicine. In 2001 she was appointed Director of Nuclear Medicine and Positron Emission Tomography at The Methodist Hospital in Houston.

In 2003, she returned to Greece were she organized the first academic PET/CT Department in Greece, in the Foundation for Biomedical Research of the Academy of Athens, of which she is currently the Director. She is associate professor in the University of Athens Medical School and Director of Nuclear Medicine in Attikon University Hospital in Athens, Greece. She has multiple peer reviewed publications and multiple presentations in national and international meeting.

Other than PET/CT, she is currently promoting the PRRT therapies for metastatic neuroendocrine tumors in Greece.

She is certified by the American Board of Nuclear Medicine and she is licensed to practice medicine in Greece and in Texas, USA.

PET Scan: is it useful in endocrinology?

Positron emission tomography is the molecular imaging than adds significant information in the staging, restaging and response to treatment evaluation of cancer. The most common indication with the use of F-18 FDG (a glucose analogue) is the evaluation of patients with history of differentiated thyroid cancer with increased thyroglobulin and negative whole body 131 whole body scan. The higher the degree of uptake of F-18 FDG the poorer prognosis. Lately, PET imaging is increasingly used in the evaluation of neuroendocrine tumors. New radiopharmaceuticals labeled with Ga-68 that bind to somatostatin receptors demonstrate increased accuracy in the identification of metastatic disease as well as in the selection of patients who would benefit from PRRT (peptide receptor radiation therapy). F-18 FDG plays also a significant role in the evaluation of neuroendocrine tumors firstly because it offers a better whole body grading of the tumor compared to the Ki-67 of the biopsy site and secondly for better identification of metastatic disease in neuroendocrine tumors with high Ki-67. In these tumors too the degree of F18 FGD uptake is correlated to the prognosis (the higher the degree of uptake the poorer the prognosis).

Biographies & Abstracts

Murat Faik Erdogan MD

Murat Faik Erdogan, MD,
Professor,Endocrinology
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Born in the 4th of January 1967. Started his medical education in Ankara University, School of Medicine in 1983. Graduated from medical school and started Internal Medicine fellow-ship in 1989. Studied on molecular endocrinology, in Tulane University, United States-Japan laboratories, New Orleans, USA, for one year in 1993. Gained his speciality in Internal Medicine, in June 1995.

Started his training in Endocrinology and Metabolism at the same University in May 1996 and finished his fellow-ship in June 1998. Became an Associate Professor in Endocrinology and Metabolism in 1998 and full Professor in 2004.

Has several national and international publications in the field of Endocrinology and Metabolism. Worked as congress scientific secretary of the congresses and joint meetings organised by the Society of Endocrinology and Metabolism of Turkey between 1997 and 2001. Organizing scientific secretary of ETA 2004, Istanbul. Organized and took place in several thyroid ultrasonography courses during ETA, ECE and ITC meetings.

Specific fields of interest 'thyroid ultrasonography', 'iodine deficiency', 'thyroid nodules', 'sporadic or familial medullary thyroid cancer', 'MEN 2 Syndromes'.

Worked with Turkish Government Ministry of Health, Mother and Child Care General Directorate since 1997, for the determination of Iodine Status and control of Iodine prophylaxis programme in Turkey and also in Turkish republic of Northern Cyprus. Organized, directed and worked himself on several iodine surveys all over the Turkey. Gave several lectures educational courses, published medical and paramedical articles, took part on several television programmes covering iodine deficiency and endemic goiter in Turkey. Worked as the National Representative of Turkey, in ICCIDD West, Central Europe Region.

Executive Committee Member of ETA (European Thyroid Association)(2004-2009), Senior advisor ICCIDD (International Council for the Control of Iodine deficiency disorders, , National representative ICCIDD; member AACE (American Association of Clinical Endocrinologists), SEMT (Society of Endocrinology and Metabolism of Turkey).

Thyroid & neck ultrasound, sonographical case presentations

After the introduction of Ultrasonography to Endocrinology Clinics in 1977, by professor Hegedus, in Copenhagen, a bunch of prestigious papers by using thyroid ultrasound had been published by the "Pisa Group". Every day more and more colleagues starts practicing this noninvasive, inexpensive technique which also provides guidance for all the further, minimally invasive diagnostic and theuropatic modalities like FNAB, PEI, PLA etc.

US is an easy side examination method, superior to palpation and every patient, having an outpatient visit to a thyroid clinic should have an US examination. It creates a large feeling of confidence on the patient and the performing physician. However the procedure is operator dependent and requires education, experience and extra working hours for the endocrinologists. It is a common practice among endocrinologists in countries like Italy, Germany, France, Denmark, and Turkey.

In this session you can find about 30 patient videos from Ankara University Medical School, archives, from basic to more advanced, complex cases and may develop your visual skills.

Biographies & Abstracts

Richard Feelders MD, PhD

Erasmus Medical Center,
Department of Internal Medicine
Division of Endocrinology
Rotterdam, The Netherlands

Richard Feelders is an Associate Professor of Endocrinology at the Erasmus University Medical Center, Rotterdam, the Netherlands.

He trained in Internal Medicine at the Maasstad Hospital, Rotterdam and the Erasmus Medical Center, Rotterdam (1993-1999), followed by an endocrinology fellowship, also at the Erasmus Medical Center (1999-2001). In 1999 Dr. Feelders completed his thesis on endocrine changes in the acute phase response. In Erasmus Medical Center he is director of the Endocrinology training program, chair of the Pituitary and Adrenal Center Rotterdam and coordinator of the ENETS GEP-Neuroendocrine Tumor Center Rotterdam. In 2012-2013 Dr. Feelders worked as Visiting Professor at the National Institutes of Health, Bethesda, USA.

Dr. Feelders main fields of patient care and scientific interest are neuroendocrinology and neuroendocrine tumors. His research is focused on the pathophysiology and treatment of (non-) functional pituitary adenomas, adrenal and neuroendocrine tumors. A main topic in this respect involves diagnosis and medical treatment of Cushing syndrome. Another research area concerns determinants of glucocorticoid sensitivity in health and disease.

Cushing syndrome

Cushing syndrome (CS) is a rare disorder resulting from prolonged exposure to excess glucocorticoids. CS can be ACTH-dependent, caused by a pituitary adenoma or ectopic ACTH production, or ACTH-independent, caused by an adrenal adenoma, hyperplasia or carcinoma.

CS is associated with multisystem morbidity, resulting in an impaired quality of life and an increased cardiovascular risk. Early diagnosis and treatment of Cushing syndrome is important to reverse morbidity and mortality risk. Clinical presentation is, however, highly variable and establishing the diagnosis can often be difficult. First-line screenings tests to detect endogenous hypercortisolism include measurement of urinary free cortisol excretion and late-night salivary cortisol levels and the low-dose dexamethasone suppression test. Second-line tests, mainly used to differentiate between CS and pseudo-Cushing states, are assessment of the cortisol diurnal rhythm (with midnight plasma cortisol measurement), the desmopressin test and the dexamethasone-CRH test. In patients with ACTH-dependent CS and no lesion or a small lesion (<6 mm) on pituitary MRI, inferior petrosal sinus sampling is the gold standard to differentiate between a pituitary cause and ectopic ACTH production.

Surgery (resection of the pituitary or ectopic source of ACTH, unilateral or bilateral adrenalectomy) remains the optimal treatment in all forms of CS but may not always lead to remission and is not always possible. In addition, in case of pituitary-dependent CS, recurrences can occur at the long-term. Medical therapy (pituitary-targeting drugs, steroidogenesis inhibitors, or glucocorticoid antagonists) and pituitary radiotherapy may be needed as an adjunct. A multidisciplinary approach, long-term follow-up, and treatment modalities customized to each individual are essential for optimal control of hypercortisolemia and management of co-morbidities.

Biographies & Abstracts

Gregory Kaltsas
MD FRCP (Lon.)

Dr Kaltsas received his training in General Medicine – Endocrinology – Diabetes in the UK and his PhD thesis (1993) at the National and Kapodistrian University of Athens, Greece. From 1995 – 2000 he worked as a Senior Registrar in the Department of Endocrinology St Bartholomew's University Hospital, London UK. He is a Fellow of the Royal College of Physicians (FRCP) since 2005 and has been appointed as a Visiting Reader in 2008 at St Bartholomew's University Hospital, London UK. He is currently an Associate Professor in Endocrinology at the National and Kapodistrian University of Athens and head of the Endocrine unit of the Department of Pathophysiology. Dr Kaltsas is actively involved in all aspects of Endocrinology and General Medicine, and has been a member of the editorial board of several endocrine journals and a member of the advisory boards of the European Society of Neuroendocrine Tumours (ENETS) and member of the Executive Committee of the European Neuroendocrine Association (ENEA). His research focuses in several aspects of Neuroendocrinology, pathophysiology of tumours of the adrenal glands and in the endocrine manifestations and alterations of metabolism in a variety medical conditions and systemic diseases. The last 10 years has developed a special interest in all aspects Endocrine Oncology and particularly in the diagnosis and management of neuroendocrine neoplasms of the gastrointestinal and respiratory system. He also runs the adult Langerhans Cell Histiocytosis (LCH) clinic in Greece.

Addison Disease

Primary adrenal insufficiency (PAI) is a rare life threatening disease, that affects 100 per million per year with an incidence rate of 5 per million per year, which has been rising in recent years. Primary AI, or Addison disease, in the Western world is mostly caused by an autoimmune destruction of the adrenals leading to adrenocortical hormonal deficiency and consequent alterations in extracellular volume, cardiovascular integrity and metabolic homeostasis, thus being potentially life threatening; consequently patients are at higher risk of developing other autoimmune diseases. Due to the reduction of glucocorticoid levels compensatory adrenocorticotropin (ACTH) secretion develops that may lead to hyperpigmentation. The diagnosis of PAI is often delayed as symptoms may be non-specific (headache, anorexia, weakness, fatigue) and patients may present with symptoms of acute adrenal insufficiency. Because PAI is rare a high index of suspicion is required particularly in undiagnosed patients presenting with dehydration, low blood pressure, electrolyte (low sodium and increased potassium) and metabolic (low glucose) abnormalities. The diagnosis is substantiated in the presence of low serum cortisol (<138nmom/l, 5 mcg/dl) levels; ACTH levels are elevated and suggestive of PAI when in excess of 66 pmol/l (200ng/l). The diagnosis is also confirmed when serum cortisol at 30 min following a short Synacthen test (250 mcg ACTH iv) is less than 500-550 nmol/l. As adrenal destruction involves the whole cortex aldosterone levels are low and rennin levels are high whereas adrenal androgens are substantially reduced. Following diagnosis 21-hydroxylase antibody levels are measured to confirm the autoimmune etiology of adrenal destruction; in their absence and in male patients very long chain fatty acids should be measured to exclude the X-linked condition adrenoleucodystrophy. Computerized tomography (CT) of the adrenals is employed to excluded an inflammatory, infective or space occupying process. Patients with an autoimmune etiology are at higher risk (50%) of developing other autoimmune disorders (polyendocrine syndromes). In an acute state iv hydrocortisone 100 mg should be given followed by 200mg/24hs of hydrocortisone; when hydrocortisone dose exceeds 50 mg/day concomitant mineralocorticoid cover is not required. Chronic supplementation is with hydrocortisone (12-25mg/day) or cortisone acetate (25-37.5mg/day) given at 2-3 doses the last 4-6 hours before bed (prednisolone 3-5 mg once daily) and flurocortisone (50-200 mcg/day). In premenopausal women with symptoms of depression and loss of libido a 6-month trial with 25-50mg DHEA/day could be tried. Patients require regular monitoring, medic alert, and continuous education to improve quality of life modify treatment in acute stresses. Conditions that increase CBG or alter CYP3A4 function also require dose modifications.

Biographies & Abstracts

Djuro Macut, MD, PhD

Assoc. Professor of Internal Medicine and Endocrinology
Clinic of Endocrinology, Diabetes and Metabolic Disorders, Clinical Center of Serbia and School of Medicine, University of Belgrade, Belgrade, Serbia
E-mail: djmacut@gmail.com

Associated Professor Djuro Macut, MD, PhD, was born in Belgrade and graduated from the Belgrade University School of Medicine. He specialized in Internal Medicine and Endocrinology in the same institution. His postgraduate studies, M.Sc. and later on Ph.D. thesis were completed from the Belgrade University School of Medicine. Dr Macut completed a postgraduate program in Reproductive Medicine from the University of Geneva and World Health Organization, Switzerland. He was on clinical attachment programs in the Center of Gynecological Endocrinology, University of Bologna, the Department of Endocrine Oncology, University of Uppsala, Sweden, and the Oxford Center for Diabetes, Endocrinology and Metabolism, UK. Currently he is serving as the Chief of the Unit in the Clinic of Endocrinology, Diabetes and Metabolic Diseases, Clinical Center of Serbia, and from 1999 is the Staff Member of the School of Medicine, University of Belgrade. At the moment, he is the president of the Organizing Committee of the Frontiers and Innovations in Medicine, the Annual Symposium of the School of Medicine, University of Belgrade.

Dr Macut is the author or co-author in over 60 original articles, reviews, and book chapters, and delivered several presentations and lectures on the international conferences. His original published work was related to the basic and clinical issues in the polycystic ovary syndrome, investigation of the growth hormone release and function in different endocrine conditions, and metabolic influences on neurophysiologic functions. He was an editor of the book on PCOS from the Karger's series Frontiers of Hormone Research. Dr Macut is a reviewer for international journals *(European Journal of Endocrinology, Clinical Endocrinology, Canadian Medical Association Journal, Journal of Ovarian Research, etc)* and currently serving as the member of the editorial board of the international journals *Hormones and Journal of Endocrinological Investigation.*

Treatment of congenital adrenal hyperplasia during adult life

Congenital adrenal hyperplasia (CAH) is the most common genetic endocrine disorder. The most common form is caused by 21 hydroxylase deficiency (inactivating mutations in the CYP21A2 gene). Rare forms arise from mutations affecting other enzymes involved in adrenal steroidogenesis, including 11ß hydroxylase, 17α hydroxylase or 3ß hydroxysteroid dehydrogenase. CAH due to 21 hydroxylase deficiency is inherited as an autosomal recessive trait. Disrupted cortisol synthesis results in reduced cortisol feedback that increases the release of ACTH followed by overproduction of 17 hydroxyprogesterone (17OHP), progesterone and adrenal androgens. Patients could have mineralocorticoid deficiency, as 21 hydroxylase is involved in the synthesis of aldosterone. Clinical classification of 21 hydroxylase deficiency is based on the severity of the disease, which in turn correlates with the severity of mutations. Major loss-of-function mutations leads to disruption of production of glucocorticoids and mineralocorticoids while the mildest mutations cause androgen excess only. Adults with nonclassic CAH as a result of 21 hydroxylase deficiency should be classified as having normal cortisol reserve or partial cortisol deficiency after stimulation with 250μg ACTH. Those with cortisol response <500– 550 nmol/l should be advised for glucocorticoid treatment during illness, trauma, surgery or other major stressful situations. According to the CYP21A2 mutation groups, daily dose of glucocorticoids is highest in most severe genotype (null group) and lowest in mildest genotype (Group C) while the use of fludrocortisone is frequent in patients with more severe genotypes. Various regiments including reverse circadian rhythm with hydrocortisone, dexamethasone and prednisolone are used. Oral modified release formulations of hydrocortisone that provide delayed and sustained absorption of hydrocortisone are used today. Dexamethasone should be reserved for special situations as it is induction of fertility. Female fertility due to failure of implantation is consequent to consistently increased progesterone levels that compromise sufficient build-up of the endometrium. Subfertility in men might arise from overproduction of adrenal androgens in men who are not treated or who are inadequately treated. Testicular adrenal rest tissue might lead to male subfertility by causing seminiferous tubule blockage resulting in oligospermia or azoospermia. Optimal treatment with glucocorticoids has been achieved when serum levels of 17OHP vary between slightly above the upper limit and thrice the upper limit of the reference range while the androstenedione is maintained within reference range. If inappropriate, glucocorticoid replacement therapy could result in short stature, obesity, hypertension, osteoporosis and an aggravated metabolic profile.

Biographies & Abstracts

Professor Bernadette Biondi, MD

Department of Clinical Medicine and Surgery.
University of Naples Federico II, Italy

CURRENT APPOINTMENTS

• Professor of Endocrinology, Department of Clinical Medicine and Surgery, University of Naples, Federico II Medical School, Italy;

• Tutorial teacher in Endocrinology and Cardiovascular Endocrinology for the students of University of Naples Medical School; Author and co-author of numerous papers that appeared in such journals as Journal of Clinical Endocrinology and Metabolism, European Journal of Endocrinology, Annals of Internal Medicine, Circulation, Nature Clinical Practice in Endocrinology and Metabolism, New England Journal of Medicine etc, Endocrine Review, JAMA, The Lancet.

EDITORIAL POSITIONS (PRESENT)

- 2007-2015 Contributing Editor of European Journal of Endocrinology
- 2010-2015 Editorial Board Member of Thyroid
- 2011-2015 Editorial Board Member of Frontiers in Thyroid Endocrinology
- 2011-2015 Editorial Board Member of European Thyroid Journal
- 2011-2015 Editorial Board Member of World Journal of Endocrinology
- 2013-2015 Editorial Board Member of Journal of Endocrinological investigation

MEMBERSHIPS

- Member of the American Thyroid Association, the Endocrine Society, the European Thyroid Association and the Italian Society of Endocrinology;
- 2005-2007 Corresponding Member Advisor of the Clinical Affairs Committees of the American Thyroid Association;
- 2007-2008 Corresponding Member Advisor of the Clinical Affairs Committees of the of the Endocrine Society;
- 2009-2011 Member of the Scientific Committee of the Italian Society of Endocrinology;
- 2009-2014 Member of the Scientific Committee of theItalian Thyroid Association;
- 2011-2015 Member of the Executive committee of the Italian Thyroid Association

5 RELEVANT PUBLICATIONS IN THE LAST TWO YEARS

Clinical research has focused on the cardiovascular effects of thyroid hormone, overt and subclinical thyroid disease and clinical outcomes in patients with thyroid cancer.

• Biondi B, Wartofsky L. Treatment With Thyroid Hormone. Endocr Rev. 2014, . 35(3):433-512.

- Biondi B. The normal TSH reference range: what has changed in the last decade? J Clin Endocrinol Metab. 2013 Sep;98(9):3584-7.;
- Biondi B . How could we improve the increased cardiovascular mortality in patients with overt and subclinical hyperthyroidism?. Eur J Endocrinol. 2012 167: 295-299
- Biondi B., Wartofsky L. Combination Treatment with T4 and T3: Toward Personalized Replacement Therapy in Hypothyroidism?; J Clin Endocrinol Metab. 2012 ; 97: 2571-16.
- Cooper D.S., Biondi B . LANCET, 2012 vol. 380, p. 336-337.

Thyroid replacement

Treatment with thyroid hormone in replacement doses is indicated once the diagnosis of hypothyroidism is confirmed. Levothyroxine (L-T4) is recommended as the lifelong therapy for all hypothyroid patients with persistent disease, either overt hypothyroidism or subclinical hypothyroidism (SHypo) with serum TSH levels greater than 10 mIU/L. Two important meta-analyses provided sufficient evidence to justify treatment of patients with SHypo and serum TSH level above 10 mU/L, in order to avoid the risk of coronary heart disease and heart failure. Whether or not to treat patients with mild SHypo remains controversial. This is especially true in patients with negative anti-thyroid antibody titers, because patients with mild TSH increase frequently have transient TSH elevation.

The goal of replacement therapy in hypothyroid patients is to restore biochemical euthyroidism, indicated by serum TSH concentrations and thyroid hormone levels within their respective reference ranges, together with restoration of clinical euthyroidism. Although hypothyroidism is generally considered simple to diagnose and treat, recent studies have confirmed that both under and over-treatment during L-T4 replacement therapy are still frequent. Recent data suggest that different are the factors that may affect L-thyroxine requirements (sex, age, gender, menstrual status, body weight ,lean body mass) and advise appropriate individual dosage adjustment especially in elderly patients and pregnant women. Moreover, poor patient compliance, L-T4 administration's timing, interferences with absorption, gastrointestinal diseases and administration of interfering drugs might be the major causes of failure to achieve optimal serum TSH levels during long-term treatment with L-thyroxine.

Although replacement therapy with L-T4 is generally considered safe and well tolerated and is associated with disappearance of all symptoms and signs of thyroid hormone deficiency, the persistence of hypothyroid symptoms has been documented in some patients receiving adequate doses of L-thyroxine . New insights into deiodinase polymorphisms may explain the differences in both tissue and relative individual clinical responses to L-T4 treatment.

Although earlier meta-analyses failed to find clear benefits in treating hypothyroid individuals with combination T4 and T3, recent findings have increased interest in examining the role of adjunctive T3 therapy in thyroidectomized patients to normalize serum FT3.

Prospective double-blind randomized large studies are therefore necessary to clarify the potential beneficial effects of combination treatment with T3 and T4 vs L-T4 monotherapy to improve symptoms and reverse the biochemical abnormalities in patients with primary hypothyroidism.

Biographies & Abstracts

Maria Alevizaki, MD, PhD

Professor of Endocrinology,
Endocrine Unit,
Dept of Medical Therapeutics,
Athens University School of Medicine, Greece.

Professor of Endocrinology, Athens University School of Medicine.

Endocrine Unit, Dept of Clinical Therapeutics, ALEXANDRA University Hospital.

MD thesis, Athens Univesrity.

PhD thesis, London University.

Clinical Specialty in Internal Medicine and Endocrinology.

She served as an Officer in the Executive Committee of the European Society of Endocrinology and in the Executive Committee of the European Thyroid Association. She has served in many POCs for European Congresses either as a member or as chair.

She has been invited to give lectures in many national and international scientific meetings.

She serves in the editorial board of several international journals of endocrinology.

Currently deputy Chief Editor of the European Journal of Endocrinology.

So far she has 150 publications in peer review medical journals.

She has been the supervisor of several medical doctors and scientists doing their MD or PhD thesis in the Athens University School of Medicine.

Clinical and Research Interests: Thyroid carcinoma. Medullary thyroid carcinoma. Familial thyroid disease. Subclinical thyroid disease and its complications. Endocrine tumours.

Current developments in the management of differentiated thyroid cancer

The prevalence of differentiated thyroid cancer (DTC) has recently risen probably as a result of the wide application of neck ultrasound. The majority of these new cases are papillary microcarcinomas that in general carry an excellent prognosis. It should however be remembered that a small percentage of microcarcinomas may present with lymph node metastasis. The management of thyroid cancer includes 3 steps, thyroid surgery, radioiodine remnant ablation and thyroxine treatment with the aim to suppress TSH. The protocol to be used for these 3 steps is frequently updated and has been addressed in the recently published and revised guidelines from both the European and the American Thyroid Association. The extent of thyroid surgery to be performed is being discussed. Radioiodine treatment (RAI) is indicated for remnant ablation in selected (not all) cases of DTC; this can be performed either after thyroid hormone withdrawal, or, equally effectively, by exogenous administration of rhTSH. Higher RAI doses may be administered to serve as adjuvant therapy in case of metastatic disease already at presentation. Clinical research is focusing on identifying the low-risk cases, where RAI administration has no benefit for the patient. The follow-up of DTC patients includes thyroid hormone and TSH measurements. Basal and stimulated thyroglobulin (Tg) levels (accompanied by antiTg antibody measurements) are used as an index of persistent or recurrent disease; neck ultrasound should be performed to ensure lack of recurrence. Whole body RAI scan may be used in cases where antiTg antibodies are present. Recently it has been suggested that the risk of recurrence should be reassessed at time intervals during follow-up and further management accordingly modified. The TSH suppressive therapy with thyroxine is currently shorter and the degree of suppression milder. So, the management of DTC, both short term as well as long term, is now directed towards a more individualized model based on the risk of recurrence; the latter is estimated taking into account both the histological subtype, the features of invasiveness and extent of disease, the gender and age of the patient and to a lesser degree the size of the tumour.

Biographies & Abstracts

Enrico Papini, MD

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Past President, Italian Association of Clinical Endocrinologists (AME)

Fellow, American College of Endocrinology (ACE)

Italian Representative, UEMS Board of Endocrinology

President Elect, Italian AACE Chapter

Member of Italian and international working groups for consensus statements and guidelines in the field of endocrine oncology and thyroid diseases.

Main fields of clinical research:

- thyroid imaging and ultrasound-guided biopsy
- image-guided minimally invasive procedures
- clinical management of nodular goiter and cancer
- diagnosis and treatment of neuroendocrine tumors.

Thyroid nodules: current diagnosis and management

Enrico Papini, Department of Endocrinology
Regina Apostolorum Hospital, Albano (Rome, Italy)

Thyroid nodules are common and carry a 4 - 6% risk of malignancy. Currently, TSH determination, sonography (US) and, when necessary, US-guided fine needle aspiration (FNA) provide a reliable identification of benign or suspicious/malignant nodules. Surgery remains the well-established treatment of these last lesions while, after the exclusion of malignancy or abnormal thyroid function, therapy aimed at volume reduction is unnecessary due to the slow growth of benign nodules. Clinical and US follow-up may be performed every 1 to 2 years and a repeated FNA is appropriate only in case of suspicious US or volume changes.

A minority of benign nodules present a progressive growth and, on the long-term, local discomfort or anxiety may become ill-tolerated and are followed by surgery. Nonsurgical treatment options include percutaneous ethanol injection (PEIT) for recurrent cystic/complex lesions and TSH suppression with levothyroxine (T4) or US-guided thermal ablation for solid nodules.

A clinically significant volume decrease is obtained with T4 in a minority of patients. As subclinical hyperthyroidism may be associated with adverse effects, T4 treatment should be considered only in younger patients from iodine-deficient areas who have small size nodular goiters. Therapy should be targeted toward a partial TSH suppression. If T4 therapy is not indicated, surgery or US-guided minimally-invasive procedures may be considered.

PEIT is an alternative to surgery for nodules with dominant fluid component. The volume of thyroid cysts is rapidly decreased by fluid drainage, but recurrences are common. In randomized studies PEIT was significantly superior to aspiration alone, with a decrease > 50% vs baseline in nearly 90% of cases and a low recurrence rate. PEIT is rapid and inexpensive and adverse effects are uncommon and temporary.

For solid benign nodules that grow causing local symptoms, thermal ablation may be considered. Laser (LAT) and radiofrequency (RFA) ablation are both effective outpatient procedures. These ablation techniques are performed in about 30 minutes and do not require expensive resorces. Mild cervical pain is frequent during the procedure but major complications are rare. Two randomized trials demonstrated that a single LAT induces a 50% decrease in nodule volume and local symptoms improvement. A recent multicenter study confirmed the persistence of LAT-induced changes at a 3-yr follow-up.

In conclusion, US and FNA have sharply decreased the rate of diagnostic surgery and provide a reliable monitoring of benign thyroid nodules. Minimally-invasive procedures may further reduce surgical treatments for those benign nodules that present a significant growth.

Biographies & Abstracts

Dimitrios G. Goulis

Associate Professor of Reproductive Endocrinology
Aristotle University of Thessaloniki, Greece

Dr. Dimitrios G. Goulis completed his basic medical training in the Aristotle University of Thessaloniki (1990) and received his Ph.D. degree from the same University (2000). Having a scholarship from the European Union, he worked as clinical research fellow at St. Mary Hospital, London, UK (1996 - 2000), acquiring the specialty of Endocrinology, Diabetes and Metabolism. Following his return to Greece, he has been working in the field of Andrology, with professor J. Papadimas. In 2004, he was appointed lecturer, in 2009 assistant professor and in 2015 associate professor of Reproductive Endocrinology in the Aristotle University of Thessaloniki (head: professor B.C. Tarlatzis).

Dr. Goulis has published more than 130 full papers in peer-review international journals and 120 in Greek journals. He was an invited speaker in 230 Greek and international congresses. He has been a reviewer in 30 medical journals and associate editor of "Human Reproduction", "Andrology", "Journal of Endocrinological Investigation", "Hormones" and "Anir". He is currently president of the Hellenic Society of Andrology (2013 - 2015) and general secretary of the executive council of the European Academy of Andrology (2014 - 2018).

Dr. Goulis' main research interests include male infertility, endocrine complications of pregnancy and polycystic ovary syndrome.

Male infertility

Dimitrios G. Goulis
Assistant professor of Reproductive Endocrinology, Unit of Reproductive Endocrinology, 1st Department of Obstetrics and Gynecology, Aristotle University of Thessaloniki; President, Hellenic Society of Andrology

Male infertility refers to a male's inability to cause pregnancy in a fertile female. It accounts for 40-50% of all infertility cases, affecting approximately 7% of men. The first step towards management of male infertility is the determination of its exact cause (varicocele, endocrine, male accessory gland infections, cryptorchidism, sexual disturbances, systematic diseases, idiopathic), through an appropriate diagnostic approach.

The diagnostic approach includes history (personal, family, social), physical examination (general, skin, testes), hormonal [follicular stimulating hormone (FSH), leutinizing hormone (LH), total testosterone, sex hormone-binding globulin (SHBG), inhibin B, prolactin, thyroid stimulating hormone (TSH)], imaging (testicular ultrasound, Triplex, transrectal ultrasound), semen [standard semen analysis, semen culture, biochemical parameters, DNA fragmentation, acrosome reactions, anti-oxidant capacity, functional tests], histology [testicular sperm extraction (TESE), micro-TESE, fine needle aspiration (FNA)] and genetic procedures [karyotype, Yq microdeletions, sperm fluorescent in situ hybridization (FISH)].

The therapeutic approach includes, etiological (gonadotropins in hypogonadotropic hypogonadism, dopamine agonists in hyperprolactinemia, anti-thyroid medications in hyperthyroidism, L-thyroxine in hypothyroidism, microsurgical approach in obstructive azoospermia), oriented (antibiotics, varicocelectomy, antioxidants) and empirical procedures [clomiphene citrate, intra-uterine insemination (IUI), in-vitro fertilization (IVF), testicular sperm extraction (TESE)].

In any case, according to guidelines of many scientific societies, the caring physician has to select the most appropriate treatment, taking under consideration couple's personal and family history, its beliefs, effectiveness and adverse effects of each specific treatment, as well as its cost, compared to the expected outcome.

Biographies & Abstracts

George Mastorakos

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George Mastorakos, MD, PhD, is Associate Professor of Endocrinology at the at the Aretaieion Hospital of the Faculty of Medicine, University of Athens, Greece where he directs the Unit of Endocrinology, Diabetes Mellitus and Metabolism. He graduated from the School of Medicine of the National Kapodistriakon University, Athens, Greece. He completed his Internal Medicine residency at the Hospital Lariboisière, Paris, France, and his fellowship in Endocrinology at Hospital Cochin, Paris, France. He subsequently spent 4 years as a Visiting Fellow of the Fogarty International Center in the Developmental Endocrinology Branch of NICHD/NIH, Bethesda at Maryland, USA. He is the current president of the Hellenic Endocrine Society and ex-officio member of the ESE ExCo as representative of the ECAS (the ESE Council of Affiliated Societies). Among other scientific societies he is a long-standing member of the European Society of Endocrinology and the American Endocrine Society.

His main publications deal with peripheral CRH, effects of endogenous and exogenous interleukin-6 in the Hypothalamic-Pituitary-Adrenal axis, somatostatin in inflammation, various aspects of the immune-inflammatory systems in Neuroendocrinology, PCOS in adolescence and menopause, and, recently, with the metabolic foetal–maternal environment during pregnancy (adipocytokines, incretins, appetite-related peptides, insulin resistance). He is also interested in understanding the development of neuroendocrine mechanisms underlying chronic or acute stress in models such as exercise. He has been first author or co-author in more than 170 peer-reviewed papers and is a reviewer for *New England Journal of Medicine, Journal of Clinical Endocrinology and Metabolism, European Journal of Endocrinology, Fertility and Sterility, Diabetes*, and other major scientific journals.

Endocrine disruption and male gonadal function

An endocrine-disrupting substance (EDC) is a natural or synthetic compound, which, through environmental exposure, alters the hormonal and homeostatic systems. Humans are exposed to dozens of known EDCs. These substances are diverse and are usually of small molecular mass. They include synthetic chemicals used as industrial solvents/lubricants and their byproducts [polychlorinated biphenyls (PCBs), polybrominated biphenyls (PBBs), dioxins], plastics [bisphenol A (BPA)], plasticizers (phthalates), pesticides [methoxychlor, chlorpyrifos, dichloro-diphenyltrichloroethane (DDT)], fungicides, and pharmaceutical agents [diethylstilbestrol (DES)] as well as natural chemicals found in human and animal food (e.g., phytoestrogens). Even heavy metals have estrogenic activity. They act via nuclear receptors, nonnuclear steroid hormone receptors,

nonsteroid receptors, orphan receptors, enzymatic pathways involved in steroid biosynthesis and/or metabolism, and other mechanisms. Several classes of EDCs act as antiandrogens and more recently, androgenic EDCs have been identified. Some of them have long half-lives becoming thus, detrimental to wildlife and humans. Susceptibility to EDCs may vary according to genetic polymorphisms. The latency between exposure to EDCs and occurrence of clinical disorders can be substantially long or even transgenerational (due to overt mutations or to more subtle epigenetic-related modifications of gene expression).

The male reproductive health endpoints subject to exposure to EDCs include: 1) disrupted reproductive function, manifest as reduced semen quality and infertility; 2) altered fetal development, manifest as urogenital tract abnormalities, including hypospadias and cryptorchidism; and 3) testicular germ cell cancer (TGCC).

Skakkebaek et al.hypothesized the existence of a common pathway by which EDCs and genetic factors, may lead to testicular dysgenesis as well as altered semen quality and TGCC in young men. Cryptorchidism, hypospadias, oligospermia, and testicular cancer have been proposed to be linked as the testicular dysgenesis syndrome (TDS) arising from disturbed prenatal testicular development. TDS was reproduced entirely or partly in rodent studies by employing phthalates (even during fetal life) and PCBs. The reduced anogenital distance observed in the rat was also observed in an epidemiological study in human male newborns. Several studies have shown a strong association of low birth weight with hypospadias and cryptorchidism, suggesting a common determinant. Prostate hyperplasia has been described after exposure to BPA. Furthermore, despite the potential importance and relevance of early life exposure to EDCs, the epidemiological evidence on the relationship between semen quality and exposure to EDCs is limited to the assessment of adult exposure to EDCs. In the cases of PCBs, pesticides, and phthalates, limited epidemiological evidence supports a relationship between adult exposure and reduced semen quality. Timing of exposure to dioxins has been suggested to have an impact upon semen quality.

The prevalence of cryptorchidism is variable and geographically specific, with temporal upward trends noted in some studies but not in others. Similarly, data for hypospadias prevalence are difficult to interpret. Maternal serum concentrations of PCBs, DDT, or DDE (primary metabolite of DDT) were weakly associated or not associated with cryptorchidism or hypospadias in offspring. The relationship of parental or general community pesticide exposure with hypospadias or cryptorchidism is suggestive, but there is the need for further research. Interestingly, Swan et al. found in humans significant inverse relationships between the highest maternal levels of phthalates and the offspring's anogenital index (anogenital distance/body weight). At present, the evidence on EDCs and risk of TGCC is very limited. There is a dramatic recent upward trend in the incidence rate of TGCC indicating that apart genetic factors environmental and lifestyle factors might be involved. Hardell et al., in a case-control study, did not find associations between serum concentrations of organochlorines among cases and controls and risk of TGCC, but instead found that blood organochlorine levels measured in their mothers, decades after their sons' birth, were predictive of increased risk. It is plausible that *in utero* exposure to environment EDCs represents the relevant etiological window of exposure.

Conclusions

Although there is current scientific, public, and governmental interest in the potential health risks of exposure to EDCs, the human evidence on associations of EDCs with altered male reproductive health endpoints remains limited and, in certain instances, inconsistent across studies. This highlights the need for further epidemiological research on these classes of EDCs.

Biographies & Abstracts

Ilpo Huhtaniemi

Ilpo Huhtaniemi received his MD and PhD at University of Helsinki, Finland, did postdoctoral training in USA (UC San Francisco and NIH, Bethesda), and has been on sabbatical leave in Germany, USA and Scotland. He held 1986-2002 the post of Professor and Chairman of Physiology at University of Turku, Finland. He moved in 2002 to UK to a Chair in Reproductive Endocrinology at Imperial College London. He has received several national and international honours, amongst them a fellowship of The Academy of Medical Sciences (UK) and a Doctor Honoris Causa at the Medical University Lodz, Poland, and University of Szeged, Hungary. He has been the Chief Managing Editor of Molecular and Cellular Endocrinology since 1999, has served in the Editorial Board of Endocrinology and Endocrine Reviews and is/has been the Editor or Editorial Board Member of several other scientific journals (e.g. Eur J Endocrinol, Clin Endocrinol, Hum Reprod Update, J Endocrinol, Mol Hum Reprod, Reproduction, Asian J Androl). He has extensive experience as Official of international scientific organizations (e.g. Past President of International Society of Andrology). His research interests include clinical and basic reproductive endocrinology, in particular the function of gonadotrophins and male reproductive endocrinology. He also has long-term interests in development of male contraception, hormone-dependent cancer, and the endocrinology of ageing. His H factor is 69, and he has authored over 650 peer-reviewed research articles and reviews.

Male hypogonadism

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In male hypogonadism, the testes are unable to produce physiological levels of testosterone (T) and to maintain normal spermatogenesis; the latter sometimes occurs in the presence of normal T production. Classical male hypogonadism starts before or at puberty and is caused by an intrinsic anatomic or genetic defect of the hypothalamic-pituitary-testicular (HPT) axis, such as Klinefelter or Kallmann syndromes. Its prevalence is about 0.2% in the general population and it is both under-diagnosed and under-treated. The other type, adult-onset, or late-onset hypogonadism (LOH), is a more contentious diagnostic entity. It entails milder functional suppression of the PHT axis without anatomical or genetic defect, and it is usually associated with ageing, co-morbidities and/or obesity. The symptoms of LOH are diffuse (e.g. suppressed sexual function, muscle weakness, fatigue, insomnia, muscle weakness, irritability) and T is usually marginally below the reference range. It is less common than believed (and advertized); according to the European Male Ageing Study (EMAS) about 2% in men aged 40-79 years. Both forms of hypogonadism can be divided into primary testicular and secondary hypothalamic-pituitary failure, which classification has therapeutic implications. In secondary hypogonadism fertility can be restored by gonadotrophin treatmen, but in the primary form, T therapy only restores the symptoms of extragonadal androgen deficiency. As concerns LOH, about 75% are secondary and due to over-weight or obesity. The rest 25% of LOH are primary and due to aging. There is no dispute about the high benefit-risk ratio of T replacement therapy in young hypogonadal males. In contrast, T therapy of LOH is surrounded by controversy, mainly because evidence based information about its benefits and risks is still missing. Because LOH is mostly caused by modifiable conditions (obesity and chronic diseases), it is more logical to address them first before embarking on T replacement therapy with unknown benefits. A T treatment trial can be made if there are no contraindications (e.g. erythrocytosis, prostatic or cardiovascular diseases), but the uncertain benefits and potential risks of the treatment have to be explained to the patient.

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Abstracts

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A NOVEL MUTATION OF THE CALCIUM-SENSING RECEPTOR GENE IN A GREEK FAMILY FROM NISYROS

Michalis Kokkinos [2], Aikaterini Polonifi [2], George Boutzios [2], Georgia Kassi [1], Narjes Ansari [3], Eva Kassi [3], Evaggelia Zapanti [1]

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Aim: Inactivating mutations of the calcium –sensing receptor (CASR) gene cause familial hypocalciuric hypercalcaemia (FHH). Here we report 3 siblings with FHH caused by a novel mutation in the calcium-sensing receptor (CASR).

Methods: A 60-year-old patient referred because of mild hypercalcaemia, increased PTH levels and persistently low calcium/creatinine ratio. FHH was suspected and a family biochemical and genetic analysis were performed.

Results: Sequencing of the CASR gene revealed a frame shift mutation (Val258Arg) in the extracellular domain of the CASR that generates a stop codon 46 aminoacids later. This heterozygous loss of function mutation in the CaSR gene causes reduced CaSR sensing ability resulting in the clinical manifestation of FHH.

Conclusion: We report the identification of a novel heterozygous loss of function mutation of the CASR gene in a Greek family from Nisyros island. Further prediction and detailed functional studies are needed to clarify the exact role of this mutation on CASR activity.

CHALLENGING CLINICAL CASE: ACTH-DEPENDENT CUSHING SYNDROME

Nino Gabidzashvili
European Limbach Diagnostic Group/Clinic Cardionet , Tbilisi, Georgia

Patient is a 28 year old male. In December 2013 (2 years ago) after falling from the horse patient underwent abdominal CT, which revealed a right adrenal mass s. 2,5X4,5 cm with density +35...+55 HU. Patient was evaluated for hypersecretion of adrenal hormones, which revealed elevated serum and 24 h/urine free cortisol – 216 µg/l (N 62 – 194) and 177 µg/24h (N14 – 97), respectively. Serum Renin, Aldosteron, R/A ratio, urine metanephrin and normetanephrin were within normal range. 1 mg Dexametasone test was performed: patient was given 1 mg Dexametasone, serum cortisol measured the next day morning fasting was adequately suppressed. Thus, hypercortisolism was considered to be due to the squeezing of the normal adrenal tissue by the tumour.

After few weeks right adrenalectomy was performed. Histomorphology revealed clear cell adrenal adenoma.

Control adrenal CT, performed after surgery, did not reveal pathology. ACTH, serum and 24 h/urine cortisol levels were elevated - 67 µg/l (N 7,2 - 63), 219 µg/l and 153 µg/24h respectively. 1 mg Dexametasone test revealed adequate suppression of serum cortisol level - 4,4 µg/l. Pituitary MRI performed with dynamic contrast did not reveal pathology.

Liver and kidney function tests, thyroid function tests, as well as serum potassium and glucose levels are within normal range.

Patient has anxiety and mild depression, no other symptoms of hypercortisolism.

Follow up (last visit was on 10 January/2015) confirmed elevated ACTH and Serum Cortisol levels - 126 µg/l and 214 µg/l respectively. Chest and abdominal CT performed with i/v and oral contrast did not reveal any abnormality.

Would the following diagnostic steps be approved:

1) Inferior petrosal sinus sampling

2) Repeated histomorphologic and immunohisto-chemical analysis of the removed adrenal mass.

Question to the Faculty and audience:

1) Are the removed adrenal mass and ACTH-dependent hypercortisolism manifestations of one and the same problem or two different diseases?

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CRANIAL DIABETES INSIPIDUS MASKED BY ANTERIOR PITUITARY DYSFUNCTION IN A PATIENT WITH SHEEHAN'S SYNDROME

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[1]Department of Endocrinology, Diabetes and Metabolism, Imperial College London; [2]Department of Endocrinology, Diabetes and Metabolism, St Mary's Hospital, Imperial College Healthcare NHS Trust, UK

Introduction: Sheehan's syndrome occurs as a result of ischaemic pituitary necrosis due to severe postpartum haemorrhage. It is characterized by varying degrees of anterior pituitary dysfunction. Diabetes insipidus is considered to be an uncommon complication of Sheehan's syndrome. We present the case of a woman with Sheehan's syndrome and both anterior and posterior pituitary dysfunction, in whom the latter was acutely masked by the former.

Case: A 36-year old woman was admitted to the maternity ward eight days after the delivery of her healthy baby vomiting and feeling unwell after a meal out. Physical examination was unremarkable. She was found to be profoundly hyponatraemic (Na 112mmol/L). Initial IV normal saline treatment led to a drop in Na to 108 mmol/L and a diagnosis of SIADH was made based on this and urinary Na 156 mmol/L with osmolality 445 mOsmol/Kg; 2.7% saline was substituted acutely. Re-visiting the history, she had suffered a significant post-partum haemorrhage. Urgent bloods were sent and hydrocortisone therapy commenced. Bloods revealed hypopituitarism: TSH 0.32mU/L, FT4 7.9pmol/L, LH <0.5IU/L, FSH <0.5IU/L, early morning cortisol 18nmol/L. On treatment Na rose by 8mmol/l per 24 hours. After 48 hours Levothyroxine was commenced. Following this, the patient complained of increased thirst and had a significant diuresis with urine output of 3.7 litres in the first day. Her Na level increased to 144mmol/L and intravenous 5% dextrose infusion was required. She was discharged on full hormone replacement therapy. In clinic, she continued to complain of significant thirst and micturition of 4.5litres per day if DDAVP was not taken. A water deprivation test off treatment was discontinued after showing basal values of plasma osmolality 318 mOsm/kg and urine osmolality 440 mOsm/kg, confirming diabetes insipidus. A repeat test 4 months later, after withdrawal of DDAVP, was normal, showing peak urine osmolality 701 mOsm/kg and plasma osmolality 300 mOsm/kg and confirming resolution.

Discussion: This patient with Sheehan's syndrome had impairment of her neurohypophyseal function, the detection of which was delayed due to anterior pituitary dysfunction at the time, and which eventually resolved. The thirst centre may be affected by ischaemic damage and the osmotic threshold for the onset of thirst in patients with Sheehan's syndrome increased as a result. Both deficiencies of cortisol and thyroid hormone impair the body's ability to excrete free water. If multiple pituitary hormone deficiency is either untreated or undetected, a diagnosis of diabetes insipidus may be missed. Once the missing hormones are replaced, diabetes insipidus may be uncovered.

LONG-TERM REMISSION OF A TSH-SECRETING PITUITARY ADENOMA BY GAMMA-KNIFE RADIOSURGERY, AFTER FAILURE OF OTHER TREATMENT MODALITIES: A CASE REPORT AND A REVIEW OF LITERATURE

Zadalla Mouslech [1], Maria Somali [1], Anastasia-Konstantina Sakali [2], Christos Savopoulos [1], George Mastorakos [2], Apostolos I. Hatzitolios [1]

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Purpose: Thyrotropin-secreting adenomas (TSHomas) are rare with an estimated prevalence of about one case per million. TSHomas present with symptoms of hyperthyroidism, are accompanied by high levels of thyroid hormones and inappropriately normal or elevated TSH levels and are differentiated from the resistance to thyroid hormone syndrome (RTH), mainly by the use of TRH stimulation and T3 suppression tests. The main therapeutic principles are surgical adenomectomy and long-acting somatostatin analogs. Few cases of treatment by gamma-knife radiosurgery have been reported in the literature, with no data on the long-term efficacy and safety of this method. Our objective is to present the efficacy of such treatment in a case of a recurrent TSHoma and to review the literature.

Methods: A 43-year-old woman, previously misdiagnosed as having primary hyperthyroidism and treated with antithyroid drugs, presented to us with overt hyperthyroidism, high levels of thyroid hormones and elevated TSH. MRI revealed a pituitary microadenoma extending suprasellarly.

Results: The patient responded favorably to initial treatment with somatostatin analogs for two years but due to escape phenomenon, TSH levels escalated and hyperthyroidism relapsed. Transsphenoidal adenomectomy was applied but recurrence was again observed due to incomplete tumor removal. Gamma-knife radiosurgery was finally employed 4,5 years ago, resulting in complete disease remission without evidence of long-term complications to date.

Conclusions: The results demonstrate the efficacy and safety of gamma-knife radiosurgery for achieving long-term remission in the case reported, suggesting validation of this technique as an effective treatment option for the management of recurrent TSHomas.

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CASE REPORT OF PHEOCHROMOCYTOMA IN COMBINATION WITH ACTH-ECTOPIC TUMOUR

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Introduction: Cushing Syndrome due to ectopic ACTH production is uncommon and due to pheochromocytoma is extremely rare. We report the clinical presentation of ACTH-ectopic pheochromocytoma, and assess the histopathological diagnosis, treatment modality and prognostic factors.

Case report: We discuss the case of a 56-year-old female who initially presented with vague, non-specific symptoms, such as general and muscle weakness, weight loss, hyperthermia, hypertension, hyperglycemia. At the baseline exam the patient was asthenic and had diffuse lypodystrophy, hyperpigmented skin with "darkened elbow" symptom. Laboratory showed am cortisol of 1201 mmol/l, pm cortisol of 1428 mmol/l, 24-hour urinary free cortisol of 2700 nmol/day, am ACTH level of 124.7 mg /ml, pm ACTH level of 134,4 mg/ml and non-suppression of cortisol with overnight dexamethasone suppression test (1 mg and 8 mg). The 24-hour urinary levels of normetanephrine and metanephrine were 890 mg/day and1189 mg/day respectively. Brain MRI showed no pathological changes. CT scan showed a tumor of the left adrenal gland (2.8 x3,3x4,1 cm, density 38H). Before surgery the patient took doxazozine and mifepristone for two weeks. All the clinical and laboratory signs of Cushing syndrome and pheocromocytoma regressed after left adrenalectomy.

Conclusion: In this case an ACTH-ectopic tumor of pheochromocytoma resulted in Cushing syndrome. Such patients are still underdiagnosed. There is also a lack of research data on this condition. To make the process of diagnosis and treatment more accurate we need to improve the guidelines for diagnosis and treatment of ACTH-ectopic tumors.

CONFUSING SYMPTOMS AND BIOLOGY: PAINFUL HASHIMOTO'S THYROIDITIS

Ioana Vasiliu [1], Ioana Armasu [1], Lacramioara Ionela Serban [2], Delia Ciobanu [3], Lidia Ionescu[4], Carmen Vulpoi [1]

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Hashimoto's thyroiditis (HT) is usually characterized by goiter and/or hypothyroidism. Thyroid pain and tenderness are rare and suggest an alternative diagnostic of subacute thyroiditis (SAT).

We present two cases of painful HT, who had temporary relief with corticosteroids and required surgical intervention for persistent pain. Both patients were middle-aged women with painful goiter, fever, and inflammatory syndrome. Thyroid function was normal, and ultrasonography showed a hypoechoic inhomogeneous pattern. Moderate inflammatory syndrome corroborated with the symptomatology diagnosed a probable subacute thyroiditis and corticosteroid treatment was started with rapid amelioration but with relapse in about two months. First patient (MR, 52 y) had moderate hypothyroidism and restarted the corticosteroid treatment in association with L-thyroxine, with a new amelioration. Six months later, she presented relapse of intense pain with inflammatory syndrome, with no response to corticoids, and she was operated. Pathology confirmed lymphocytic thyroiditis, with diffuse fibrosis. She had a favorable evolution for the next 10 years. On her second episode, second patient (MD, 50 y) had high antibodies level with normal thyroid function. Corticosteroids induced a new amelioration but with relapse at smaller doses. Ultrasonography showed a left thyroid nodule with suspicious cytology after FNAB. She was operated, with favorable evolution until nowadays. Pathology found a rare association of lymphocytic thyroiditis with giant cells, suggesting the association of subacute thyroiditis.

The overlapping of the symptoms may lead to confusion between painful HT and SAT. Thyroid function is variable and antibodies are not always elevated. There are few small series of painful HT published in the literature, in which surgery was imposed by the evolution of the disease. In front of a clinical picture of SAT with no or little response to anti-inflammatory treatment, painful HT must be considered. Thyroidectomy seems to be the best option, with relief of the symptoms.

Abstracts

MALIGNANT INSULINOMA WITH MULTIPLE METASTASES AND CARCINOID SYNDROME

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We report the case of a 73-year-old female patient, who suddenly presented with obnubilation, confusional state, speech disorders, psychomotor agitation. She was admitted to the service of neurology with the suspicion of stroke in the context of atrial fibrillation. Diagnosis was refuted by brain CT. Concomitant hypoglycemia was found, with subsequent repeated hypoglycemic episodes and hyperinsulinemia. Abdominal imaging (ultrasound, CT) evidenced a tumor of the head of the pancreas (d=4 cm) and multiple liver tumors. The patient was admitted to the service of surgery, where the pancreatic tumor was removed. Histological examination with immunohistochemistry (chromogranin, synaptophysin, Ki-67) established the diagnosis of neuroendocrine pancreatic tumor (moderately differentiated neuroendocrine carcinoma – NET G2) with liver metastases. Sandostatin treatment was indicated. Subsequently, for one year, evolution was unfavorable, with persistent hypoglycemic episodes, associated with carcinoid crises (flush, diarrhea, tachyarrhythmia). An increase of serum serotonin and urinary 5-hydroxy-indoleacetic acid (5HIAA) excretion was found. Abdominal CT and MRI evidenced multiple pancreatic tumors associated with multiple abdominal adenopathies and liver metastases. Other associated aspects: moderately increased serum parathormone, normal calcemia, thyroid micronodules, flutter-fibrillation, heart failure NYHA II. In this context, carcinoid syndrome, MEN I and therapeutic possibilities were discussed.

RADIOTHERAPY - CURE OR CURSE? HODGKIN LYMPHOMA, RECTAL CANCER AND PAPILLARY CARCINOMA: CASE REPORT

Iulia Soare [1], Anca Sirbu [1,2], Andreea Catarina Popescu [1,2], Simona Fica [1,2]

[1] Elias Emergency University Hospital; [2] University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

Long-time survivors of Hodgkin lymphoma are exposed to an increased risk of late complications, including malignant neoplasms, fertility issues, cardiovascular disease, pulmonary and bone lesions, especially after radiation therapy.

We report the case of a 57-year-old female, nonsmoker, non-dyslipidemic, with primary hypertension stage II, admitted to the department of Cardiology with non-ST elevation myocardial infarction, the third one, with previous in 2005 and 2008. From her medical history we retain Hodgkin disease IVB (1985), operated (removal of the mass, right superior pulmonary lobe and spleen) and treated with chemotherapy and radiation therapy, inducing premature ovarian failure (POF) at the age of 28, with no hormone replacement therapy (HRT). In 2005, she was diagnosed with superior rectal adenocarcinoma and had undergone Dixon anterior rectosigmoidian rejection, then chemotherapy and radiotherapy. In 2012, 27 years later from the Hodgkin disease, a thyroid nodule of 4/3.2 cm with suspicious characteristics was discovered during a routine cervical ultrasound. Fine needle aspiration biopsy revealed papillary carcinoma and she had total thyroidectomy and postoperative radioiodine ablation, with no sign of residual or recurrent disease. During this admission, she complained about back pains and CT and IRM imaging of the spine could not distinguish secondary malignant dissemination from post-radiation lesions or severe secondary osteoporosis, while the PET-CT scan revealed severe osteoporosis with vertebral fractures.

This case has some particularities: the presence of three neoplasms in a young patient (genetic disorder or late consequences of Hodgkin lymphoma treatment); and is the cardiovascular disease due to her POF without HRT or another consequence of her primary malignancy? Genetic tests will be performed, since she has two children and a family history of one brother with renal cancer and one sister died from bone cancer. There are no other cases described in the literature with this pathological association.

Abstracts

SALIVARY CORTISOL LEVELS IN ALLGROVE SYNDROME

Dr Blertina Dyrmishi [1]; Dr Taulant Olldashi [1], Prof Asc Zamira Ylli [2]; Prof Agron Ylli [2]
[1] Hygeia Hospital Tirana; [2] UHC "Mother Teresa", Tirana, Albania

Aim: To present a case with Allgrove Syndome.

Methods: A 15 years old child was present to our hospital with fatigue, anemia, skin hyperpigentation and blood hypotension. He is treated by GP doctor for anemia, but the symptoms weren't improved. The case was referred to cardiologist for examination. The boy was underwent surgery before ten years ago for a esophageal achalasia. Clinically the chronic adrenal failure was suspected. He doesn't have secondary sexual signs. Schirmer's test 3mm. The patient says that the boy has had no tears production, since he has born.

The lab results: ACTH 8:00 = 3067 pg/ml (N 8-65); ACTH 16:00 = 1200 pg/ml (N 7-30); Total Cortisol 0.5 g/dl (4.3-22.4), Salivary cortisol (morning) 0.001 microg/dL ; Sinachten stimulation test: Morning serum Cortisol 0.5 g/dl ; Salivary cortisol (morning) 0.002 microg/dL and one hour after test serum cortisol level 0.5 g/dl, salivary cortisol 0.001 microg/dL . The other hormones; Aldosteron, Renine, GH; IGF1; TSH in the normal range. Glucose 90 mg/dl. Sodium 138 mEq/L; potassium 4.5mEq/L; FBC: WBC 6690; RBC 4500000; PLT 212000; htc 37.4; Hb 13.1g/dl. Head MRI: Without pathology to hypothalamus and pituitary gland. Clinically the diagnosis of Allgrove syndrome was suspected. The treatment with hydrocortisone was started after blood collected. After two months: ACTH 43.3 pg/ml (normal range 8-65) . The genetic analysis was recommended.

Conclusions: The Allgrove syndrome is a rare genetic syndrome, but in the patient with achalasia and alacrima, the syndrome should be suspected and the adrenal gland should be screening. Morning salivary cortisol is as good as serum as screening test for patients with adrenal failure.

Key words: Allgrove syndrome, Cortisol, ACTH.

MOYA MOYA SYNDROMIC DISEASE IN A PATIENT WITH GROWTH HORMONE DEFICIENCY AND HYPERGONADOTROPIC HYPOGONADISM

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[1] Necker Children's University Hospital; [2] La Pitié Salpétrière University Hospital, Paris, France

Introduction: Moya Moya disease is a chronic cerebrovascular angiopathy characterized by progressive stenosis of terminal part of internal carotid vessels and the compensatory development of collateral vessels. It can be isolated or syndromic and is mostly found in the Japanese population. We present here the case of a young boy with growth hormone deficiency and testicular insufficiency in the context of a Moya Moya syndrome.

Case report: A 12.9 year-old boy of Caucasian origin is referred at the Endocrinology Department of Necker Children's University Hospital for evaluation because of short stature. His height is at 130 cm (-3 SD) and his weight at 27.7 kg. Tanner puberty stage is A1P1; testis measure 28 mm. Initial evaluation excludes any organic or inflammatory disease. Hormonal work-up shows low IGF1 levels, normal thyroid hormones levels, and a normal for puberty stage testosterone level. Two growth hormone stimulation tests reveal a growth hormone deficiency (GHD). Brain MRI is normal. Growth hormone (GH) treatment associated with a GnRH agonist to optimize growth was started at age of 13 years and 2 months; GnRH agonist was stopped at age of 14. Linear growth and response to GH is moderate and puberty evolution is rather slow. At age of 17, endocrine evaluation shows high levels of LH and FSH with low levels of inhibin B. Karyotype is normal (46XY). At age of 18, growth hormone deficit and hypergonadotropic hypogonadism are confirmed during re-evaluation. Other pituitary axes are normal. Gonadal dysfunction is also reflected at the patient's spermogram (azoospermia). A new brain angio-MRI shows collateral vessels of anterior and median cerebral arteries, orienting the diagnosis towards a Moya Moya disease. Molecular analysis found a mutation (deletion) at BRCC3 and MTCP1 genes, associated with syndromic Moya Moya. The patient is actually without any medication, as GH stopped after vascular anomaly in brain MRI.

Conclusions: This case illustrates the association of growth retardation -in a context of GHD- and of hypergonadotropic hypogonadism in a boy with Moya Moya disease diagnosed in adulthood. Further considerations should be made concerning the necessity or not of GH treatment at this patient and the potential risk of vascular complications.

Abstracts

ARE CYPRIOT WOMEN EXEMPT FROM THE SYMPTOM-ORIENTED THERAPEUTIC GUIDELINES FOR THE POLYCYSTIC OVARY SYNDROME?

Gyula Petrányi
Private practice, Limassol, Cyprus

Introduction: Many, including the most recent guidelines for the polycystic ovary syndrome (PCOS) list treatment forms according to phenotypes, symptoms, or even the "main concern" of the patient. This, with the unfortunate name, differing diagnostic criteria, non-existence of specific diagnostic tests, wide variation of the occurrence and severity of symptoms at diagnosis confuse both doctors and patients. Symptoms need considerable time to develop or reach another category (weight gain into obesity, hypertrichosis into hirsutism); infertility may be a concern only when pregnancy is planned; all these may compromise the validity of the symptomatic treatment approach. Insulin resistance (IR) is an accepted underlying feature of PCOS. The high prevalence of IR related disorders like the metabolic syndrome and diabetes found in Cyprus suggests that PCOS may occur in rather high numbers and targeting IR in all cases would be a more comprehensive treatment, even if there is no practical and precise measurement to prove IR in each case.

Case series: 18 women (age, 18–38 yrs) with hyperandrogenism and ovarian dysfunction were given detailed advice on healthy lifestyle (increase of physical exercise, low glycaemic index diet, with calorie restriction in the overweight or obese), and metformin 500 mg tablets three times daily. During 12 months, acne and hirsutism improved in each patient; the Global Acne Grading Score fell from 23.3 ± 9.5 to 11.9 ± 6.2***; the Ferriman-Gallwey score from 12.4 ± 2.4 to 8.2 ± 2.1***. BMI fell from 27.8 ± 5.9 to 26.6 ± 5.4**; but it did not diminish significantly in the lean ones. Irregular periods became regular in 5 of 8. In a different group of 15 infertile women with PCOS, 15 spontaneous singleton pregnancies occurred, ranging from the first up to the17th month of metformin treatment (mean, 7 months); with 13 live births (87% success rate).

Conclusion: This experience is encouraging to advise healthy lifestyle combined with metformin to all women with PCOS as basal treatment. At time of diagnosis, we don't know how their symptoms would progress or their phenotype change by time. Many are not planning pregnancy and do not want to take contraceptive pills (contraindications, side effects, bad experience), are dissatisfied with the ambiguous advice of various medical professionals, and the contraceptive pill or fertility treatment forms do not improve the metabolic aspects of PCOS. The basal treatment proved to be safe; it improved significantly all symptoms of PCOS despite some negative suggestions in the literature, and can be continued for long years including pregnancy and beyond. It can also be combined with any other treatment forms used in PCOS if some symptoms do not improve satisfactorily.

BREAST NEUROENDOCRINE CARCINOMA ASSOCIATED WITH INVASIVE NEUROENDOCRINE PANCREATIC TUMOUR

Ioana Armasu [1], Iulia Crumpei [1], Ioana Vasiliu[2], Alina-Daniela Belceanu [1], Roxana Stefan [1], Mihai Danciu [3], Constantin Volovat [4], Voichita Mogos [1], Carmen Vulpoi [1]

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Introduction: Breast neuroendocrine carcinoma is a rare aggressive neuroendocrine tumor (NET) and the research on this subject is poor. Only seven studies were cited in the literature, the largest with 142 cases. Incidence in the population has not been reported, but the prevalence is under 0.1% of all breast carcinomas.

Case report: AV, 72, is hospitalized in Endocrinology Department for exploring bone pain with significant weight loss (15kg in 2 months). Highlights from patient's previous history are: diabetes, hypertension, nodular goiter (subtotal thyroidectomy was performed) and suspected pulmonary sarcoidosis in 2011 (clinical symptoms: persistent cough, bronchoscopy with biopsy revealed an epithelioid giganto-cellular granuloma with central ischemic necrosis, positive for CD-68), treated 6 months with corticosteroids. In 2013 an abdominal CT revealed in the pancreas an area of 21/20 mm at the isthmus. CA-50 was dosed and found negative 14 U/ml (N<25 IU/ml), without any further specific exploration until January 2014 when intense bone pain lead to spinal MRI and bone scintigraphy that objectified secondary dissemination at the lumbar-sacral level and dorsal vertebrae. Abdominal CT reevaluation described: an intraductal pancreatic lesion with secondary disseminations in the liver, spleen and bone. At this point, the patient was addressed to the Endocrinology Department. The appearance was suggestive for pancreatic NET, confirmed by high tumoral markers: chromogranin A=141.8 ng/ml (N:0-100), serotonin=998 mg/dl (N:80-450), NSE=17.07 ng/ml (N:0-17).

From the patient's history, we found that she had a left breast fibroadenoma (2013 - benign image on mammography). The breast ultrasound identified in the left breast (5 cm from the nipple) multiple solid nodules with a maximum diameter of 10 mm, with coarse calcifications. Breast cancer markers were increased ACE=31.5 ng/ml (N:0-1.5) and CA 15.3=160 IU/ml (N = 0-38.4). A biopsy was performed from the lesion in the liver revealing a metastasis of poorly differentiated carcinoma, immunohistochemical data showing a carcinoma of the mammary gland with neuroendocrine features: intense positive for citokeratin-7, weak/moderate positive for chromogranin, negative for synaptophisin, negative for citokeratin-20 and weak/moderate positive for estrogen receptor in 50-60% cells. The oncology evaluation staged the tumour in cT2N0M1 (liver, lung, bone), ECOG performance status 4, and recommended treatment with Sandostatin LAR, along with initiating treatment with zoledronic acid and aromatase inhibitors.

Conclusions: The peculiarity of the case presented consists in the association of a probably pancreatic neuroendocrine tumour with breast carcinoma with neuroendocrine features, probably evolving for a long period of time in the past, which was initially considered and treated as sarcoidosis.

Abstracts

SUDDEN ONSET OF DIABETES INSIPIDUS - THE FIRST SIGN OF A BRAIN METASTASIS

Iulia Crumpei [1], Ioana Armasu [1], Ion Poeata[2], Anca Sava [3], Daniela Boisteanu [4], Dragos Negru [5], Elena Braha [6], Cristina Preda [1], Carmen Vulpoi [1]

[1] Department of Endocrinology; [2] Department of Neurosurgery; [3] Department of Morphopathology [4] Department of Pneumology; [5] Department of Radiology and Medical Imaging; [6] Department of Genetics, University of Medicine and Pharmacy "Gr.T. Popa" Iasi, Iasi Romania

Diabetes insipidus (DI) is a disease with heterogeneous etiology.

We present the case of a 50 year old man with no significant medical history, investigated for sudden onset of polyuria-polydipsia syndrome (7 l/d). On physical examination he presented nervousness, loss of appetite, decreased libido, dizziness and low BP (90/50 mmHg). The osmolarity (low urinary osmolarity =53 mOsm/l and normal plasma osmolarity =273 mOsm/l) and the positive response to ADH confirmed central diabetes insipidus. Pituitary function tests revealed thyrotropic (low fT4 =0.4 ng/dl with inadequate TSH =1 mIU/l), gonadotropic (testosterone =0.5 ng/ml, LH=0.8 IU/ml, FSH=0.6 IU/mL) and adrenocorticotropic (morning cortisol 18 ng/dl) insufficiency. The PRL level was normal (19.8 ng/ml). He associated leukocytosis (10,800/mmc) and elevated ESR (110 mm/1h). Despite a normal phosphate metabolism, the chest X-ray followed by CT showed an opacity in the right pulmonary hilum suggesting sarcoidosis. Brain CT identified two lesions: one lesion intra- and suprasellar of 20 mm diameter, and the second in the cerebellum, measuring 12 mm. MRI was not possible due to a metallic inclusion of the left upper eyelid. After removal of the latter, MRI confirmed the CT examination and the patient was operated. The surgery, very laborious, removed most of the sellar lesion. The morphopathology examination diagnosed undifferentiated neoplasia, with most likely a pulmonary origin. Three months after surgery his precarious condition did not allow aggressive treatment (removal of the lung tumor, radio- or chemotherapy). It is still under ADH and corticosteroid therapy.

Metastases associated with diabetes insipidus are very rare - only twenty cases with lung cancer as the primary tumor are described in the literature. Their presence requires surgery, followed, if possible, by chemotherapy of the primary tumor.

DOES NELSON SYNDROME STILL EXIST?

George-Sebastian Zmău [1], Iulia Crumpei[1], Mirela Puiu [1], Adina Manolachie [1], Viorel Scripcariu [2], Delia Ciobanu [3], Corina Ursulescu [4], Letitia Leustean [1], Maria-Christina Ungureanu [1], Carmen Vulpoi [1]

[1] Department of Endocrinology; [2] Department of Surgery; [3] Department of Morphopathology; [4] Department of Radiology and Medical Imaging, University of Medicine and Pharmacy "Gr.T. Popa" Iasi, Iasi, Romania

Bilateral adrenalectomy for Cushing disease (CD) may trigger the growth of a pituitary adenoma and increased levels of ACTH secretion,first described in 1958, as Nelson syndrome. We present the case of a young girl with CD, who after bilateral adrenalectomy constantly presented increased levels of ACTH without significant modification in the size of the pituitary adenoma.

Case report: Laura C, 21 years old, was addressed to the endocrinology departament for investigation of severe osteoporosis. Clinical (central obesity, osteoporosis, amenorrhoea) and biological data (increased cortisol levels with positive response at inhibition and stimulation tests) confirmed the suspicion of CD. MRI revealed a 6 mm diameter pituitary adenoma. After treatment with ketoconazole and alendronate the general status and osteoporosis improved, being operated afterwards – bilateral adrenalectomy. After surgery she developed signs of adrenal insufficiency, which imposed the onset of substitution therapy (gluco- and mineralocorticoids). Clinical improvement (progressive enhancement of bone mass, weight loss and menstrual cycle normalization) as well as the low plasma cortisol (4 mg/dl) confirmed the efficacy of the surgery. One year after, hyperpigmentation suggested a Nelson syndrome and pituitary radiotherapy was performed. ACTH persisted at high levels (1250, 551 pg/ml) but the MRI image remained small, with a maximum diameter of 11 mm. She remained on substitutive treatment and bisphosphonates.

Discussion: Younger age, duration of Cushing disease before surgery, ACTH levels after adrenalectomy are considered as predictive factors for ww disease. Corticotrope progression generally begins in the first 3 years after adrenalectomy but it may also begin later, thus imposing life-long follow-up with repeated pituitary MRI. ACTH variation between two consecutive investigations suggests corticotropic evolution and imposes MRI scan. If promptly treated, tumor growth has no clinically consequences.

Conclusion. Our patient has high constant ACTH values with no significant evolution of the tumor size. Despite the adrenal insufficiency (well substituted) she has a normal life, finished her studies and is happily married. Close follow-up of the pituitary tumor evolution remains mandatory.

Abstracts

AN INCIDENT AND HIGH RISK TYPE 1 DIABETES COHORT - AFTER DIAGNOSIS DIABETES RESEARCH SUPPORT SYSTEM (ADDRESS-2): DESCRIPTION AND COMPARISON OF CLINICAL CHARACTERISTICS AND PRESENTATION OF PATIENTS WITH AND WITHOUT EVIDENCE OF HUMORAL AUTOIMMUNITY

Vassiliki Bravis [1], Akaal Kaur [1], Helen Walkey [1], Ian Godsland [1], Colin Dayan [2], Mark Peakman[3], Polly Bingley [4], David Dunger [5], Nick Oliver [1], Desmond G Johnston [1]
On behalf of the ADDRESS-2 Consortium

[1] Department of Endocrinology, Diabetes and Metabolism, Imperial College London; [2] Cardiff University School of Medicine; [3] Department of Immunology, King's College, London; [4] Department of Diabetes and Metabolism, University of Bristol; [5] Department of Paediatrics, University of Cambridge, UK

Background: Classification of adult diabetes is mostly based on age at onset, together with the presence of either obesity and metabolic syndrome or insulin deficiency and autoantibodies. None of these criteria are absolute.

Aims: Compare the clinical characteristics and mode of presentation of a cohort of volunteers with incident type 1 diabetes (T1D), with and without evidence of humoral autoimmunity, recruited with a view to participating in aetiopathogenesis and early intervention studies.

Methods: We evaluated the presence of three diabetes-related autoantibodies(AAbs) (glutamic acid decarboxylase 65 kDa isoform, insulinoma-associated-2 autoantibodies and zinc transporter-8) in patients with T1D aged 5-60 years, recruited in the UK within 6 months of diagnosis.

Results: 926 patients donated serum. 84% had evidence of humoral autoimmunity. AAb positive (AAb +ve) patients were younger (AAb +ve: median age 19 years (IQR 12-31); AAb –ve: median age 30.5 years (IQR 20.5-40); p<0.001). The rate of AAb presence decreased with age (p<0.001) and was higher in white European (85%) than non-European (67%) patients (p<0.001). Adult AAb +ve patients were significantly leaner (AAb +ve: median BMI 24.3kg/m2 (IQR 21.5-26.8); AAb -ve: median BMI 25.1kg/m2 (IQR 23.0-28.8); p=0.01), whilst children in the AAb +ve and –ve groups had comparable BMI (p>0.05). Birth weight, symptom duration, presentation with fatigue and weight loss, seasonal variation in diagnosis and other autoimmune disease prevalence were similar in the AAb +ve and –ve cohorts. Polyuria/polydipsia were significantly more prevalent in AAb +ve patients (97% AAb +ve; 92% AAb -ve; p=0.01). Rate of ketoacidosis at presentation was comparable (43% AAb +ve; 39% AAb -ve; p>0.05). GAD65 and IA-2 titres correlated poorly with DKA at presentation. Insulin dose per kg per day were comparable in the two groups (AAb+ve: median insulin dose 0.44 units/kg/day (IQR 0.30-0.60); AAb –ve: median insulin dose 0.40 units/kg/day (IQR 0.29-0.55); p>0.05). AAb +ve patients were significantly less likely to have a positive family history of diabetes in their mother, father or grandparent compared with AAb –ve patients (p<0.05 for all three).

Conclusions: This cohort of people with a clinical diagnosis of incident T1D treated in the NHS, who had volunteered for research, was established with support from the NIHR CRN, Diabetes UK and JDRF. It includes representative patients with a clinical diagnosis of T1D, over a wide age range. Humoral autoimmunity was present in 84%. Its presence did not affect ketoacidosis rate at presentation and degree of insulin deficiency, but was associated with higher rate of osmotic symptoms at presentation, younger age, white European ethnicity and leaner phenotype in adults but not in children.

Selected Cases

DIABETES AND CALCIUM/BONE

Friday 13.02.15
CHIOS ROOM 16:30 - 17:30
CHIOS ROOM 18:00 - 19:00

1. GESTATIONAL DIABETES MELLITUS
Gesthimani MINTZIORI [1,2], Dimitrios G. GOULIS [1]

[1] Unit for Reproductive Endocrinology, 1st Dept of Obstetrics and Gynaecology, Medical School, Aristotle University of Thessaloniki; [2] Department of Endocrinology, General Hospital Ippokrateio, Thessaloniki, Greece

2. A PATIENT WITH TYPE 2 DIABETES MELLITUS AND PAINFUL MUSCLE WEAKNESS OF THE LOWER LIMBS.
Stavros LEONTIDIS

University Hospital of Patras, Patras, Greece

3. A 30 YEARS OLD MALE WITH NEWLY DIAGNOSED DIABETES
Agathi VASILIOU

Department of Endocrinology and Metabolic Diseases, University Hospital of Larissa, University of Thessaly, Larissa, Greece

4. PRIMARY HYPERPARATHYROIDISM. DIAGNOSTIC TOOLS IN BORDERLINE CASES
Maria NIKOLOPOULOU

Department of Endocrinology, Diabetes and Metabolism of Athens Medical Center, Athens, Greece

5. ATYPICAL PARATHYROID ADENOMA
Argyro PANAGIOTAKOU

Sismanoglio, Department of Endocrinology and Diabetes, Amalia Fleming General Hospital, Athens, Greece

6. A NOVEL MUTATION OF THE CALCIUM-SENSING RECEPTOR GENE IN A GREEK FAMILY FROM NISYROS

Michalis KOKKINOS [2], Aikaterini POLONIFI [2], George BOUTZIOS [2], Georgia KASSI [3], Narjes ANSARI [3], Eva KASSI [3], Evaggelia ZAPANTI [1]

[1] 1st Endocrine Department, Alexandra Hospital, [2] 1st Department of Internal Medicine, Laikon General Hospital, Athens University School of Medicine, [3] Department of Biological Chemistry, Medical School, University of Athens, Athens, Greece

PREGNANCY AND PITUITARY

Friday 13.02.15
DELOS ROOM 16:30 - 17:30
DELOS ROOM 18:00 - 19:00

1. CUSHING SYNDROME IN PREGNANCY DUE TO LH/HCG RECEPTOR POSITIVE ADRENOCORTICAL CARCINOMA
Stelios TIGAS, MD, PhD, MRCP.

Department of Endocrinology, University of Ioannina, Ioannina, Greece

2. PROLACTINOMA IN PREGNANCY
Erotokritos EROTOKRITOU, Marinella TZANELA, Stylianos TSAGARAKIS

Department of Endocrinology, Evangelismos Hospital, Athens, Greece

3. CRANIAL DIABETES INSIPIDUS MASKED BY ANTERIOR PITUITARY DYSFUNCTION IN A PATIENT WITH SHEEHAN'S SYNDROME
Vassiliki BRAVIS[1,2] Stephen ROBINSON[2], Jeremy PD COX[2]

[1] Department of Endocrinology, Diabetes and Metabolism, Imperial College; [2] Department of Endocrinology, Diabetes and Metabolism, St Mary's Hospital, Imperial College Healthcare NHS Trust, London, UK

4. CHALLENGING CLINICAL CASE: ACTH-DEPENDENT CUSHING SYNDROME
Nino GABIDZASHVILI

European Limbach Diagnostic Group/Clinic Cardionet, Tbilisi, Georgia

5. ACUTE PITUITARY APOPLEXY COMPLICATING A PITUITARY MACROADENOMA
Stavroula A. PASCHOU, Andromachi VRYONIDOU - BOMPOTA

Department of Endocrinology, Diabetes & Metabolism, Korgialenio - Mpenakio Hospital, Athens, Greece

6. LONG-TERM REMISSION OF A TSH-SECRETING PITUITARY ADENOMA BY GAMMA-KNIFE RADIOSURGERY, AFTER FAILURE OF OTHER TREATMENT MODALITIES: A CASE REPORT AND A REVIEW OF LITERATURE
Anastasia-Konstantina SAKALI [2], Zadalla MOUSLECH [1], Maria SOMALI [1], Christos SAVOPOULOS [1], George MASTORAKOS [2], Apostolos I. HATZITOLIOS [1]

[1] 1st Medical Propedeutic Department of Internal Medicine, AHEPA University Hospital, Aristotle University of Thessaloniki, Thessaloniki; [2] Department of Endocrinology, Metabolism and Diabetes, Aretaeio Hospital, School of Medicine, University of Athens, Athens, Greece

ADRENALS AND FEMALE REPRODUCTION

Saturday 14.02.15
CHIOS ROOM 16:30 - 17:30
CHIOS ROOM 18:00 - 19:00

1. CASE REPORT OF PHEOCHROMOCYTOMA IN COMBINATION WITH ACTH - ECTOPIC TUMOUR
Vadim KRYLOV, Ekaterina DOBREVA, Evgenia MAROVA, Nikolay KUZNETSOV, Leonid IPPOLITOV, Iya VORONKOVA

Endocrinology Research Centre, Moscow, Russia

2. CUSHING DISEASE?
I.TSIROU, Marinella TZANELA, Stylianos TSAGARAKIS

Department of Endocrinology, Evangelismos Hospital, Athens, Greece

3. A DELAYED DIAGNOSIS OF MALE PSEUDOHERMAPHRODITISM DUE TO P450 OXIDOREDUCTASE (POR) DEFICIENCY
Anastasia K. ARMENI, Neoklis A. GEORGOPOULOS

Department of Obstetrics and Gynecology, Division of Reproductive Endocrinology, University of Patras Medical School, Patras, Greece

4. OVARIAN FAILURE POST CHEMOTHERAPY DUE TO LYMPHOMA
Anastasia K. ARMENI, Maria TSOLI, Neoklis A. GEORGOPOULOS

Department of Obstetrics and Gynecology, Division of Reproductive Endocrinology, University of Patras Medical School, Patras, Greece

5. A CASE OF POSTMENOPAUSAL ANDROGEN EXCESS
Evaggelia KAROPOULOU, Nikolaos VLACHOS, Nikolaos DAFNIOS, A. PAFITI, Irini LAMBRINOUDAKI

Menopause Clinic, 2nd Department of Obstetrics and Gynecology, University of Athens, Aretaieio Hospital, Athens, Greece

6. HIRSUTISM IN A PREGNANT WOMAN
Michail APOSTOLAKIS

1st Department of Endocrinology, Alexandra Hospital, Athens, Greece

LABORATORY SUPPORT IN ENDOCRINE PRACTICE AND DIABETES

Saturday 14.02.15
DELOS ROOM 16:30 - 17:30
DELOS ROOM 18:00 - 19:00

1. CONFUSING SYMPTOMS AND BIOLOGY: PAINFUL HASHIMOTO'S THYROIDITIS
Ioana VASILIOU [1], Ioana ARMASU [1], Lacramioara Ionela SERBAN [2], Delia CIOBANU [3], Lidia IONESCU [4], Carmen VULPOI [1]

[1] Department of Endocrinology; [2] Department Physiology; [3] Department of Morphopathology; [4] Department of Surgery, University of Medicine and Pharmacy "Gr.T. Popa" Iasi, Iasi, Romania

2. A 34-YEAR-OLD WOMAN PRESENTING HYPERPROLACTINEMIA
Katerina SALTIKI [1], Aimilia MANTZOU [2]

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3. PITUITARY METASTASIS IN A PATIENT WITH BREAST CANCER. CORRELATION BETWEEN IMAGING AND LABORATORY FINDINGS - DIFFERENTIAL DIAGNOSIS
Sofia FONTARA, F. JAGOURI, Achilles CHATZIIOANOU, Lia Angela MOULOPOULOS

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4. BIOCHEMICAL EVIDENCE OF ISOLATED ACTH DEFICIENCY WITHOUT CLINICAL SIGNS
Grigoria BETSI, Dimitra VASSILIADI, Giorgos DIMITRIADIS

Endocrine Unit, 2nd Department of Internal Medicine-Propaedeutic, Research Institute and Diabetes Center, Attikon University Hospital, Athens, Greece

5. MALIGNANT INSULINOMA WITH MULTIPLE METASTASES AND CARCINOID SYNDROME
Codruta LENCU, Oana PANZARIU, Carmen GEORGESCU

Department of Endocrinology, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Romania

6 . LATENT AUTOIMMUNE DIABEDES OF THE ADULT (LADA) IN A 32 YEARS OLD OBESE MAN
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