



Canadian League Against Epilepsy



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I hope you all had a very pleasant and wonderful summer. As we get back to work at our regular pace I have a few reminders and announcements. We are almost a year from our next CLAE meeting to be held in London Ontario on October 17 - 19, 2014. The deadline for the call for submissions is fast approaching and I encourage all of you interested to make a submission as soon as possible. We are in the process of organizing the Canadian Night at the AES in Washington DC. The tentative date and time is Sunday December 8 from 6-9 pm. Please mark your calendars.

In May 2011 one of our colleagues Dr. Alain Bouthillier, a Montreal-based neurosurgeon, climbed Alaska's Mount McKinley to raise funds for a fellowship. He was able to raise approximately \$ 16,000. It is time

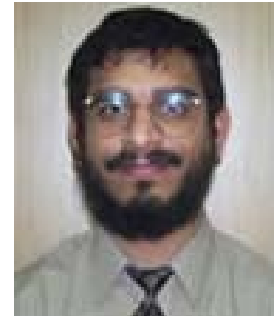
that we all work together over the next 6 months to raise the remaining \$44,000. You will be hearing from CLAE about the fund raising in the next few months. I sincerely hope that each of us contributes and encourage others to do the same. The CLAE will issue tax deductible receipts.

I must congratulate Dr Rajesh Ramachandran Nair for successfully steering our quarterly newsletter, the CLAE Times as the first Editor-in-Chief. This is a great opportunity for all members to share their research summaries, awards and accolades and efforts in patient advocacy. For a nominal publication fees you can also advertise job openings and fellowship opportunities.

Last but not the least, I encourage all members to participate and contribute in some way to the Epilepsy Awareness Month,

celebrated in March in Canada. You can contribute by writing about epilepsy in your local or community newspapers, making yourselves available for a brief television interview and considering running one extra clinic in March to reduce the wait times for patients with epilepsy.

I look forward to seeing all of you at the AES in December.



Best Regards,

S. Nizam Ahmed, MD, FRCPC

JUHN ATSUSHI WADA: 2013 LIFETIME ACHIEVEMENT AWARD



Dr Juhn Wada was awarded the 2013 lifetime achievement award of the ILAE at the 30th International Epilepsy Congress, Montreal.

Prof. Juhn Wada was born in Japan in 1924 and has, over an illustrious career, carved a reputation for research in epilepsy, including his description of the Wada test for cerebral hemispheric dominance of language function.

He worked at University of Minnesota and Montreal Neurological Institute, then settled at University of British Columbia in 1956, where he was Professor of Neurology. He created the first surgical epilepsy program and seizure monitoring unit in British Columbia. His main interest has been in researching Human Brain Asymmetry and Neurobiology of Epilepsy, for which work he has received

many internationally renowned awards. He was an associate of the Medical Research Council of Canada 1966-1994; founding president of Canadian League Against Epilepsy 1977-1979, and president of American Epilepsy Society 1988. He was appointed Officer of the Order of Canada in 1992 and awarded the Queen Elizabeth II Diamond Jubilee Medal in 2012.

PAINTING BY EDUARDO URBANO MERINO



RISING STARS

In this issue of CLAE Connections we introduce Dr. Elysa Widjaja, MD; The Hospital for Sick Children, Toronto



Dr Elysa Widjaja is a pediatric neuroradiologist with cross appointment at the division of Neurology at the Hospital for Sick Children. She completed her medical degree at the University of Melbourne, Melbourne, Australia. Her interest in epilepsy imaging and imaging of brain malformations began when she undertook a fellowship in neuroradiology at Sheffield Teaching Hospital in England. At the time of her fellowship, she also completed her Master's degree at the University of Sheffield, England, and defended her thesis on advanced imaging of cortical malformations. Subsequently, Dr Widjaja undertook a pediatric neuroradiology fellowship at the Hospital for Sick Children in Toronto, where she is currently a faculty member.

Dr Widjaja has research interest in utilizing advanced imaging to improve detection of brain malformations in children and fetuses. The research was supported by the American Society of Neuroradiology, Physician Services Incorporated Foundation and the Ontario Federation for Cerebral Palsy. She was awarded the Cornelius Memorial Dyke Award from the American

Epilepsy- leaving the nightmare behind.

Painted in 2013. Technique: oil/canvas. Measurements: 100 × 120 cm. Location: Royal University Hospital, Saskatoon, Saskatchewan, Canada. **Artist: Eduardo Urbano Merino.**

This painting was presented by the Mexican artist Eduardo Urbano Merino on March 26 during the celebration of Purple day by the Saskatchewan Epilepsy Program. The painting is a contemporary art piece representing "epilepsy surgery". The description of the painting by Eduardo Urbano is as follows:

On the left side of the painting, it is darkness for the patient, there is a storm, the disease is active, neurons are sick (black) and are trapped between two of the three crystals that float at the center, the patient is standing up, he is completely incorporated when doctors are healing him (epilepsy surgery), there is a grid (device used to map seizure activity in the brain during epilepsy surgery), and after surgery the patient is surrounded by healthy neurons in white.....on the right side there is third glass that represents the screen used to read the

epileptic activity mapped with the grid.. one of the doctors is touching the patient (neurosurgeon), the other is reading an electroencephalogram (epileptologist) ... the oldest doctor represents the experience, he has the maple leaf in his lab coat, the other doctor wears a badge with the flag of the Canadian province of Saskatchewan .. THE GOLDEN POINT results from the division of the top of the painting and the gray line and it is represented by the Lily flower....this point is used to calculate all the vertical lines of the painting... except for the patient standing that takes up the head of the "grid" ... this "grid" comes from a characteristics plant of my work that represent health and life.

*Painting provided to the CLAE Connections by Dr Jose Tellez-Zenteno. For more information please read 'Art and epilepsy surgery' in *Epilepsy & Behavior* 2013;29:82-89.*



CALL FOR PROPOSALS: CLAE BIENNIAL MEETING

You are invited to submit proposals for a plenary session or workshop for the CLAE Biennial Meeting to be held in London, Ontario from October 17 - 19, 2014.

The proposal should be organized under the following headings:

Course outline

Learning objectives

Target audience

Learning format: Lectures or workshops

Name of the chairperson (including affiliation and contact information)

Name of each speaker with a title of the talk and affiliation.

Please note the following:

Registration rates for Course Chairs and speakers are currently under discussion by the CLAE executive. Information will be available at a later date. Speakers and chairs will not be provided with travel or accommodation expenses.

Courses are limited to a maximum of 5 speakers. Courses relevant to the broader membership will be given a preference.

The deadline for submission is November 30th, 2013.

Submit your proposals to

Dr. Jorge G Burneo, Director of Education, CLAE. Email jburneo2@uwo.ca

DEFINITION OF EPILEPSY- MESSAGE FROM ILAE

An ILAE task force, under the leadership of Robert Fisher, has created a new definition of seizures and epilepsy that will become the League's working definition. As part of the process, ILAE is seeking the broad input and guidance of members and community from around the world to refine the document that we in the epilepsy community will use going forward as our definitions.

Please read the paper, especially with regard to how it will be used, and send us your comments. We ask you to send us your thoughts about the definitions before October 1. All comments will be posted, and at the end of the comment period, a task force will be appointed by the Executive Committee to review the additional thoughts from our community.

<http://www.ilae.org/Visitors/Centre/Definition.cfm>

EDITOR'S PICK: NOTABLE PUBLICATIONS FROM CANADA IN 2013 (JAN-JUNE)

1. Nguyen DK, Tremblay J, Pouliot P, Vannasing P, Florea O, Carmant L, Lepore F, Sawan M, Lesage F, Lassonde M. [Noninvasive continuous functional near-infrared spectroscopy combined with electroencephalography recording of frontal lobe seizures](#). *Epilepsia*. 2013 Feb; 54(2):331-40.

Neurology Division, University of Montreal Health Center Notre-Dame Hospital, Montreal, Quebec, Canada.

2. Fiest KM, Dykeman J, Patten SB, Wiebe S, Kaplan GG, Maxwell CJ, Bulloch AG, Jette N. [Depression in epilepsy: a systematic review and meta-analysis](#). *Neurology*. 2013 Feb 5; 80(6):590-9.

Department of Community Health Sciences, University of Calgary, Canada.

3. Hrabok M, Sherman EM, Bello-Espinosa L, Hader W. [Memory and health-related quality of life in severe pediatric epilepsy](#). *Pediatrics*. 2013 Feb;131(2):e525-32.

Alberta Children's Hospital, Neurosciences, 2888 Shaganappi Trail NW, Calgary, AB, Canada T3B 6A8.

(Articles were selected by Dr Cecil Hahn, The Hospital for Sick Children, Toronto)

..Society of Neuroradiology, an award given to junior faculty for excellence in research, for her work in MR imaging of fetal cerebral laminations.

Another focus of her research is to better understand the impact of intractable epilepsy on the developing brain through the use of MR imaging. The research was supported by the Sickkids' Foundation/CIHR new investigator grant and the Association of University Radiologists. The findings of the cross-sectional study on the relation between white matter injury and neurocognitive function in children with intractable epilepsy have been published in *Epilepsia* this year. Following the completion of the cross-sectional study, Dr Widjaja has successfully secured further funding from EpLink/Ontario Brain Institute to conduct a prospective longitudinal study to assess the impact of intractable epilepsy on the developing brain structure and function longitudinally.

In the last few years, Dr Widjaja had developed an interest in outcomes research and comparative effectiveness studies, and has recently completed a Master's degree in Public Health at the Harvard School of Public Health. She has published on cost effectiveness of pediatric epilepsy surgery, performance of diagnostic tests for the work-up of non-lesional intractable epilepsy in children and cost effectiveness of diagnostic tests for the work-up of epilepsy surgery.



ESTABLISHMENT OF AN ICU EEG MONITORING PROGRAM

Rajesh asked me to reflect on our experience establishing our ICU EEG monitoring program at The Hospital for Sick Children in Toronto. Back in 2006, when I started on staff at The Hospital for Sick Children, only a handful of children in our ICU were undergoing continuous EEG (cEEG) monitoring, mostly those with refractory status epilepticus, to guide titration of high-dose anticonvulsant therapy. That year, my colleagues reported that 16% of children in our pediatric ICU with an unexplained decrease in consciousness who underwent a routine 30-minute EEG were found to have nonconvulsive seizures. Other centers had reported that when continuous EEG monitoring was used, the incidence of nonconvulsive seizures was even higher. My colleagues and I became concerned that some children in our ICU could be having nonconvulsive seizures that remained undetected and untreated, possibly prolonging their ICU stay or even worsening their outcomes.

We decided to make ICU EEG monitoring a priority. Fortunately, we were able to acquire four new portable EEG machines designed for the use in the ICU, which were compact and could more easily fit at the bedside. But obtaining this new equipment was only the first step. We then had to build a team and develop a system to perform the monitoring. Based on our own experience and published evidence at the time, we developed institutional guidelines and indications for ICU EEG monitoring (see box). We also developed procedures for how continuous EEGs were ordered, hooked up, reviewed and reported. We decided early on that a neurology consultation would be required before the initiation of EEG monitoring. This was to help ensure the most appropriate use of this resource-intensive service, and allow us to provide timely management advice in the event that the EEG detected seizures. Our neurology residents thus became the frontline decision-makers regarding which ICU patients received continuous EEG monitoring.

Another key element to our success was an extensive educational program that we delivered to ICU fellows, staff physicians and bedside nurses. We taught our ICU colleagues to identify which critically ill children were at risk for nonconvulsive seizures, how to recognize seizures and when to call for help. Our EEG technologists provided hands-on small-group teaching to over 200 ICU nurses on the use of our portable EEG equipment. This active educational outreach was key to developing effective collaboration. Efficient communication between the ICU bedside nurses, ICU fellows, and

and epilepsy fellows has been essential to providing superior integrated care.

Demand for ICU EEG monitoring at SickKids has grown rapidly, from just over 20 cases per year in 2006 to over 200 in 2012. The duration of EEG monitoring is typically 24-48 hours, but some children who are experiencing frequent seizures can be monitored for weeks. The rapid growth of our monitoring program has brought its own challenges. Keeping up with the large number of continuous EEG requests can be challenging. Our dedicated EEG technologists have made themselves available to hook up new patients on evenings and weekends, and often go above and beyond the call of duty. Coping with the large volume of EEG data would not have been possible without our hard-working epilepsy fellows who perform the majority of continuous EEG review. Thanks to our fellows, we are able to provide EEG interpretation around-the-clock, with the frequency of EEG review prioritized according to the clinical scenario and the anticipated risk of detecting sub-clinical seizures.

My colleagues and I have become convinced that continuous EEG monitoring has improved the standard of care in our ICUs. About a quarter of critically ill children who are monitored based on our clinical indications turn out to have seizures. Two-thirds of these seizures are non-convulsive, and would otherwise have gone undetected. Importantly, EEG monitoring has also allowed us to clarify that many clinical behaviours suspected to be seizures are actually non-epileptic, reducing inappropriate anticonvulsant treatment.

Does all of this EEG monitoring actually improve outcomes? Is it cost effective? The answers to these important questions are still emerging, but evidence from our center and others is showing that electrographic seizures are independently associated with worse short-term outcomes, even after adjusting for diagnosis and illness severity. However, it remains unknown whether prompt seizure recognition and effective treatment actually improve outcomes. Future interventional studies to address these important questions will require collaboration from multiple centers. A Critical Care EEG Monitoring Research Consortium is actively pursuing this research agenda, and welcomes interested new members (see www.acns.org).

Any pediatric or adult centers that would like advice on developing their own ICU EEG monitoring programs, or wish to participate in collaborative research are also welcome to contact me at cecil.hahn@sickkids.ca

The establishment of this program has truly been a team effort. I am indebted to my neurology and neurophysiology colleagues, our epilepsy fellows, our EEG technologists and our ICU colleagues for their commitment to this joint vision of an ICU EEG monitoring program, and for their ongoing contributions to the program's growth and success.

Indications for Continuous EEG Monitoring at SickKids

Refractory status epilepticus, to guide titration of high-dose anticonvulsant therapy.

Unexplained coma, with suspicion of non-convulsive seizures.

Neuromuscular blockade, with suspicion of seizures.

To characterize clinical events suspected to be seizures.

To characterize patterns on amplitude-integrated EEG suspected to represent seizures. **By Cecil Hahn**



Cecil Hahn, MD, MPH, FRCPC is an Assistant Professor in the department of Pediatrics and a staff neurologist at the Hospital for Sick Children, Toronto. Dr. Cecil Hahn joined the Division of Neurology at The Hospital for Sick Children (SickKids) as a Clinician-Investigator in 2006, with expertise in pediatric epilepsy and neurocritical care. Dr. Hahn directs the SickKids ICU continuous EEG monitoring program, and has led the implementation of clinical guidelines for EEG monitoring in the neonatal, pediatric and cardiac intensive care units.



Canadian League Against Epilepsy

The Canadian League Against Epilepsy is an organization of medical and basic sciences professionals including physicians, basic scientists, nurses, neuropsychologists, neuroradiologists, students and other healthcare professionals.

Board of Directors

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NOTE FROM YOUR EDITOR

The fourth issue of CLAE Newsletter (December 2013) will include meaningful and relevant information to CLAE members, including but not limited to the following:

1. CLAE Stars: A member who has received local, national or international recognition for his/her research, teaching, innovation or advocacy.
2. Innovative new programs and services (clinical, research or advocacy). These include, but are not restricted to: new major regional/institutional or provincial clinical programs, new research themes, platforms, consortium and networks, outreach programs in vulnerable/marginalized communities, innovative educational programs and advocacy initiatives/projects.
3. Major publications by Canadians in the field of epilepsy during the last six months.
4. Information on epilepsy meetings, and epilepsy related social events.
5. Information on recruitment of patients for research studies and opportunities for research, educational and clinical collaboration.
6. Success and success stories in major grant competitions.
7. Colleagues we recently lost /an In Memorium section.

If you are interested in contributing and providing content to the CLAE Newsletter, please contact Rajesh Ramachandran Nair (rnair@mcmaster.ca) before November 15, 2013.

Thank you.

Rajesh Ramachandran Nair, MD, FRCPC

Editor-in-Chief, CLAE Connections

UPCOMING PROGRAMS

Epilepsy Medicine and EEG: A Comprehensive Review, The Westin Beach Resort, Fort Lauderdale, Florida, USA .4 - 6 October, 2013

A symposium designed for adult and pediatric neurologists and epileptologists

www.ccfme.org/epilepsyreview

Epilepsy and Autoimmune Encephalitis, 25 October, 2013

Sponsored by the Danish Epilepsy Society, Charlottehaven, Hjørtinggade 12C, Copenhagen

Questions and registration information:ER@DADL.DK

American Epilepsy Society Annual Meeting, 2013

December 6-10, Washington DC, Washington Convention Center

4th Course on Epilepsy Surgery (EPODES), 13-17 January, 2014 Brno, Czech Republic

An advanced interactive course on surgically remediable epilepsies, presurgical evaluation, scalp and intracranial EEG, neuropsychology, imaging and psychiatric issues of surgical patients before and after surgery.

<http://www.ta-service.cz/epodes2014/>

5th SEEG Course on Seizures of the Motor System, SEEG 2014,

Venice, Italy

4 - 8 February, 2014

More information: seeg@ant-congres.com

2nd African Epilepsy Congress

Cape Town, South Africa

22 - 24 May

<http://www.epilepsycapetown2014.org/>



The next CLAE Biennial Meeting will be held in London, Ontario from October 17-19, 2014. This would be a joint meeting with the Canadian Epilepsy Association. Please mark your calendars.