INTERNATIONAL CONFERENCE

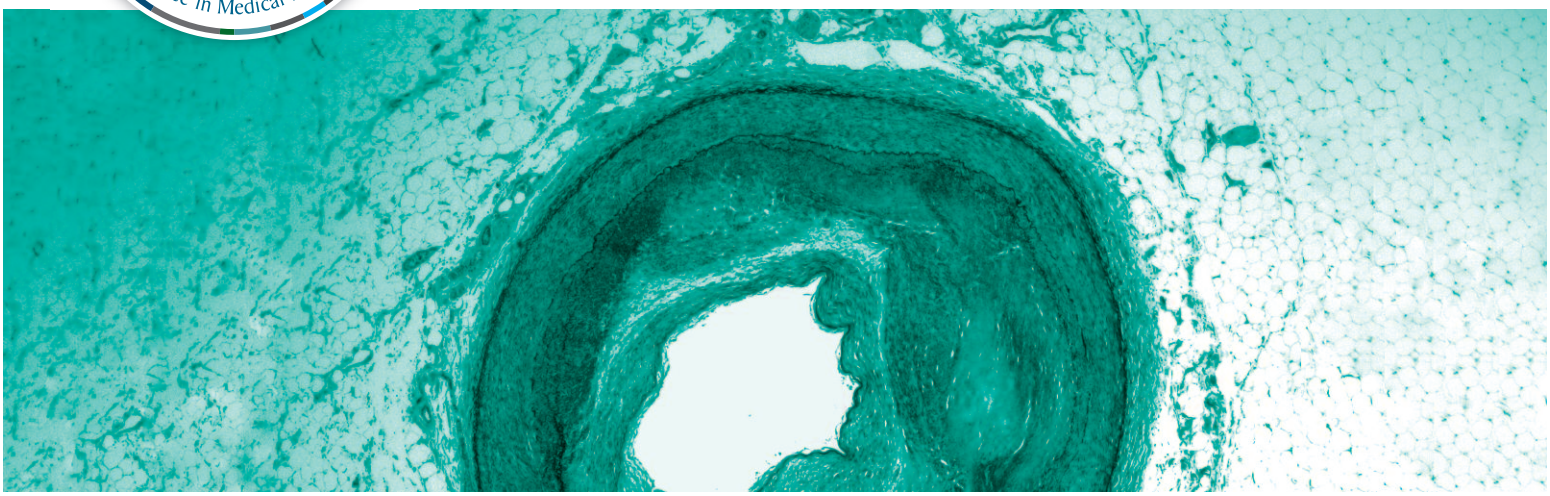
FINAL PROGRAMME AND ABSTRACT BOOK

EXCEMED

Excellence in Medical Education

Diabetes and thyroid diseases: clinical features and management

14 May 2016 - Lisbon, Portugal



Diabetes and thyroid diseases: clinical features and management

Overview

Diabetes and thyroid disorders are two of the most prevalent non-communicable chronic diseases worldwide, both with a heavy impact on quality of life and life expectancy. Diabetes is one of the largest and alarming health emergencies of the 21st century. It is worrisome that the pandemic of diabetes is far from slowing; the most recent estimates by the International Diabetes Federation (7th IDF Atlas, 2015) show that 415 million people are affected by diabetes and its complications which are major causes of disability and premature death. Diabetes is preventable if the earliest disorders of glucose metabolism - namely, impaired fasting glucose and impaired glucose tolerance - are promptly identified and treated. Thyroid disorders are also very common, especially in iodine deficient countries. Thyroid nodules can be detected in up to 68 per cent of randomly selected individuals, more frequently in women and the elderly, and thyroid cancer occurs in 7 to 15 per cent depending on age, sex and other risk factors. Luckily there is a large-scale effort to face the global burden of both diabetes and thyroid disorders leading to new research achievements which are to be implemented in clinical practice. This meeting has been organized by EXCEMED to review the most recent and significant research advancements in the fields of prediabetes, diabetes and thyroid diseases, with the goal of having immediate clinical impact. Roundtables, workshops and interactive clinical cases will facilitate exchange between audience and faculty members.

Learning objectives

By attending this live educational conference, participants will be able to:

- Diagnose and manage disorders of glucose metabolism
- Diagnose and manage subclinical thyroid disease
- Conscientiously apply the most recent guidelines to the management of diabetes and thyroid diseases
- Understand and use updated diagnostic and therapeutic strategies to face common cases in daily clinical practice

Target audience

Endocrinologists and specialists involved in the diagnosis and management of patients with diabetes and thyroid disorders

Chairs

Osama Hamdy
Joslin Diabetes Center
Harvard University
Boston, USA

George J. Kahaly
Department of Medicine I
Gutenberg University Medical Centre
Langenbeckstr
Mainz, Germany

CME Provider

EXCEMED is a non profit foundation dedicated, since the last four decades, to the development of high-quality medical education programme all over the world.

EXCEMED adheres to the guidelines and standards of the European Accreditation Council for Continuing Medical Education (EACCME®) which states that continuing medical education must be balanced, independent, objective, and scientifically rigorous.

Continuing medical education

EXCEMED (**www.excemed.org**) is accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) to provide the following CME activity for medical specialists. The EACCME® is an institution of the European Union of Medical Specialists (UEMS), **www.uems.net**

The CME conference **"Diabetes and thyroid diseases: clinical features and management"** held on 14 May 2016 in Lisbon, Portugal is designated for a maximum of **3 (three) hours** of European CME credits (ECMEC). Each medical specialist should claim only those credits that he/she actually spent in the educational activity. EACCME® credits are recognized by the American Medical Association (AMA) towards the Physician's Recognition Award (PRA). To convert EACCME® credit to AMA PRA category 1 credit, please contact the AMA.

EXCEMED adheres to the principles of the Good CME Practice group (gCMEp).

General information

Language

The official language of this live educational conference is English.

CME Provider

EXCEMED - Excellence in Medical Education

Programme Manager: Giulia Anastasìa
T +39 06 420413 315 - F +39 06 420413 677
giulia.anastasia@excemed.org

Medical Advisor: Ernesto Maddaloni
e.maddaloni@unicampus.it

For any logistic support please contact:

Meridiano Congress International
Congress Manager: David H. Slangen
T +39 06 88595 250 - F +39 06 88595 234
david.slangen@meridiano.it

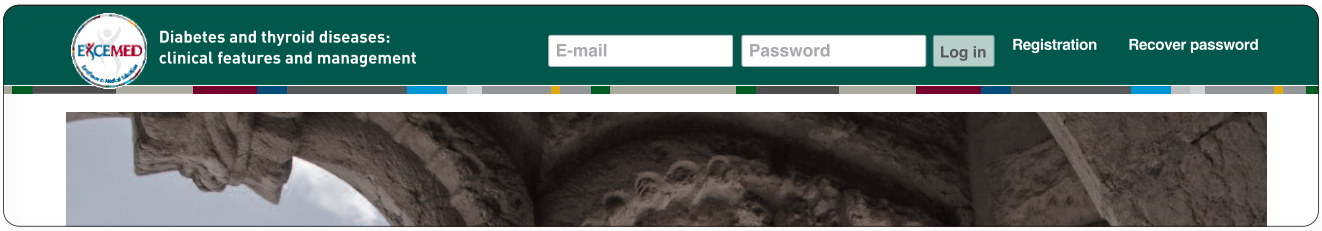
Format

Using a highly innovative format and tools, this educational initiative will allow the audience to express their own views and opinions through debates, discussion, interactive workshops, Q&A sessions, question cards and dedicated website.

Dedicated website

Access **http://www.excemedgm.org** to:

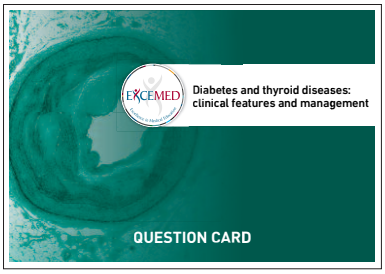
- √ View the scientific programme and list of faculty members
- √ Get your certificate of attendance
- √ Fill in the post-event surveys
- √ Get your EACCME certificate



Any question?

You can post your questions:

- √ Fill in the question card
- √ Sign in to the dedicated website and post your question on the "Question Wall"



Programme

Saturday, 14 May 2016

8.25 **Welcome and opening**

Session I — The hidden diseases

Chairs: O. Hamdy (USA) - G.J. Kahaly (Germany)

8.30 **L1:** **Undiagnosed diabetes: an emergency waiting to happen**
J.K. Cruickshank (UK)

8.55 **L2:** **Management of autoimmune thyroid disease**
G.J. Kahaly (Germany)

9.20 **Roundtable**
The two faces of pre-diabetes: disease and opportunity
- Pre-diabetes as a disease or a pre-disease
- Pre-diabetes to face diabetes

9.40 **Question time**

Session II — The heart of diabetes and thyroid disorders

Chairs: O. Hamdy (USA) - G.J. Kahaly (Germany)

9.50 **L3:** **Cardiovascular disease and diabetes cause or consequence**
J.K. Cruickshank (UK)

10.15 **L4:** **Cardiac benefits of thyroid hormone therapy**
S. Razvi (UK)

10.40 **Question time**

10.50 **Coffee break**

Legend: **L** : Lecture; : Discussion; : Question time; : Clinical cases:

Programme

Session III Focus on pregnancy

Chairs: O. Hamdy (USA) - G.J. Kahaly (Germany)

11.10 L5: **Diabetes in pregnancy**
L. Morviducci (Italy)

11.35 L6: **Subclinical hypo- and hyperthyroidism in pregnancy**
B. Biondi (Italy)

12.00 **Question time**

12.10 **Workshops**
Participants will be divided in two groups

Group A - Plenary room	Group B - Auditorium VIII
12.10 - 12.40	
Managing diabetes during Ramadan N. Lessan (UAE)	**Algorithms for personalized therapies in diabetes** E. Maddaloni (Italy)
12.40 - 13.10	
Algorithms for personalized therapies in diabetes E. Maddaloni (Italy)	**Managing diabetes during Ramadan** N. Lessan (UAE)

Back to plenary

Session IV The heart of diabetes and thyroid disorders

Chairs: O. Hamdy (USA) - G.J. Kahaly (Germany)

13.15 L7: **Subclinical hypothyroidism: myths, presumptions and facts**
P.A. Kopp (USA)

13.40 **Interactive clinical case**
Thyroid cancer: pre and post-operative management according to the new guidelines
P.A. Kopp (USA)

14.00 **Concluding remarks**

End of the conference

Closing lunch

Disclosure of faculty relationships

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The following faculty provided information regarding significant commercial relationships and/or discussions of investigational or non-EMEA/FDA approved (off-label) uses of drugs:

Bernadette Biondi	Declared no potential conflict of interest.
John Kennedy Cruickshank	Declared receipt of grants and contracts from Excemed. He declared to receipt of honoraria or consultation fees from Merck.
Osama Hamdy	Declared receipt of grants and contracts from Metagenetics. He declared to be member of a company advisor board, board of directors or other similar group: Novo Nordisk Inc., Astrazeneca Inc.
George J. Kahaly	Declared no potential conflict of interest.
Peter Andreas Kopp	Declared no potential conflict of interest.
Nader Lessan	Declared no potential conflict of interest.
Ernesto Maddaloni	Declared no potential conflict of interest.
Lelio Morviducci	Declared no potential conflict of interest.
Salman Razvi	Declared no potential conflict of interest.

Biographies

Bernadette Biondi

Department of Clinical and
Molecular Endocrinology and Oncology
University of Naples Federico II
Naples, Italy

Bernadette Biondi is associate Professor at the Endocrine Division of the Department of Clinical Medicine, University of Naples Federico II Medical School, Naples, Italy. After receiving her medical degree from the University of Naples Federico II, Prof Biondi completed her internship and residency in the same university where she was a Clinical Research Fellow in the Thyroid Unit and the Endocrine Unit. She is tutorial teacher in Endocrinology and Cardiovascular Endocrinology for the students of University of Naples Medical School. Dr. Biondi's clinical research has focused on the cardiovascular effects of thyroid hormone, subclinical thyroid disease and clinical outcomes in patients with thyroid cancer. She is the author or co-author of numerous papers that appeared in such journals as *Lancet*, *Journal of Clinical Endocrinology and Metabolism*, *Annals of Internal Medicine, Circulation, Endocrine Review*, *Nature Clinical Practice in Endocrinology and Metabolism*, *New England Journal of Medicine*, *JAMA*, *European Journal of Endocrinology* etc.

John Kennedy Cruickshank

Diabetes & Nutritional Sciences Division
King's College
London, UK

John Kennedy Cruickshank is Professor of Cardiovascular Medicine & Diabetes in the Diabetes & Nutritional Sciences division at King's College, and Consultant physician at St Thomas' & Guy's Hospitals, London since 2011. He previously held a chair in Cardiovascular Medicine & Clinical Epidemiology at the University of Manchester and Consultant Physician at Manchester Royal Infirmary. He spent a further year as visiting Senior Lecturer and Consultant at the University of the West Indies & Queen Elizabeth Hospital, Barbados, before being recruited to Manchester. He coordinated an EU study on nutritional origins of high BP & diabetes in African-origin populations between rural & urban Cameroon, Jamaica & Manchester. He spent a sabbatical at the US Bogalusa Heart study. His research continues on the origin of ethnic differences in high blood pressure, diabetes and cardiovascular disease, particularly via arterial function and stiffness. That is focused on the life course (ie: early causes and mechanisms from fetal life and childhood), developing interventions & treatment strategies at all stages. He founded the Cardiovascular Trials Unit in Manchester and runs similar Trials based in the Clinical Research Facility in St Thomas' Hospital. He is a founder member of the British Hypertension Society. He sat on the Tropical Medicine & Public Health panel for the Wellcome Trust and is incoming President of the Artery Society, dedicated to research in arterial function and disease across all walks of life.

Biographies

Osama Hamdy

Joslin Diabetes Center
Harvard University
Boston, USA

Osama Hamdy is Medical Director of the Obesity Clinical Program, Director of the Inpatinet Diabetes Program, senior endocrinologist and clinical investigator at Joslin Diabetes Center in Boston and Assistant Professor of Medicine at Harvard Medical School. Dr. Hamdy research led to the first discovery that 7% weight reduction in obese patients with type 2 diabetes significantly improves vascular endothelial function and insulin sensitivity that may eventually prevent progression of atherosclerosis and coronary artery disease. Dr. Hamdy was co-investigator of two landmark NIH studies; "the Diabetes Prevention Program" and "the Look AHEAD Study". In 2005, Dr. Hamdy founded the "Weight Achievement and Intensive Treatment-Why WAIT?" program at the Joslin Diabetes Center, which is the first model of intervention to demonstrate a sustained weight reduction and an improvement in cardiovascular risk factors for 5 years. Dr. Hamdy won the 2015 Michaela Modan Award from the American Diabetes Association for his work on diabetes weight management. Dr. Hamdy chaired the task force that developed the Joslin Nutrition Guidelines. He is also a member of the Nutrition Committees of many American societies and co-chaired the global task force that developed the Transcultural Diabetes Nutrition Alogrithm (tDNA). Dr. Hamdy was nominated by the Harvard Medical School for best mentor award of 2013 and was given the Compassionate Caregiver Award of the Kenneth Scwartz Center. Dr. Hamdy has more than 150 peer-reviewed original articles, reviews, chapters and conference abstracts. He is on the editorial board of several medical journals including *US Endocrinology*, *Journal of Nutritional Disorders & Therapy* and 2-times section editor of the *Current Diabetes Report* and is on the editorial review board of many scentific medical journals including *JAMA, Diabetes Care, Lancet*, Obesity Research and the Expert Opinions.

George J. Kahaly

Department of Medicine I
Gutenberg University Medical Centre
Langenbeckstr
Mainz, Germany

George Jean Kahaly, M.D., Ph.D. currently holds the rank of Professor of Medicine and Endocrinology / Metabolism and is chief of the endocrine outpatient clinic at the Johannes Gutenberg University (JGU) Medical Center, Mainz, Germany. Dr. Kahaly directs the Molecular Thyroid Research Laboratory and has authored 231 original papers and reviews, covering both clinical and experimental aspects of endocrine autoimmunity, immunogenetics of thyroid and polyglandular autoimmunity, as well as cardiovascular involvement of metabolic disorders. Original papers and reviews have been published in the *New England Journal of Medicine*, the *Journal of Autoimmunity*, the *Journal of Clinical Endocrinology and Metabolism*, the *Journal of Nuclear Medicine*, *Endocrine Reviews*, *Nature Reviews* and *Autoimmunity Reviews*. Dr. Kahaly organized and co-chaired numerous international scientific meetings in the USA, Europe, and in Asia dealing with molecular and endocrine autoimmunity. Dr. Kahaly is currently Treasurer and principle officer of the Executive Committee of the European Thyroid Association (ETA). He serves currently on the Research Committee of the American Thy-roid Association (ATA). In the years 2007-2011, Dr. Kahaly has been active member of the Finance and Audit Committee of the ATA and in the years 2000-2006 member of the Membership and Publication Committees. Dr. Kahaly is currently the Treasurer of the "European Group on Graves' Orbitopathy" (EUGOGO), official subgroup of the ETA. In 2005, he was elected member of the Executive Committee of the German Thyroid Board. Furthermore, he is an active member of the American Endocrine Society. In the years 2009-2012, Dr. Kahaly served as Associate Editor of the journal *THYROID*, official journal of the ATA. In the years 2007-2010, he also served on the Editorial Board of the *Journal of Clinical Endocrinology & Metabolism (JCEM)*, official Organ of the American Endocrine Society. Dr. Kahaly is also member of the Editorial Board of the *European Thyroid Journal (ETJ)*, official journal of the ETA.

Peter Andreas Kopp

Division of Endocrinology,
Metabolism and Molecular Medicine
Feinberg School of Medicine
Northwestern University

Peter Kopp is a faculty member in the Division of Endocrinology, Metabolism and Molecular Medicine at Northwestern University in Chicago, USA. He has also directed the Center for Genetic Medicine (CGM) at the Feinberg School of Medicine of Northwestern University in Chicago from 2007 to 2014. Dr. Kopp has extensive clinical experience in clinical endocrinology with a focus on thyroid cancer and thyroid dysfunction. His research is focusing on the molecular pathophysiology and genetics of thyroid and other endocrine disorders. Since 2013 he is the Editor-in-Chief of the journal *Thyroid*, the official journal of the American Thyroid Association, an appointment that reflects his recognized expertise in clinical and basic thyroidology. Dr. Kopp is an author or co-author of more than 160 publications, including chapters in major textbooks such as Harrison's Principles of Internal Medicine, Werner and Ingbar's The Thyroid, and DeGroot and Jameson's Endocrinology. He has also served or is serving on numerous committees of the Endocrine Society and the American Thyroid Association.

Nader Lessan

Diabetes Centre
Imperial College of London
Abu Dhabi, UAE

Nader Lessan, MBBS, MD,FRCP is Consultant Endocrinologist & Lead in Clinical Research at the Imperial College London Diabetes Centre and Honorary Senior Lecturer, Imperial College London. Member of the Royal College of Physicians (MRCP), he is Founder & Programme Director for the Imperial Diabetes educator Training (IDET) course. Member of Editorial Board for *International Journal of Obesity*, he is reviewer for several Scientific Journals such as *British Medical Journal*, *International Journal of Obesity* and *Clinical obesity*. Dr Lessan's clinical research has focused on Medical aspects of Ramadan,Vitamin D deficiency, Biomarkers & predictors of complications in diabetes, Genetics of obesity and the Role of Adenovirus 36 in obesity and diabetes in the UAE.

Biographies

Ernesto Maddaloni

Department of Endocrinology and Diabetes
University Campus Bio-Medico
Rome, Italy

Ernesto Maddaloni qualified in Medicine at the University Campus Bio-Medico, Rome, Italy, and he actually works as a medical doctor at the department of Medicine, Unit of Endocrinology and Diabetes, at the University Campus Bio-Medico. He is involved in diabetes research as he is a clinical investigator in several international clinical trials, including trials for the prevention of type 1 diabetes and for the evaluation of cardiovascular outcomes of new agents for the treatment of type 2 diabetes. In 2015 Dr. Maddaloni completed his Post-Doctoral Research Fellowship at the Vascular Cell Biology Section, Research Division, of the Joslin Diabetes Center, Harvard Medical School, in Boston, MA, USA. His commitment to research is also demonstrated by several peer-reviewed papers in the field of diabetes and endocrinology. He has been awarded the "2014 Campus Bio-Medico Alumni Association award for the Internationalization of Research" and the "2015 Albert Renold fellowship" of the European Foundation for the Study of Diabetes.

Lelio Morviducci

Department of Diabetes
S. Camillo Forlanini Hospital
Rome, Italy

Lelio Morviducci, qualified in Medicine at "Sapienza" University in Rome and specialized in Endocrinology and Metabolic Diseases at the same University. PhD in Endocrinology and Metabolism. He attended as post-doctoral fellow the laboratories of the Diabetes Division, University of Texas, Health Science Center at San Antonio Mentor: R.A. DeFronzo. Present Position: Vice Head Physician at the Diabetic Unit of San Camillo-Forlanini Hospital, Rome Italy. Main fields of interest: Pathogenesis of insulin resistance in type 2 diabetes, with the development of methods for the study (clamp technique and others) both in humans and in animal models with the use of radiotracers.

Salman Razvi

Institute of Genetic Medicine
Newcastle University
Newcastle upon Tyne, UK

Razvi is a Senior Lecturer in Endocrinology at Newcastle University and a Consultant Endocrinologist at Queen Elizabeth Hospital. His major research interest is the action of thyroid hormones particularly on the cardiovascular system. His research focus has been on investigating the association of thyroid function on the cardiovascular system in various populations. He is the chief investigator of several projects funded by various statutory funding bodies as well as charities.

Abstracts

L1. Undiagnosed diabetes: an emergency waiting to happen

John Kennedy Cruickshank
Diabetes & Nutritional Sciences Division, King's College, London, UK

The obesity epidemic worldwide, associated with urbanization and greatly reduced physical activity and general energy expenditure, has caused an inevitable upsurge of what we currently called Type 2 diabetes. People with "pre-diabetes", or variations such as the "metabolic syndrome" die from vascular events more often than earlier than those not obese or overweight. That even affects younger women with previous gestational diabetes (GDM) or at risk of GDM.

This talk covers aspects of metabolism related to vascular function before and in T2 DM. Results from bariatric surgery & the apparent "disappearance" of what was labeled as irreversible T2 DM suggest complex patterns of local & systemic cellular & cardiovascular (CVS) disruption. We used a metabolomic approach (PLoS One. 2014 Sep 3;9(9):e103217) that identified metabolites/pathways altered prior to decline into hyperglycaemia, finding lipid molecules & disturbances that other groups have also recently reported. How fat becomes "hypoxic", with resulting mitochondrial dysfunction and the consequences for blood vessels and the heart will be discussed.

For prevention and therapy, increased physical activity first, Hopefully with weight loss of the cornerstones. Metformin and probably starting statin treatment follow. The data all indicate that T2DM management does not benefit from continuing over-focus on glycaemia, and possibly should not continue to be defined solely by it.

L2. Management of autoimmune thyroid disease

George J. Kahaly
Department of Medicine I, Gutenberg University Medical Centre, Langenbeckstr, Mainz, Germany

Autoimmune thyrotoxicosis or Graves' disease (GD) is the most common cause of hyperthyroidism worldwide. GD occurs more often in women (ratio 5:1) and has a population prevalence of 1-2%. A genetic determinant to the susceptibility to GD is suspected because of familial clustering of the disease, a high sibling recurrence risk, and the familial occurrence of thyroid autoantibodies. GD is a systemic autoimmune thyroid disorder characterized by the infiltration of immune effector cells and thyroid-antigen-specific T cells into the thyroid and thyroid stimulating hormone receptor (TSH-R) expressing tissues, i.e. orbit, skin, with the production of autoantibodies to well-defined thyroidal antigens. Stimulatory autoantibodies in GD activate the TSH-R leading to thyroid hyperplasia and unregulated thyroid hormone production and secretion. Diagnosis of GD is straightforward in a patient with a diffusely enlarged, heterogeneous, hypervascular (increased Doppler flow on neck ultrasound) thyroid gland, associated orbitopathy, biochemically confirmed thyrotoxicosis, positive TSH-R autoantibodies, and often a family history of autoimmune disorders. Radioiodine treatment for autoimmune hyperthyroidism worsens the eye disease in approximately 15-20% of patients (especially smokers). In contrast, neither antithyroid drugs nor, to a less extent, thyroid surgery have severe adverse effects on the clinical course of thyroid eye disease.

L3. Cardiovascular disease and diabetes cause or consequence

John Kennedy Cruickshank
Diabetes & Nutritional Sciences Division, King's College, London, UK

All but the most recent randomised trials (RCTs) in T2DM failed to improve mortality or cardiovascular (CVS) events by focusing treatment on glycaemia, possibly excepting metformin. The most recent SGLT inhibitor trial was really of an osmotic and Na channel diuretic. Apparent benefit on microvascular events, if at all, is slow and arguable (UKPDS at 10 years had no impact; any was on retinopathy progression; ADVANCE was on renal changes only but with 3/2mmHg BP difference & 30 intervention versus 12 "control" arm visits, etc). Accord & VA had excess mortality. Recent "Gliptin" RCTs had no vascular impact at all. Fatness, as general or central obesity is clearly key.

As T2DM (&T1) patients die from & are troubled by CVS causes, this talk focuses on vascular issues, and arterial structure & function.

This talk focuses on limitations of the RCTs and how cardiovascular methods suggest arterial function is disturbed very early in or before what we call T2DM now. Different techniques are covered and implications for Intervention discussed.

L4. Cardiac benefits of thyroid hormone therapy

Salman Razvi
Institute of Genetic Medicine, Newcastle University, Newcastle upon Tyne, UK

The cardiovascular system is very sensitive to changes in circulating thyroid hormone levels. Mild hypothyroidism (also termed subclinical hypothyroidism or SCH) is seen in up to 15% of the adult population and has been associated with adverse clinical outcomes, particularly cardiovascular disease, for several decades. However, to date, no clinical trial has been performed that has assessed whether treating SCH reduces CV events and improves health. A number of smaller RCTs suggest that there may be a small but significant reduction in atherogenic lipid profiles and other CV risk factors. Furthermore, recent data suggest that thyroid hormone levels change with cardiac disease and are associated with worse outcomes. It isn't clear, however, if these changes are adaptive to conserve metabolism or are maladaptive. Experimental as well as small proof of concept studies suggests that thyroid hormone treatment may have a beneficial role to play in some cardiac conditions.

L5. Diabetes in pregnancy

Lelio Morviducci
Department of Diabetes, S. Camillo Forlanini Hospital, Rome, Italy

Gestational diabetes (GDM), defined as a glucose intolerance resulting in hyperglycaemia of variable severity with onset during pregnancy, is increasing in incidence in many populations worldwide as obesity becomes more prevalent. Hyperglycaemia during pregnancy is associated with increased risks to mother and child. The initial criteria for the diagnosis of GDM were established more than 40 years ago and, with modifications, remain in use today. These criteria were chosen to identify women at high risk for development of diabetes after pregnancy or were derived from criteria used for non pregnant individuals and not necessarily to identify pregnancies with increased risk for adverse perinatal outcome. There is consensus that overt diabetes during pregnancy, whether symptomatic or not, is associated with significant risk of adverse perinatal outcome. However, the risk of adverse perinatal outcome associated with degrees of hyperglycemia less severe than overt diabetes is controversial. Therefore, globally agreed diagnostic criteria for GDM remain elusive. The Hyperglycemia and Adverse Pregnancy Outcomes (HAPO) study was designed to clarify risks of adverse outcome associated with degrees of maternal glucose intolerance less severe than those with overt diabetes during pregnancy and this study is the basis of the International Association of Diabetes and Pregnancy Study Groups (IADPSG) new criteria for the diagnosis of GDM. Nevertheless, questions have been raised regarding cost-effectiveness and benefit of detecting and treating GDM at lower glucose levels. Referring to therapy, nutritional therapy, followed by regular glucose self-monitoring by patients is widely recommended as an integral part of the treatment of GDM. Moreover, at least two oral agents (glyburide and metformin) can be used to intensify treatment and achieve good perinatal outcomes beyond insulin. In summary, the different viewpoints from experts and guidelines underscore the fact that there are data to support each strategy (IADPSG vs Carpenter and Coustan criteria; one-step vs two-step screening). The decision on which strategy to implement must therefore be made on the basis of the relative role of cost considerations, and availability of infrastructure locally, nationally, and internationally.

L6. Subclinical hypo- and hyperthyroidism in pregnancy

Bernadette Biondi
Department of Clinical and Molecular Endocrinology and Oncology, University of Naples Federico II, Naples, Italy

The TSH normal reference range in pregnancy is influenced by high T4-binding globulin (TBG), estrogens, human chorionic gonadotropin levels, increased iodine clearance, and enhanced type III 5-deiodinase activity of the placenta. Therefore, the diagnosis of thyroid hormone deficiency in pregnancy can be difficult. Consequently, the current guidelines suggest considering a trimester-specific reference range for both TSH and thyroid hormones during pregnancy. If trimester-specific reference ranges for TSH are not available in the laboratory, the following reference ranges are recommended: 0.1 to 2.5 mU/L in the first trimester, 0.2 to 3.0 mU/L in the second trimester, and 0.3 to 3.0mU/Lin the third trimester.

Subclinical Hypothyroidism (SHypo) in pregnant women is defined as a serum TSH between 2.5 and 10 mU/L with a normal FT4 concentration. The incidence of SHypo is approximately 2% to 3% and chronic autoimmune thyroiditis represents the most frequent cause of thyroid hormone deficiency in pregnant women living in iodine sufficient areas. Thyroid autoantibodies are positive in 5-15% of women during pregnancy. The risk of progression to hypothyroidism is increased in pregnant women with positive thyroid autoantibodies during the first trimester.

Symptoms of SHypo, if present, are typically subtle, and might be attributed to pregnancy. Obstetric complications are increased in women with untreated SHypo with a high risk of miscarriage, gestational hypertension and pre-eclampsia. Conflicting data have been reported on the association between SHypo in pregnancy and impaired neuropsychological development of the offspring. Further studies are required to determine the precise effects of SHypo on obstetric outcome and childhood neuro-intellectual development. Recent reports suggest an increased risk for gestational diabetes in SHypo.

The goal of levo-thyroxine treatment (L-T4) in SHypo is to normalize maternal serum TSH values within the trimester-specific pregnancy reference range. Adequate treatment with replacement doses of L-T4 in early pregnancy improved the outcome of pregnancy in hypothyroid women in terms of maternal and neonatal morbidity. Early fetal loss and preterm delivery were shown to be significantly reduced in adequately treated hypothyroid women compared with inadequately treated. In a large prospective study, women with SHypo treated with L-T4 had a significantly lower rate of obstetrical and neonatal complications compared with untreated women.

The 2011 American Association of Clinical Endocrinologists- American Thyroid Association (AACE-ATA) guidelines recommended the treatment of SHypo in all women positive for TPOAb. On the contrary, the 2012 Endocrine Society (ES) guidelines recommended L-T4 replacement in women with SHypo who are TPOAb+ or TPOAb-.

The 2012 ES guidelines do not recommend treatment with L-T4 in euthyroid women with positive thyroid antibodies because only 1 randomized trial has demonstrated a decrease in the miscarriage rate in euthyroid antibody-positive women during the first trimester.

Subclinical hyperthyroidism (SHyper) is defined as a serum TSH level below the trimester-specific reference range with normal levels of free T3 and T4. Subclinical maternal hyperthyroidism has not been found to be associated with severe adverse maternal or fetal outcomes, and recommendations are for monitoring SHyper in pregnancy without therapy.

WS1. Managing diabetes in Ramadan

Nader Lessan
Diabetes Centre, Imperial College of London, Abu Dhabi, UAE

Objectives

The workshop will aim to cover:

- Impact of diabetes on glucose metabolism
- Risks associated with fasting in people with diabetes
- Tips for best management of diabetes during Ramadan

Summary

During the holy month of Ramadan, Muslims practice dawn to dusk fasting. This entails abstinence from eating and drinking. Length of the fasting varied with time of the year and latitude. Although the sick are exempt from fasting, many, including patients with diabetes choose to fast, for social, cultural and personal reasons. This will bring with it risks and challenges for the patients. It is important therefore, that the medical profession is aware of these to help patients practice the fast in the safest possible manner.

The Ramadan fast represents a major change from the usual routine for the fasting individual. The interval between meals becomes much more prolonged and is typically more than 12 hours depending on latitude and timing of the year. During the fast, there is gradual glycogen depletion and a shift to gluconeogenesis and thus body fat stores become the main fuel. Glycogen stores are replenished soon after the fast is broken (iftar time).

For the patient with diabetes, this change has major implications and can become a risk, particularly, to those with type 1 diabetes. Hypoglycaemia during the fasting period and hyperglycaemia at iftar time are some of these risks that were highlighted by the landmark EPIDIAR study several years ago. Other risks include diabetic ketoacidosis, dehydration and thrombosis. Ramadan-related guidelines, including those from the American Diabetes association and the DAR (Diabetes and Ramadan) group provide helpful tips on different risk categories and treatment decisions.

For most patients with type 2 diabetes however, these risks are minimal or modest, providing there is good control and adequate medical supervision. Factors helping with risk stratification include overall glycaemic control, previous incidence of hypoglycaemia and other complications, and medication category. Those on insulin and sulphonylueas are at higher risk and will need a more thorough pre-Ramadan consultation with their doctor/diabetes educator so the necessary changes in treatment are made in preparation for the Ramadan period.

The workshop will tackle some of the common scenarios and help the delegates make informed decisions on the safety of the practice for different patient groups and what the best management decision may be for each case. The cases will include patients on different medication categories and levels of control. The workshop will be very much interactive and input from the delegates will be expected.

WS2. Algorithms for personalized therapies in diabetes

Ernesto Maddaloni
Department of Endocrinology and Diabetes, University Campus Bio-Medico, Rome, Italy

Objectives

The workshop will aim to cover:

- Discuss about the benefits and risks of patient centered approach vs guideline based therapy
- Discuss with the audience about the best strategy to choose the right glycaemic target and the right drug in patients with type 2 diabetes
- Summarize the main algorithms proposed for personalized therapy in type 2 diabetes

Summary

Type 2 diabetes is a complex disease and a complex interplay of pathological mechanisms operates involving multiple organs, such as the heart, the kidneys, the liver, the peripheral nerves and also the adipose tissue, the bone and the brain. Management of type 2 diabetes is difficult because such interplay differs in each patient and it the development of unequivocal guidelines for a multifaceted disease like type 2 diabetes is not simple. This can be even more difficult if we consider the wide therapeutic options available for the treatment of diabetes. Ten pharmacological classes of oral and injectable drugs/hormones, with more than 25 molecules associable with each other in several combinations are to date available. A non-univocal and patient-centred approach is thus currently suggested for the treatment of type 2 diabetes. Indeed, nowadays diabetologists are witnessing to a paradoxical phenomenon where the same guidelines for the treatment of type 2 diabetes suggest personalising therapies. Age, phenotype, disease duration, presence and severity of diabetes complications, frailty, patients' preferences, costs and other issues should be considered while taking therapeutic decisions.

During this workshop we will discuss about the benefits and risks of patient-centered approach vs guideline-based therapy and we will summarize the main algorithms proposed for personalized therapy in type 2 diabetes.

L7. Subclinical hypothyroidism: myths, presumptions and facts

Peter Andreas Kopp
Division of Endocrinology, Metabolism and Molecular Medicine, Feinberg School of Medicine, Northwestern University

Subclinical hypothyroidism (SCH), defined as an isolated elevation of the thyroid stimulating hormone (TSH) with normal peripheral hormones, is a clinical challenge. Estimates for its prevalence are variable because of differing upper limits of normal (ULN) for TSH and they vary by sex, age, race/ethnicity, and geographic location (0.4-16.9%). Higher rates of SCH are consistently reported in women (0.9-16.9%), as well as in older individuals (2.7-16.9%). However, the ULN of TSH increases with age, suggesting that reports of SCH prevalence in elderly people may be overestimated.

Associated clinical signs and symptoms are unspecific, and treatment recommendations remain, in part controversial. Numerous studies have, however, documented pathophysiological alterations in subjects with SCH, and multiple studies have reported an increased risk of progression to overt hypothyroidism among individuals with an elevated TSH and antithyroid antibodies. Moreover, prospective data have shown an increased risk of coronary heart disease events, heart failure, and cardiovascular mortality associated with SCH, whereas conflicting results have been found on the association between SCH and cognitive impairment, depression and fracture risk. SCH may affect pregnancy outcomes and fecundity based on some, but not all studies. Based on recent results, treatment of women identified with SCH or hypothyroxinemia during the first half of pregnancy does not result in improved cognitive outcomes in offspring through 5 years of age.

Main learning objectives include:

- It is difficult to ascertain the true prevalence of SCH.
- The use of age-adjusted definitions may be considered when assessing prevalence.
- A diagnosis of SCH does not always justify treatment, especially if TSH elevations are transient (i.e. not persistent for > 3-6 months) and if the patient lacks other risk factors for developing overt hypothyroidism.
- Treatment can be beneficial in patients with certain comorbidities and in patients with a high risk of progressing to overt hypothyroidism.
- The impact of treatment on fecundity and pregnancy outcomes remain controversial.
- Treatment of mothers with SCH during the first half of pregnancy does not seem to impact cognitive outcomes in the offspring.
- Clinical recommendations are predominantly based on epidemiological associations, rather than on evidence from randomized controlled trials.
- Treatment decisions need to be individualized.

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EXCEMED - Excellence in Medical Education

Headquarters
14, Rue du Rhône - 1204 Geneva, Switzerland

Representative Office
Salita di San Nicola da Tolentino 1/b - 00187 Rome, Italy
T +39 06 420413 1 - F +39 06 420413 677