Nodding Syndrome Baffles Researchers

BY JENNIE SMITH
Elsevier Global Medical News

The cause of nodding syndrome, a progressive seizure and developmental disorder of unknown cause affecting children and teenagers, has remained elusive since the condition was first described in a remote mountain region of Tanzania in the early 1960s, then decades later in northern Uganda and what is now South Sudan, but recent efforts have begun to narrow down the possibilities.

Mental retardation and generalized or complex partial seizures are among the most frequent abnormalities reported along with involuntary head nodding, which starts in children aged 5-15 years. Few children are known to have recovered from nodding syndrome, although antiepileptic medications have been shown to help reduce seizures in some cases.

In 2005, a multinational team working in Tanzania documented impaired consciousness and other supportive signs of epileptic seizures and EEG-confirmed epileptic activity with head nodding (Epilepsia 2008;49:2008-15). And in 2010, the US-based Centers for Disease Control and Prevention (CDC) documented that head nodding in northern Uganda was a manifestation of seizures that cause brief lapses in muscle tone due to alterations in brain function.

In a Jan. 27 report on a 2011 case-control study from two communities in South Sudan, CDC investigators found, based on physical and neurological examinations; clinical, family, and epidemiologic histories; and laboratory investigations, that the syndrome is, in fact, the same as that observed in children aged 5-15 years. Few children are known to have recovered from nodding syndrome, although antiepileptic medications have been shown to help reduce seizures in some cases.

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WFN Looks at e-Learning, Telemedicine Options

BY MORRIS FREEDMAN, MD, RIADH GOUIDER, MD, TIM PATTERSON, BA
eLearning Task Force, WFN

A survey by the World Federation of Neurology (WFN) to assess e-learning needs and capabilities for distance learning using electronic technologies found that there is significant support for online learning (e-learning) and telemedicine among member societies. However, although there is good access to online distance learning technology, cost and time constraints might be a hindrance to some societies going online.

The survey was organized by the eLearning Task Force of the WFN Education Committee. The task force is cochaired by Dr. Morris Freedman and Dr. Riadh Gouider, WFN delegates from Canada and Tunisia. Tim Patterson (Canada) serves as a consultant to the task force. Fifty-four of the WFN’s 113 member societies responded (response rate, 47.8%). The distribution of society responses by geographical region was: Asia, 18 societies; South America, 6; Europe, 18; North America, 4; and Africa, 8.

The response rates for developing countries was almost double that of developed countries at 56.5% and 29.5%, respectively. This observation requires further study, but it raises the possibility that representatives from developing countries responded at a higher rate because they perceive a greater need than those from developed countries for increased CME using distance learning technologies. In addition, WFN member societies support e-learning and telemedicine, with the survey showing that 62% of member societies strongly encourage online distance learning. Twenty-eight percent somewhat encouraged this. Other key findings are discussed on page 8.

See e-Learning page 8

In This Issue of WORLD NEUROLOGY

Apply for a Junior Travelling Fellowship
Submit your proposal for project funding

See Pages 2 and 3
Web Access Triumphs Geographical Barriers

My farewell editorial in 2007 as Editor-in-Chief of Clinical Neurophysiology was titled, Editing the journal in a time of revolution. In it, I described the transition, common around that time, from a paper-based manuscript submission process to an online submission system. Although that was not too long ago, it is almost difficult to remember working with those paper manuscripts. The revolution continues in many ways. People communicate by Facebook and Twitter as well as e-mail. Landline telephones are becoming unnecessary, replaced by cell phones. And the cell phone itself is gradually morphing into the smart phone. Faxing is on the decline and will likely disappear. Soon, everyone will have their medical histories and whole genome recorded in a small chip embedded in their forearms. And so on.

The current issue of World Neurology has two reports dealing with continuing progress in the electronic revolution (pages 1 and 8). The e-Learning Task Force of the World Federation of Neurology’s Education Committee has evaluated the desirability and capability of e-learning. There is considerable interest in this, especially from neurologists in developing countries. The advantages of e-learning programs are considerable. Materials can be developed and used repeatedly at times that are convenient to each person. Electronic resources are not yet universal, but their accessibility is certainly increasing rapidly, including in developing countries. Cost continues to be a barrier in some locations, but in the long run, online learning will likely be a more efficient, less costly form of education.

Neurologists in Canada and Tunisia have organized joint behavioral neurology rounds through teleconferencing. This is an excellent use for the methodology as well as telemedicine, allowing for patient cases to be presented remotely from selected centers and for participating neurologists to assess and discuss the cases and recommend medical care. There appear to be no barriers to neurologists interacting no matter where they are. This is a great area for the WFN to take the lead and to promote high-quality education and patient care worldwide.
WFN Updates and Enhances Its Web Site


The new look homepage has two features: WFN News, for Federation-related matters, and Neurology News, which carries international news that is relevant to neurology. The content for these features will change regularly to keep the homepage current and interesting. Members of the Web Site Committee hope that this will encourage neurologists to visit the site frequently for routine updates on issues that interest them. (My web committee colleagues are Chiu K. Man, webmaster; Donna Bergen, global networks; Wolfgang Grisold and Steven Seigay, education; Walter Struhal, social networks and news; Keith Newton and Laura Druce, executive office.)

The primary purpose of the web site is to inform neurologists of the ongoing work of the WFN, to offer educational programs, and to provide an interactive space, both open and password-protected as appropriate, for officers, committee members, and member societies to carry out WFN activities. The main sections are: About Us, Education, Global Networks, Publications, Member Societies, and Meetings and Congresses. We have also added social networking capabilities in recognition of the importance of attracting young neurologists to WFN. The content of the web site is as follows:

About Us. This section provides demographic information about the WFN, lists the Federation’s officers, committees, and describes ongoing projects such as WFN-Africa, Asien, Asian, and Latin American Initiatives.

Education. The Education Committee’s activities and structures are highlighted in this section, which features information for practicing neurologists, neurologists in training, medical students, and nonneurologists who provide neurological care. The section includes or will include information on opportunities for neurologists, neurologists in training, and nonneurologists who provide neurological care. The section includes or will include information about opportunities for neurologists, including the WFN Junior Traveling Fellowship and education grants.

Global Networks. Members of the WFN’s World Brain Alliance the European Brain Council, International Brain Research Organization, International Child Neurology Association, International TBI Alliance, World Federation of NeuroRehabilitation, World Federation of Neurosurgical Societies, World Psychiatric Association, and the World Stroke Organization all have links to the new web site. The WFN currently maintains the World Health Organization’s list of World Health Organization’s list of WFN’s World Alliance. The site provides links to the new web site. The site provides a list of WFN’s World Alliance. The site provides access to the WHO’s online publications, which are mainly Generation Y neurologists, and members of the WFN member societies and links to their web sites. Member societies that do not have web sites can create a site in this space.

Meetings and Congresses. These pages will provide information on all news items published in the news section of the WFN website. They also carry current information from previous World Congresses, and a calendar of other events of interest to neurologists.

Social Networks. As a novel initiative, the WFN will regularly broadcast news online on Twitter (twitter.com/wfneurology) and Facebook (www.facebook.com/wfneurology). The target group for these services are mainly Generation Y neurologists, the digital natives. These channels will provide information on all news items published in the news section of the WFN website and will remind young neurologists about WFN initiatives such as the Junior Traveling Fellowships and education grants. In addition, the WFN aims to use the unique interactive features of these services through its presence on the social networks.

Comments regarding the web site can be sent to the Web Site Committee at info@wfneurology.org.
Piecing Together Electricity's Role in Nerve Function

Almost two years have past since I received a fish from Mr. van's Gravesande, general director of the Volksplantinge of Issaquo; a fish that the inhabitants of the place consider a kind of eel; although basically it is a fish, called Gymnotus.

Allamand’s correspondent, Laurens Storm van's Gravesande (1704-1775) was administrator and secretary of the Dutch West-Indies Company and informed Allamand about his observations:

The experiment was done with an eel called a tremble fish, and what I had written to you about it in my previous letter is true. It produces the same effect as the electricity that I felt with you, while holding [my] hand in a bottle [Leyden jar] that was connected to an electrified tube by an iron wire.

The effect of the fish is much stronger than that of rays: If one touches the fish, it does not give off fire or sparks, similar to the apparatus for electricity. But for everything else it is the same; yes, even much stronger, because if the fish is big and lively, the shock produced by the animal will throw anyone who touches it to the ground, without exception, and one feels it throughout the whole body.

At the time, electricity was gradually introduced for treatment of various afflictions, as Allamand had reported in the Proceedings several years previously. For example, Abbé Nollet in cooperation with Sauveur Morand and Joseph Marie F. de la Sône at the Charité Hospital in Paris tried to get body parts that had been affected by paralysis to move on application of an electric pulse from the Leyden jar, but were not successful

The Leyden jar, discovered in 1745, was of fundamental importance in the medical application of electricity.

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Leading resources in clinical neurology!

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Editor-in-Chief
Robert P. Lisak, Department of Neurology, Wayne State University School of Medicine

The Journal of the Neurological Sciences provides a medium for the prompt publication of studies on the interface between clinical neurology and the basic sciences.

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Official Journal of the World Federation of Neurology
Association of Parkinsonism and Related Disorders

Editors-in-Chief
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Z.K. Wszolek, Dept. of Neurology, Mayo Clinic

Parkinsonism & Related Disorders publishes the results of basic and clinical research contributing to the understanding, diagnosis and treatment of all neurodegenerative syndromes in which Parkinsonism, Essential Tremor or related movement disorders may be a feature.

www.prd-journal.com
New Experiences, Diverse Perspectives at Stroke Conference

BY B.K. BAJAJ, MBBS, MD, DM

Dr. Bajaj is associate professor of neurology in the Postgraduate Institute of Medical Education & Research at the Dr. Ram Manohar Lohia Hospital, New Delhi, India.

I attended a preconference workshop on transcranial Doppler ultrasound. It was truly a hands-on experience for the participants. We discussed the basic techniques of the test and the methods for obtaining an accurate, functional image of the intracranial arteries. The speakers and instructors were all experts in their fields and superb teachers. The enthusiasm of Dr. Vijay Sharma from National University Hospital, Singapore, was particularly impressive.

There were multiple sessions on the management of acute stroke as well as the rehabilitation of stroke patients. There is little opportunity for exchange of information between physicians from developed and developing countries, but at this conference, we were exposed to the different viewpoints of international experts for the management of stroke. In certain areas, the outlook and the practices of experts from the Eastern and Southeast Asian countries seemed notably different from their colleagues from more developed and technologically advanced countries. A speaker from Japan highlighted the low dose of t-PA at 0.6 mg/kg body weight as effective and safe in Japanese patients with acute stroke, compared with the recommended 0.9 mg/kg body weight cited in the NINDS-NIH protocol. The attendees vigorously deliberated the study findings, since the drug was given only to those patients in whom there were no early CT signs of ischemia. There was also heated discussion after a presentation by Peter Sandercrof and Alan Barber on the concept of separate stroke units. The concept of separate stroke units is not new to places such as the United States and most European countries. In contrast, many developing Asian countries such as India do not have the most basic neurology facilities and struggle to provide neurological care. The non-communicable disease burden in such countries is significant, and financing to provide the basic infrastructures for managing conditions such as stroke should be considered at the global level. Many of the tertiary-care teaching hospitals in developing countries are not equipped to handle stroke patients. The obstacles to delivering the best possible stroke treatment in many Asian countries are formidable.

But there are ways in which developing countries can meet the challenges of being underresourced. Dr. Tissa Wijeratne from Australia suggested that a hospital could start a special stroke care facility by designating a few beds for stroke patients only and by drawing on the expertise of different medics and para-medics without having the sophisticated infrastructure and paraphernalia in place. However, some attendees disagreed with his suggestion. They questioned the feasibility of such an arrangement and whether it would ever be able to replicate the results seen in better equipped stroke units.

It was clear that we need to look into new ways and means of delivering advanced neurological services to underdeveloped countries. This can happen only through cooperation and exchange between neurologists from developed and developing countries, and the WFN is doing much to foster this exchange in its bid to improve neurological care and ensure expertise in neurology in the less developed regions of the world. I am thankful to the WFN for awarding me a travel grant to attend APSC 2011 and in helping me see things from a different perspective.

Neurosciences Training at Sudan Meeting

BY OSHEIK ABU ASHA SEIDI, MD


The purpose of the Fourth Clinical Neurosciences Course will be to address the clinical and practical challenges in delivering neurological care in Sudan and to update participants on therapies and the diagnosis and management of neurological diseases. It will be held at the Education, Examinations and Training Centre at Soba University Hospital, the teaching hospital for the University of Khartoum’s faculty of medicine.

Among the topics covered during the sessions are neuroanatomy, history taking, the neurological exam, neuroradiology, neurophysiology, neurology in women, neuro-rehabilitation, pediatric neurology, and neurological investigations. There will also be sessions on stroke, epilepsy, peripheral neuropathies, movement disorders, CNS infections, dementias, neurodisorders, headache, and neurosurgery.

At the end of the second day, there will be a clinical stations session. Experienced neurologists will present at 18 stations to present cases and field participants questions. The 10-minute demonstrations will include three stations each on pediatric neurology and clinical neurophysiology, as well as a challenging case competition and a range of other clinical cases, from hemiplegia, to movement disorders and ataxia, and others.

The course was planned by the local organizing committee, Osheik A. Seidi, Mohamad Nagib, Eetidal Abu Albashir, Sarah Misbah El Sadig, Isam Izzeldin, Husam Abu Obeida, Muazd Abdelatif, Mohamed Khalafalla Saeed; and its supporting team, Mutakil Ilham, Assim Mamoun, and Shad Hamid.

The international faculty is Hadi Manji, Mathew Pitt (London, UK), Victor Paterson (Belfast, UK), Ashraf Ghobashy (Cairo, Egypt), Abdelaziz Mirghani (Jeddah, Saudi Arabia), John Nixon (Preston, UK), and Khalid Awad (Kuwait).

For more information, e-mail: info@medicaluofk.net. To reserve a space in the course, e-mail Muna El Bahi at munaelbahi4@yahoo.co.uk, or phone +249-915-566-1412. Placement in the course is done on a first come, first serve basis up to 100 participants.

Dr. Seidi is registrar and clinical lecturer in the department of neurology, Soba University Hospital, University of Khartoum, Sudan.

Calendar of International Events

2012

XIII Pan American Congress of Neurology
March 4-8
La Paz, Bolivia
www2.kenes.com/PCN2012

64th Annual Meeting of the American Academy of Neurology
Apr. 21-28
New Orleans, USA
www.aan.com

7th World Congress for NeuroRehabilitation
May 16-19
Melbourne, Australia

13th Asian Oceanian Congress of Neurology
June 4-8
Melbourne, Australia
www.aocn2012.com

22nd Meeting of the European Neurological Societies
Sep. 8-11
Stockholm, Sweden
www.efnis.org/efns2012

10th European Congress on Epileptology
Sep. 30-Oct. 4
London, UK
www.epilepsy-london2012.org

8th World Stroke Congress
Oct. 10-13
Brasilia, Brazil
www2.kenes.com/stroke/Pages/Home.aspx

2013

XXI World Congress of Neurology
Sep. 21-26
Vienna, Austria
www2.kenes.com/wcn2012/Pages/Home.aspx
WORLD SLEEP DAY, MARCH 16, 2012

Annual Event Highlights Ventilatory Disturbances

This year’s World Sleep Day (WSD) will take place on Friday, March 16 under the slogan, Breathe easily, sleep well, highlighting the focus on sleep-related ventilatory disturbances that are so common in our modern society.

WSD is an annual event, intended to be a celebration of sleep and a call to action on important issues related to sleep. It is organized by the World Sleep Day Committee of the World Association of Sleep Medicine (WASM) and aims to reduce the burden of sleep problems on society through better prevention and management of sleep disorders.

The event is cochaired by Liborio Parino, MD, assistant professor of neurology at Parma University, Italy, and me, with support from WASM’s executive director, Allan O’ Bryan.

A Platform for Societies

WSD events take place primarily online at www.worldsleepday.org, featuring educational videos, historical videos, education materials, and public service announcements.

World Sleep Day offers a platform for sleep societies, enterprises, and interested practitioners to raise awareness about sleep, its disturbances, and the effects of those disturbances at the local level. Professional in more than 70 countries have taken advantage of this opportunity on an annual basis.

The first WSD was held in March 2008, under the slogan, Sleep well, live fully awake. Each successive year since then has operated under a slogan that indicates the focus for that year: 2009, Drive alert, arrive safe, 2010, Sleep well, stay healthy; and 2011, Sleep well, grow healthy. It is often effective to invite a well-known local celebrity to draw attention to the event and provide the media with photo opportunities of the celebrity trying out the driving simulator.

Moreover, most sleep problems can be managed by changing behaviors around sleep, with appropriate medical therapy or cognitive behavioral therapy. Patients suffering from sleep complaints, or who suffer from excessive daytime sleepiness should consult with their physician.

The 10 Commandments of Sleep Hygiene ...

1. Fix a time for going to sleep and waking up.
2. If you are in the habit of taking naps, do not exceed 45 minutes of daytime sleep.
3. Avoid excessive alcohol ingestion 2-4 hours before bedtime and do not smoke.
4. Avoid caffeine 6-8 hours before bedtime. This includes coffee, tea, and many sodas, as well as chocolate.
5. Avoid heavy, spicy, or sugary foods 4 hours before bedtime. A light snack before bed is acceptable.
6. Exercise regularly, but not immediately before bed.
7. Use comfortable bedding.
8. Find a comfortable temperature setting for sleeping and keep the room well ventilated.
9. Block out all distracting noise and eliminate as much light as possible.
10. Reserve the bed for sleep and sex. Don’t use the bed as an office, workroom, or recreation room.

... and Healthy Sleep for Children

1. Make sure your child gets enough sleep by setting an age-appropriate bedtime and wake time.
2. Set consistent bedtime and wake-up times on both weekdays and weekends.
3. Establish a consistent bedtime routine that includes quiet time.
4. Encourage your child to fall asleep independently.
5. Avoid bright light at bedtime and during the night (including light from television or computer screens) and increase light exposure in the morning.
6. Keep all electronics, including televisions, computers, and cell phones, out of the bedroom and limit use of electronics before bedtime.
7. Maintain a regular daily schedule, including consistent mealtimes.
8. Have an age-appropriate nap schedule.
9. Ensure plenty of exercise and time spent outside during the day.
10. Eliminate foods and beverages containing caffeine.

Visit www.worldsleepday.org, for translations in different languages.

Research, Diagnosis, and Treatment

In summary, more research is needed before we can fully understand sleep and the causes of sleep disorders; and greater emphasis should be placed on the diagnosis and treatment of sleep disorders.

Most sleep problems can be managed by changing behaviors around sleep, with appropriate medical therapy or cognitive behavioral therapy. Patients suffering from sleep complaints, or who suffer from excessive daytime sleepiness should consult with their physician.

The event should be primarily themed around the impact of the current year’s slogan, Breathe easily, sleep well. However, you can draw on previous year’s slogans. Several examples of public events have been posted on the web site www.worldsleepday.org.

- Distributing patient literature such as booklets, leaflets, and newsletters.
- Pasting public service announcements.
- Creating excitement and generating interest in WSD.

Visit www.worldsleepday.org, for translations in different languages.
Canada, Tunisia Link Up for Long Distance Education

BY TIM PATTERSON, BA, RIADH GOUIDER, MD, MORRIS FREEDMAN, MD

The first telecast of the Canada-Tunisia Telehealth program was held in late May 2011 2 weeks into the Arab Spring Uprising as part of the weekly City-Wide Behavioural Neurology Rounds, sponsored by University of Toronto’s division of neurology, and cochaired by Dr. Morris Freedman and Dr. Sandra Black.

The program was initiated by the E-Learning Task Force of the World Federation of Neurology’s Education Committee. It is cochaired by WFNeuro staff (excluding-aged care and research, were featured in the telecast, which was titled Tunisia-Canada Frontotemporal Dementia Case Conference. After each presentation, Dr. Tiffany Chow, Dr. Nastri Amira, Dr. Moune Ben Djebara, Dr. Gargouri Amina, Dr. Huzem Yost, Dr. Goudier, Dr. Black, and Dr. Freedman were discussants for the cases. Three rounds opened to participants from 14 other Canadian sites.

This successful experience, based on the positive feedback from the participants, encouraged us to schedule other rounds. From a programming point of view, the Tunisian round was based on two international neurology series initiated in 2005 and 2009. Each series involves a program scripting process, production techniques, and a minimum of two videoconferencing bridges to accomplish the telecast. Each site has a videoconferencing codec with connectivity either in the form of IP or bridges to accomplish the telecast. Each site has a videoconferencing codec with connectivity either in the form of IP or Services Digital Network (ISDN). IP connectivity involves a monthly fee and is cheaper than ISDN connectivity. Although we do not have data on earlier connectivity, it is likely that IP connectivity is increasing.

Cost was reported as a barrier to accessing online distance learning by 44.9% of respondents. Time constraints were considered a barrier by 40.8%. These constraints could stall access to online distance learning technology, even though it is readily available.

Teaching programs. A minority of WFNeuro countries (28.6%) have an e-learning teaching program, but 63.3% of respondents use some form of e-learning in postgraduate and continuing medical education (CME) courses. In addition, 53.1% of respondents have participated in a telemedicine event. These data suggest there are fewer e-learning teaching programs than expected, based on potential to access this resource. This may reflect a need for leaders who can initiate e-learning and telemedicine programs and for experts who can create content for the programs.

Internet access. Most WFNeuro member societies have Internet access (79.6%), a web site (60%), online resources (62%), telemedicine (55%), and people familiar with information technology (82%), but only (18%) have a portal. Fifty-four percent of societies have journals, but only 63% of those journals are online. About 50% of societies with telemedicine capability have Internet Protocol (IP) connectivity, and 50% have access to Integrated Services Digital Network (ISDN). IP connectivity involves a monthly fee and is cheaper than ISDN connectivity. Although we do not have data on earlier connectivity, it is likely that IP connectivity is increasing.

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Prioritizing content areas. The respondents indicated that the following fields were most in need of online distance learning courses: movement disorders (79.6%), epilepsy (75.5%), and stroke and vascular neurology (73.5%). This suggests that the initial foci on WFNeuro e-learning and telemedicine programs should include these areas. However, it will be important to include other fields even if the demand is smaller.

CME responsibility. Forty-nine percent of respondents reported that CME was compulsory for maintaining licensure or for other reasons, and most of those respondents (63.3%) said they can obtain CME credits through e-learning. About a third (30.6%) stated that government (national, state, or provincial) was responsible for overseeing CME. From that group, 89.7% stated that responsibility was with the national government. Just over a quarter of respondents (26.5%) said that national neurological societies were responsible for overseeing CME. For overseas education in general, 47.9% stated that responsibility was with the government; for 85% of cases, it was at the national government level. CME is clearly important for WFNeuro society members, and working with national governments and neurological societies will be a key factor in developing e-learning and telemedicine programs.

Conclusions and Recommendations

Countries across the world are very interested in CME using electronic distance learning technologies.

For increasing CME opportunities using e-learning and telemedicine may be higher in developing countries than in developed countries.

The infrastructure for developing e-learning and telemedicine programs exists in many countries, but cost and time constraints are potential barriers. The WFNeuro could serve as a resource for enabling countries to develop and enhance e-learning and telemedicine capabilities.

There may be a need for leaders who can initiate e-learning and telemedicine programs and experts who can create program content. The WFNeuro could provide mentoring in this regard.

Areas of focus for e-learning and telemedicine include movement disorders, epilepsy, and stroke. It is recommended that the WFNeuro collaborate with professional groups that are already active in these areas to further develop distance learning programs to meet the needs of neurologists worldwide.

National governments are actively involved in overseeing CME and education in general in a sizeable number of countries surveyed. It will be important for the WFNeuro to work with national governments and neurological societies in developing international e-learning and telemedicine programs.

Most WFN member societies (92.5%) find e-learning useful for acquiring clinical skills. This ranked about the same as textbooks (77.6%) and was higher than hospital rotations (63.3%). About half of the respondents (55.1%) strongly agreed that distance learning is useful, and 32.7% somewhat agreed with that, suggesting a need for growth in development of e-learning and telemedicine.

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Most WFN member societies (92.5%) find e-learning useful for acquiring clinical skills. This ranked about the same as textbooks (77.6%) and was higher than hospital rotations (63.3%). About half of the respondents (55.1%) strongly agreed that distance learning is useful, and 32.7% somewhat agreed with that, suggesting a need for growth in development of e-learning and telemedicine.

For overseas education in general, 47.9% stated that responsibility was with the government; for 85% of cases, it was at the national government level. CME is clearly important for WFNeuro society members, and working with national governments and neurological societies will be a key factor in developing e-learning and telemedicine programs.

Conclusions and Recommendations

Countries across the world are very interested in CME using electronic distance learning technologies.

Interest for increasing CME opportunities using e-learning and telemedicine may be higher in developing countries than in developed countries.

The infrastructure for developing e-learning and telemedicine programs exists in many countries, but cost and time constraints are potential barriers. The WFNeuro could serve as a resource for enabling countries to develop and enhance e-learning and telemedicine capabilities.

There may be a need for leaders who can initiate e-learning and telemedicine programs and experts who can create program content. The WFNeuro could provide mentoring in this regard.

Areas of focus for e-learning and telemedicine include movement disorders, epilepsy, and stroke. It is recommended that the WFNeuro collaborate with professional groups that are already active in these areas to further develop distance learning programs to meet the needs of neurologists worldwide.

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New Guideline for Comorbid Epilepsy, HIV Care

BY GRETCHEN L. BIRBECK, MD, MPH, DTMH.

A n evidence-based guideline that addresses the potential risk of drug interactions for people with comorbid HIV and epilepsy was released in early January.\(^1\) The guideline was developed by a joint committee of the American Academy of Neurology and the World Health Organization through the International League Against Epilepsy and was endorsed by the American Epilepsy Society. It promises to highlight a problem that can likely be ameliorated in developing regions through better communications between specialist physicians and increased patient awareness.

Seizures requiring treatment occur in about 11% of people with HIV; other conditions that may warrant treatment with an antiepileptic drug (AED), such as peripheral neuropathies, are also very common. But the potential pharmacokinetic interactions between AEDs and antiretroviral agents (ARVs) are complex and varied.

Enzyme-inducing AEDs (EI-AEDs; phenobarbital, carbamazepine, and phenytoin) are especially problematic because they may cause more rapid metabolism of protease inhibitors and/or nonnucleotide reverse transcriptase inhibitors resulting in ARV failure, progression to AIDS, and the development of ARV-resistant strains of HIV. AED-ARV combinations can also result in subtherapeutic AED levels. Interactions may also increase the toxicity of either or both AEDs and ARVs. For example, the combination of AZT and valproic acid can result in fatal anemia, presumably from toxic levels of AZT.

Based on available data, no clear recommendations are made regarding which AED-ARV combinations are optimal, although there are some data for combinations that have not been shown to interact pharmacologically. Unfortunately, there were no published reports on the use of levetiracetam or gabapentin with ARVs, which, given their relative lack of interactions with other medications, are presumably the best options.

The recommendations for the treatment of comorbid HIV and epilepsy are:

- Patients receiving phenytoin may require a levetiracetam/ritonavir dosage increase of about 50% to maintain unchanged serum concentrations.
- Patients receiving valproic acid may require a zidovudine dosage reduction to maintain unchanged serum zidovudine concentrations.
- Coadministration of valproic acid and efavirenz may not require efavirenz dosage adjustment.
- Patients receiving ritonavir/atazanavir may require a lamotrigine dosage increase of about 50% to maintain unchanged lamotrigine serum concentrations.
- Coadministration of ritonavir oratazanavir and lamotrigine may not require lamotrigine dosage adjustment.
- Coadministration of ritonavir and midazolam may not require midazolam dosage adjustment.
- Patients may be counseled that it is unclear whether dosage adjustment is necessary when other AEDs and ARVs are combined, and
- It may be important to avoid EI-AEDs in people on ARV regimens that include PIs or NNRTIs, as pharmacokinetic interactions may result in virologic failure, which has clinical implications for disease progression and development of ARV resistance. If such regimens are required for seizure control, patients may be monitored through pharmacokinetic assessments to ensure efficacy of the ARV regimen.

What does this mean for most patients suffering from both HIV and epilepsy? Although ARV treatment options are expanding in low-income countries, AED availability remains limited in general and in the public sector includes primarily enzyme-inducing AEDs. Furthermore, such regions generally have no capacity for monitoring AED levels or ARV levels.

Perhaps a particular African proverb accurately describes the scenario: ‘When two elephants fight, the one that suffers most is the grass.’ In other words, unless or until the donor community, ministries of health, and nongovernmental organizations come together over the issue of epilepsy care in HIV endemic regions, the two elephants of AEDs and ARVs will likely continue to fight, and people with epilepsy and HIV will continue to be the primary victims of suboptimal AED-ARV regimens. But the potential public health consequences of ignoring this problem should also be of great concern.

References

Dr. Birbeck is the director of the Epilepsy Care Team, Chikankata Hospital, Mazabuka, Zambia, and professor and director of the International Neuropsychiatric Epidemiology Program, Michigan State University, East Lansing, USA.

Comorbid ADHD Affects Cognition in Epileptic Children

BY HEIDI SPLETE
Elsevier Global Medical News

BALTIMORE Comorbid attention-deficit/hyperactivity disorder persistently affected the cognitive development of children with epilepsy up to 5 or 6 years after the onset of seizures in a prospective case-control study.

Connie Sung, a doctoral student at the University of Wisconsin, Madison, USA, and colleagues conducted cognitive assessments of 75 children with epilepsy and 62 of their healthy first-degree cousins as controls. They gave the children a comprehensive battery of neurological tests at baseline and at 2 and 5-6 years follow-up. Average age at last follow-up was 13 years. At baseline, ADHD and academic performance were significantly associated with neuropsychological impairment across all cognitive domains, but children with epilepsy and no ADHD or academic performance problems had entirely normal cognition, compared with controls. Ms. Sung said in a poster at the American Epilepsy Society annual meeting.

The trends persisted after 2 and 5-6 years. Full-scale raw IQ scores after 2 years were about 88 for controls and children with epilepsy without comorbidities, compared with 76 in those with epilepsy and comorbidity. The researchers said they had no relevant financial disclosures.
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New Clues to Cause of REM Behavior Disorder in Parkinson’s

**BY DIANA MAHONEY**

Elsiver Global Medical News

The research is in early stages, but it suggests that the cholinergic system may play a role in the development of the condition.

**Teams Working to Find Origins**

**Nodding Syndrome**

Teams are working to find the origins of Nodding Syndrome, a disease that has affected populations in northern Uganda and South Sudan. The syndrome is characterized by the sudden, uncontrolled movement of the head, which can lead to seizures and other neurological problems.

**IN TANZANIA, AS EARLY AS THE 1960S, PEOPLE KNEW THAT CHILDREN WHO HAD HEAD NODDING WOULD SOONER OR LATER HAVE EPILEPSY.**

The disease is named for the nodding movements of the head that are a hallmark of the condition. The cause of the disease is still unknown, but it appears to be linked to a variety of factors, including genetics, environment, and infections.

**Causes of Head Nodding**

The causes of head nodding are not yet fully understood, but research suggests that genetics, infections, and environmental factors may all play a role. Some studies have suggested a possible link to parasitic infections, while others have pointed to genetic mutations.

**New Clues to Cause of REM Behavior Disorder in Parkinson’s**

The research suggests that the cholinergic system may play a role in the development of REM behavior disorder, a condition that can cause people to act out their dreams while they are sleeping.

**Major Finding:** Patients with REM behavior disorder had significantly decreased rates of acetylcholine hydrolysis in the neocortical, thalamic, and limbic regions on PET imaging.

**Additional Findings:**

- **Parkinson’s Disease:** Patients with Parkinson’s disease had significantly decreased rates of acetylcholine hydrolysis in the brain regions that regulate movement.
- **Dementia:** Patients with dementia had significantly decreased rates of acetylcholine hydrolysis in the brain regions associated with memory and cognitive function.
- **Cortical and Limbic Cholinergic Denervation:** Patients with REM behavior disorder had evidence of significant loss of cortical and limbic cholinergic neurons.

**Conclusion:** The findings suggest that the cholinergic system may be involved in the development of REM behavior disorder and may provide insights into the underlying mechanisms of the condition.

**Data Source:** A cross-sectional study of 80 patients with Parkinson’s disease without dementia.

**Disclosures:** The study was funded by grants from the Michael J. Fox Foundation, the Department of Veterans Affairs, and the National Institutes of Health. The authors disclosed potential conflicts of interest with multiple companies, including Pavid Medical, Arena Pharmaceuticals, Guidepoint Global, Orbit/MedAdvisors, Philips Respironics, Fisher Paykel, K.A.F., Andro Pharmaceuticals, MlMvista, and General Electric.
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Movement Disorder Seen in Children With New Narcolepsy With Cataplexy

Authors hope narcolepsy with cataplexy will be added to the differential diagnosis of movement phenomena.

By Denise Napoli

Elsevier Global Medical News

Childhood narcolepsy with cataplexy frequently presents with a movement disorder that comprises both active and negative motor disturbances, including tongue protrusion, head and trunk swaying, facial grimacing, and chorea.

However, this constellation of motor phenomena seems to be transient, with the age of disease onset and disease duration both inversely related to motor composite scores, according to Dr. Giuseppe Plazzi and colleagues (Brum 2011; 124:480-92).

Our description is of a new clinical picture of childhood narcolepsy with cataplexy close to disease onset, Dr. Plazzi wrote in an e-mail interview.

The clinical picture of narcolepsy is easily misunderstood for a movement disorder, muscle disease, epilepsy, malingering, or a psychiatric disorder. We hope that our description will help specialists to consider the potential role of sleepiness symptoms in the evaluation of such cases, thus adding narcolepsy with cataplexy to their differential diagnosis, he added.

Dr. Plazzi, a professor of neurology at the University of Bologna, Italy, made video recordings of 39 patients (19 girls) aged younger than 18 years who were newly diagnosed with narcolepsy with cataplexy. These videos were then compared with videos of 25 matched, healthy controls. The recordings included several minutes of baseline recording and then up to 30 minutes of the patient watching a funny video.

Two neurologists independently reviewed the recordings and noted the subjects movements, classifying them as either active or negative in nature, and noting whether they occurred at baseline or only in response to emotional stimuli (in this case, the funny video)

Negative motor phenomena were classified as paroxysmal head drops and falls, persistent eyelid narrowing and tongue protrusion, persistent facial hypotonia, and persistent generalized hypotonia.

Active movements included eyebrow raising, perioral and tongue movements, facial grimaces, head and/or trunk swaying, stereotyped motor behavior, and dysskinetic or dystonic movements.

The patients' mean age was 11.5 years, and the mean age of symptom onset was 9.3 years. There was a mean diagnostic delay of 1.8 years, ranging up to 6 years.

All negative motor phenomena and the composite score evaluated at baseline during emotional stimuli were significantly more common in the patients, the authors wrote.

Patients and controls obtained a mean score greater than or equal to 1 in the following percentages at baseline and during emotional stimuli, respectively: head drops and falls, 18% (baseline) and 82% (emotional stimuli) for patients vs. 0% and 4% for controls; ptosis and tongue protrusion, 51% (baseline) and 82% (stimuli) for patients vs. 0% and 0% for controls; facial hypotonia, 39% (baseline) and 71% (stimuli) for patients vs. 0% and 0% for controls.

Similarly, all active phenomena except facial grimacing were significantly more prevalent in patients.

Patients and controls had a mean score greater than or equal to 1 in the following: eyebrow raising, 23% (baseline) and 76% (stimuli) in patients vs. 0% and 36% for controls; facial grimaces, 10% (baseline) and 82% (stimuli) for patients vs. 0% and 36% for controls; and dyskinetic-dystonic movements, 10% (baseline) and 5% (stimuli) for patients vs. 0% and 8% among controls.

Two additional abnormal complex behaviors could not be simply classified as active or negative motor phenomena, the authors wrote. One was a neck extension viewing posture (characterized by neck extension and eyelid ptosis with eyebrow raising while the patient watched videos), which was observed exclusively in nine patients (24%). The other was puppet-like movements characterized by a rapid and rhaphodic set of choreic movements of the whole body, and limbs with hypotonia, which was observed exclusively in five patients (13%).

Dr. Plazzi and his colleagues then sought to determine which clinical and demographic factors were associated with the observed motor phenomena.

We found that the age at narcolepsy with cataplexy onset was inversely related to negative composite scores, and that disease duration was inversely related to both negative and active composite scores, the latter reaching statistical significance only during emotional stimulation, the investigators wrote.

They did not find any correlations between sleep latency and sleep onset REM (rapid eye movement) periods on the Multiple Sleep Latency Test, or with baseline hypocretin-1 levels. Finally, the authors assessed whether dopaminergic abnormalities and the transient imbalance of basal ganglia cortical networks may give rise to the disorder.

Narcolepsy is easily mistaken for a movement disorder, muscle disease, malingering, epilepsy, or psychiatric disorder.

Major Finding: Children with new-onset narcolepsy with cataplexy had significantly more negative motor phenomena (falls, head drops, ptosis, tongue protrusion, and facial hypotonia) and positive motions (eyebrow raising, facial grimaces, and dyskinetic-dystonic movements) during emotional stimuli than did healthy control children, but the movement disorder faded over time from diagnosis.

Data Source: A prospective study of 39 children who were newly diagnosed with narcolepsy with cataplexy.

Disclosures: The study was funded by a grant from rElUroG. The authors stated that they had no conflicts to disclose in relation to this study.

T he active movements described by Dr. Plazzi and his colleagues cast a new light on the pathogenesis of the disease and on the interaction between increasing hypocretin deficiency and dopaminergic mechanisms. In spite of their temporary character, the description adds to our knowledge of cataplectic attacks in young kids, thus helping us to diagnose new cases, Dr. Sona Nevišmalová wrote in an e-mail interview.

She praised her colleagues’ work in offering new clues to correct diagnosis in the setting of childhood narcolepsy with cataplexy.

Narcolepsy is a frequently underdiagnosed disease, particularly in children, she wrote, adding that a diagnostic delay can extend until adulthood in some cases.

Therefore, a clinical description of childhood symptoms is extremely important, and so is awareness of the disease, both in the medical profession as well as in the general population.

Since 2009, European Narcolepsy Day has been celebrated in many countries with a huge media campaign to draw attention to this morbidity.

The third European Narcolepsy Day will be held this year in Bologna, Italy, on March 17 under the auspices of the European Narcolepsy Network.

Dr. Nevišmalová is a neurologist at Charles University I, Prague. She wrote that she has no conflicts to disclose in relation to her comments or this study.
An Exploration of the Neuropsychological Borderland

The Shaking Woman or A History of My Nerves
By Siri Hustvedt
Henry Holt and Co., New York, 2010

From time to time, what I need as a physician is not a picture but a thousand words. There are few materials that are both factual and reassuring, insightful, and practical that one can draw on to educate medical students or help patients feel less alone. As a third-year medical student, I spent 6 weeks at a tiny psychiatric hospital on an island off the coast of Georgia. When I arrived, the enigmatic psychiatrist immediately handed me a copy of *An Unquiet Mind*, psychiatrist Kay Redfield Jamison’s account of living with bipolar disorder. Over the next couple of hours I saw him reach for a box and hand another copy to a patient, newly diagnosed with bipolar disorder. He would also sometimes give out Dale Carnegie’s *How to Win Friends and Influence People* after his father died, while giving a talk in New York. “I need to be a therapist, a psychiatrist, a neurologist,” said Dr. Kranick, chief of the Mayo Clinic’s Division of Neurology. “There are few materials that are both factual and reassuring, insightful, and practical that one can draw on to educate medical students or help patients feel less alone.”

Neurologists too love a good story, and our patients make for best sellers via Oliver Sacks and Vilayanur S. Ramachandran. At the borderland of neurology and psychiatry, patients with psychogenic or conversion disorder are seemingly underrepresented in these collections. The paucity of narratives for the lay public describing conversion is particularly unfair given that these are the same patients in whom the story is so critically important. They come with stacks of documents, often meticulous self-written accounts of lab data and clinical details, are endlessly frustrated with the limits of the 45-minute appointment, and can be remarkably improved, if not cured, through psychotherapy, by learning how to retell their personal story.

In *The Shaking Woman or A History of My Nerves*, the novelist describes her personal experience with the neuropsychological borderland. Two years after her father died, while giving a talk in her honor at St. Olaf College in Northfield, Minn., USA, where he had been a professor, she experienced uncontrollable shaking from the neck down but was able to finish the speech. These violent tremors recurred on multiple other occasions, usually when speaking publicly, casting a new perspective on previous symptoms such as febrile seizures as an infant and lifelong migraines with aura. As someone who was already deeply interested in the brain, to the point of taking practice tests for the psychiatry boards as research for a novel, she documents her search for a diagnosis through contact with psychotherapy, psychiatry, neurology, and psychoanalysis. She senses keenly the divide between neurology and psychiatry and the artificial duality of brain and mind. She describes the gray areas between migraine and epilepsy, the similarities between patients with neglect and conversion, phenomena that keep us from being able to draw strict borders around diagnoses.

Hustvedt’s book is not entirely sure what it wants to be, perhaps reflecting the very ambiguity that haunts this subject matter. Part source book for a course on the history of hysteria (and a much smaller) part memoir, most of the customer reviews on Amazon would indicate that the lay public wants to hear more from her and less about history. It would most certainly benefit from chapter delineations. The story channels the patient’s frustration at not having a clear diagnosis, but will also provoke the physician’s frustration as we read with horror when, after beginning to acclaim to the idea of conversion disorder, a new psychiatrist tells her that this has to be something neurological at all and puts her on the path toward more tests. All of these experiences will ring true with many conversion patients as well as the neurologists who treat them.

The Shaking Woman works as a primer on how hysteria became conversion and a view into the patient’s experience of this diagnosis. There are transformative moments in Hustvedt’s lovely prose (‘blurring borders create abiding conundrums’) in which, always a reader, she attempts to make sense out of her shaking by reading and re-reading the experience in different contexts: the search for the shaking woman takes me round and round. My only certainty is that I cannot be satisfied looking at her through a single window. This is the kind of self-reflection that, although not curative (this book is proof that insight alone is not enough to halt conversion symptoms for most patients), is certainly less harmful than the search for more invasive medical procedures to discover why conversion happens. Her memoir illuminates one particular illness experience that is too often left undescribed.

Cortical Demyelination, Inflammation Found in Early MS

Cortical demyelination is common early in the course of multiple sclerosis and is inflammatory in nature, according to an analysis of brain biopsy samples containing cortical tissue.

**Major Finding:** A total of 53 (38%) of 138 biopsy samples of cortical tissue showed demyelination, with a high prevalence of inflammation.

**Data Source:** An analysis of brain biopsy samples containing cortical tissue from 138 patients early in the course of MS, often before the disease was diagnosed.

**Disclosures:** This study was supported by the National Multiple Sclerosis Society and the National Institutes of Health. Dr. Lucchinetti’s associates reported ties to numerous companies that develop drugs for MS, as well as receiving research funding or travel awards from research institutions or patient advocacy organizations.

These findings do not support a primary (noninflammatory) neurodegenerative process during the early-stage multiple sclerosis, wrote Dr. Claudia F. Lucchinetti of the Mayo Clinic, Rochester, Minn., and her associates. Most previous studies of cortical lesions have focused on autopsy findings in patients with longstanding multiple sclerosis and have suggested that neurodegeneration proceeds independently of parenchymal inflammation, they noted.

They chose instead to study the prevalence and histopathologic features of cortical demyelination in brain biopsy samples from 563 patients who underwent the procedure to rule out possible causes of their neurological symptoms, such as brain tumors. The cortical matter was obtained in passing, in samples that were targeting white-matter lesions. The samples were obtained within a median of 27 days from the onset of symptoms. A total of 138 patients samples contained a sufficient amount of cortex for analysis. Of those patients, 77 had clinical follow-up for a median of 3.5 years. MS was diagnosed in 58 (79%), and a clinically isolated syndrome was diagnosed in the remaining 19 (25%).

In all, 53 of the 138 samples (38%) showed cortical demyelination, the researchers reported (N. Engl. J. Med. 2011;365:2388-97). The lesions were highly inflammatory and had a high prevalence of CD3-positive and CD8-positive T-cell infiltrates as well as myelin-laden macrophages.

In addition, among patients who had sufficient meningeval tissue for analysis, meningeval inflammation was topographically adjacent to the cortical demyelination. The researchers also found concurred subpial and leukocortical lesions within individual tissue sections, suggesting that superficial demyelinating disease may contribute to the generation of deeper lesions by means of cytokine diffusion. In addition, our findings of microglial activation, neuritic injury, pyknotic neurons, and reduced oligodendrocyte density are consonant with those findings in patients with progressive MS, underscoring the potential of cortical demyelination to cause irreversible injury, although inflammation may resolve rapidly.

They speculated that the mechanism of MS progression might involve myelin-laden macrophages leaving the cortex, entering the cerebrospinal fluid, and gaining access to deep cervical lymph nodes to promote epitope spreading.

The provocative findings of Dr. Lucchinetti and her colleagues provide definitive evidence that inflammatory disease of the gray matter commences early in the pathogenesis of some cases of multiple sclerosis, wrote Dr. Peter A. Calabresi.

Before now, macrophages laden with myelin the hallmark of an acute plaque have not been seen in cortical tissue, and gray-matter lesions have been routinely underestimated because conventional MRI doesn’t pick up MS plaques in the cortical and deep gray structures, he said.

This study suggests that cortical neuronal loss is directly associated with inflammatory demyelination, and therefore early therapeutic efforts to suppress inflammation may be neuroprotective in both gray-matter and white-matter compartments, Dr. Calabresi added.

Dr. CALABRESI is in the department of neurology at Johns Hopkins Hospital, Baltimore. He reported ties to numerous companies that market and develop drugs for MS. These remarks were adapted from his editorial comment accompanying Dr. Lucchinetti’s report.
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