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Editorial

Collaboration is not just the theme of this issue, it is essential to successful endocrine scientific research and the effective treatment of our patients.

ECAS (the ESE Council of Affiliated Societies) was founded during the recent meeting between ESE and its Affiliated National Endocrine Societies in Vienna, Austria. It is a considerable force for good, building networks between endocrinologists and raising the profile of our discipline amongst the biosciences. Representatives from the majority of the **Affiliated National Endocrine Societies** were present at this landmark meeting, as you can see from our cover image. You can read more about the progress of this exciting new initiative on page 13.

This issue is also the first to include a special report on the proceedings of a topical conference: in this case, the 4th European Meeting on the Management of Acromegaly, which took place in Rome in October (see pages 7–10). We hope that readers will enjoy this opportunity to read about the latest research, and we look forward to bringing you more meeting reports in future issues.

The next meeting on everyone's agenda is of course the 16th European Congress of Endocrinology (ECE 2014), in Wrocław,



Poland. The date for submission of your abstracts will soon be upon us: 13 January 2014! This issue of ESE News is bursting with information about the Congress. On page 11, Paolo Beck-Peccoz and Anna Spada bring us an insight into the most topical areas of endocrinology to feature at ECE 2014, with an emphasis on obesity and its associated conditions. Learn more about the enchanting city of Wrocław from Marek Bolanowski on page 3, and enter the spirit of ECE 2014 with a look at 'A day in the life of a Polish endocrinologist' with Beata Kos-Kudla on page 15. We look forward to receiving your abstracts and registration for the Congress.

As always, you will find the latest news from across endocrinology in these pages. I hope that it, like ECAS, serves to build bridges and bring endocrinologists closer together. Meanwhile, if you have any comments or ideas to further collaboration under the auspices of ECAS, please get in touch with me at ese.president@endocrinology.org.

Philippe Bouchard **ESE President** Co-Editor of ESE News

ESE experts undertake major review of PCOS

It is now very clear that polycystic ovary syndrome (PCOS) is much more than a reproductive disorder. Although it has principally been treated by gynaecologists until recently, it carries a significant metabolic risk that may affect women during their lifetime.

The ESE PCOS Task Force recently met in Porto, Portugal, to finalise the analysis of the questionnaire sent to ESE members and carry out a review of this disease. Under the direction of Renato Pasquali (Bologna, Italy), the PCOS Task Force is summarising its conclusions.

Both the analysis of the questionnaire on the various phenotypes of the disease across Europe and a full review of its physiology and treatment will shortly be submitted to ESE's leading journal, European Journal of Endocrinology.

Philippe Bouchard ESE President







ECE 2014: Welcome to Wrocław

16th European Congress of Endocrinology 3-7 May 2014, Wrocław, Poland

You are all invited to Wrocław, the largest city in southwestern Poland, for the forthcoming 16th European Congress of Endocrinology (ECE 2014).

At the meeting, you will enjoy hearing this year's Geoffrey Harris Lecturer, Ashley Grossman, as well as European Journal of Endocrinology Prize Lecturer Martin Fassnacht. There is also an outstanding repertoire of 7 plenary lectures, 29 symposia, 19 Meet the Expert sessions and 12 oral presentation sessions.

In addition, 4 debates will consider:

- Androgens: perspectives for treatment of metabolic syndrome and type 2 diabetes
- Mild primary hyperparathyroidism: surgery or not?
- Glycaemic control in type 2 diabetes mellitus
- Gender-specific medicine in endocrinology and metabolism

In total, 130 speakers from across the globe will discuss many different basic, translational and clinical subjects. The **Programme Organising Committee** (POC) has strived to ensure integration of basic and clinical content. The huge range of topics includes polycystic ovary syndrome, membrane lipid composition and receptor function, the endocrine changes and treatment needs in critically ill patients, pituitary development, gut microbiota in diabetes and obesity, the clinical outcome of medical intervention in disorders of sex development, brown adipose tissue, novel therapies in thyroid

cancer, obesity beyond BMI, and new hormones and endocrine tissues.

On page 11, you can read about some of the highlights of the programme, which we have selected to give you a foretaste of the meeting and to whet your appetites.

As in previous Congresses, the POC has supported the Young Investigator Symposium, which has been organised independently by the European Young Endocrine Scientists (EYES). Twelve ESE Young Investigator Awards, each worth €1500 (generously sponsored by Novartis), will be awarded to researchers who submit basic or clinical abstracts to ECE 2014. Eight ESE Poster Prizes, each worth €250 (also sponsored by Novartis), will be awarded for the best posters.

Moreover, ESE offers 50 Meeting Grants of up to €400 each for members to attend ECE 2014, and 100 ESE Basic Science Meeting Grants of up to €450 each for ESE members who are basic scientists (see www.ese-hormones.org/prizes).

Submit your abstracts by 13 January 2014, and register by the early bird registration date of 10 March to benefit from the reduced prices. For further information about the Congress, see www.ece2014.org.

We look forward to welcoming you to Wrocław in 2014.

Paolo Beck-Peccoz and Anna Spada Joint Chairs,

Programme Organising Committee

Wrocław: endocrine capital of Poland

Among many Polish academic centres, medicine in Wrocław has especially embraced endocrinology.

The 1950s saw pioneering epidemiological studies of goitre in Lower Silesia. Later, interests focused on gynaecological endocrinology, neuroendocrinology and osteoporosis, too. Many meetings (international, European and national) have been held here, but the chance to host ECE 2014 emerged just recently, thanks to the efforts of Andrzej Milewicz, and the support of many others.

We hope that you all, with interests spanning basic and clinical endocrinology, will come from across Europe and further afield to enjoy the meeting, and also be keen to learn about Poland, our culture and history.

Our city's motto is 'Wrocław - the meeting place'. Wrocław has been chosen to host the 2012 European Football Championship, the 2016 European Capital of Culture and the 2017 World Games, so ECE 2014 fits well in this list!

Wrocław has a long complicated history under Bohemian, Austrian and German influence, being quite near Prague, Vienna and Berlin. Make sure you see the 18th century market square with the beautiful town hall, the baroque university building with glorious Aula Leopoldina museum, Cathedral Island, and the many other famous churches, museums and monuments.

One is the Centennial Hall, the venue of ECE 2014. It is located in the city's green quarter, between the zoo, parks and sports grounds. Designed by Max Berg, it was built in 1913 as a cathedral of democracy and is a UNESCO World Heritage Site. Nowadays it is home to festivals, theatre and opera performances, music concerts, sports events and trade fairs. During breaks, you will be able to relax in the Japanese Garden. The Hall's capacity exceeds 5000, so all endocrinologists are warmly encouraged to attend.

See you soon in Wrocław!

Marek Bolanowski Co-chair, Local Organising Committee

Calls for nominations!

Prestigious ESE prizes

Nominations are invited by 28 February 2014 for ESE's two most prestigious awards.

The **Geoffrey Harris Prize 2015** will be presented to an established researcher in neuroendocrinology. It has a value of €12 000 and is generously sponsored by Ipsen.

The **European Journal of Endocrinology Prize 2015** is for a candidate who has significantly contributed to the advancement of the field of endocrinology through publication. It comprises a certificate and €10 000.

The winners will each deliver a headline lecture to open ECE 2015 in Dublin, Ireland, on 16 May 2015.

Nominations must be made by an ESE member. See www.ese-hormones.org/prizes for full details regarding eligibility and nomination.

ESE Nurses' Working Group

The ESE Nurses' Working Group provides a support network and resources for endocrine nurses based in Europe and internationally. It also aims to develop, promote and raise the profile of endocrine nursing throughout Europe.

Make your nominations now!

Nominations for membership of the ESE Nurses' Working Group are welcomed. They may be made by members or non-members of ESE, but those elected must be ESE members. Individuals will be selected to maintain a balance of gender, geographical spread and expertise within the Group. Nominees should also be actively involved in promoting endocrine nursing and have experience of working closely with their national endocrine nurses' groups. Working Group members serve for a term of 3 years.

Visit the nurses' page of the ESE website (www.ese-hormones.org/nurse), where you can:

- access further details about the Working Group and download a nomination form
- sign-up up to receive messages and alerts from the Working Group.

Membership 2014

You should by now have received an email with your renewal details and a link to make payment. Make sure you take this opportunity to continue receiving the great benefits of ESE membership!

- Reduced registration fees for ECE meetings and training courses
- Free online access and reduced price print subscriptions to European Journal of Endocrinology, Journal of Endocrinology, Journal of Molecular Endocrinology, Endocrine-Related Cancer and Endocrine Connections

- Access to grants, prizes and awards
- Access to the members-only section of the website, including a directory of member endocrinologists
- Tri-annual newsletter and regular email alerts to keep you up to date
- Free access to the new ESE careers database, where you can upload your CV and advertise or browse vacancies

Find out more at **www.ese-hormones.org**

ESE looks forward to your continued support!

| Fees for 2014 kept at 2013 rates! | | | |
|-----------------------------------|--------|---------|----------|
| Membership | 1 year | 3 years | Lifetime |
| Ordinary (individual) | €80 | €215 | €1280 |
| Reduced rate (including nurses)* | €35 | €95 | €560 |
| In-training** | €20 | n/a | n/a |

*The reduced rate is available for nurses, retired endocrinologists or those under 35 years of age, or individuals whose country of residence does not have a high income status (see the list at http://data.worldbank.org/about/country-classifications/country-and-lending-groups#High_income).

ESE Short-Term Fellowships

Apply by 31 May and 30 November each year!

ESE Short-Term Fellowships fund research visits of between 1 week and 3 months for early-career ESE members. They aim to promote scientific collaboration between members, and are awarded for exchanges between two laboratories in different countries only.

They cover economy class travel plus subsistence (lodging and a daily allowance) for the fellow only, but not research costs or those of any dependents. The maximum award amount is €2500.

For full details see

www.ese-hormones.org/prizes

EYES online forum now open!

The European Young Endocrine Scientists (EYES) online forum is now open. It will allow young endocrinologists, enthusiastic hormonologists, basic researchers and clinicians involved in endocrine research to:

- share information
- participate in the EYES community
- · discuss scientific questions with peers
- look for new positions and lab exchanges

• obtain information about our annual meetings and much more besides

Register for the forum now at **http://eyes.forumatic.com**





^{**}The in-training rate applies if you are studying full time for an academic qualification (not for part time study whilst also working in another role, e.g. MD students). You will need to provide written proof of your student status.



First and foremost: EYES in Rotterdam

1st Meeting of EYES (jointly with the 15th YARE Meeting)

11-13 October 2013

'A constant element of enjoyment must be mingled with our studies' Desiderius Erasmus

So ran the motto of this, our 1st Meeting of European Young Endocrine Scientists (EYES). It included over 30 presentations on cutting-edge topics. Research results, novel ideas and technical challenges prompted active discussion and scientific enjoyment amongst participants.

Three invited lectures from established researchers inspired the young audience to stick with endocrinology. Marc van

de Wetering spoke on 'Lgr5 stem cells in homeostasis and regeneration', while Onno Meijer discussed 'From head to toe: glucocorticoid hormones in adaptation to almost anything', and Sebastian Neggers considered 'How to treat an acromegaly patient: the Rotterdam experiment'.

To foster networking, participants enjoyed a sightseeing tour of the city of Rotterdam by day and night. We welcomed 70 participants from 18 different countries and received very positive feedback. We have a policy of limiting the number of delegates to enhance the atmosphere, but the high number of applicants from around the globe reflects the huge success of this meeting.

We are grateful to YARE (Young Active Research in Endocrinology, based in Germany) and the local hosts (Leonie van Houten, Anneke van den Beukel, Sabine Staufenbiel, Sanne Franck and Roxanne van Adrichem). The meeting was made possible by the generous support of the Dutch, European and German Endocrine Societies and corporate supporters.

In 2014, EYES will be in Belgrade, Serbia - see you there!

Dominik M Schulte and Maximilian Bielohuby

EYES Committee

Danish Society of Young **Endocrinologists (FYEN)**



Denmarks' society for young endocrinologists, FYEN, has a joint academic and social purpose.

FYEN aims to maintain high academic standards by providing clinically relevant courses, supporting annual meetings where new knowledge is presented and updating the educational programme for young endocrinologists.

Social activities bring young endocrinologists together at all stages of their training to encourage cohesion. They include everyone with a common interest in endocrinology, from medical students to far more experienced doctors at the

end of their training. The aim is to pass on good standards of teaching, allow space for development and encourage high academic standards.

During ECE 2013 in Copenhagen, FYEN organised a well-attended and successful social event with EYES: a great example of teamwork between national and international groups of young endocrinologists.

FYEN is a growing society, and with representatives on the Board of the Danish Endocrine Society, FYEN can influence future changes in the specialty and thus members' own academic and occupational futures. You can find out more at www.fyen-endokrinologi.dk.

ESE Summer School on Endocrinology 2014

Bregenz, Austria, 3-7 August

- Endocrinology of pregnancy and early epigenetic programming of endocrine axes
- Hormones in the ageing population
- DFG-funded ThyroidTransAct session: Thyroid hormone transport and action
- Systemic regulation of energy metabolism - from gut to brain and back
- Metabolic impact of nutrient transporters and sensors: novel developments
- Cutting edge methods, novel animal models, new hormones

See www.ese-hormones.org/education/ basicscience.aspx.

From the Science Committee:

In quiet contemplation of research

ESE's basic science activities include support for meetings to benefit basic scientists and science-oriented clinicians. One such event is the annual Mont Sainte Odile Symposium on Hormones and Cell Regulation. These events, featuring high calibre science, have take place annually since 1975 at the monastery of Mont Sainte Odile in Alsace, France.

The symposia correspond perfectly with ESE's wish to foster a European counterpart for the American Gordon and Keystone conferences. The secluded location, on top of a 760m high peak in the Vosges Mountains and far away from the distractions of the world, allows an intensive meeting where all participants stay together and have ample time for informal interaction. In particular, younger scientists have the chance to get personally acquainted with leading scientists in the field.



Mont Ste Odile, courtesy of Richard Edwards

The President of these symposia has been Jacques Dumont (Brussels, Belgium) since their inception, and there is a scientific organising committee with circulating membership. The topic varies; in 2013 it was 'Development, diseases and evolution of endocrine organs', organised by Roberto di Lauro (Naples, Italy).

The 2014 meeting (on 9–12 October) will discuss 'Inositol lipid signaling: from molecular mechanisms to human pathologies', while in 2015 the focus will be on G-protein coupled receptors. Find out more at www.ese-hormones.org/ education/basicscience.aspx. ESE will continue to provide Meeting Grants for those attending the symposia (see www.ese-hormones.org/prizes).

Ilpo Huhtaniemi

Science Committee Chair ilpo.huhtaniemi@imperial.ac.uk

Clinical Committee Update: First topics for ESE Clinical **Practice Guidelines**

In ESE News issue 21 (Summer 2013), I reported on a meeting that was held to gather expertise on the process involved in producing guidelines. Since then, the Clinical Committee has identified suitable topics for the first ESE Clinical Practice Guidelines. This has involved performing a thorough review of approximately 150 guidelines, position papers and expert opinions published in 2005-2013 by European and international societies, organisations, and expert groups.

We considered adrenal disorders, bone diseases, hyperand hypocalcaemia, endocrine hypertension, gonads/reproductive endocrinology, neuroendocrine tumours, multiple endocrine neoplasia, obesity/metabolism, pituitary and thyroid disorders. Topics were selected using the following criteria: a high medical need, a gap in current guidelines, topic not recently addressed or recommendations out of date, and novel data available. A strong European contribution to current knowledge also influenced the final choice. Areas already in planning or in preparation by other societies were excluded.

Each member was asked to propose one to three guidelines, and list the key questions to be addressed. By going



through this process, two topics were prioritised: management of adrenal incidentaloma (Scientific Chair Martin Fassnacht) and management of hypoparathyroidism (Scientific Chair Jens Bollerslev). Olaf Dekkers will be the Methodological Chair for both sets of guidelines. The groups aim to present their recommendations at ECE 2015 in Dublin.

Pia Burman

Clinical Committee Chair pia.a.burman@skane.se

Acromegaly: an update



This issue of ESE News is the first to provide you with insights into the latest endocrine developments from a recent conference, in this case on the topical issue of acromegaly.

The 4th Annual European Meeting on the Management of Acromegaly took place in Rome, Italy, on 25-26 October 2013. The event was initiated and sponsored by Pfizer, as part of their 'Endocrinology FIRST' programme. It attracted more delegates than in previous years - 224 attendees from 25 countries, a truly global representation.

Roy Gomez (Medical Director for Endocrine Care Europe, Pfizer) welcomed delegates to the meeting. Christian Strasburger (Berlin) then introduced the event on behalf of the faculty and the Scientific Planning Committee (comprising Christian Strasburger, Felipe Casanueva (Santiago de Compostela), Ezio Ghigo (Turin) and AJ van der Lely (Rotterdam)).

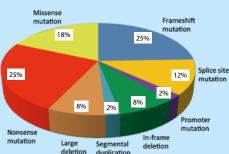
'It is striking that 40% of patients are still poorly controlled'

Sebastian Neggers

The independent programme was designed to discuss the latest information on the medical treatment of acromegaly, including sharing the perspectives of various countries, a debate on the use of cabergoline, acromegaly in pregnancy, and new treatment modalities.

Genetics of acromegaly

Lawrence Frohman (Chicago) described genetic causes of acromegaly during the opening plenum. About 5% of pituitary tumours have a familial/genetic origin. They may occur as part of a mixed pattern, in MEN-1, MEN-4, McCune-Albright syndrome and the Carney complex. As regards isolated familial pituitary tumours, a breakthrough publication in 2006 (Vierimaa et al. 2006 Science 312 1228-1230) described mutations in the AIP gene, which is believed to have a tumour suppressor role, in families in northern Finland with acromegaly and prolactinoma. Some 70 mutations of this gene have been described to date.



Types of mutation of the *AIP* gene: 70 mutations have been described to date (modified from Ozfirat & Korbonits 2010 Molecular and Cellular Endocrinology 326 71)

Typically, somatotrophinoma patients with the AIP mutation:

- are diagnosed earlier
- have larger and more aggressive tumours
- are cured by surgery in only 25% of cases
- have a higher requirement for surgery to be repeated
- · are more likely to be resistant to somatostatin analogues (SSAs)
- show poorer control after 12 months' therapy

Thus, these patients need to be watched particularly carefully. Their family members also need to be tested for gene mutations (as should those with a family history of pituitary tumour or gigantism).

Breakout

In discussions, the groups agreed that young patients (age at first symptoms below 30 or 40), giants, those with a family history of acromegaly or other endocrine tumours and patients with large and aggressive tumours that were resistant to medical treatment should have their genetic profiles investigated.

The groups also agreed that there were clinical benefits in diagnosing genetic causes of acromegaly:

- for the patient, since tumours with genetic causes of acromegaly tend to respond less well to surgery and medical treatment, so doctors caring for them would be more ready to treat the tumours aggressively and to follow them up more frequently; doctors would also search for other tumours in these patients
- for the relatives, as they have the opportunity for genetic counselling and testing, which would improve their clinical care and be useful for those who want children

Cabergoline in acromegaly - a debate

The first scientific session saw a debate on the use of the dopamine agonist (DA) cabergoline in acromegaly, moderated by John Wass (Oxford).

In favour

Philippe Chanson (Paris) spoke for cabergoline, encouraging doctors to try the drug since 'an old drug may not be so bad for you'. Its practical value has been overshadowed by the advent of the SSAs, he said.

A meta-analysis of 15 studies showed that cabergoline treatment normalised insulinlike growth factor-I (IGF-I) levels in 34% of patients. When cabergoline was added to SSA treatment, more than 50% of patients achieved IGF-I levels within the normal range. Similarly, in a prospective trial, the combination of low-dose cabergoline with low-dose pegvisomant gave significantly better normalisation rates than either monotherapy in SSA-resistant patients.

Cabergoline is comparatively cheap, is given orally and is well-tolerated. It is no less effective than SSAs and the 'usual' dose of pegvisomant, and deserves to be tried in acromegaly patients.

Against

The case against cabergoline was put by Diego Ferone (Genoa). Numerous studies have demonstrated the efficacy of SSAs as first-line therapy in newly diagnosed

patients with acromegaly, he said. By contrast, high quality studies are not available for efficacy of cabergoline.

Dr Ferone challenged Dr Chanson's interpretation of the meta-analysis of the place of cabergoline, saying that some of the studies included were of poor quality. The meta-analysis could not be used to guide therapy. He concluded that cabergoline was viable therapy only for patients with minimally active disease.

The audience's view

- It would be difficult to conduct a placebo-controlled trial, since we already have effective agents
- Cabergoline has weak efficacy, which disappears with time
- We live in an era of individualisation of patient care. Intervention with cabergoline is benign and secures an answer very rapidly; it can be helpful in individual patients
- Tailoring of therapy makes sense since patients have different types of tumour

The vote

The case for cabergoline was carried by 50 votes to 17.

Pregnancy

Philippe Chanson (Paris) reviewed what we do and don't know about acromegaly and pregnancy. Research from France considered 46 pregnant women with active acromegaly (Caron et al. 2010 Journal of Clinical **Endocrinology and Metabolism 95** 4680-4687): they produced 64 healthy babies, all but 4 born at term, only 2 with macrosomia, and no major birth defects. Those patients whose growth hormone (GH) and IGF-I were not controlled before conception were more likely to have gestational diabetes and hypertension. The pituitary tumour volume was stable in 81% of cases, and increased in just 3 women.

GH levels are variable in pregnant women; GH is secreted by the placenta but pituitary GH secretion may or may not be altered. Most pregnancies that occurred in women taking SSAs or DAs at the time of conception were uneventful, and those who took SSAs during pregnancy all delivered normal newborns.

- Ovarian dysfunction occurs in twothirds of women with acromegaly
- · Acromegaly is not a contraindication to pregnancy
- Changes in GH and IGF-I are variable, so routine monitoring is not mandatory if the pregnancy is uneventful
- No major malformations were observed
- Rebound clinical symptoms may occur postpartum
- Breastfeeding is not contra-indicated



Maxillofacial surgery

The surgical procedures that may be used to correct facial anatomy in acromegaly were described by Rutger Schepers (Groningen). The facial characteristics are prominent brow, cheekbones and jaw; separation of the teeth; vertical enlargement of the lower third of the face; and thickening of the skin of the forehead. Patients are asked to bring photographs to the surgeon to trace the evolution of their face over the course of the disease.

- Due to late diagnosis, many patients have irreversible craniofacial malformations
- These malformations can be corrected to balanced proportions with skeletal and soft tissue procedures
- Psychological counselling is very important, partly to make sure that expectations are realistic
- The aim is to balance the features, though coarsened facial aspects must be accepted
- The patient's disease must be stable before surgery can be considered

Breakout

Participants were asked how they managed acromegaly in pregnancy. First, if the patient wants to become pregnant, medication might be discontinued. Are drug treatments for acromegaly safe during pregnancy? They probably are, but pregnant women are reluctant to take drugs. In an ideal world, doctors would prefer to discontinue drug treatment and to monitor the patients' symptoms, but the decision would depend on tumour size, how aggressive the disease was, and on biochemical control. Most felt happier with DAs than SSAs, but others preferred SSAs, especially if the patient had visual defects. If the patient is well controlled on pre-pregnancy medication then that should not be changed.



Acromegaly – perspectives from different European countries

Data from Germany were presented by Christof Schoefl (Erlangen). There are about 80 million people in Germany. On average, 100 new cases of acromegaly are recorded in the register each year, which equates to about 3-5 new cases per million population per annum, compatible with data from other countries.

An analysis of 1344 patients from the German Acromegaly Register (Schöfl et al. 2013 European Journal of Endocrinology 168 39-47) looked at long-term outcome in patients with acromegaly; the survey was conducted approximately 8.6 years post-diagnosis. Of these patients, 38.8% were controlled by surgery alone, and 65.2% of medically treated patients were controlled. There was a significant improvement in long-term outcome when patients were operated on by surgeons with a higher pituitary surgery caseload.

In all, 72% of patients had normalised IGF-I levels, and one-fifth of patients were not controlled as defined by GH and IGF-I levels. Thus there is room to up-titrate medical therapy, and indeed 47% of patients with elevated IGF-I were receiving no medical therapy.

Doctors were asked to complete a questionnaire to describe their reasons for not commencing or up-titrating medical treatment in patients with uncontrolled disease. In order, these were:

- the patient refuses treatment
- IGF-I levels were variable
- compliance
- · drug holiday
- non-responders
- side effects
- cost

Ernesto De Menis (Montebelluna) gave some insights into the picture in Italy. There is inadequate provision of neurosurgery in some regions, he said. No national register of all patients is available, but an increased prevalence of acromegaly has been reported in a highly polluted area (Messina).

He presented findings of a recent Italian survey on predictors of morbidity and mortality in acromegaly, which included 1512 participants (about 45% of Italian acromegalics) (Arosio et al. 2012 European Journal of Endocrinology **167** 189–198). The mean diagnostic delay was 70 months, a figure which has not changed significantly over the past 20 years. Dr De Menis called for greater efforts to increase awareness of acromegaly in other specialities, such as rheumatology and orthopaedics. Diabetes was seen in 16% and hypertension in 33% of patients; these correlated with age and IGF-I level at diagnosis.

Patients were treated with surgery (80%), medical therapy (75%), radiotherapy (18%) and radiosurgery (6%). Among medical therapies, three-quarters of patients received SSAs; 10% DAs; SSA and DA 12%; and GH antagonist 3%. (The regulatory rules concerning use of pegvisomant are very restrictive in some parts of the country, he said.) More than two-thirds of patients received two or more types of therapy. Controlled disease, as defined by normal GH and IGF-I levels, was seen in 65%, and control was correlated with initial GH levels.

Sixty-one deaths were recorded, giving a standardised mortality rate (SMR) of 1.13. Those with controlled disease

had an SMR of 0.59, whereas those with active disease had an SMR of 1.93. Predictors of mortality were age, IGF-I level at diagnosis, GH level at followup, neoplasia and radiotherapy.

In his personal view, medical treatment of acromegaly should aim for normalisation of GH and IGF-I in the shortest possible time.

Richard Ross (Sheffield) presented the UK experience. Data from the National Acromegaly Register Investigators describe 2572 patients with a median 7.2 years of observation. Of these patients, 70% have had surgery, 45% pituitary radiotherapy and 60% medical therapy. Control of GH levels has improved with time, from 21% pre-1990 to 61% in the 2000s: pre-treatment levels were similar, and the improved control reflects improvements in treatment, he said. The most recent figures suggest GH control in more than 75% of patients on SSAs. Similarly, the percentage of patients with control of both GH and IGF-I has risen to roughly 50%.

Clinicians are not up-titrating doses of SSAs: this is partly from ambivalence about the importance of getting GH and IGF-I to normal levels, partly because of concern about side effects, and partly because of cost. DAs are generally less effective in achieving control, though results with bromocriptine are better when treatment is started early.



Acromegaly Report

New treatments for acromegaly

Annamaria Colao (Naples) discussed the SSA pasireotide. Although SSAs remain the mainstay of medical treatment, only 50% of patients in the real world have adequate biochemical control. An improved medical option is needed with a good safety profile. Pasireotide has a higher affinity for some of the different somatostatin receptor subtypes than other SSAs and so has the potential to be more effective.

A large study published in 2012 (Colao et al. 2012 Endocrine Abstracts 29 OC1.1) enrolled 358 patients with medically naïve acromegaly. Its primary objective was to compare the effects of pasireotide and octreotide in normalising GH and IGF-I at 12 months. In all, 83% of patients completed 12 months of therapy. Pasireotide was significantly superior to octreotide: the primary end-point was achieved in 31% of pasireotide patients versus 19% of octreotide patients.

Diabetes and hyperglycaemia were more common with pasireotide but the hyperglycaemia appeared to be reversible when patients were switched to octreotide. During the extension phase of the trial, GH and IGF-I levels remained suppressed in both treatment groups.

A new formulation of octreotide for oral administration was described by Christian Strasburger (Berlin). Octreotide acetate is given with transient permeability enhancer, a combination of chemical excipients that enhances intestinal absorption via the paracellular route, opening the tight junctions in the gut wall. Toxicology studies in monkeys observed no adverse octreotide-related effects at 9 months, and four clinical studies conducted in healthy volunteers demonstrated similar pharmacokinetics in patients who had the oral and subcutaneous formulations.



A phase 3 study is ongoing in 13 countries, investigating patients who respond to parenteral SSAs. Duration of the core treatment phase is 7 months, with a 6-month extension phase for patients who successfully maintain a normalised IGF-I and are willing to continue treatment. Enrolment of 155 patients is complete: the core study should have completed by the end of 2013 and, to date, the majority of patients who completed the core phase have elected to enrol into the extension phase.

Martin Bidlingmaier (Munich) described work on 'antisense' drugs, molecules that target mRNA. They are termed 'antisense' because the base sequence of these oligonucleotides is complementary to the 'sense' sequence of mRNA. The antisense strand is taken up, combines with mRNA and then blocks the translation phase of protein production.

The drug ATL1103 (Isis Pharmaceuticals) is an antisense oligonucleotide specific for GH receptor mRNA. When this receptor is inhibited, the level of circulating IGF-I is reduced. Positive results have been seen in mice, monkeys and human volunteers, with reductions in IGF-I and GH receptor mRNA in the liver. A phase 1 clinical trial in 36 healthy men showed that the treatment was safe and generally welltolerated. A phase 2 randomised, openlabel trial is ongoing. The trial will recruit 24 patients from 11 European centres, who will be given two subcutaneous dosing regimes over a 13-week period. Results should be available in 2014.

Breakout

The new treatments and treatment modalities were discussed. When asked to select the most important therapeutic need that was unmet, participants found it difficult to decide. Their responses sum up their opinions of our current position regarding the diagnosis and management of acromegaly:

- earlier diagnosis
- reliable assays and assessment criteria
- an easy tool to assess clinical control
- improved knowledge of the relationship between biochemical control and patient well-being, quality of life, morbidity and mortality
- better medical and surgical treatment of acromegaly and its co-morbidities
- new tools to assess pituitary tumours
- a drug that actually cures the disease
- lower cost drugs
- for every patient to have access to the best management, wherever they live



Please note that Pfizer Inc. was the sole sponsor of the 4th Annual Meeting on the Management of Acromegaly and the programme was developed by a Scientific Planning Committee (SPC). The SPC comprises specialists who provide scientific and planning oversight for the overall programme and content. Its members are recognised authorities in the field of endocrinology, and they receive an honorarium from Pfizer Inc. for this work. The communications of this symposium reflect the scientific opinions of the individual presenters and may not necessarily reflect the opinions of Pfizer Inc., or any of its subsidiaries, partners or employees. The publication and distribution costs of the Acromegaly Report on pages 7–10 of issue 23 of ESE News have been sponsored by Pfizer Inc. Pfizer reviewed the report for medical accuracy and regulatory compliance of medical literature purposes only and otherwise had no input into its content or publication within ESE News.

This summary of the meeting was written by Dr Rachel Arthur, freelance medical writer, on behalf of ESE.



A taste of things to come

Obesity and other highlights at ECE 2014 in Wrocław

Most endocrinologists see patients with type 2 diabetes.

We all know that type 2 diabetes is a result of complex gene-environmental interactions, with several risk factors, including age, family history, diet, sedentary lifestyle and obesity.

We are probably unaware that up to 10% of the transcriptome of each cell is rhythmically regulated by clock output genes, and perturbation of the circadian clock has been linked to various disorders, such as cancer, mood disorders and metabolic disruption. Food timing is known to have profound influences on obesity and metabolic dysfunction. For example, shift workers have a high propensity for developing metabolic syndrome, although they do not overeat, but the timing of their food consumption is altered.

Studies on mice mutants show that deficiency in specific clock genes results in an increased vulnerability to obesity, increased insulin secretion and lipid storage in adipose tissues under high fat diet challenge. That the dietinduced obesogenic phenotype of these mutants has intriguing similarities to the phenotype of the shift workers highlights the importance of diet under conditions of circadian disruption.

This is just one of the many topical issues relating to obesity and diabetes that will feature at ECE 2014, as Geet van der Horst (The Netherlands), delivers his plenary lecture 'Good times, bad times: (patho)physiology of diurnal rhythms'.

To understand and possibly prevent obesity and diabetes, we must also consider what is happening in our gut. Alterations in gut microbiota contribute to the development of metabolic diseases by increasing intestinal permeability, leading to metabolic endotoxaemia and chronic inflammation. Individuals with a low bacterial richness are characterised by more marked overall adiposity, insulin resistance and dyslipidaemia and a more pronounced inflammatory phenotype.

Interestingly, variation in the gut microbiome identifies subsets of individuals who may be at increased risk of progressing to adiposity-associated co-morbidities. There is growing interest in the potential of faecal microbiota transplantation for treatment of cardiometabolic and other extraintestinal conditions only recently associated with altered intestinal microbiota. It is not clear if changes in the microbiota are a cause or effect of obesity and cardiometabolic diseases. Symposium 12 'Gut microbiota in diabetes and obesity' will give us the chance to learn about the role of intestinal microbiota in health maintenance and the impact of re-establishing a balanced intestinal flora on the progression of metabolic disorders.

Of course, obese people are not our only concern, and ECE 2014 will embrace many areas across the endocrine spectrum. Most endocrinologists see patients with pituitary adenomas. We know the diagnostic and therapeutic guidelines for these patients and, in Wrocław, experts will discuss the long term outcome of 'cured' pituitary tumours (Symposium 11). We will also learn how to manage patients with an unusual pituitary infection, such as tuberculosis (Symposium 7 'Non-tumorous pituitary diseases').

Differentiated thyroid carcinoma is an increasingly common thyroid disorder. Delegates will share the latest news on treatment of thyroid cancer, including the small proportion of individuals who develop radioactive iodine-resistant recurrent disease. These patients have few treatment options, most of them eventually dying from their illness. Pilar Santisteban (Spain) will deliver her plenary lecture 'Advances in molecular pathogenesis of thyroid cancer - therapeutic implications', while Symposium 10 will consider 'Novel therapies for thyroid cancer'.

Importantly, as our Society is 'home' to both basic and clinical endocrinologists, ECE 2014 will offer symposia and Meet the Expert sessions focusing on both basic and translational endocrinology.

This is just a flavour of what you can enjoy in Wrocław. We look forward to seeing you there!

Anna Spada and Paolo Beck-Peccoz Joint Chairs, Programme **Organising Committee**

Submit your abstracts by 13 January 2014 Early bird registration 10 March 2014

see www.ece2014.org

Obesity and diabetes at ECE 2014

Good times, bad times: (patho)physiology of diurnal rhythms G Van der Horst Islet transplantation S Gough Hypothalamic inflammation - cause or consequence of obesity? C Yi

Obesity beyond BMI Gut microbiota in diabetes and obesity Nutrient regulation of metabolism and

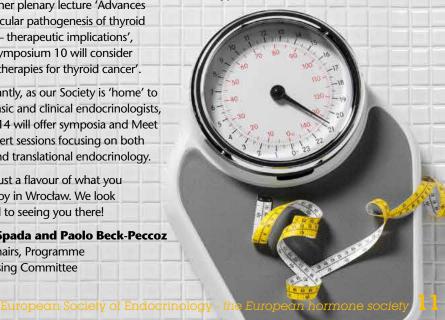
endocrine systems Gonadal hormones and obesity Brown adipose tissue Obesity prevention and treatment

Meet the Expert

Physical activity in diabetes/metabolism B Klarlund-Pedersen

Gestational diabetes mellitus / Francois Gautier Diabetes complications, what's new? P Groop

Glycaemic control in type 2 diabetes Androgens for metabolic syndrome and type 2 diabetes in men



Increased plasma FGF21 in sepsis and SIRS



Fibroblast growth factor 21 (FGF21) is a key regulator of glucose and lipid metabolism. Plasma FGF21 is increased in humans in type 2 diabetes,

obesity and non-alcoholic fatty liver disease, and in animal models of sepsis and pancreatitis. Gariani et al. found significantly raised plasma FGF21 in patients with sepsis (n=22) or systemic inflammatory response syndrome (SIRS; *n*=11) compared with healthy controls (n=12). Levels at study entry correlated positively with the APACHE II score. Plasma FGF21 peaked near the onset of shock and rapidly decreased with clinical improvement. This indicates that circulating FGF21 is increased in patients presenting with sepsis and SIRS. Further studies will determine FGF21's role in these inflammatory conditions.

Read the full article in *Endocrine Connections* **2** 146–153

PKC and ERK mediate GH-stimulated lipolysis



GH regulates several physiological processes in vertebrates, including promotion of growth, an anabolic process, and

mobilisation of stored lipids, a catabolic process. Bergan et al. used hepatocytes isolated from rainbow trout (Oncorhynchus mykiss) to examine the mechanism of GH action on lipolysis. GH promoted lipolysis, which was accompanied by GH-stimulated phosphorylation of the lipolytic enzyme hormone-sensitive lipase. GH activated the phospholipase C/protein kinase C and the MEK/ERK pathway, but deactivated JAK-STAT and the PI3K-Akt pathway. This suggests molecular mechanisms for activating the lipid catabolic actions of GH while simultaneously deactivating anabolic processes such as anti-lipolysis and the growth-promoting actions of GH.

Read the full article in *Journal of Molecular Endocrinology* **51** 213–224

Antiproliferative effect of IFNa2 associated with IL6 and IRF9



Interleukin 6 (IL6) influences progression, differentiation, survival and angiogenesis of prostate cancer (PCa). Erb et al. identified

interferon (IFN) regulatory factor 9 (IRF9) as one of the most prevalent IL6-regulated genes in two PCa cell lines. A tissue microarray with 36 PCa tissues showed that IRF9 protein expression was moderately elevated in malignant areas and positively correlated with tissue expression of IL6. Furthermore, expression of IRF9 was essential to mediate the antiproliferative effects of IFN α 2. It appears that IL6 induces IRF9 expression in PCa and is a sensitiser for the antiproliferative effects of IFN α 2.

Read the full article in *Endocrine-Related Cancer* **20** 677–689

CB1 mediates glucocorticoid effects on hypothalamic AMPK



Cannabinoids have central and peripheral metabolic effects via the type 1 cannabinoid receptor (CB1). The cannabinoid–CB1 system interacts

with several hormonal systems and can mediate their effects. Scerif et al. established a mouse model of Cushing's syndrome to investigate the role of CB1 in the tissue-specific effects of glucocorticoids on AMPK activity using CB1 (Cnr1)-knockout mice. They found that CB1 was important in the central orexigenic effect of glucocorticoid-induced activation of hypothalamic AMPK activity. In adipose tissues, changes may occur independently of CB1, but CB1 appears to alter the responsiveness of the liver and myocardial tissues to glucocorticoids.

Read the full article in *Journal of Endocrinology* **219** 79–88

Chemerin expression in humans

Based on rodent studies, it has been suggested that chemerin is an adipokine. It has recently been associated with obesity and the metabolic syndrome. Chamberland et al. analysed its physiology and expression patterns in humans. Plasma levels did not display a diurnal variation, whereas acute energy deprivation led to a drop in circulating levels of about 42%. Leptin did not affect circulating levels or chemerin secretion by adipocytes in vitro. Chemerin was expressed primarily in the human pancreas and liver. Chemerin receptor showed increased expression in lymph nodes and spleen. This outlines for the first time how chemerin expression and physiology in humans differ from those in mice.

Read the full article in *European Journal of Endocrinology* **169** 453–462



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Feature Article

Making plans for ECAS: members of ESE and the Affiliated National Endocrine Societies in Vienna



ECAS: the new voice of collaboration

A new active partnership between ESE and the ESE Affiliated National Endocrine Societies is set to strengthen bonds in endocrinology and promote the discipline internationally.

The Presidents of 37 of the 43 National Endocrine Societies that are affiliated to ESE met recently in Vienna, Austria, with the ESE Executive Committee and Committee Chairs, to discuss the relationship between the Societies and ESE. It was clear to us all that we need to kick start a transformation of European endocrinology.

Endocrinology faces competition from other organ specialty societies where hormones play a role: cardiology, neuroscience, gynaecology, fertility, metabolism, as well as neuroendocrine tumours and endocrine-related cancers. We - the National Endocrine Societies and ESE – need to communicate better about hormones and hormone-related diseases, and to talk to European and national science and health authorities.

Rather than working in parallel, ESE and the National Endocrine Societies will now work closely together.

Our major decision was to create a European Council – the ESE Council of Affiliated Societies, or ECAS. ECAS will meet regularly, co-ordinate events in Europe, improve the visibility of our specialty and maintain a directory of basic and clinical researchers and physicians.

The road ahead still looks long and challenging, but this is a very extraordinary development that can only increase the recognition of the role of hormones in medicine and physiology and the role of endocrinologists, basic and clinical researchers and physicians.

Philippe Bouchard

ESE President

ECAS's objectives

Short term

Use links between ESE and the Affiliated National Endocrine Societies to promote each other's initiatives:

- advertise ESE educational programmes to local members through the National Societies, and vice versa
- enhance the ESE website and ESE News

Offer dual membership between ESE and Affiliated National Endocrine Societies

Collaboration with ESE at national meetings, on the invitation of local societies

Use of ESE materials and speakers at regional and national meetings, to promote awareness of ESE

Develop a plan to hold an annual European Hormone Day

ECAS will:

- Provide a network to promote endocrine development and education in ESE's geographical area
- Give endocrinology an international presence, through the relevant national and international bodies
- Serve as an open forum for discussion of shared issues
- Develop collaborative projects to benefit endocrinology
- Increase the benefits of Affiliated Society membership

What next?

A working group will determine how best to make progress, with a communications plan to keep all parties informed, and developing business cases where necessary (e.g. for dual membership). Some short term objectives related to communications have already been implemented.

The next meeting of ECAS will be held during ECE 2014 in Wrocław, Poland, on Saturday 3 May 2014. You can contact ECAS via the ESE Office (info@euro-endo.org).

Long term

Develop a European Accreditation **Programme**

Compile a map of European endocrinology, to show centres of expertise and patient demographics

Define endocrinology within the biosciences community, to raise awareness of the subject in the public

Develop centres of excellence in endocrinology

Create a register for rare diseases Provide an e-learning platform



Pharaoh Akhenaten

An endocrine enigma?

Images of Pharaoh Akhenaten can be found in many endocrinology textbooks, particularly those dealing with acromegaly and pituitary disorders. Of course, we will never be able to confirm his diagnosis, but many 'experts in the field' have felt the urge to speculate on the (endocrine) disorders suffered by him.

Pharaoh Akhenaten, or Amenhotep IV, was a ruler of the 18th Dynasty (circa 1550-1292 BCE). He is also considered to be the father of the famous Pharaoh Tutankhamun.¹ Akhenaten and his Great Royal Wife, Nefertiti, had six daughters. He died relatively young. Generally, the physical condition of the pharaohs was weak, presumably because of extensive in-breeding, and because many suffered from tropical diseases like malaria and other plagues.

Why an endocrine diagnosis?

Akhenaten was depicted with an elongated head, prominent upper jaw, prominent lips, hollow cheeks, almond-sized slit eyes, large ears and an impressive long neck (see pictures). Furthermore, the images generally show an 'androgyne' phenotype with a hollow chest, gynaecomastia, a pot belly, wide hips, broad thighs and thin lower legs. He was 1.60m tall and had a slight vertebral scoliosis.

As early as 1924, a hypothalamic abnormality was suggested for Akhenaten,² and in some cases this diagnosis was also noted in combination with hydrocephalus. Other suggested endocrine diagnoses included acromegaly,3 osteomalacia, lipodystrophy, Marfan syndrome, Klinefelter syndrome and the androgen insensitivity syndrome.

In 1980, Paulshock postulated a familiar gynaecomastia syndrome of unknown origin.4 In 1999, Cattaino & Vicario5

suggested that Akhenaten would have suffered from dystrophia myotonica and, in the spectrum of this disease, hypogonadism in combination with gynaecomastia could occur later during life.

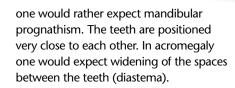
In 2009, Braverman and co-workers postulated that Akhenaten's phenotype could be best explained by the combination of an 'aromatase excess syndrome' and sagittal craniosynostosis, which constitutes a variant of the Antley Bixler syndrome.6

The typical characteristics of the depicted head of Akhenaten can be also found in some of the images of his daughters, and his feminine body shapes and gynaecomastia can also be seen in pictures and sculptures of his ancestors and those of Tutankhamun.

Examining the evidence

The mummified remains from tomb KV 55 in the Valley of the Kings probably belong to Akhenaten. This mummy is currently on display in the Egyptian Museum in Cairo. Its pelvis is definitely not feminine. The diagnosis of hydrocephalus could also be excluded from the reconstruction of the skull. Furthermore, the sella turcica was not enlarged (though this part of the skull was greatly damaged during removal of the brain via the nostrils during embalming). In addition, Akhenaten produced offspring, but acquired hypogonadism occurring at a later stage cannot be ruled out.

In 2010, Hawass and colleagues performed extensive anthropological, radiological and molecular genetic studies in 11 mummies, including that of Akhenaten.¹ They could not find evidence for any syndromic familial disorder. The skeleton did not show pectus carinatum or pectus excavatum, but did show mandibular retrognathism. In acromegaly,



In conclusion

The diagnostic controversies surrounding Akhenaten are based on pictures, sculptures and remnants which have been attributed to him. The pictures and sculptures of Akhenaten dating from the 14th century BCE were decorated and changed in a way that has led to confusion and speculation about medical and endocrine causes in the 20th and 21st centuries CE. These decorations and changes were probably made to symbolise and support the religious conviction that Akhenaten was both the father and the mother of humanity.

A number of hypothesised endocrine disorders can be excluded on the basis of clinical, historical, anthropological and/or genetic data. In fact, there is presently no solid ground to support any suggestion that Akhenaten had a specific – endocrine or pituitary - disorder. Therefore, the publication of his picture on the covers of books and leaflets dealing with acromegaly is currently not justified.

Wouter de Herder

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A Day in the life of...

A Polish endocrinologist

Wake up. Exercise – cross-trainer and Tibetan rites – they give me strength for the whole day. For breakfast it's eggs or sausages – yet again! (Two of the meals my husband can cook.) Still, better than nothing.

I leave for work. This is a brief moment for concentration during a hard morning. I make some phone calls to all those who are already awake.

At the hospital, I take a first glance at today's to-do list. It's a long one. Then it's time for a briefing to determine what happened during the most recent shift, how many 'emergency' cases could not be put in the admission queue, and who will handle the students and consultations. Complete a literature overview: 'What's new in endocrinology'.

08.30

Work on a radiology consultations or tumour board: solve unsolvable problems, co-ordinate the handling of patients. Again, those with neuroendocrine tumours are the most problematic. Next it's time to run grand rounds, together with fellows and students. The students' youthful enthusiasm and their eagerness to help others compensate for the gaps in medical knowledge...

Taking care of everything at once – the current affairs of the clinic, scientific research planning (everyone is complaining that they are short of time) and co-organisation of the hospital's modern diagnostic base (to make the lives of patients and doctors easier). Why can't the phone stop ringing! Another call means another task. How many issues can one tackle simultaneously?

12.00

In the outpatient clinic, the women with hyperthyroidism make a lot of fuss, as usual. Don't those thyreostatic drugs actually work? Patients with neuroendocrine tumours patiently wait for their dose of somatostatin analogues, trying to ease the tension in the waiting room, and to convince the usually depressed hypothyroid women that life can be enjoyable.

It's time to give a lecture for students, at the lecture hall in the oldest historical part of the Medical University, nearly 40 km from the hospital. I eat lunch in the car (I even keep a set of



cutlery to hand; only use of the knife can be quite challenging when you are speeding down the highway). In the meantime, I deal with the phone calls I was unable to handle on my way to work.

16.30

I arrive at the Endokrynologia Polska editorial office. The most important person, the editorial assistant, has scanned all the incoming papers. Now they have to be carefully assigned to reviewers. Replies need to be sent to all disappointed submitting authors with the negative opinion of the editorial office, which sometimes fails to see a particular paper as a legitimate Nobel Prize candidate.

Time to work at the private practice – in a peaceful and friendly atmosphere, without any of the pressure or queues of national

21.00

Home at last. Make a quick call to my daughter Ania to apologise for not answering calls from her all day. Then it's time to deal with some paperwork on my desk. I need to finish an article I promised a long time ago, review a few papers (they've been waiting far too long again), and reply to some letters. I still need to prepare a lecture. I'm leaving in 2 days (there will be a few hours during the journey for finishing touches).

00.00

The inbox is flooded yet again. I need to reply to the most important emails and leave the rest for tomorrow.

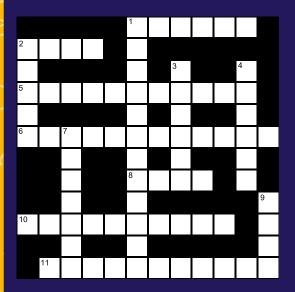
My typing disturbs my husband's sleep (he claims he can hear it in every part of the house). It's probably time to call it a day another one will begin soon.

Beata Kos-Kudla

Professor of Medicine Medical University of Silesia Katowice, Poland bkoskudla@sum.edu.pl



WIN! WIN! WIN! Send us your solutions to this topical puzzle for your chance to win one of three €20 Amazon vouchers! Let us have your answers, along with your name and email address, by emailing them to info@euro-endo.org or faxing them to 0044 1454 642222. The first three correctly completed puzzles that we receive will win the prizes!



Answers to the puzzle in issue 22

ACROSS 1. Abstract, 3. Graph, 6. Property, 7. Peer, 9. Archive, 11. Introduction, 12. First author, 17. House, 18. Reviewer, 19. Editor DOWN 2. Title, 4. Preprint, 5. Impact factor, 6. Plagiarism, 8. Letter, 10. Citation, 13. Hash, 14. Reject, 15. Paper, 16. Free EXTRA CHALLENGE Conflict of interest

Endo Prize Puzzle

Across

- Myenteric ______: part of the nervous system controlling gut motility, discovered by Leopold Auerbach in Breslau (6)
- Kazimierz ____: biochemist widely credited as the father of vitamin therapy, born in Warsaw, 1884 (4)
- 5. Alpha cell tumour (11)
- 6. Anagram: oestrone test? Male hormone! (12)
- 8. Chelating agent (4)
- 10. Maiden or birth name of the first woman to win a Nobel Prize, born Warsaw 1867 (10)
- 11. Branch of medicine devoted to the female (11)

Down

- Female hormone first purified in Breslau by Ludwig Frankael, Karl Slotta et al. at the beginning of the 20th century (12)
- 2. ____ or flight? Behavioural response to stress (5)
- Stefan Kopec pioneered this branch of endocrinology when at Warsaw, via his studies on metamorphosis (6)
- 4. Scale of physical development based on primary and secondary sex characteristics (6)
- 7. Polish-American Nobel Laureate, awarded 1977 for 'discoveries concerning the peptide hormone production of the brain' (7)
- 9. Diagnostic scan developed by 10 across (1,3)

Did you know?

Fast-paced hypothyroidism

Since the 1984 Los Angeles Olympic Games, when Carl Lewis matched Jesse Owens' record of winning four gold medals in four events during one Olympiad, Lewis had demonstrated seemingly boundless energy and strength. As an Olympic and World Championship medallist in the long jump, the 100 and 200 metre sprints, and the 4 x 100 metre relay, the record-setting Lewis won the attention and admiration of fans around the world.



However, 5 months before he was to compete at the relatively old age of 35 in his fifth and final Olympics, Carl Lewis received some unexpected news. Blood tests ordered by his endocrinologist revealed that Lewis had hypothyroidism. In his book, *One More Victory Lap*, Lewis says he felt, '...a moment of panic... when I wondered if my season was about to be declared over...' Though he did not match past performances, his third-round leap of 8.50 metres won gold at the 1996 Atlanta Olympics!

Save the Dates!

For more information about any ESE event see www.ese-hormones.org/meetings.

ESE Basic Endocrinology Course

15-17 January 2014

Amsterdam, The Netherlands

14th ESE Postgraduate Training Course in Clinical Endocrinology

10-12 April 2014

Vilnius, Lithuania



16th European Congress of Endocrinology (ECE 2014)

3-7 May 2014

Wrocław, Poland

ESE Summer School on Endocrinology 2014

3-7 August 2014

Bregenz, Austria

17th European Congress of Endocrinology (ECE 2015)

16-20 May 2015

Dublin, Ireland

Deadlines:

13 Jan 2014

ECE 2014

Abstract submission

28 Feb 2014

Geoffrey Harris Prize 2015 and European Journal of Endocrinology Prize 2015

Nominations

10 Mar 2014

ECE 2014

Early bird registration

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