

# News etter Leading headache science, education and management globally

# Letter from the President – Full speed ahead

# Contents

Update from the Honorary Secretary Patricia Pozo-Rosich

Meet the new Trustees

20th International Headache Congress 2021 Chiara Demartini. Hakan Ashina. Irene de Boer and

Francesca Puledda

COVID-19 and headache Edoardo Caronna and Patricia Pozo-

Rosich

**IHS-GPAC: Education in** headache to healthcare providers in Africa David Dodick and Nim Lalvani

Spotlight on IHS Affiliate Member Societies Israel. Russia

**Calendar of events** 

#### **Editorial board**

Cristina Tassorelli Patricia Pozo-Rosich Mario Peres Henrik Schytz Carol Taylor



# Cristina Tassorelli

**Dear Colleagues** 

It is an immense privilege for me to assume the role of President of the International Headache Society (IHS). I do it with gratitude for the faith bestowed on me by the membership, enormous enthusiasm for a cause to which I have dedicated most of my life, vivid emotion and a strong sense of responsibility for the importance of the role.

The past 2 years have been hard for the entire world, and for the 2019–2021 IHS Board the road has started uphill. And yet I feel fortunate to have had the opportunity to work and learn from these brilliant, visionary, hardworking leaders who, supported by the strong and illuminated guidance of Messoud Ashina, strived relentlessly and successfully to achieve their goals and to make IHS even stronger and more respected in such difficult times. To them goes all my admiration and gratitude for handing me a society that is scientifically solid, politically authoritative and financially prosperous.

Yes, IHS is a strong, independent scientific society. This is the result of the vision and dedication of those who preceded me, those who, in four decades (IHS was founded in 1981), have worked together and sequentially to bring headache from an almost neglected area of medicine to a respected and stimulating field of science. Today, IHS is a modern and strong scientific society that has been ahead of times in many ways: its international outreach, the importance of multidisciplinarity in research and in the care of affected people, the attention to young scientists, and the recognition of the role of women in science with a female President (the late Marcia Wilkinson) already in the 1980s.

Much has been done, which needs to be carefully preserved, but the 'headache people' are an energetic and brilliant community that wants and deserves more. The rate of scientific publications on headaches in peer-reviewed top-class scientific journals has indeed progressively increased over the past years, even through the COVID-19 pandemic. This has been paralleled not only by a progressive improvement in patients' care, but also an unrelenting and even growing effort in the field of basic research.

We cannot stop and we do not want to stop! Several important objectives are ahead of us and at reach, if not in the next 2 years, definitely in the long term, if properly planned. The migraine pathophysiological puzzle is far from being solved. Further research is strongly needed to finally complete it, thereby bringing additional effective therapeutic options to patients. To this end, it is also vital to prepare and nurture new generations of clinicians and scientists. The recognition of migraine among the highly disabling chronic conditions is fundamental to attract research resources for scientists and for improving the care of

1



The recognition of migraine as a highly disabling chronic condition is fundamental to attract research resources for scientists people affected; to this end, it is important to engage and sensitise stakeholders and decision makers, also liaising with other scientific societies and patients' associations. Increased focus on neglected primary headaches and on selected secondary headaches is needed to expand the IHS field of action. Inclusivity and gender equality are key to foster wider access to headache science and headache medicine, and to ultimately improve the lives of those living with headache across the world.

All this can be accomplished with a collaborative effort from scientists and clinicians, an effort that will also need to include the patients' perspectives. IHS is positioned for this global leadership opportunity with its growing membership, with over 50 affiliated national societies and the close collaborations with strong supranational entities such as ARCH (Asian Regional Consortium for Headache), AHS (American Headache Society), and EHF (European Headache Federation). IHS has already produced multiple examples of its role as a global guidance in the field of headache (Classification, Clinical Trial Guidelines, iHEAD, just to mention a few) and it is important to continue down this road.

IHS needs to focus on the roadmap to achieve these objectives and to put in place the required strategies. To this end, the new Board will meet, hopefully in person, in March 2022 for a strategic planning meeting where people, priorities and resources will be framed into an operative implementation plan.

The global leadership needs the input from all the different 'worlds' that live inside the IHS, to be effective and representative. For this reason, your help, collaboration, and guidance will be of the utmost importance in supporting the work of the Board. I welcome and encourage all of you to express your point of view and suggestions that will be collected in a dedicated mailbox that I expressly created for this purpose.

Thank you Cristina Tassorelli, MD, PhD cristina4IHS@gmail.com

# **IHS Grant Opportunities 2022**

# In 2022 IHS will offer

IHS Fellowships Junior headache research grants Seed funding for research into child and adolescent headache Research grants for secondary headache studies Headache Trainee programme Visiting Professors

Information will be posted soon on the IHS website



# **Update from the Honorary Secretary**



## Patricia Pozo-Rosich

It is my pleasure to be able to share with you my first Update as the new Honorary Secretary of the International Headache Society.

First of all, I would like to acknowledge and thank Professor Stefan Evers for the incredible work that he has done during the last 10 years. Filling his shoes will not be easy as I believe he has been an excellent Secretary because of his personal qualities, ethical values, rigour and commitment.

My commitment to the IHS stems from my willingness to serve our society, which I have already done in several ways in the past. I have been a member of the IHS for the last 20 years. First, I got involved in the Junior Sub-Committee where I stayed for 6 years; and for the last 4 years I have been a member of the Board of Trustees. This year together with Todd Schwedt and Christian Lampl, I was one of the Co-Chairs of the International Headache Congress (IHC) Scientific Programme Committee, where we tried to follow the tagline 'Headache Science to Optimise Patient Care' and made efforts to create a programme which was thought to be interesting, educational, inclusive and global, with the goal of sharing science and clinical experience to improve patient care.

Currently I am also involved in the Clinical Trials Guidelines Committee, the Scientific Committee and a part of the Women's Leadership Forum.

So, as you can see, I have always tried to contribute to the society's mission. Becoming the IHS Honorary Secretary is the perfect way to contribute further, by establishing a fluid relationship with the President and the Board of Trustees, learning about its governance, and working closely both with the IHS Treasurer and the finance and administration teams.

I can assure you that I will do my best to become an IHS Secretary who will continue to warrant the success of our society.

So now, I am pleased to give an update on IHS activities since the last Newsletter distributed in July 2021.

#### **20th International Headache Congress**

The main activity over the past few months was the 20th International Headache Congress (IHC) held for the first time virtually, and in collaboration with the European Headache Federation. We presented a rich and varied programme highlighting all aspects of headache medicine to almost 2,000 registered delegates. Highlights from the congress are reported later in this newsletter.

#### Membership

In 2021 we have had the largest ever number of members – 1,770 paying members and 1,624 free of charge Associate members, representing 112 countries. Our new Membership Committee Chair, Mario Peres from Brazil, hopes to continue to increase membership numbers in coming years. Members – I do hope you will all renew to continue to enjoy IHS membership benefits, and please spread the word about IHS membership to your colleagues and juniors. The renewal invitations for 2022 have been mailed – please help our administration team by renewing your membership early for the coming year.

### Highest ever number of IHS members in 2021

Members – renew now for 2022



#### IHS Board Trustees

Thanks to all retiring Trustees and Committee Chairs for their commitment and work for IHS over many years The Trustees elected during the member ballot earlier this year joined the Board at the Annual General Meeting (AGM) in September. Cristina Tassorelli succeeded Messoud Ashina as President, Rami Burstein joined as President-elect, and the three elected Trustees, Andrea Carmine Belin, Jan Hoffmann and Aynur Özge, took up office. The Board has also appointed five Co-opted members to ensure global representation: Augustina Charway-Felli (Ghana), Min Kyung Chu (South Korea), Maria Teresa Goicochea (Argentina), Amr Hassan (Egypt) and Teshamae Monteith (USA). An introduction to all the new Trustees is included in this newsletter. I was appointed Honorary Secretary and Fayyaz Ahmed Honorary Treasurer. Grateful thanks are offered to the retiring members: Past-President: Lars Edvinsson; Elected members: Mario Peres, Todd Schwedt; Co-opted members: Mi Ji Lee, Marco Lisicki, Kirill Skorobogatykh. The Board also offers huge thanks to Stefan Evers and Wendy Thomas who retired as Honorary Secretary and Treasurer, respectively; they have each served IHS for over 10 years and been excellent ambassadors for the society, working tirelessly to secure the future of IHS as an internationally recognised organisation working for headache science, education and management.

#### **Committee Chairs**

Following the AGM several Committee Chairs were re-appointed and new appointments made:

- Child and Adolescent Committee Andrew Hershey succeeded Ishaq Abu-Arafeh as Chair after his second term ended
- Education Committee Allan Purdy retired after 6 years as Education Chair. His Co-Chair, Henrik Schytz, continues in the role
- Electronic Media Committee Arao Belitardo De Oliveira was re-appointed as Co-Chair for a second term
- Membership Committee Mario Peres has succeeded Anne Ducros
- Juniors Group Francesca Puledda has succeeded Anders Hougaard
- Asian Regional Consortium for Headache K Ravishankar has succeeded Shuu-Jiun Wang
- Secondary Headache Special Interest Group (SIG) David García Azorín has succeeded Guus Schoonman.

Many thanks to our retiring Chairs for their commitment and work for IHS over many years.

#### **IHS Special Recognition Awards and Life Memberships**

The 2021 Special Recognition Awards were given to Vincenzo Guidetti and Allan Purdy for their outstanding contribution to the formation and advancement of IHS since its foundation.

Special Recognition Awards given to Vincenzo Guidetti and Allan Purdy for their contributions to IHS



**Vincenzo Guidetti** has been Professor of Child and Adolescent Neuropsychiatry at the University of Rome "La Sapienza", Italy, since 2001. He was Chair of the IHS Paediatric Sub-Committee from 1995– 2003, a member of the IHS Executive Committee from 2003–2009, and one of the originators of the IHS Master Schools, the first of which was held in Brazil in 2011. He continues to serve IHS as Chair of the Italian Linguistic SIG.

**Allan Purdy** is Professor of Medicine (Neurology) at Dalhousie University, Canada, and a Past-President and Fellow of the American Headache Society and Past-President of the Canadian Headache Society. He was a member of the IHS Board of Trustees from 2009–2013 and Chair of the IHS Education Committee from 2015–2021. He has directed headache educational courses worldwide for IHS and other organisations, and has received Excellence in Teaching Awards on many occasions.





Two Life Memberships were awarded to Patrick P A Humphrey and Pramod R Saxena, founders of the triptans.



**Patrick Humprey's** work on isolated blood vessels, and in particular cranial vessels, led to the discovery in his laboratory of a previously unknown receptor for 5-hydroxytriptamine (to be named 5HTI), at a time when only two other 5HT receptors were known (now named 5HT2 and 5HT3). The 5-HTI was identified predominantly in certain cranial vessels including those in the human dura mater. This led to in depth pharmacological work to identify a molecular structure that would be selective in activating the 5-HTI receptor, while avoiding the much broader pharmacological spectrum of serotonin and ergotamine.

**Pramod Saxena's** early preclinical experiments showed that mianserin would not be effective in migraine, and one should in fact look for agonists at this 'Atypical' 5-HT (later named 5-HTIB) receptor for antimigraine efficacy. Using radioactive microspheres, he showed that 5-HT reduced carotid arteriovenous anastomoses (AVAs) blood flow, but concurrently increased capillary blood flow; methysergide and ergotamine selectively decreased AVA flow. Thus, it became apparent that 5-HTIB receptor agonists would be effective in migraine, and one may use an animal model for this purpose. He began collaborating with Patrick Humphrey to investigate novel triptamine analogues in the 'migraine model'.



Their collaborative work led to the development of small molecule derivatives of serotonin and in 1984 sumatriptan underwent extensive clinical trials which showed its remarkable efficacy; it was subsequently marketed in 1991. To this day sumatriptan is widely used in the effective treatment of migraine and is the Father of the Triptans (group of 5-HTIB/ID agonists) having been identified years ahead of its followers. Given the grand success of sumatriptan in treating migraine attacks, other pharmaceutical companies soon started research activity in this area and more triptans followed.



Life Membership was also awarded to **Lars Edvinsson**, IHS President from 2017–2019, who retired from the IHS Board. Lars Edvinsson is Professor and senior consultant at Lund University/Hospital in Internal Medicine, MD PhD, and Chairman of the Swedish Migraine Society. He has a long history in studies of the cerebral circulation, innervation, receptors and function, and was first to describe calcitonin generelated peptide (CGRP) in cranial vessels and the trigeminal ganglion, showing the release of CGRP in conjunction with migraine and cluster headache attacks. He was instrumental in the development of novel CGRP receptor antagonists and was recently one of the recipients of the highly acclaimed Brain Prize. Lars has been an IHS Trustee for the last 6 years and his contribution to the Board has been invaluable.

#### Cephalalgia Reports

Our online silhouette journal to *Cephalalgia* has now published over 100 articles; the journal is listed in the Directory of Open Access Journals (DOAJ) and SCOPUS.

Please consider publishing your research or views in *Cephalalgia Reports*. The journal actively encourages high quality papers in emerging observations with translational potential not yet realised, reports limited to regional relevance which may validate and add to existing studies, RCTs with negative outcomes, confirmatory studies, technical reports, articles with a more clinical emphasis, pilot trials which may stimulate therapeutic innovation and scientifically rigorous pathophysiological and pharmacological studies.

Please visit the **Cephalalgia Reports** website if you would like to submit your work to this exciting publication.

### Life Membership awarded to the triptan founders, Patrick Humphrey and Pramod Saxena

IHS honours Lars Edvinsson, retiring Past-President, for his invaluable contribution to IHS and to headache science



### IHS grants for 2022 available soon – check the IHS website

#### **Grants and fellowships**

We are hoping that as worldwide travel resumes in 2022 we will be able to recommence our grant and educational programmes – please check the IHS website later in the year for details and application information.

#### Aura app

Over the past 2 years a collaborative group from Italy, Norway and Denmark has developed a mobile application (app) for registration of migraine aura. The app is designed by expert neurologists and researchers in the migraine aura field. Although migraine aura is a disabling and frequent phenomena, the exact mechanism underlying aura is still not clear.

The app provides patients with a tool to document aura symptoms as they occur, with a high level of detail and an easy and intuitive approach. This will be of great help for researchers to understand aura mechanism, which is fundamental to develop specific treatment for migraine with aura, and an important tool for researchers internationally to collaborate in registering and pooling data on the occurrence and progression of migraine aura.

Patricia Pozo-Rosich ppozo@vhebron.net

# **Meet the new Trustees**



### President-elect – Rami Burstein, USA

Professor Rami Burstein is the John Hedley-Whyte Professor of Anaesthesia and Neuroscience at Harvard Medical School, and Vice Chairman of Neuroscience in the Department of Anaesthesia at Boston's Beth Israel Deaconess Medical Center.

Professor Burstein was an appointed member of the Scientific Programme Committee for the IHC 2021 and the Interagency Pain Research Coordinating Committee (IPRCC). He was also a previous member of the Board of Directors of both the American Headache Society (AHS) and IHS and the European Headache Federation meeting in 2018.

Throughout the years, Professor Burstein has received numerous awards. These include the prestigious Javits Neuroscience Merit Award (National Advisory Neurological Disorder and Stroke Council), the Harold Wolff Awards in 2003 and 2005 (AHS), the Cephalalgia Award Lecture in 2013 and 2015 (IHS), the Seymour Diamond Lectureship Award in 2012 and 2015, and the 2010 Alan Edwards Center for Research on Pain Award (McGill University).

Among Professor Burstein's accomplishments are the discoveries of the spinohypothalamic tract, the roles peripheral and central sensitisation play in migraine pathophysiology and treatment, the mechanisms of action of several anti-migraine drugs, the neurobiology of photophobia and, most recently, potential roles played by the glymphatic system, macrophages and dendritic cells in migraine pathophysiology.



### **Elected Trustees**



# Andrea Carmine Belin, Sweden

Dr Andrea Carmine Belin is a senior researcher and group leader at the Department of Neuroscience, Karolinska Institutet. Her research team focuses on cluster headache by identifying genetic factors and characterising the link to circadian rhythm.

Dr Carmine Belin defended her thesis on the role of genes in Parkinson disease and Schizophrenia at Karolinska Institutet and she became an Associate Professor in neuroscience in 2011. She is a member of the Board of the Swedish Headache Society, a member of the International Headache Genetics Consortium (IHGC) and has been part of establishing the International Consortium for Cluster Headache Genetics (CCG).

Dr Carmine Belin is an editorial board member of the journal Brain Sciences and has been the guest editor of two special issues entitled 'Recent advances and new insights in cluster headache' and 'Genetic aspects of primary headache'.

Dr Carmine Belin has authored more than 80 peer-reviewed publications in the field of neuroscience.



### Jan Hoffmann, UK

Dr Jan Hoffmann is a Clinical Senior Lecturer and Honorary Consultant in Neurology at the Institute of Psychiatry, Psychology & Neuroscience at King's College London. He graduated at Charité – Universitätsmedizin Berlin (Germany) where he also obtained his doctoral degree. Following a postdoctoral fellowship at the University of California San Francisco (USA) he worked at the University Medical Center in Hamburg-Eppendorf (Germany) before he relocated to London to his current position.

At King's College London he leads a translational research group that focuses on the molecular mechanisms and central pain processing of headache and facial pain syndromes and conducts specialised headache and facial pain clinics.

He is a member of the IHS Science and Research Committee as well as a Council Member and Treasurer of the British Association for the Study of Headache.

Since 2016 he is an Associate Editor for Cephalalgia. He also serves as Associate Editor for Cephalalgia Reports, Journal of Oral & Facial Pain and Headache as well as for Frontiers in Pain Research.





# Aynur Özge, Turkey

Professor Aynur Özge is Professor of Neurology, Algology and Clinical Neurophysiology at Mersin University School of Medicine, Department of Neurology in Turkey, an international lecturer, writer, and President of the Global Migraine and Pain Summit (GMPS) together with the MENA (Middle East and North Africa) Organisation.

She is Co-Editor of three international books, two of them about childhood headaches, the other about peripheral interventions in headache medicine.

She has been an active member of IHS since 2004, and has actively served in the Child and Adolescent and Classification Committees. She was elected to serve as a Co-opted Board member of the Society for the 2019–2021 term.

Professor Özge has served as the Organising Committee Chair of the 7th International Child-Adolescent Headache Congress held in Istanbul in 2008. She was the Organising Committee Chair of the 4th MENA and 2nd Turkish-African Migraine-Pain Congress, which was held in Antalya in 2020. She is President of the GMPS, established in 2019 to raise social awareness about migraine and painful syndromes.

Professor Özge's H index score is 26. She is the author of two public information books which are on sale to benefit various NGOs.

# **Co-opted Trustees**



# Augustina Charway-Felli, Ghana

Dr Augustina Charway-Felli, MD, PhD, FGCPS, is a neurologist practicing in Accra, Ghana. She completed her medical, neurology training and doctorate in the I.M. Sechenov 1st Moscow State Medical University in the Russian Federation. She is a Fellow of the Ghana College of Physicians and Surgeons.

Dr Charway-Felli is currently one of only seven trained neurologists in Ghana serving a population of >30 million. She returned to Ghana in 2007 on completion of specialist training when there was only one practicing neurologist. She runs a general neurology practice with a special interest in geriatric neurology, cognitive and behavioural science, headache, functional neurological disorders, and epilepsy. Whilst being predominantly a clinician, a lot of time is dedicated to advocacy and education to work towards improvement of access to specialised neurological care on the African continent.



She holds the following positions: President of the African Academy of Neurology (AFAN); Vice-president: Neurology Society of Ghana; Vice-President: Ghana Neuroscience Society; 2nd Vice-President: Ghana Epilepsy Society, ILAE country Chapter; Member: International League Against Epilepsy – Africa Commission; Member: AAN Bruce S Schoenberg Award Workgroup; Member: World Federation of Neurology (WFN) membership committee; Member: WFN Tropical and geographical neurology special interest group, WFN Neurology in migrants, WFN Neuroepidemiology working group, and WFN Rare diseases special interest group; Member: European Academy of Neurology (EAN) Africa Task Force.



# Min Kyung Chu, Korea

Professor Min Kyung Chu, Professor of Neurology, Severance Hospital, Yonsei University, Seoul, Korea, earned his medical degree at Yonsei University in Seoul in 1992. He completed his neurology resident course at Severance Hospital, Yonsei University in 2002. He has studied headache medicine at Hallym University, Anyang, since 2003, and has been an active member of the Korean Headache Society. He worked at Montefiore Headache Center, New York, from 2009–2010 as a visiting scholar. He has served as a Vice President of the Korean Headache Society since 2015.

Dr Chu has worked as an associate editor of Journal of Clinical Neurology and Yonsei Medical Journal. He became a Fellow of the American Headache Society in 2015. He has published more than 170 peer-reviewed articles as a principal writer and has written 10 book chapters regarding headache since 2010.

Min Kyung Chu's main research interests are epidemiological study of headache disorders, identifying the association between sleep and headache disorders and experimental study of headache.



# Maria Teresa Goicochea, Argentina

Maria Teresa Goicochea MD is a Latin American clinical Neurologist. She is in charge of the Headache Clinic at Fleni (Fundación para la lucha contra enfermedades neurológicas de la infancia) and a member of the ethics committee in Buenos Aires, Argentina. She was awarded her degree by the Universidad Católica in Córdoba, and completed her residency in neurology in Fleni. Dr Goicochea began her training in headaches under the mentoring of Dr Jorge Leston.



She has been actively involved in the working group in headache for the Sociedad Neurológica Argentina. Her research interests include medication overuse headache, occipital neuralgia, migraine and artificial intelligence in headache, among others.

She promotes medical education for neurologists and physicians in the headache field for the LatAm region.



### Amr Hassan, Egypt

Dr Amr Hassan received his MBBCh (Medicine and Surgery) from Cairo University, Egypt, in 2001. He completed his neurology residency at Kasr Al-Ainy Hospital, which is one of the biggest hospitals in the Middle east and North Africa. He received his Master degree in Neuropsychiatry in 2007 and completed his Doctoral degree in 2010 at Cairo University.

Currently, Dr Hassan is a Consultant and Professor of Neurology at Kasr Al Ainy Hospital, Cairo University. He has been a Fellow of the European Board of Neurology since 2016.

Dr Hassan is a Board member of the Headache Chapter of the Egyptian Society of Neurology. He is also a Board member of the Council of Egyptian Fellowship of Neurology and head of its training committee.

Dr Hassan has authored and co-authored many peer-reviewed articles in headache in adults and children.



### **Teshamae Monteith, USA**

Dr Teshamae Monteith is an Associate Professor of Clinical Neurology at the University of Miami, Miller School of Medicine, USA. She is the Chief of the Headache Division and the programme director for the United Council of Neurologic Subspecialties (UCNS) Headache Medicine fellowship programme. Dr Monteith received a Bachelor of Science degree in Biology at Florida International University prior to obtaining a medical degree at the University of Miami, Miller School of Medicine. She received her neurology residency training at New York University, and then pursued two fellowships in headache medicine at Thomas Jefferson University and University of California, San Francisco.

Dr Monteith currently serves on the editorial board for the American Migraine Foundation and the American Academy of Neurology's (AAN) Brain and Life Magazine. She also serves on the Diversity Officers Subcommittee of the AAN and the American Neurological Association's Addressing the Pipeline for Academic Neurology Leadership



Workgroup. She is the Headache Topic Chair for the 2022 AAN Annual Meeting Scientific Program abstract review process. Previously, she was the founding chair of the New Investigator Trainee (NIT) Section of the American Headache Society (AHS). During her tenure, she developed multiple programmes including a Telementoring Series, the First Junior Forum, the NIT Research Tournament, and the NIH Forum. Previously, she also served on the AHS Bylaws and Ad Hoc Education Committees.

Dr Monteith is a co-recipient of the AAN Palatucci Advocacy Leadership Award and the AHS Wolff award. She received the Florida International Society's Torch Award and the University of Miami, Miller School of Medicine Dean's Diversity Award for her work on racial justice in the medical curriculum and department's Inclusion, Diversity, Equity, Anti-racism, and Social Justice (IDEAS) committee.

She has lectured both nationally and internationally, authored numerous publications and has provided peer review for both national and international journals, and has served on several advisory boards for migraine and cluster headache. She has hosted over 80 podcasts for the AAN Neurology Journal/Neurology. Neurology Minute and Continuum Audio for topics important for neurologists including brain health, migraine, cluster headache and secondary headache disorders. Her research interest has been in the cross section of migraine and stroke, funded by the NIH NINDS Research Supplements to Promote Diversity in Health-Related Research. During the pandemic, she became a member of the US National Cohort COVID Collaborative Neurology Clinical Team Domain; her interest includes the investigations of post-COVID headache, the impact on migraine, and post-acute sequela of COVID-19 (long-COVID).

# 20th International Headache Congress 2021



Headache Congress IHS and EHF joint congress 2021



The 20th International Headache Congress (IHC) was a joint congress with the European Headache Federation (EHF). Due to the ongoing COVID-19 pandemic, the congress was held virtually, which facilitated the attendance of almost 2,000 delegates representing over 60 countries.

Congratulations to the winners of the Brain Prize 2021 – all **IHS Past-Presidents** 

Delegates enjoyed a varied programme of plenary and scientific sessions, debates, special sessions (Presidential Symposium, IHS Special Lecture, EHF Enrico Greppi Award, Cephalalgia Award Lecture, Headache Science Excellence Tournament), and oral and poster presentations from the 500+ abstracts received. The opening of the congress was preceded by Teaching Courses which were well attended.

Guest speaker in the Opening Ceremony, Boris Konrad, a four-times Guinness World Record Holder for memory, presented a keynote lecture on artificial intelligence. During his presentation he outlined what role artificial intelligence already plays in our everyday lives, how it stays with us, how it connects with our own intelligence, and how technology affects our thinking.

A special session was held to celebrate the recipients of the 2021 Brain Prize - Professors Michael Moskowitz, Lars Edvinsson, Peter Goadsby and Jes Olesen. The Brain Prize is recognised as the largest research prize in neuroscience worldwide and was awarded for their ground-breaking research that led to the advent of therapies targeting calcitonin gene-related peptide (CGRP) signaling in migraine.



#### Congratulations to all involved with IHC 2021 – an excellent collaboration between IHS and EHF

Several awards were presented during the congress by the Juniors Group – reported below. A new IHS award, the Headache Science Award, was presented. The awards recognise promising early- and mid-career basic, clinical or translational scientists whose research has already contributed to the headache field. The two recipients were Hakan Ashina (early-career) and Hashmat Ghanizada (mid-career) and both gave a short presentation of their research; Towards a better understanding of post-traumatic headache (Hakan Ashina); (Neuro)peptides in migraine (Hashmat Ghanizada), and received their awards from the IHS Science and Research Committee Chairs, Hans-Christoph Diener and Shuu-Jiun Wang.



The highlights of the congress were presented on the final day by the three IHC 2023 programme Co-Chairs, Hayrunnisa Bolay, KC Brennan and Gianluca Coppola, and are summarised below by IHS members Chiara Demartini, Hakan Ashina and Irene de Boer.

# **Basic science highlights**



# Chiara Demartini

The most interesting presentations in the basic science field were related to three major topics: cortical spreading depression (CSD), vascular-mediated phenomena and sex differences in migraine.

CSD, a wave of neuronal and glial depolarisation, is the electrophysiological correlate of migraine aura. A Schain showed the precise vascular and inflammatory events that occur during CSD. The meningeal vessels dilation, together with the neurogenic inflammation leads to dural nociceptive firing, with the consequent activation of first and second order neurons. The complex machinery of CSD has been addressed by other researchers. Of note, two basic science studies highlighted different pathways involved in the phenomenon, delineating the P2X7 (Uzay et al.) and Panx-1 (A Dehghani)

Advances in cortical spreading depression using an optogenetic approach



channels as key factors in the generation of neurogenic inflammation and thus prompting new possible targets for treatment. Of great relevance, especially for the evaluation of behavioural outcomes in the preclinical setting, was the implementation of the CSD model with the optogenetic approach (opto-SD) by A Harriott.

This approach allows the evaluation of purely spontaneous behaviour in awake animals. For instance, it was reported that opto-SD, especially in a repeated/chronic fashion, generates long lasting pain and anxiety-like behaviour, a pattern that seems consistent with clinical observations. Interestingly, these behavioural outputs can be combined with the analysis of different brain parameters, like neurovascular activity, field potentials and actimetry/accelerometry by using the newly developed head-mounted wireless device, called MICRONAB (A Charles). It is anticipated that these methods will provide innovative ways to study migraine-related features.

Migraine pain is closely connected to the intracerebral and extracerebral vascular system. Meta-analysis studies have drawn attention on the interaction between migraine and the vascular risk profile, identifying migraine, especially in its subtype with aura, as a factor of increased risk for cardiovascular events (T Kurth). Genome-wide association studies (GWAS) conducted on large migraine populations have pointed to an intrinsic role of the vasculature in the susceptibility to migraine attack due to an increased vascular pliability and potential micro-embolic mechanisms (D Chasman).

Moreover, the GWAS analysis presented by L García-Marín identified among others some vascular risk factors (e.g. vasoconstriction, platelets clumping) for migraine, thus suggesting vasomotility and thrombosis as potential causal effectors. Such relationship between migraine and vascular risk is also supported by metabolomic studies, as suggested by decreased high-density lipoprotein metabolites and omega-3 fatty acid levels in patients with migraine (G Terwindt). Altogether these observations provide further insights on the cardiovascular risk in migraine, with a valuable impact on acute and prophylaxis therapy.

It is a consolidated fact that migraine is more prevalent in females. The contributing role of sexual hormones has been supported also by preclinical models. Several preclinical findings presented at the congress reported the sexual dimorphic effect of numerous peptides including prolactin, CGRP and amylin. For instance, the dural application of prolactin induces sensitisation only in females, while dural application of amylin only causes sensitisation in males and ovariectomised females (G Dussor). As regards prolactin, converging studies suggest its role as a female sex specific factor in migraine chronification. Indeed, it seems that medication overuse may lead to prolactin-dependent sensitisation in female mice only (F Porreca). Thus, dissecting the clinical phenotypes using basic science approaches may generate important advances in the understanding of migraine mechanisms and contribute to devise future treatments.

# **Clinical science highlights**

Amylin analogues, adrenomedullin and opening of adenosine triphosphatesensitive potassium channels induces migraine

# Hakan Ashina

A number of newsworthy findings in clinical science were highlighted at IHC 2021. Results from two experimental studies showed that migraine attacks can be induced by intravenous infusion of pramlintide (amylin analogue) and adrenomedullin (H Ghanizada), both of which are signaling molecules that belong to the same family of peptides as CGRP. These findings suggest that targeting amylin or adrenomedullin signaling might hold therapeutic promise in migraine.

GWAS studies investigating the intrinsic role of the vasculature in the susceptibility to migraine attacks



Proinflammatory molecules involved in the development of persistent headache after COVID-19 infection In a similar vein, experimental data from the Danish Headache Center suggest that opening of potassium channels plays an important role in the genesis of cephalic pain in migraine. A provocative finding was that opening of adenosine triphosphatesensitive potassium channels might be the first reliable inducer of aura symptoms in individuals with migraine with aura (M Al-Karagholi). If confirmed in future studies, this finding would open new avenues for the study of migraine aura in a controlled experimental setting.

New evidence has given cause for pause on dismissing the involvement of intracranial vasodilation in migraine pathogenesis. It has been a long-held belief by some that intracranial vasodilation might be an epiphenomenon in migraine pathogenesis because 20-minute intravenous infusion of vasoactive intestinal peptide (VIP) did not induce migraine attacks. However, experimental data were presented at IHC 2021 which demonstrated that intravenous infusion of VIP over 120 minutes caused migraine attacks in 15 (71%) of 21 patients with migraine without aura (L Pellesi). This finding suggests that long-lasting dilation of intracranial arteries and the accompanying outflow of potassium from vascular smooth muscle cells might be the principal driver of migraine pathogenesis.

A new consensus statement by the EHF was presented and provided definitions for resistant migraine and refractory migraine (S Sacco). The EHF statement aims to facilitate standardised data acquisition and raise awareness about the individual and societal impact of difficult-to-treat migraine.

Advances in our understanding of secondary headache disorders were also highlighted. Results from a study on individuals with post-traumatic headache (and no pre-existing migraine) found that intravenous infusion of CGRP caused headache with migraine-like features in 21 (70%) of 30 study participants (H Ashina). This finding suggests that therapies targeting CGRP signaling might address unmet treatment needs of those afflicted by post-traumatic headache. Major developments have also been made in the field of idiopathic intracranial hypertension, with promising research demonstrating the effectiveness of bariatric surgery in lowering intracranial pressure (S Mollan).

Another hot topic at IHC 2021 was the discussion of headache attributed to COVID-19 infection. Reports from Turkish researchers have shed light on the involvement of proinflammatory molecules in the development of persistent headache after COVID-19 infection (H Bolay). Moreover, studies have begun to investigate the prevalence of and risk factors for headache following the COVID-19 vaccine (E Ekizoglu; C Göbel). Early data seem to suggest that the occurrence of headache might depend on the type of vaccine, although more research is needed before firm conclusions can be drawn.

# Genetics, imaging and neurophysiology highlights



Irene de Boer

Exciting new research focusing on genetics, imaging and neurophysiology was presented during the congress. Dr Gianluca Coppola had the honourable but difficult task to make a selection of the excellent work presented. This article presents a summary.



#### Identification of the FHL5-locus may suggest partly shared genetic pathways for CH and migraine

Hypothalamic activation is reduced more in responders compared to non-responders following CGRPmAB treatment Generating a wealth of new information, Hautakangas et al. performed the largest GWAS in migraine to date. They identified 123 risk loci, of which 86 are novel, from 102,084 migraine patients and 771,257 controls. There were loci pointing towards genes encoding migraine-specific drug targets, namely CGRP and the serotonin 1F receptor.

Furthermore, their analyses supported the role of neurovascular mechanisms in migraine pathophysiology.

Where GWASs are mainly used to identify common genetic variants, Rasmussen et al. explored the contribution of rare variants to the genetic architecture of migraine. They found a gene module in the visual cortex that had increased rare mutations in migraine families and replicated this in an independent cohort.

The genetic architecture of cluster headache (CH) was also further elucidated. Multiple studies reported genetic risk variants for CH identified by GWAS. They discovered four risk loci and provided robust evidence that CH has a genetic basis. Interestingly, identification of the *FHL5*-locus, an established risk locus for migraine, may suggest partly shared genetic pathways for CH and migraine (Fourier et al.).

Magnetic resonance imaging (MRI) data of CH patients (47 during in-bout, 47 during out-of-bout period) and 47 heathy controls was used by Lai et al. to identify related morphological changes in the brain. CH patients had reduced grey matter volume in regions within the pain-processing network. Moreover, distinct morphological changes were found between CH-in-bout and CH-out-of-bout.

Several studies explored functional MRI (fMRI) in relation to migraine. Messina et al. explored whether hypothalamic and pontine resting state functional connectivity changes are associated with migraine progression. Twenty-three patients and controls were examined at baseline and after 4 years. At follow-up, higher hypothalamicorbitofrontal gyrus resting state functional connectivity correlated with lower migraine attack frequency. Park et al. assessed fMRI-based migraine diagnosis. They found that wholebrain connectivity may not be stable over time. The accuracy of diagnosis at follow-up increased when only interictal patients were included. These studies highlight the importance of taking into account migraine burden, phases and frequency when performing fMRI studies.

In animal models, the somatotopic arrangement of the trigeminal nerve within the brainstem is well known. Now Sturm et al. provided evidence supporting somatoptopic arrangement within the brainstem in humans. They stimulated four areas of the hemiface with nociceptive electrical stimulation and found distinct blood oxygen level-dependent (BOLD)-signal activation for each stimulus site within the spinal trigeminal nucleus.

Two studies explored the effect of CGRP monoclonal antibodies (mAb) on the central nervous system. Basedau et al. studied patients with fMRI before and 2–3 weeks after galcanezumab administration and found that galcanezumab reduces hypothalamic activation. This effect was more pronounced in responders compared with non-responders. Thiele et al. performed assessments of the nociceptive blink-reflex, a readout of brainstem excitability and habituation, at baseline and after 3 months of anti-CGRP treatment. They found normalisation of sensitisation and habituation after treatment. These studies indicate that despite their peripheral site of action mAb treatment might result in central remodelling.

This is only a small selection of the many valuable works on genetics, imaging and neurophysiology in the field of headache presented at the congress. It has to be taken into account that the selection presented here will inadvertently omit important research findings. Hopefully these highlights will be of interest to all the investigators dedicated to understanding headache.



# **Juniors activities at IHC 2021**



# Francesca Puledda

This year's IHC was obviously a challenge for all, and for the IHS Juniors Group it was particularly difficult not to be able to hold our usual activities during the conference, such as the soccer match and the extremely popular Junior's forum. However, the congress was incredibly stimulating and well attended, even in a virtual format. As Chairperson of the Juniors Group, it was a real pleasure to see many excellent presentations from talented and promising young headache scientists on a variety of different topics.

As a group we worked hard in order to maintain our traditional scientific event during the conference, the Headache Science Excellence Tournament. 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 expand their knowledge in the headache field.

The group selected the six best abstracts, among the 110 submitted by Juniors to IHC. Of the selected presenters, two winners were then chosen by the audience: one for a clinical research presentation, and one for basic research. The presentation award winners were Dr James Mitchell, from Birmingham, UK, with a presentation titled 'Using optical coherence tomography as a surrogate of measurements of intracranial pressure in idiopathic intracranial hypertension' (clinical science) and Dr Olivia Grech, also from Birmingham, UK, with a presentation titled 'The impact of glucose on mitochondrial function in a brain slice model of cortical spreading depression' (basic science). The tournament ran smoothly and with great participation, and the Group offers thanks to our incredible session Co-Chairs, Drs Patricia Pozo-Rosich and Jan Hoffmann.



For the second time during IHC, the Juniors Group organised the 'Juniors Open Meeting', a meeting for Junior delegates including a presentation of current IHS initiatives and activities for IHS Juniors, and with the possibility for participants to ask questions and provide suggestions for new Junior activities and ways of better promoting IHS to Juniors. This was done virtually and was well attended by over 50 participants.

Congratulations to the winners of the Headache Science Excellence Tournament, James Mitchell and Olivia Grech



## International Headache Society

### Welcome to the new Juniors Group members

- Before the IHC, five new members of the Juniors Group were elected from the IHS Junior members, and one member was co-opted. The new members, who were presented during the meeting, are:
  - Faraidoon Haghdoost (Australia)
  - Mohammad Al-Mahdi Al-Karagholi (Denmark)
  - Kuan-Po Peng (Taiwan)
  - Ayush Chandra (Nepal/China)
  - Tatiana Castro Zamparella (Argentina)
  - Soo-Jin Cho (South Korea)

During the Open Meeting, the winners of a new activity created by the Group, the IHS Junior Research Grant, were proudly announced. We again congratulate Dr Linda Al-Hassany from the Netherlands, with her project titled 'Cardiovascular risk associated with migraine and coronavirus disease', Dr Noemi Meylakh from Australia, with a project titled 'Identifying the underlying neurobiology of chronic migraine' and Dr Bahtigul Holmuratova from Uzbekistan with a project titled 'Gender differences and features of the clinical course of primary headaches'. We look forward to hearing about their research in IHC 2023.

#### If you have suggestions for Juniors activities please contact the Group Chair

Finally, the members of the Juniors Group 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 Juniors Group members: 'Intracellular pathways of calcitonin gene-related peptide-induced relaxation of human coronary arteries'; Tessa de Vries et al. (Netherlands)
- People's Choice Award: 'Salivary CGRP can help monitor the different migraine phases: CGRP (in)dependent attacks'; Alicia Alpuente et al. (Spain)

We are really looking forward to the next IHC in Seoul in 2023. If you have any suggestions for new Junior activities or ways for IHS to support Junior headache scientists and clinicians, please email me your thoughts: **francesca.puledda@kcl.ac.uk** 

# COVID-19 and headache: what is changing and where are we heading to?



# Edoardo Caronna and Patricia Pozo-Rosich

Neurology Department, Hospital Universitari Vall d'Hebron, Barcelona, and Headache and Neurological Pain Research Group, Vall d'Hebron Research Institute, Department of Medicine, Universitat Autònoma de Barcelona, Barcelona, Spain

Since the beginning of the COVID-19 pandemic, a growing body of literature has been published on COVID-19 headache. This includes studies on headache in the context of the acute or post-acute phase of the infection, emerging works on headache associated with SARS-COV-2 vaccines, and also articles on the impact of the pandemic on migraine patients and headache care. The evidence of a global interest in this new field is represented by the fact that around 10% of all abstract submissions at both the American Headache Society congress 2021 and the International Headache Congress 2021 focused on COVID-19. Moreover, original research on COVID-19 headache showed



unprecedented world-wide representation of countries,<sup>1-5</sup> reflecting the enormous impact of the pandemic globally. Thus, this flourishing literature has raised some relevant questions so far.

#### Is COVID-19 changing our view on headache disorders?

Studies have provided different hypotheses on the pathophysiology of COVID-19 headache in the acute phase, involving immune-inflammatory mechanisms<sup>6-8</sup> as well as the direct viral damage to the nervous system.<sup>9,10</sup> However, at present, these pathways are not fully understood and it is still a matter of debate whether they are SARS-CoV-2specific or common to other viral infections.<sup>11</sup> Nevertheless, a finding deserves further discussion: COVID-19 patients with headache, including those with no personal migraine history, may present with a migraine-like phenotype,<sup>12,13</sup> pointing to the activation of the trigeminovascular system. This is not new, as migraine-like headaches are also observed in other secondary headache disorders, such as post-traumatic headache. However, this finding remarks two fundamental concepts: (1) completely different noxae (infection, trauma, etc.) can elicit a cascade of pathophysiological mechanisms that may end up in common pathways; and (2) primary and secondary headache disorders may also share pathophysiological mechanisms.<sup>14</sup> In this scenario, it is important to remark that migraine-like headaches are also observed in the postacute phase of COVID-19, although, under this definition, a complex spectrum of patients is probably included:<sup>15</sup> some may be people with low frequency episodic migraine, undergoing chronification in the context of the infection, others may have a new-onset long-lasting headache since the COVID-19 acute phase, and finally there may be patients with a delayed-onset headache that exclusively appeared after the acute phase. Although patients experiencing headache in the acute phase are more likely to have headache after the resolution of the infection,<sup>16</sup> suggesting that certain mechanisms once activated may persist, the specific pathophysiological pathways involved in headache in the post-acute phase of the infection are currently unknown. Taken together, the findings on common migraine-like features in acute and post-acute COVID-19 headaches make it logical to wonder whether some migraine mechanisms could be congenital (i.e. migraine as a primary headache disorder) or acquired. Although it is true that this perspective could be too simplistic, COVID-19 has highlighted that the study of common pathophysiological mechanisms between primary and secondary headache disorders needs to be further developed.

#### Is COVID-19 changing our clinical practice in headache?

Since the first wave of the pandemic, headache has represented one of the major complaints expressed by COVID-19 patients during the infection.<sup>12</sup> The clinical relevance of headache in the COVID-19 scenario has been further recognised by the increase of patients' referrals due to persistent headache after the resolution of the infection, where it represented one of the most common and disabling symptoms of the so called 'post-covid syndrome.<sup>17</sup> Later, vaccine-related headaches also emerged as common symptoms after vaccine administration,<sup>18-20</sup> and in some cases they caused a dramatic increase in emergency room visits, favoured by the case reports on cerebral venous thrombosis following vaccination.<sup>21</sup> All these facts clearly highlight: (1) the need to specifically manage, treat and educate on COVID-19 headaches in clinical practice; and (2) that headache specialists and IHS should have a leading role in helping general clinicians and the society in achieving this purpose.

#### Where are we heading to?

It is clear that the COVID-19 scenario is offering a regained interest in secondary headaches, specifically, the ones associated with a systemic viral infection. However, investigating headache associated with COVID-19 is not only about better defining and managing it, but also about understanding its role during an infection. For example, fever is a protective mechanism to reduce pathogens survival and enhance cytoprotection through changes in body temperature,<sup>22,23</sup> while cough enables pathogens clearance.<sup>24</sup> So, why do people have headache during an infection? Recently, a meta-analysis of 48 studies on COVID-19 inpatients has observed reduced mortality in those reporting headache as a symptom of the infection.<sup>25</sup> This may suggest that headache arising secondary to an infection is not a 'non-specific' symptom, but rather

COVID-19 has significantly generated clinical and research interest in headache globally

The migrainelike phenotype present in COVID-19 headache reinforces the concept of shared pathophysiological mechanisms between primary and secondary headache disorders



### International Headache Society

#### The emerging cases of persistent COVID-19 headaches and vaccine-related headaches stress the role of headache specialists in developing better strategies to manage them

Headache as a symptom of the infection is associated with enhanced COVID-19 survival. Is headache a protective mechanism in humans?

it may be a marker of enhanced likelihood of survival. Following this line of thoughts, it is logical to wonder whether headache as a symptom may engender protective mechanisms during viral infections and whether primary headache disorders as well may be protective, emerging as adaptive responses in human evolution to enhance survival and therefore being consequently genetically selected in the population in response to certain stimuli such as viruses.<sup>25</sup> So, in future, investigating primary headache disorders in the setting of a viral infection will be fundamental to establish their mutual relationships and define the physiological and pathological role of headache in humans.

#### References

- Uygun Ö, Ertaş M, Ekizoğlu E, et al. Headache characteristics in COVID-19 pandemic-a survey study. J Headache Pain 2020;21;121. doi:10.1186/s10194-020-01188-1
- 2 Magdy R, Hussein M, Ragaie C, et al. Characteristics of headache attributed to COVID-19 infection and predictors of its frequency and intensity: a cross sectional study. Cephalalgia 2020;40:1422-1431. doi:10.1177/0333102420965140
- 3. Rocha-Filho PAS, Magalhães JE. Headache associated with COVID-19: frequency, characteristics and association with anosmia and ageusia. Cephalalgia 2020;40:1443–1451. doi:10.1177/0333102420966770
- 4 Islam MA, Alam SS, Kundu S, et al. Prevalence of headache in patients with Coronavirus disease 2019 (COVID-19): a systematic review and meta-analysis of 14,275 patients. Front Neurol 2020;11:562634. doi: 10.3389/fneur.2020.562634
- 5. Membrilla JA, de Lorenzo I, Sastre M, et al. Headache as a cardinal symptom of coronavirus disease 2019: a cross-sectional study. Headache 2020;60:2176-2191. doi: 10.1111/head.13965
- 6. Bolay H, Karadas Ö, Öztürk B, et al. HMGB1, NLRP3, IL-6 and ACE2 levels are elevated in COVID-19 with headache: a window to the infection-related headache mechanism. J Headache Pain 2021;22:94. doi: 10.1186/s10194-021-01306-7
- Kursun O, Yemisci M, van den Maagdenberg AMJM, Karatas H. Migraine and neuroinflammation: the inflammasome perspective. J Headache Pain 2021;22:55. doi: 10.1186/s10194-021-01271-1
- Trigo J, García-Azorín D, Sierra-Mencía Á, et al. Cytokine and interleukin profile in patients with headache and COVID-19: a pilot, CASE-control, study on 104 patients. J Headache Pain 2021;22:51. doi: 10.1186/s10194-021-01268-w
- 9 Meinhardt J, Radke J, Dittmayer C, et al. Olfactory transmucosal SARS-CoV-2 invasion as a port of central nervous system entry in individuals with COVID-19. Nat Neurosci 2021;24:168–175. doi:10.1038/s41593-020-00758-5
- 10. Messlinger K, Neuhuber W, May A. Activation of the trigeminal system as a likely target of SARS-CoV-2 may contribute to anosmia in COVID-19. Cephalalgia 2021;3331024211036665. doi: 10.1177/03331024211036665
- Rozen TD. Daily persistent headache after a viral illness during a worldwide pandemic may not be a new occurrence: lessons from the 1890 Russian/Asiatic flu. Cephalalgia 2020;40:1406-1409. doi:10.1177/0333102420965132
- 12. Caronna E, Ballvé A, Llauradó A, et al. Headache: a striking prodromal and persistent symptom, predictive of COVID-19 clinical evolution. Cephalalgia 2020;40:1410–1421. doi: 10.1177/0333102420965157
- 13. Trigo López J, Garcia-Azorin D, Planchuelo-Gómez A, et al. Phenotypic characterization of acute headache attributed to SARS-CoV-2: an ICHD-3 validation study on 106 hospitalized patients. Cephalalgia 2020;40:1432-1442. doi: 10.1177/0333102420965146
- 14. Caronna E, Pozo-Rosich P. Headache during COVID-19: lessons for all, implications for the International Classification of Headache Disorders. Headache 2021;61:385–386. doi:10.1111/head.14059 15. Caronna E, Alpuente A, Torres-Ferrus M, Pozo-Rosich P. Toward a better understanding of persistent headache
- after mild COVID-19: three migraine-like yet distinct scenarios. Headache 2021;61:1277–1280. doi: 10.1111/head.14197
- 16. Fernandez-de-las-Penas C, Gomez-Mayordomo V, Cuadrado ML, et al. The presence of headache at onset in SARS-CoV-2 infection is associated with long-term post-COVID headache and fatigue: a case-control study. Cephalalgia 2021;41:1332–1341. doi: 10.1177/03331024211020404
- 17. Lopez-Leon S, Wegman-Ostrosky T, Perelman C, et al. More than 50 long-term effects of COVID-19: a systematic review and meta-analysis. Sci Rep 2021;11:16144. doi: 10.1038/s41598-021-95565-8
- 18. Ekizoqlu E, Gezegen H, Yalınay Dikmen P, et al. The characteristics of COVID-19 vaccine-related headache: clues gathered from the healthcare personnel in the pandemic. Cephalalgia 2021;3331024211042390. doi: 10.1177/03331024211042390
- 19. Göbel CH, Heinze A, Karstedt S, et al. Headache attributed to vaccination against COVID-19 (Coronavirus SARS-CoV-2) with the ChAdOX1 nCoV-19 (AZD1222) vaccine: a multicenter observational cohort study. Pain Ther 2021;10:1309–1330. doi: 10.1007/s40122-021-00296-3
- 20. Göbel CH, Heinze A, Karstedt S, et al. Clinical characteristics of headache after vaccination against COVID-19 (coronavirus SARS-CoV-2) with the BNT162b2 mRNA vaccine: a multicentre observational cohort study. Brain Commun 2021;3:fcab169. doi: 10.1093/braincomms/fcab169
- 21. Greinacher A, Thiele T, Warkentin TE, et al. Thrombotic thrombocytopenia after ChAdOx1 nCov-19 vaccination.
- N Engl J Med 2021;384:2092–2101. doi: 10.1056/NEJMoa2104840 22. Hasday JD, Singh IS. Fever and the heat shock response: distinct, partially overlapping processes. Cell Stress Chaperones 2000;5:471–480. 10.1379/1466-1268(2000)005<0471:fathsr>2.0.co;2
- 23. Guihur A, Rebeaud ME, Fauvet B, et al. Moderate fever cycles as a potential mechanism to protect the respiratory system in COVID-19 patients. Front Med (Lausanne) 2020;7:564170. doi: 10.3389/fmed.2020.564170 24. Whitsett JA. Airway epithelial differentiation and mucociliary clearance. Ann Am Thorac Soc 2018;15(Suppl
- 3):S143–S148. doi: 10.1513/AnnalsATS.201802-128AW 25. Shapiro RE, Gallardo VJ, Caronna E, Pozo-Rosich P. The impact of headache disorders on COVID-19 survival: a world population-based analysis. medRxiv 2021. preprint. https://doi.org/101101/2021031021253280







# David Dodick and Nim Lalvani

The programme provided worldclass headache education to healthcare providers in Africa

Collaboration between local expert neurologists and international headache specialists Education in Headache to Healthcare Providers in Africa (EHHPA) was the first joint educational programme in Africa – a collaboration between the African Academy of Neurology (AFAN), the International Headache Society-Global Patient Advocacy Coalition (IHS-GPAC) and the World Federation of Neurology (WFN). The virtual programme was offered free of charge to provide world-class headache and migraine education to African healthcare providers all over the African continent, with added education focused on patient experience and perspective.

Wolfgang Grisold of the World Federation of Neurology (WFN) initiated the concept of providing education to healthcare providers in Africa to IHS-GPAC and the AFAN. A committee including Professor Grisold (WFN), Dr David Dodick (IHS-GPAC), Dr Augustina Charway-Felli (AFAN) and Dr Riadh Gouider (AFAN) with Nim Lalvani and Heather Phillips from IHS-GPAC discussed the goals of the programme and designed a 2-day event to introduce headache science and medicine to the region, with focus on migraine on the



second day. Patient presentations were included on both days of the programme. The faculty members were local African neurologists identified through AFAN, and international speakers through IHS and IHS-GPAC.



During the programme, renowned international headache experts including the IHS President, Dr Cristina Tassorelli, and three Past-Presidents, Drs Messoud Ashina, David Dodick and Peter Goadsby, and local experts including Drs Augustina Charway-Felli (Ghana), Callixte Kuate (Cameroon), Riadh Gouider (Tunisia) and Frank Ojini (Nigeria), presented topics on the pathology and classification of headache, and information about treatments and therapies. There were also sessions in French with regional experts Drs Riadh Gouider, Augustina Charway-Felli, Ramez Reda



Moustafa (Egypt), Marieme Soda Diop-Sene (Senegal) Sarah Misbah El-Sadig (Sudan) and Paul Macaire Ossou-Nguiet (Republic of Congo). Audrey Craven from the Migraine Association of Ireland represented the international patient voice giving a presentation on seeking medical advice on headache.

The programme was designed for trainees, neurologist practitioners and healthcare professionals. 551 delegates registered for the event, representing 71 countries, 32 of which were from the African continent (418 delegates); 36% of registrants were neurologists, 20% General Practitioners.



#### Delegates from 32 African countries attended

All attendees were asked to complete a post-event evaluation and given a certificate of attendance. The virtual site was open to all registrants 4 weeks after the event and the content uploaded onto the WFN's virtual content site. Most delegates reported that their:

- confidence to make a correct diagnosis of migraine and other types of headache disorders increased
- understanding of the underlying biology and pathophysiology of migraine and other headache disorders improved
- confidence in treating and managing migraine and other headache disorders increased.

# **Spotlight on IHS Affiliate Member Societies**

# Israel Headache Society



# Oved Daniel, Abraham Avi Ashkenazi, Nirit Lev, Baruch El-Ad and Gal Ifergane

The Israeli Headache Society was established in 2019, with the Israel Neurological Association as its parent organisation. The first and current President of the society is Dr Oved Daniel, with four board members. Currently there are 60 members of the society.

The goal of the Israeli Headache Society is to promote and improve the care of headache patients in Israel through the facilitation of clinical care delivery, education of healthcare professionals as well as the general public about headache disorders, and advancing the field through research. We are excited about receiving the status of an IHS Affiliate



The headache field in Israel has seen a significant growth over the past few years and the society works to increase knowledge and awareness of headache

Our goal is to establish the field as a thriving subspecialty of neurology Member Society and are grateful for its recognition and support.

The headache field in Israel has seen a significant growth over the past few years, with more and more doctors, who have been trained locally or in the United States, devoting more of their professional time and effort to the field. However, there is still an enormous gap between the needs of headache patients in Israel and the number of trained headache specialists who are able to care for them. With this in mind, we are actively promoting the field through educational activities directed at neurology residents, aiming to encourage them to choose headache medicine as their focus of interest. We also strive to establish formal headache fellowship programmes that will provide the appropriate setting for training and educating future headache specialists.

The Israeli Headache Society is also working hard to increase the awareness and knowledge of primary care doctors about headache medicine through workshops and seminars; even through the COVID-19 pandemic we have successfully continued with our programmes, both virtually and physically. We are also actively involved in advocacy programmes for our patients, collaborating with national and local headache patients' organisations, and engaging with governmental regulators to make the newest and most effective treatments available to all our patients.

One of the highlights of our activities each year is the Annual International Headache Symposium in Israel, initiated and organised by Daniel Oved and Dr Arieh Kuritzky. This Symposium has been held since 2016 and continually attracts an increasing number of attendees, both nationally and internationally, as well as renown headache specialists. The 6th Annual International Headache Symposium was due to be held in January 2022, however, due to the ongoing COVID-19 pandemic this has been postponed. We hope to hold it still in the first half of 2022, and will host some of the world leaders in headache medicine and science, including Messoud Ashina, Cristina Tassorelli, Rami Burstein, Richard Lipton and Alan Rapoport.

Headache medicine in Israel is a growing field. Our goals for the future are to establish the field as a recognised and thriving subspecialty of neurology in Israel, and to continue promoting access to the best clinical care for our headache patients.

# Russian Headache Research Society and Report of the 7th Russian Headache Congress



# Kirill Skorobogatykh and Alexey Sergeev

The Russian Headache Research Society (RHRS) was founded in 2008. This year, members of the RHRS, led by Professor Vera Osipova, translated the ICHD-3 into Russian. Also, the facial pain specialist's subgroup under the leadership of Dr PhD Leniza Mingazova finalised the Russian version of the International Classification of Orofacial Pain, 1st edition (ICOP). New Russian national guidelines on migraine, tensiontype headache and medication overuse headache were developed by the group of Professors Tabeeva, Osipova, Filatova and co-authors.

The annual RHRS symposium will be held online on 16–17 December 2021.



The 7th Russian Headache Congress reached >2,000 neurologists and other specialists interested in headache

Russian Master Class on headache disorders focuses on actual contact with patients under the supervision of headache specialists



The 7th Russian Headache Congress 'Headache Treatment: Theory and Practice' organised by the University Headache Clinic was held on 24–25 September 2021 in Moscow with the support and the auspices of the International Headache Society.

The conference was held in a hybrid format. About 150 participants attended the conference in person. On each of the 2 days of the congress, about 2,000 participants were online and 4,000 additional views on demand after the congress.

The conference was attended by neurologists, therapists, endocrinologists, psychologists, psychiatrists, paediatricians, and ophthalmologists from 133 Russian cities, as well as colleagues from other countries – Azerbaijan, Ukraine, Belarus, Kazakhstan, Kyrgyzstan, Uzbekistan.

The main topics of the congress were the real world experience of the new biological migraine therapies, pathogenesis of migraine, combination of migraine and depression, vascular headaches, paediatric headaches and facial pain. The participants discussed clinical cases, including headache associated with COVID-19, and clinical cases of neuroimaging in secondary headache disorders, and discussed the most important topics from the international neurological congresses. Our special guests gave lectures on the differential diagnosis of facial pain



(Professor Stefan Evers, Germany), CADASIL (Professor Nadine Pelzer, Netherlands), neuroimaging in migraine (Professor Sait Ashina, USA) and refractory migraine (Professor Mark Braschinsky, Estonia)



The average score of the conference meeting expectations, according to the results of our traditional survey, was 4.8 points out of 5.

In 2021, a new educational initiative was launched at the University Headache Clinic – Master Classes on Headache Disorders. Over 2 days, at a real non-simulated admission of patients with headache, six to seven doctors under the supervision of headache specialists studied the principles of dialogue with headache patients, the need for further investigations, the principles of the

International Classification of Headache Disorders (ICHD-3) diagnosis, and how to provide optimal and individual management of headache and comorbid conditions. Almost 50 doctors completed this course in 2021.



# **Registered Reports of studies of trigeminal pain**

Cephalalgia is now inviting researchers to submit study protocols of planned studies including hypotheses, aims, methods, and expected outcomes of studies they are planning to conduct to Cephalalgia Reports. If accepted after peer review, the completed study will be published in Cephalalgia.

If the manuscript is accepted, the study protocols will be published in *Cephalalgia Reports* (Stage 1), together with the promise to publish the completed study, independent of the outcome, in *Cephalalgia* (Stage 2). The only requirement is that



the Stage 2 study follows in all details the methods outlined in Stage 1. This will incentivise quality and rigour during the Stage 1 preregistration over novelty and statistical significance of the actual Stage 2 findings – allowing negative results to be published at equal level with positive results.

# For papers to be considered for the special issue they must adhere to the following criteria:

- 1. The study examines relevant aspects of the trigeminovascular system and trigeminal pain.
- 2. The study is adequately powered for relevant statistical tests of all hypotheses and an appropriate power analysis is reported in detail. This is important to allow for the estimation of a plausible range of true effect sizes with reasonable precision.
- 3. Data collection has not started. Analyses of existing data will not be considered. The collection of pilot data to determine feasibility is allowed. If pilot data are collected, these data should be described in the initial Stage 1 manuscript.
- 4. Replications: Direct (close) replications of earlier published studies are interesting, if the planned study implements the same methodology (i.e. data collection, processing, analysis) as the original research within a new sample of participants. Authors must provide a compelling case to justify the value of a direct replication by outlining why the to-be-replicated result is empirically and/or theoretically important to be replicated and why replicability cannot be considered well established for this specific finding.

### Timeline

Stage 1 Registered Report *Cephalalgia Reports* submission deadline: December 2022 Stage 2 Registered Report *Cephalalgia* submission deadline: December 2024

Note: Stage 1 Article processing charge (APC) fee waived to publish the Registered Report article in *Cephalalgia Reports* 

For more information please visit the Cephalalgia website



# **Calendar of events**

Date	Event	Country	Contact/information
2022			
27 January	2nd International Conference on Controversies in Neuropathic Pain	Virtual	Visit website
24–27 March	16th World Congress on Controversies in Neurology (CONy)	London, UK	Visit website
17-22 April	74th Annual Meeting of the American Academy of Neurology	Seattle, WA, USA	Visit website
9–12 June	64th Annual Scientific Meeting of the American Headache Society	Aurora, CO, USA	Visit website
25–28 June	8th Congress of the European Academy of Neurology	Vienna, Austria	Visit website
8–11 September	Migraine Trust International Symposium	London, UK	Visit website
19-23 September	IASP 2022 World Congress on Pain	Toronto, Canada	Visit website
27-29 October	Brazilian Headache Society Meeting	Santos, Brazil	Visit website
9–11 December	European Headache Federation Annual Congress	Vienna, Austria	Visit website
2023			
14–17 September	21st International Headache Congress (IHC 2023)	Seoul, Korea	Visit website

**Important note:** Events may be cancelled, postponed or go virtual due to the COVID-19 pandemic. Please check each event website for updated information.

If you would like IHS to include your meeting on the IHS website and newsletter please contact **Carol Taylor** with the details.



# New Open Access companion journal for Cephalalgia

## Cephalalgia Reports: A fully Open Access Journal

Published on behalf of the International Headache Society, *Cephalalgia Reports* is a peerreviewed, open access publication providing an international forum for original research papers, review articles, clinical perspectives, technical reports and short communications.

It actively encourages high quality papers in the following areas:

- Emerging observations with translational potential not yet realised
- Reports limited to regional relevance which may validate and add to existing studies
- Negative outcomes
- Technical reports
- · Articles with a more clinical emphasis
- · Pilot trials which may stimulate therapeutic innovation
- · Confirmatory studies

All articles are freely available online immediately upon publication. All articles are rigorously peer-reviewed, and brought to publication as rapidly as possible.

### Now accepting submissions! https://mc.manuscriptcentral.com/reports

For more information including Author Processing Charges, visit journals.sagepub.com/rep and click on Submission Guidelines







International Headache Society

To advance headache science, education and management and promote headache awareness worldwide

# Join the IHS

Subscription and online access to Cephalalgia and The Neuroscientist

Free access to the IHS Online Learning Centre

**Early access to IHS International Guidelines** 

Eligibility to apply for IHS Fellowships and other awards

Reduced registration to the bi-ennial International Headache Congress

Free download of the Cephalalgia app



To learn more about our different membership categories and related benefits please visit us at

www.ihs-headache.org