Dear Colleagues,

When one reflects on the investment IHS makes in education and in the growth of junior clinician scientists from around the world, the measure of scope and impact is impressive and we should all be proud of our society. Our headache masters schools (HMS) have trained thousands of clinicians throughout Asia, South America, and India – and Japan and India now independently direct their own HMS reaching even more providers. We have supported three iHEAD and three International Headache Academies in Europe and North America in an effort to train and mentor future leaders in the field. We continue to support and sponsor large educational meetings in the Middle East and North Africa, as well as in Asia through the Asian Regional Congress on Headache (ARCH). As outlined by Stefan Evers, we are supporting young clinician scientists through our short-stay scholarships, pioneer programs, and travel grants and helping our colleagues with regional meetings by supporting visiting IHS professors. Of course our flagship journal continues to thrive and is innovating by offering for the first time an open-access silhouette companion to Cephalalgia.

Several of the major priorities which came out of our strategic planning meeting in 2015 are coming to fruition already. Our priority to increase our support for research and stronger strategic partnerships with our Affiliate Member Societies (AMS) and other leading organizations is happening. Instead of one, we will be supporting three fellowships in 2017. Two will be 1–2 year clinical or basic science research scholarships and one will be co-sponsored by IHS and the American Brain Foundation. The goal will be to facilitate the training of young clinician scientists and award the highest quality research.

With regard to patient advocacy, stronger collaboration with our AMS and other leading organizations, IHS will bring together the leadership from AMS, patient advocacy groups, World Health Organization (WHO), International Association for the Study of Pain (IASP), World Federation of Neurology (WFN), American Academy of Neurology (AAN), European Academy of Neurology (EAN), European Medicines Agency (EMA), Food and Drug Administration (FDA), Lifting the Burden, and pharmaceutical and biotechnology companies, in an unprecedented effort to discuss and determine patient advocacy priorities that are both international and uniquely regional in scope. The goals are to identify opportunities for patient advocacy in each country and the avenues by which leading professional medical societies and industry can help facilitate and support these efforts. This will include devising strategies for educational public awareness campaigns, presentations for employers and regulatory bodies, and mechanisms to expand and improve patient access to healthcare services and treatments that have proven to be safe, effective, and improve patient outcomes and quality of life.

Finally, the board prioritized the updating of established and the development of new clinical trial guidelines. I am pleased to say that the board has approved a guidelines committee which will be chaired by Cristina Tassorelli. Clinical investigators, industry, and
Since the last IHS Newsletter the 5th European Headache and Migraine Trust International Congress (EHMTIC) meeting has been held in Glasgow which was a major event for the headache world. The Board of Trustees met in Glasgow and had further telephone conferences in October and November; any items members wish to be discussed by the Board are welcome.

Membership
Membership numbers remained stable during 2016 with over 1,200 paying members, 65% of whom are members through their Affiliate Society. In addition, there are almost 900 Associate Members, specialists living in the 100 developing countries who receive free access to Cephalalgia and the IHS website. The Board started an initiative to remind previous members to renew their membership; this is an ongoing project.

The Board welcomed the Colombian Headache Society and the Ukrainian Headache Society as new Affiliate Member Societies of IHS. This increases the total number of countries represented in IHS to 49.

Cephalalgia update
The Board has agreed a new development for Cephalalgia. The Editor-in-Chief, Arne May, proposed an online-only, open-access silhouette title to Cephalalgia and the Board is currently in negotiations with the publisher. Formally, this will be a new journal with a new title and Cephalalgia will remain as the main society title. Details of this new development are still under discussion and IHS members will be informed about the progress soon.

Educational activities and Fellowships
The 6th ARCH meeting was held in South Korea in October this year. Our Asian colleagues organised another very successful meeting to increase awareness of headache and to train headache specialists in the Asian region. A report is included in this newsletter. IHS also supported the Baltic Headache Days in Lithuania.

IHS received 102 applications for travel grants to the EHMTIC meeting in Glasgow. Twenty-seven grants were funded, including three from IHC 2015 who were denied visas to Valencia. The grant recipients participated in the EHMTIC scientific programme and regulatory authorities look to IHS clinical trial guidelines and this effort will harmonize outcome measures and facilitate drug development around the world.

Finally, the Scientific Program Committee, co-chaired by Shuu-Jiun Wang and Cristina Tassorelli, have completed the agenda for IHC 2017 and you will not want to miss this event in one of the world’s most beautiful cities. The educational program is extensive and the breaking science and clinical trial results promise to be memorable. I truly hope to see as many of you as possible at IHC 2017. Until then, I wish you all a peaceful holiday season and the best of health and success in the new year.

Report of the Honorary Secretary
Stefan Evers

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presented their research. The number of applications for this type of grant is increasing and is a very successful initiative of IHS.

Another successful 3rd European International Headache Academy (iHEAD) was organised by Peter Goadsby and his group in London. Young researchers from Europe presented and discussed their research and were supervised by senior headache experts from Europe. A report is included in the newsletter. IHS received funding for this meeting and will try to continue this tradition of educational meetings for young scientists.

Two applicants have been offered funding to support their participation in the Danish Masters programme.

Visiting Professorships have taken place in Sri Lanka and Bangladesh.

International Headache Congresses (IHC) 2017 and 2019
The 18th IHC 2017 will be held in Vancouver, 7–10 September. The official Congress website has been launched www.ihc2017.com and the scientific programme has been finalised. All further information can be found on this website. Key dates for the IHC in 2017 are:

- abstract submission deadline: 6 March
- early bird registration deadline: 20 June
- late-breaking abstract site open: July

The congress in 2019 will be held in Dublin, Ireland, from 8–11 September.

Update on ICHD-3 and ICD-11
The alpha version of the International Classification of Headache Disorders (ICHD)-3 is being finalised. The Classification Committee held its last meeting during EHMTIC. Some changes to the beta version of the ICHD-3 were discussed and the final alpha version will be ready soon. It is planned that the ICHD-3 alpha can be presented during the IHC in Vancouver in September 2017 and will be published in the first issue of Cephalalgia 2018.

Finances
IHS is in a secure position financially, with stable income and funding. Therefore the Board has agreed that the membership fees will remain the same in 2017.

The 2017 budget has been approved by the Board with over £380,000 budgeted for educational and committee activities and grants.

Stefan Evers everss@uni-muenster.de
Delegates from 27 European countries attended a highly interactive and intensive headache programme

**Membership renewal**

* Members – It's time to renew your membership for 2017 *

Renew today to make sure there is no interruption to your membership benefits

**IHC 2017, Vancouver – reduced registration fee for IHS members!**

Visit the IHS website, login, and click on the orange Renew banner

Or

AHS, BASH, Danish Headache Society, SISC, SBCe, Turkish Headache Society members contact your local society

If you are unsure if you have renewed you can see your 2017 membership status in the orange login box

**Report from the 3rd International Headache Academy (iHEAD)**

Ron van Oosterhout

From Friday 21 October until Sunday 23 October 2016 the 3rd International Headache Academy (iHEAD) Europe was held at King’s College, London, UK. The 3-day programme offered a highly interactive and intensive overview of headache including pathophysiology, diagnosis and management of different headache syndromes to young clinicians and researchers enrolled in the field of headache. A brief overview with some highlights.

A total of 85 delegates were present, including Neurology residents, Headache Medicine fellows, and MD or PhD clinicians / researchers. Besides 19 participants from the UK, 66 had travelled from an overwhelming 27 other European countries to attend the event at King’s College campus.

The first day started off with four interesting case presentations by delegates, followed by an interactive discussion. During the second part of the day, guest-speaker Professor Stephen McMahon (Wolfson Centre for Age Related Diseases, King’s College, London) gave a lecture on pain, addressing pathophysiologic mechanisms and research methods which his group has been using, studying mostly non-headache pain. In the evening, a social programme was organised at Shepherds Hall at nearby Saint Thomas’ Hospital to stimulate networking among the delegates over dinner.
Delegate participation was encouraged through poster and paper presentations and debates

On the second day, four delegates each presented the paper they felt was most important for their field during 2015–2016. A wide range of papers was presented, from clinical topics including headaches caused by intracranial hypertension, to new insights in clinical neurophysiological and genetic aspects of headache research. The invited speaker on the second day was Professor Steven Williams (Department of Neuroimaging, King’s College, London). He guided the audience through the fundamentals of functional neuroimaging, and how to best apply these techniques in pain research. In the afternoon, four different interactive workshops for smaller groups were offered in parallel sessions. Professor Tobias Kurth taught about how to perform outstanding epidemiologic studies in headache. Dr Phillip Holland provided guided laboratory visits where experiments were in progress. The third workshop gave delegates the opportunity to improve history taking in patients with trigeminal autonomous cephalalgias, and was moderated by Professor Peter Goadsby. The fourth workshop provided participants with a platform for presenting a poster and receiving feedback on content and presentation skills, supervised by Professors Messoud Ashina, Lars Edvinsson and Arne May.

Later that day, two debates were held, in each of which two teams of three delegates argued in favour of or against the proposition. The first proposition was ‘CGRP monoclonal antibodies will not be useful preventive migraine treatments’ and this debate was won by the mixed Romanian-Dutch-Swiss team who argued pro. The second debate on the proposition ‘Tension-type headache does not exist’ was won by the Portuguese-Serbian-UK team arguing against.

On the last day, two morning sessions provided the delegates with useful tips and tricks on how to write a research paper by Professor Arne May, and on how to very critically read or review a paper, chaired by Professor Michel Ferrari. Hereafter, the last session of the programme gave insight in the strategy of the Danish Headache Group in reaching out to both the lay public and medical professionals, in order to increase awareness on headache in the Danish society.

On behalf of all participants, I would like to thank the local organising committee (Professors Goadsby, Ferrari, Ashina, May and Jean Schoenen) as well as the International Headache Society for supporting this event. To all young clinicians and researchers who are working in the headache field who could not attend this time, I would suggest to keep an eye open for future iHEAD events.
EHMTIC abstracts published in Cephalalgia

The hypothalamus has been highlighted as a region of overlap of sleep and migraine pathways

Attenuation of inflammatory responses via oestrogen and effect of oestrogen on CGRP levels in the trigeminal ganglion

Summary of scientific highlights from EHMTIC 2016
Dara Bree (USA), Olivia Begasse de Dhaem (USA) and Marie Deen (Denmark)

The 5th European Headache and Migraine Trust International Congress (EHMTIC) gathered nearly 1,000 headache specialists from 69 countries for 4 days in Glasgow, Scotland. The following is a short summary of the highlights from plenary lectures, symposia and poster sessions during the congress. The abstracts can be found at http://cep.sagepub.com/content/36/1suppl and can be cited as Cephalalgia 2016; 36 (1 suppl): 1–185.

Sleep and migraine
The link between sleep and headache was a hot topic at this year’s EHMTIC with both a plenary session and several posters focusing on the topic. Phillip Holland from King’s College London showed that the migraine and sleep pathways overlap in the brain, with the trigemino-cervical complex (TCC) having projections to the periaqueductal grey, rostral ventromedial medulla, locus coeruleus (LC), thalamus, and hypothalamus.1 Interestingly the hypothalamus, the master clock of sleep, also seems to be a key region in the generation of migraines.2–5 In mice, chronic inhibition of the LC, which plays a key role in both sleep and arousal, pain processing, trigeminal nociception and migraine, led to decreased neuronal nociceptive activation in the TCC, underlining the importance of this brain region in headache (Poster ref 121). Not only sleep, but also light and hence the circadian rhythm play a role in migraines.6–8 Triptans both alleviate trigeminovascular pain and blunt the circadian response to light.9 A mouse model of circadian disruption (CK1δ loss of function mutation) was found to have lower cortical spreading depression threshold and higher levels of mechanical hyperalgesia.10

There is a bidirectional relationship between migraine and insomnia.11 A pilot study showed long-term reduction in headache frequency in chronic migraine patients who underwent cognitive behavioural therapy for insomnia (CBT-i).12 Comorbid chronic pain, depression, and/or anxiety in migraine patients are associated with higher insomnia severity index scores regardless of migraine frequency and severity, hence this patient subgroup is a target for further CBT-i studies (Poster ref 188).

Sex hormones and migraine
Diana Krause presented findings detailing the role of oestrogen in the trigeminovascular system and in the initiation of migraine attacks. Oestrogen binds to the oestrogen receptors (ERα) on cerebral vessels to increase the release of endothelial nitric oxide, a potent vasodilator, and subsequently modulate vascular tone,13,14 In cerebral arteries, levels of oestrogen can determine the effects of cyclooxygenase inhibition resulting in either vasodilation or vasoconstriction.15 Oestrogen also attenuates interleukin-1 (IL-1) induced inflammatory responses in rat cerebral blood vessels. Ovariectomised female rats that were treated with oestrogen displayed no IL-1 induced increased COX-2 arterial endothelium levels compared to ovariectomised rats not treated with oestrogen.16 In humans, changes in oestrogen status appear to influence onset of migraine attacks. Oestrogen receptors were also found in the human trigeminal ganglion where they are co-localised with calcitonin gene-related peptide (CGRP) in 50% of examined cells.17 In rats, decreased oestrogen levels
Is the blood-brain-barrier intact in migraine patients?

Historically, both the blood-brain-barrier (BBB) and the brainstem have been investigated in migraine. Two MRI studies of migraine with and without aura suggested that the BBB is not disrupted during spontaneous migraine attacks (Poster refs 175, 355). Findings in the brainstem of migraine patients included increased perfusion during attacks with aura (Poster ref 355), a positive correlation between 5-HT1B receptor binding and days since last attack (Poster ref 405), and structural alterations (Poster ref 172).

In a longitudinal MRI study with scans done every morning on 31 consecutive days in the same migraine patient, hypothalamic activity and functional connectivity between hypothalamus and the spinal trigeminal nuclei increased during the 24 hours preceding the next migraine attack, suggesting that hypothalamus is involved in generation of premonitory symptoms (Poster ref 201). Another fMRI study demonstrated that metoprolol might play a role in migraine prevention via a central effect in hypothalamus (Poster ref 153).

Other studies reported that nitroglycerin (Poster ref 044) and PACAP38, but not CGRP induces premonitory symptoms in migraine provocation models (Poster ref 327), suggesting different migraine inducing mechanisms of action of these substances.

CGRP and migraine

In the Jes Olesen EHF Lecture, Lars Edvinsson gave us an excellent overview of the story of CGRP from discovery to migraine therapy. In his early studies Professor Edvinsson found that activation of the trigeminovascular system led to release of CGRP in the extracerebral circulation. Later, studies showed that CGRP was increased in the jugular vein, but not the cubital vein, during migraine attacks. These studies laid the ground for the development of the first migraine specific preventative drugs, which are currently being tested. Pierangelo Geppetti from the University of Florence presented work describing the important roles of transient receptor potential cation (TRP) channels in the regulation of CGRP in the trigeminovascular system. TRPA1 or TRPV1 channel activation can lead to CGRP release, nociceptor activation, and subsequent migraine or cluster headache induction. Indeed, the mechanism behind the headache tree (Umbellularia) is thought to involve meningeal neurogenic inflammation via a TRPA1 mediated process. Antoinette Maassen van den Brink described the neurovascular effects of CGRP in cerebral vessels and the mechanism of action of triptans and gepants in terms of direct neuronal activation, vasoconstriction and inhibition of neuropeptide release. Gepants, which inhibit actions of CGRP, display poor brain penetration and therefore are thought to exert their actions in the periphery such as dural mast cells, the trigeminal ganglion or extracerebral vessels.

With several companies presenting promising data on the efficacy and safety of CGRP antibodies or CGRP receptor antagonists, studies have further underlined the hope that these drugs will be available as a preventative treatment for migraine in the near future (Poster refs 110, 112, 397, 410, 411, 412, 423). For example, monthly AMG 334 injections in episodic migraine patients is associated with a decrease in mean monthly headache days for at least the first year of treatment (Poster ref 397). Furthermore, AMG 334 does not seem to cause coronary artery vasoconstriction even during concomitant triptan use (Poster ref 122).
New players and other considerations in migraine treatment
Lasmiditan, a new 5-HT1F agonist, was shown to inhibit dural-evoked responses from the TCC in rats (Poster ref 434) and has proven efficient for acute migraine therapy in a phase III double blinded randomised trial including 2,231 patients (SAMURAI trial). This drug has no effect on human arteries in vitro (Poster ref 329) and the effect is thus independent of vasoconstriction and can be used in migraine patients with cardiovascular risk factors or diseases. A multidisciplinary group came up with a pilot protocol using Brainlab stereotactic system to inject Botox directly into the sphenopalatine ganglion for prophylaxis in intractable chronic migraine patients (Poster ref 358). The home Caloric Vestibular Stimulation Device is associated with a decrease in headache frequency in episodic migraine patients by administering time-varying thermal waveforms to patients’ ear canals to induce oscillations in the pulsatility index and heart rate in the B wave frequency (Poster ref 218). In chronic migraine, discontinuation of opioids results in decreased headache frequency and severity (Poster ref 217), underlining the importance of not prescribing these drugs for migraine treatment. This issue was also emphasised by Hans-Christoph Diener in his EHF Special Award lecture. A biochemical study on chronic migraine suggested that adipocytokines, which mediates inflammation, are involved in migraine chronification (Poster ref 183). The effect of Botox in treatment of chronic migraine was confirmed in several reports (Poster refs 143, 159, 231, 370).

Cluster headache
This year’s winner of the Giuseppe Nappi cluster award, Shuu-Jiun Wang, reported that cluster headache (CH) patients have altered functional connectivity between hypothalamus and cortical and cerebellar regions (Giuseppe Nappi Cluster Lecture). Other studies showed that the main sleep disturbance in CH patients lies in the ultradian periodicity (most cluster attacks occur during non-rapid eye movement sleep), not in the circadian rhythm. An association between a single nucleotide polymorphism in the CLOCK gene, a basic driving force for circadian rhythms, and CH was found in a Swedish population (Poster ref 256). It is best to give CH patients melatonin to compensate for their impaired melatonin nocturnal secretion hours before their sleep midpoint as even small doses of melatonin cause significant phase shifts. Male CH patients have a higher prevalence of negative lifestyle factors compared to both female CH patients and controls. This increases the risk of comorbidities which could restrict treatment opportunities (Poster ref 141). Different possible treatments for CH were presented, including vagal nerve stimulation (Poster ref 369), Botox (Poster ref 226), and SPG stimulation (Poster refs 299, 306, 308, 312, 313).

Headaches attributed to pituitary disease
Marta Korbonits from Queen Mary University of London and Miles Levy from Leicester Medical School gave two interesting talks on endocrine disorders and headache, a highly relevant topic as up to 40% of pituitary adenoma patients suffer from headaches. However, the size of the pituitary adenomas does not seem to be associated with headaches, which puts the traditional thought that headaches attributed to pituitary disease originate from a structural issue of dural extension into question. In addition, the studies on headache and cavernous sinus invasion by pituitary tumours are conflicting. Another theory is that the headaches are caused by secretion of a neuropeptide affecting the trigeminal vascular system or a paracrine diffusion from the hypothalamus. Many inflammatory peptides are found in the pituitary including substance P, CGRP, NPY, VIP, and PACAP, but no association with headaches attributed to pituitary disease has yet been found. Lanreotide and octreotide can alleviate some patients’ headaches. This might suggest that pituitary adenomas sometimes secrete chemicals that activate the trigeminovascular system and that the administered somatostatin antagonists act both on the somatostatic receptor 2.
Detoxification without the opportunity of rescue medication is a factor for a better outcome in MOH

Other secondary headaches
Secondary headaches were also a big focus at EHMTIC. An animal model of medication overuse headache (MOH) showed that mice who underwent daily injections of acetaminophen and aspirin for 30 days had increased anxiety-like behaviour and hyperexcitability in their amygdala compared to control mice (Poster refs 113, 253). In MOH, a multicentre study showed that expertise of the headache centre and low levels of feeling in control of the headache were predictors of dropout rates from a detoxification programme (Poster ref 390). The study also showed that detoxification without any intake of rescue medication is more efficient than detoxification with restricted intake. A human study on idiopathic intracranial hypertension (IIH) showed that truncal weight loss is associated with clinical resolution of IIH (Poster ref 062). Furthermore, glucagon like peptide-1 (GLP-1) reduces raised intracranial pressure in animals (Poster ref 406). Since GLP-1 therapy promotes weight loss this could be a future treatment of IIH. Post-traumatic headache (PTH), a major type of secondary headaches, currently lacks relevant preclinical models. Two models were presented at the conference describing PTH in mice and rats subjected to mild closed head injury (Poster ref 101). Increases in the sensory neuropeptides CGRP and PACAP were reported in the trigeminal nucleus caudalis as well as a persistent susceptibility to the common migraine trigger, nitroglycerin, both of which may be putative causes of PTH following mild traumatic brain injury. A clinical study showed that disability from PTH is compounded by post-traumatic stress disorder (Poster ref 106).

Headache in children
There are five ‘episodic syndromes that may be associated with migraines’: 1) infant colic (or more appropriately called ‘paroxysmal fussing in infancy’); 2) benign paroxysmal torticollis; 3) benign paroxysmal vertigo; 4) abdominal migraine; and 5) cyclic vomiting syndrome.24,25 These syndromes are associated with a maternal history of migraines and an increased odds ratio of developing subsequent episodic syndromes and then migraines later in life.26,27 The chronologic progression of these syndromes offers a window on the neurodevelopmental component of migraines.24 The migraine prevalence in 10-year-old children is 5%, which makes migraine more prevalent than epilepsy.24 In addition, paediatric migraines are associated with poorer academic performance, underlining the importance of proper treatment. Child migraine attacks are acutely managed with oral ibuprofen, rizatriptan 10 mg oral dissolving tablets, zolmitriptan 5 mg nasal spray, and sumatriptan 10 mg nasal spray.28

Trigeminal neuralgia: mechanisms lead to successful treatment
Ralf Baron gave an interesting talk detailing how the pain field has learned from the headache field in that precise phenotyping of patients into relevant disease categories can inform treatment guidelines. Neuropathic pain patients are a very heterogeneous population that perceive their pain quite differently. Therefore, sensory profiling of patients into relevant subgroups may help to determine an individualised mechanism and individualised treatment. Professor Baron’s group performed quantitative sensory profiling on 1,000 neuropathic pain patients to determine their sensory profiles; 34% displayed thermal hyperalgesia, 29% displayed sensory loss and 37% displayed mechanical hyperalgesia. Such sensory profiling of patients is important as sodium channel blockers that were in development for neuropathic pain failed to show efficacy in phase III trials, however, a follow-on study stratifying patients into sensory profile subgroups revealed that oxcarbazepine (a sodium channel blocker) was efficacious for patients with thermal (SST-2) acromegaly-related receptors and also on other receptors such as SST-5 which might be involved in headache regulation.23
New approaches to rank the burden of headaches, investigating the effects of the disease not only in the ictal phase

hyperalgesia but not for those with sensory loss.\textsuperscript{29} Trigeminal neuralgia patients can be stratified based on whether they have background pain. Patients with background pain had decreased detection thresholds, while patients without persistent background pain had thermal and mechanical hyperalgesia with generalised subclinical hypoesthesia.\textsuperscript{30}

The global burden of headache

In 2013, headache ranked third highest among all causes of disability.\textsuperscript{31} However, currently, new population based studies are being conducted in countries not previously included in GBD 2013. In addition, the EUROLIGHT study has shown that headache is not only an ictal disease, but also influences patients between attacks. Lastly, big population studies have shown that migraine is undertreated and underdiagnosed.\textsuperscript{32} Collectively, these findings could cause headache to rank even higher in the next GBD, which will further raise awareness of the huge global burden of headache diseases.

Conclusion

The EHMTIC 2016 congress highlighted the current understanding of the pathophysiology of headache and migraines, emphasising the role of the brainstem and hypothalamus. Throughout the 4 days the role of sleep, sex hormones, circadian rhythm, the hypothalamus, and CGRP were all discussed. Promising results on 5-HT\textsubscript{1}F agonist lasmiditan and the antibodies targeting CGRP were presented, raising hope that these drugs will become available in the near future. Different headache phenotypes were also highlighted with insights into the pathophysiology of cluster headaches, paediatric headaches, pituitary adenoma-related headaches and secondary headaches. A lot of progress has been made since the last EHMTIC in Denmark, and no doubt the upcoming IHS conference next year in Vancouver will bring further developments in what is an exciting time in the field of headache research.

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406 Glucagon like peptide-1 reduces raised intracranial pressure: a potential treatment for idiopathic intracranial hypertension
H Botfiled et al (UK)

410 Randomized, double-blind, placebo-controlled trial for ALD403, an anti-CGRP peptide antibody in the prevention of chronic migraine
J Smith et al (USA)

411 Phase 2, randomized, double-blind, placebo-controlled study to evaluate the efficacy and safety of erenumab (AMG 334) in chronic migraine prevention
S Tepper et al (USA)

412 Maintenance of clinical response to erenumab (AMG334) in episodic migraine: complete one year results from an ongoing open-label extension study
M Ashina et al (Denmark)

423 Patient-reported outcomes in chronic migraine patients receiving placebo or erenumab (AMG 334) in a phase 2, randomized, double-blind study
S Tepper et al (USA)

434 Lasmiditan inhibits trigeminovascular nociceptive transmission
M Vila-Pueyo et al (UK)

Juniors activities at EHMTIC
Anders Hougaard

Once again, the European Headache and Migraine Trust International Congress (EHMTIC) was a great experience for young scientists and clinicians. The 2016 EHMTIC in Glasgow provided opportunities for trainees and residents from all over the world to present their work and to network with each other, as well as with the leading experts in the headache field.

In order to facilitate the attendance of juniors with an interest in headache, the IHS Trainees and Residents SIG (IHS T&R SIG; aka ‘Juniors’ Committee’) this year awarded a total of 27 travel grants, including six educational grants to applicants from developing countries.
27 travel grants awarded to young physicians and scientists to attend EHMTIC

Additionally, IHS offered the opportunity to three young physicians and scientists from developing countries to attend EHMTIC and visit a headache clinic or research facility in the UK. Ruby Chopra from India visited Dr Anish Bahra at the Headache Service, National Hospitals for Neurology and Neurosurgery, Barstheath, London; Weera Suprinsinchai from Thailand visited Dr Anna Andreou at Academic Headache Research, Wolfson CARD, King’s College London & Pain and Neuromodulation Centre, Guy’s and St Thomas’ Hospital, and Ali Ghabeli from Iran visited Dr Fayyaz Ahmed at the Department of Neurology, Hull Royal Infirmary, Hull.

During EHMTIC there was plenty of time for interaction and discussion, and many juniors gave excellent poster presentations. One highlight was the fourth annual Headache Excellence Tournament which was organised by the IHS T&R SIG. The tournament is designed to give young scientists a platform to present their data during a short talk and discussion, and to benefit not only from sharing their research expertise, but also from improving their communication skills and expanding their knowledge in the headache field. All presenters were selected in a blinded fashion (both names and institutions) based on the content of their submitted abstract. Of the six presenters, two winners were selected by the audience: one for a clinical research presentation and one for basic research. The presentation award winners were Carmen Fourier from Sweden (clinical science) and Marta Vila-Pueyo from the UK (basic science). Congratulations to both winners for their excellent presentations, and to all other presenters for making this initiative possible!

The traditional Juniors’ Forum was this year held at ARTA, a famous local restaurant / night club, and featured an excellent buffet dinner followed by a live music cocktail party. The event was very well attended and allowed the young attendees to network in a relaxed and informal atmosphere.

The members of the T&R SIG also want to congratulate the winners of the IHS Juniors Poster Prize and the IHS People’s Choice Award. The winners were: Best poster selected by the IHS T&R SIG members: The effect of foetal growth restriction on the development of migraine in young adults. the Nord-Trondelag Health Study by Børte et al (Norway); Best poster chosen by the people: Relationship between headache and angioarchitectural particularities of brain arteriovenous malformations by Tsurkalenko et al (Ukraine).

In the IHS T&R SIG, Dr Anna Andreou stepped down as Chair after doing a great job for the benefit of headache juniors over the past 5 years. I have taken over as Chair of the group; I am a medical doctor and post-doctoral scientist at the Danish Headache Center, Copenhagen. As Chair I will continue the quest of making IHS and the headache field even more attractive to juniors. Currently, the group is preparing the Trainees and Residents activities for the upcoming IHC in Vancouver 2017.
For those of you who are interested in head, neck and orofacial pain, the biggest event in 2017 will be the 18th International Headache Congress (IHC), which is to be held in Vancouver from 7–10 September. As usual, the congress will serve as a platform to share recent advances in clinical and basic research, experience in the care of headache patients, and to co-ordinate international efforts in reducing the burden of headache worldwide. The congress will start with teaching courses:

- Paediatric episodic syndromes that may be associated with migraine
- Laboratory & imaging investigations in primary headaches
- Headache research for young scientists
- Nurses teaching course
- Refractory headaches
- Cluster headache
- Secondary headache

In addition, what makes this congress so exciting and unique is that we are entering a new era. After the “triptan boom” in the 1990s, we have experienced a relatively silent period in the pharmaceutical pipeline, except for the sporadic rise of topiramate, onabotulinumtoxinA, and gepants. The recent success of calcitonin gene-related peptide (CGRP) monoclonal antibodies gives rise to new hope in the treatment of migraine, and deserves global attention in the field of headache medicine. In addition, further highlights of this congress include:

- Headache classification: ICHD-3-beta towards the final version
- Peripheral vs central mechanisms in migraine
- Vulnerability to migraine: genetics and epigenetics
- Trigeminal neuralgia – joint IHS-IASP session
- Placebo in headache: mechanisms and use
- What is new in post-traumatic headache?
- Neuromodulation in primary headaches
- Emerging targets for migraine treatment: endocannabinoids, P2X3, and kappa opioid receptors
- Cognitive control of pain
- Imaging and biochemical biomarkers of chronic migraine
- Challenges in clinical trials

We are certain that IHC 2017 will quench your thirst for knowing all aspects of headache and look forward to seeing you all in Vancouver.
6th ARCH Regional Conference for Headache

The 6th Asian Regional Conference for Headache was held in Seoul, Korea, on 15–16 October 2016. The theme of the 6th ARCH was ‘Let’s get together to overcome headache’. The conference was organised by the Korean Headache Society and supported by IHS.

The 6th ARCH comprised scientific sessions, symposia, poster presentations and a workshop. The faculty and moderators included representatives from the USA, Sweden, Australia, China, India, Japan, Laos, Malaysia, Myanmar, Philippines, Singapore, Taiwan and Thailand. The conference attracted 249 delegates – local and from overseas (154 Korean, 95 overseas).

The first speaker was David Dodick who talked on the topic ‘Diagnosis of headache: pearls and pitfalls’. The congress was then officially opened by Professor Byung-Kun Kim, President of the Korean Headache Society and host of the 6th ARCH, who cordially welcomed all the participants on behalf of the organising committee.

The next session, ‘Chronic daily headache and medication overuse headache’, was moderated by Norihiro Suzuki and Soo-Jin Cho. The first lecture was given by Yasmin binte Idu Jion on ‘Risk factors for chronification of migraine’, followed by presentations on ‘Central sensitisation in chronic headache’ by Shengyuan Yu and ‘Educational programme for medication overuse headache in Australia’ by Bronwyn Jenkins.

The session ‘New era of anti-migraine drugs’ was moderated by Charles Siow Hua Chiang and Julia Shahnaz Merican. Lars Edvinsson opened the session on ‘CGRP and CGRP receptor story; from molecule to novel medication’, followed by Vladimir Skijarevski who talked about ‘Clinical trials of CGRP Ab for episodic and chronic migraine’. Min Kyung Chu then gave a presentation on ‘Botulinum toxin treatment in real world: Korean Chronic Migraine Subgroup analysis of COMPEL study’. The final presentation was entitled ‘SAMURAI—pivotal phase 3 clinical trial of 5HT1F agonist for the acute treatment’ given by Burnice Kuca.
After lunch, the poster session was held; 68 posters were received (27 from Korea, 41 from overseas), and 61 posters were shown during the session. Ten posters were selected for presentation, guided by Shuu-Jiun Wang.

The session ‘Assessment tools for headache’ was moderated by Kon-Hee Lee and Kaung Myat Kyaw. The first lecture given by Jong-Ling Fuh was on ‘Comorbidity of migraine’ and was followed by a lecture on ‘Assessment of psychiatric disorders in migraine’ given by Sung-Pa Park. These were followed by presentations on ‘QOL measurement to bridge the gap between doctors and patients’ and ‘Electronic headache diary’, given by Yasuo Terayama and Jung Wook Park, respectively.

The final session of day 1, ‘Advance in headache research’ was moderated by Somchit Vorachit and Pil-Wook Chung and included presentations on ‘Animal models for migraine’, Anan Srikiatkhachorn, ‘Are all types of migraine channelopathies?’, Wenjing Tang, ‘HMGB1, an important mediator of multiple CSD-induced microglial activation’, Mamoru Shibata, ‘tDCS study in headache treatment’, Wei-Hung Chen, and ‘Neurophysiology of migraine’, Jae-Moon Kim.

The Botox Workshop was held in parallel with the last session, moderated by Kwang-Soo Lee and Byung-Su Kim. The first speaker was Yen-Feng Wang who presented on ‘Mechanism and clinical evidence of botulinum toxin for CM’, followed by a presentation on ‘Recent update of Botox protocol for CM’, given by Dong-Jin Chang and Yunju Choi who talked about ‘Clinical implications and pitfalls of botulinum toxin for CM’.

At the end of the first day, we visited the attraction ‘Namsangol Hanok Village’ and had a banquet at the Korean traditional restaurant ‘Korea House’. After dinner, we watched a traditional Korean performance at the restaurant.

The second day began with a session moderated by Heui-soo Moon, with Lars Edvinsson as the first speaker on ‘Pathophysiology of migraine’. The next session was on the main topic ‘Special headaches’, moderated by Regina Macalintal-Canlas and Surat Tanprawate. Presentations included Shuu-Jiun Wang who talked about ‘RCVS’, ‘Trigeminal Autonomic Cephalalgia’, Takao Takeshima, ‘Other primary headaches, K Ravishankar and finally Salome Nicdao-Vios who presented on ‘Spontaneous intracranial hypotension’.
The final session was on the subject of ‘Management of headache’, moderated by Lars Edvinsson and Byung-Kun Kim. David Dodick lectured on ‘Neurostimulation for headache: current and future applications’, and was followed by Chin-Sang Chung on the topic ‘Special tips for management of intractable migraine’. The third lecture advised on ‘Setting up a headache service with limited resources’ by Tissa Wijeratne, followed by ‘Meditation and headache’ given by Siwaporn Chankrachang. The final presentation was given by K Ravishankar on ‘Why headache treatment fails’.

Short-stay Scholarship peri-EHMTIC

Ruby Chopra, India

National Hospital for Neurology and Neurosurgery, London, UK
Mentor: Anish Bahra

It has been a great experience working under the guidance of Dr Bahra at Queens Square. It helped me improve my clinical skills in headache, both for diagnosing the different primary and secondary headaches and for management of intractable cases.

My timetable was well planned by Dr Bahra to make the best possible use of the little time I had there. I could learn injecting Botox, and using DHE and lignocaine for various headaches. The best part was the GON blocks which I learnt here since we were not doing it in India. Attending Dr Bahra’s OPD -33 QS & Barts Health was one of the most interesting things as I could learn the importance and role of pacing and coping in headache, and the variety and overlaps of headache patients she had. I was also allowed to attend OPDs run by Dr Farooq Maniyar every Monday at the Royal National Hospital. He gave me an approach to different headache types and his Botox lessons made me really comfortable with this procedure. I was also given the opportunity to be a part of the team for SPG stimulation for CCH at RLH under Dr Vivek Mehta. I also extend my thanks to Dr Young, Dr Shields and Dr Ingle who let me gain from their experience and knowledge. Dr Bahra also gave me the chance to attend the acupuncture clinic run by the nurse specialist Reiko Ito and the Botox clinic by Juliana Ochulor – both were amazing and made my stay very comfortable at Queens Square. I also tried my best to collect the Botox data of Dr Bahra’s patients.

I attended EHMTIC right from the teaching sessions on day one of the conference. All the sessions were well organised and at times it was difficult to decide which one to attend. I also presented a poster on ‘Autonomic dysfunction in TACs’ which was appreciated by the esteemed judges. The Juniors Forum was worth attending.
IHS NEWSLETTER

I will be using Botox and GON blocks with ease for the improvement of the huge number of patients here in India.

Overall, besides the educational part its been a pleasure to know Dr Bahra, Dr Maniyar, Dr Fiddes and last but not least Carol Taylor who was always available to solve any problem I had. The Scholarship has enhanced my skills and confidence in dealing with headache patients. I will be using Botox and GON blocks with ease for the improvement of the huge number of patients here in India.

Weera Supronsinchai, Thailand

Academic Headache Research, Wolfson CARD, King’s College London and Pain and Neuromodulation Centre, Guy’s and St Thomas’ Hospital, London, UK
Mentor: Anna Andreou

It was a wonderful experience for me to be with Dr Anna Andreou’s research group at King’s College for 7 weeks. I had the opportunity to do some small projects in basic research and also see Dr Andreou work with headache patients. The scholarship includes attendance at EHMTIC held in Glasgow from 15–18 September 2016. During my last week in London, I had the opportunity to join the iHEAD academy.

EHMTIC
I had a great time attending the international conference in Glasgow. I had the chance to present my work on ‘Influence of craniofacial nociceptive process on development of cortical spreading depression’. This was inspiring as it provided the opportunity for me to discuss my research with experts in the field, to establish future collaborations and to make new friends from all over the world.

King’s College
In basic research, I did some part of piezo immunofluorescence data analysis with image J software. In the headache clinic, I was given the opportunity to observe some patients including neuropathic pain and cluster headache patients. It was interesting to watch Dr Andreou perform quantitative sensory testing in neuropathic patients and botox injections in headache patients. I also had the opportunity to see Dr Giorgio Lambru (Consultant...
The scholarship has taught me new techniques and ways of addressing specific research questions in the lab.

Neurologist) treat a cluster headache patient using the occipital nerve block technique, which I found to be a very interesting experience and extremely useful knowledge to apply in my own research.

iHEAD London
During the last 3 days of my stay, I attended the iHEAD academy in London from 21–23 October 2016. This programme included case presentations, research paper presentations, team debates, and workshops. I am grateful for this experience, and this will absolutely help me to improve my knowledge.

The scholarship has taught me new techniques and ways of addressing specific research questions in the lab, which I will employ in my own research going forward and new research collaborators/friends I can work with in the future.
IHS Fellowship Awards 2017

IHS is accepting applications for clinical or basic headache research fellowships, or a combination of both.

APPLY NOW if you are interested in enrolling in one of these international programmes.

12-month award value: £ 50,000

Short- or longer-term fellowship applications will also be considered.

Fellowship Award open to IHS members.

Deadline: 15 April 2017

Tell your colleagues about the IHS Fellowship 2017.

Spread the word in your institution.

IHS is an international professional organisation working with others for the benefit of people affected by headache disorders. The purpose of IHS is to advance headache science, education, and management, and promote headache awareness worldwide.

Visit the IHS website for more information and an application form

www.ihs-headache.org
Registration and abstract submission now open!

IHC 2017
18th Congress of the International Headache Society

New Horizons in Headache

7-10 September 2017
Vancouver, Canada

Important dates

6 March 2017
Abstract submission closes

20 June 2017
Early bird registration deadline

www.IHC2017.com  @ihs_official  IHC2017@mci-group.com  +44 (0) 1730 715243
## Calendar of events

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<td>8–11 June</td>
<td>58th Annual Scientific Meeting of the American Headache Society</td>
<td>Boston, USA</td>
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If you would like IHS to include your meeting on the IHS website and newsletter please contact **Carol Taylor** with the details.
To advance headache science, education and management and promote headache awareness worldwide

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