

# WORLD NEUROLOGY

THE OFFICIAL NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

## Neurologists Urged to Address Prevention

BY MARK HALLETT, MD  
Editor in Chief

With Africa, For Africa,” the theme of this year’s World Neurology Congress in Marrakesh, Morocco, resonated throughout the 5-day gathering.

The first event was a teaching course on neurological disorders in sub-Saharan Africa, and there were numerous other presentations during the Congress on infectious diseases and noncommunicable disorders in Africa.

Infectious diseases continue to be important even though their prevalence is beginning to decline. Experts such as Charles Newton, Michel Dumas, Gallo Diop, Erich Schmutzhard, Mohamed Abdoh Rafai, and Raad Shakir spoke on viral, bacterial, and parasitic agents, and among the diseases they discussed were

Nipah, Chikungunya, Dengue, polio (re-emerging), tuberculosis (including tuberculous meningitis), malaria, cystercercosis, onchocerciasis (river blindness disease),

toxocariasis, and HIV. Yomi Ogun of Nigeria and Elly Katabira of Uganda, who is currently the president of the International AIDS Society, were among those who presented lectures on neuro-HIV. Erich Schmutzhard made the important point that infections can spread rapidly around the world and that another dis-

such as tetanus and malaria are beginning to decline, the prevalence for noncommunicable disorders (NCDs) is rising worldwide and resulting in considerable morbidity and mortality. As discussed several times at the Congress, the World Health Organization (WHO) has issued an action plan for identifying and

preventing NCDs, with the focus on four disorders – heart disease and stroke, cancer, diabetes, and chronic respiratory disorders – and four preventative strategies – diet (reducing salt, sugar and fat), increased physical activity, moderate use of alcohol, and reduction of tobacco use. The approach is known as the four-by-four action plan.

Of the four disorders, stroke is the one that is most relevant to neurologists, and all of the preventative measures are ones that we should be discussing with our patients.

Bo Norrving of Sweden emphasized the four-by-four action plan in his plenary



COURTESY DR. MARK HALLETT

Alfred Njamshi (Cameroon; left), Gilbert Dechambenoit (Ivory Coast), Adesola Ogunniyi (Nigeria), and Charles Newton (Kenya), presented a review of the status of neurology in Africa.

aster such as HIV could happen again. It is therefore critical to pay close attention to these disorders, he stressed.

As the prevalence of infectious diseases

See **Prevention** • page 6

### INSIDE

#### Brazil

A team of researchers in Brazil was surprised to find that dengue virus was the main cause of encephalitis in the region.

PAGE 4

#### South Africa

Clinicians suggest a diagnostic algorithm for tuberculous meningitis in patients from tuberculosis- and HIV-endemic environments, where a significant number of patients have extrapulmonary TB.

PAGE 8

#### Pakistan

Public and physician awareness of dengue fever and tetanus, the availability of vaccines, and postexposure prophylaxis are key in the eradication the two diseases.

PAGE 10

## Add-On Therapy Might Reduce Sudden Epilepsy Deaths

BY JEFFREY S. EISENBERG

Elsevier Global Medical News

Randomized trials show that adjunctive antiepileptic drug treatment of patients with previously uncontrolled seizures is associated with 83% lower odds of sudden, unexpected death, according to a meta-analysis of placebo-controlled studies.

Dr. Philippe Ryvlin of the Hospices Civils de Lyon (France) and his coauthors in the meta-analysis suggested that their “findings offer hope and guidance in the prevention of SUDEP [sudden unexpected death in epilepsy] by indicating that an intervention can reduce the incidence of this devastating outcome.”

But the researchers noted that some experts dispute the clinical

relevance and value of adding additional antiepileptic drugs (AEDs) to prevent SUDEP.

SUDEP is the main cause of death in patients with refractory epilepsy, based on an incidence of 3.5 to 9.3 per 1,000 person-years. Risk factors include the frequency of seizure (particularly secondary generalized tonic-clonic seizures) and subtherapeutic levels of AEDs.

While bringing seizures under control might prevent a significant number of SUDEP cases, there is a lack of controlled studies evaluating interventions.

The meta-analysis performed by Dr. Ryvlin and his associates compared the incidence of definite, probable, and possible SUDEP in patients with uncontrolled partial or primary generalized tonic-clonic seizures who

received AEDs at efficacious doses vs. those who received placebo. They also compared these against deaths from other causes and the total number of deaths between the two groups (Lancet Neurol. 2011;10:961-8).

The researchers searched the Medline and Cochrane Library electronic databases and other

See **Epilepsy** • page 10

### In This Issue of WORLD NEUROLOGY

Full coverage of the World Congress of Neurology in Marrakesh, Morocco

See Pages 2, 3, 6 and 7

Presorted Standard  
U.S. Postage  
PAID  
Permit No. 384  
Lebanon Jct. KY

World Neurology  
60 Columbia Rd., Bldg. B  
Morristown, NJ 07960  
CHANGE SERVICE REQUESTED

## EDITOR IN CHIEF'S COLUMN

## Integrating Disease Prevention Into Medical Practice

Is there a need for a paradigm shift in the way neurologists practice? The traditional approach is to heal the sick. We wait for someone to get sick and come to us before we intervene. And, indeed, this is also the model for physician payment. One message from the World Congress of Neurology was that this model for medical care is likely not sufficient or the most effective.

It is certainly better to prevent infectious disease than to treat it after it has developed. Public health measures can deal with the spread of many of these agents through improving sanitation, control of vectors such as mosquitoes, and vaccination campaigns. Some news about infectious disease at the Congress was frightening. Polio is on the rise. An increasing percentage of tuberculosis is treatment resistant. Will there be more diseases such as HIV and West Nile virus? The idea that we are good at treating infectious disease is certainly limited. Clearly, there are ongoing efforts in Africa to deal with some of this, but more is needed, and we can't let our guard down anywhere in the world.

Noncommunicable disorders such as stroke are certainly better prevented. When we see a patient with a stroke, our ability to intervene is limited. This is already a failure of the medical system. We have good ideas for stroke prevention. The United Nations prescription for healthy diet, more physical activity, appropriate use of alcohol, and smoking cessation are suggestions that we could emphasize to every one of our patients. We cannot yet prevent a number of neurodegenerative conditions such as Alzheimer's disease and Parkinson's disease, both of which are on the increase. There are considerable research efforts in this area, as outlined, for example, by Dr. Anthony Lang at the congress in his plenary lecture on neuroprotection in Parkinson's disease.

What can we do? Certainly, there is a need for public health measures that we can support. We can also deal with our patients, one by one. Regardless of why we see them, we can give them advice on healthy life style. Tell them to lose weight. Measure their blood pressure and deal with hypertension if it is identified.

In some parts of the world, patients may need reminders about good hygiene and childhood vaccination. Prevention should be part of medical practice, not only with Africa, for Africa, but also out of Africa. ■



After the Congress, I slipped into tourist mode (and a Berber headdress) and explored the host city.

COURTESY DR. MARK HALLETT

## WCN 2011 — COUNCIL OF DELEGATES' MEETING

## Progress Is Detailed at Annual Gathering

BY MARK HALLETT, MD

Editor in Chief

The Council of Delegates' meeting of the World Federation of Neurology was held on Sunday, Nov. 13, 2011, in Marrakesh, at the start of the World Congress of Neurology. WFN President Vladimir Hachinski welcomed the delegates then asked Dr. J. (Pete) Engel, chair

of the Website Committee, to give a demonstration of the WFN's new Web site. The site has recently been updated with a new look and new functionality to provide information to the Federation's international membership and access to a range of education opportunities. The upgrade has not been fully completed, but everyone was pleased to see such progress.

Dr. Hachinski described the current organization of the WFN committees and his vision for moving forward. He noted that WFN activities should have quality and value, and viability over time; there should be synergies with other organizations to allow for more progress; and that there should be an evaluation process of all activities. In light of this vision, he described the World Brain Al-

liance, which brought together many international organizations that focus on the brain and that include brain scientists, psychiatrists, and neurosurgeons. After an initial meeting of those organizations in Geneva, there was a second meeting in Moscow, and then a presentation at the World Health Organization at which representatives of the alliance stressed the

*Continued on following page*



**WORLD FEDERATION OF NEUROLOGY**

Editor in Chief Dr. Mark Hallett (USA)

**EDITORIAL ADVISORY BOARD**

Dr. Pierre Bill (South Africa); Dr. William M. Carroll (Australia); Dr. Jagjit S. Chopra (India); Dr. Michael Finkel (USA); Dr. Osvaldo Fustinoni (Argentina); Dr. Francesc Graus (Spain); Dr. Alla Guekht (Russia); Dr. Steven Ringel (USA); Dr. Daniel Truong (USA); Dr. Alexandros Tselis (USA)

**WFN OFFICERS**

**President:** Dr. Vladimir Hachinski (Canada)

**First Vice-President:** Prof. Werner Hacke (Germany)

**Secretary-Treasurer General:** Dr. Raad Shakir (United Kingdom)

**ELECTED TRUSTEES**

Dr. Wolfgang Grisold (Austria); Dr. Ryuji Kaji (Japan); Dr. Gustavo Roman (USA)

**CO-OPTED TRUSTEES**

Donna Bergen (USA); Stephen Sergay (USA)

**REGIONAL DIRECTORS**

Dr. Ahmed Khalifa (Pan Arab); Dr. Robert Griggs (North America); Prof. Richard Hughes (Europe); Dr. Alfred K. Njamshi (Pan Africa); Dr. Ana Mercedes Robles de Hernandez (Latin America); Dr. Ching-Piao Tsai (Asia-Oceania)

**EXECUTIVE DIRECTOR**

Keith Newton

World Federation of Neurology

Hill House, Heron Square

Richmond, Surrey, TW9 1EP, UK

Tel: +44 (0) 208 439 9556/9557 Fax: +44 (0) 208 439 9499

info@wfneurology.org

**EDITOR OF THE JOURNAL OF THE NEUROLOGICAL SCIENCES**

Dr. Robert Lisak (USA)

**WORLD NEUROLOGY**

**WORLD NEUROLOGY**, an official publication of the World Federation of Neurology, provides reports from the leadership of the WFN, its member societies, neurologists around the globe, and news from the cutting edge of clinical neurology. Content for **WORLD NEUROLOGY** is provided by the World Federation of Neurology and IMNG Medical Newswire.

**Disclaimer:** The ideas and opinions expressed in **WORLD NEUROLOGY** do not necessarily reflect those of the World Federation of Neurology or the publisher. The World Federation of Neurology and Elsevier Inc. will not assume responsibility for damages, loss, or claims of any kind arising from or related to the information contained in this publication, including any claims related to the products, drugs, or services mentioned herein.

**Editorial Correspondence:** Send editorial correspondence to **WORLD NEUROLOGY**, 5635 Fishers Lane, Suite 6000, Rockville, MD 20852, U.S.A.; worldneurology@elsevier.com; Phone +1-800-798-1822

**Address Change:** Fax change of address to +1-973-290-8245

**POSTMASTER:** Send change of address (with old mailing label) to **WORLD NEUROLOGY**, Circulation, 60 B, Columbia Rd., 2<sup>nd</sup> Fl., Morristown, NJ USA 07960

**WORLD NEUROLOGY**, ISSN: 0899-9465, is published bimonthly by Elsevier Inc., 60 B, Columbia Rd., 2<sup>nd</sup> Fl., Morristown NJ 07960. Phone +1-973-290-8200; Fax: +1-973-290-8250.

©Copyright 2011, by the World Federation of Neurology



**GLOBAL MEDICAL RESEARCH**

Publisher Peter F. Bakker

**ELSEVIER GLOBAL MEDICAL NEWS**

A Division of IMNG Medical Media

**President IMNG Medical Media** Alan J. Imhoff

**Editor in Chief** Mary Jo M. Dales

**Executive Editors** Denise Fulton, Kathy Scarbeck

**Managing Editor** Renée Matthews

**Clinical News Editor** Jeff Evans

**Audience Development Manager** Barbara Cavallaro

**Executive Director, Operations** Jim Chicca

**Director, Production and Manufacturing** Yvonne Evans Struss

**Production Manager** Judi Sheffer

**Creative Director** Louise A. Koenig

**EDITORIAL OFFICE**

5635 Fishers Lane, Suite 6000

Rockville, MD 20852

+1-240-221-4500 Fax: +1-240-221-2541

**INTERNATIONAL ADVERTISING**

Chris Woods

32 Jamestown Road

Camden London NW1 7BY

+44 207424 4454

c.woods@elsevier.com

## PRESIDENT'S COLUMN

VLADIMIR  
HACHINSKI, MD

## The End of the Beginning

Half a century ago, Sir Winston Churchill, the prime minister of Britain, said, "Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning." We have begun the changes by redefining our mission, which now states that the World Federation of Neurology (WFN) is to "foster quality brain health worldwide."

Now that the different committees of the WFN have defined their priorities, there will be an invitation to the WFN membership to join the activities of their interest.

We have developed standards by which we work, particularly as a team, and we have also established for the first time an opportunity for members of the WFN to submit applications for funding for special projects, which have been funded primarily by the WFN but also with input from other organizations, including the World Stroke Organization (WSO) and the International League Against Epilepsy (ILAE).

For 2012, we plan to invite another round of grant applications for funding for projects. We also plan to change the structure of the Grants Review Committee, which I have chaired, to include members of brain and neurology organizations that share common interests with us and may join us in co funding projects.

At the World Congress of Neurology in Marrakesh,

Morocco, in October, Gustavo Roman, chair of the Latin American Initiative, called for a meeting to explore the desirability and feasibility of establishing a Pan-American Federation of Neurological Societies. The meeting is to be chaired by Ana Robles, the Regional Director for Latin America, and the decisions from that meeting will be presented at the 13th Pan American Congress of Neurology in La Paz, Bolivia, March 4-8, 2012.

Other changes in 2012 will be the appointment of a new Editor of the *Journal of Neurological Sciences* to succeed Dr. Robert Lisak (USA). The current Editor of *WORLD NEUROLOGY*, Mark Hallett, will complete his innovative and distinguished term in 2012, and an advertisement inviting applications for the position is on page 15 of this issue.

At an international level, the Federation plans to continue building the World Brain Alliance to devise a world brain agenda to raise awareness of the importance of global brain health at the World Health Organization and the United Nations as well as with regional and national governments. The World Brain Alliance is an organization of 10 international societies. It will hold a brain summit meeting in London, England, in 2014 to coincide with the planned European Brain Year.

Our plans are ambitious, times are hard,

and we anticipate that great effort will be needed if we are to achieve our goals. However, if our track record to date is anything to go by, we know that change is possible, especially if it is a result of planned evolution rooted in a solid foundation that provides a sound basis for continuity.

Let 2012 be the year of your greater involvement with the World Federation of Neurology. I wish you and your families a happy New Year!



Sunset Over the Atlas Mountains, Marrakech, by Sir Winston Churchill (1874-1965).

COURTESY BONHAMS

Continued from previous page

importance of brain health. Dr. Hachinski said that there was to be a summit meeting at the current WCN of all the neurology subspecialty organizations, also in an effort to establish cohesion and synergies. Dr. Hachinski also described the WFN's Pilot Projects Program, under which 14 projects will be started or facilitated around the world. A new round of proposals will be called for shortly.



Delegates heard presentations on the WFN's many activities and enjoyed a sneak preview of the new Web site.

Vice President Werner Hacke reported that he has been involved in planning for the 2011 Congress as well as the 2013 Congress in Vienna and the early evaluation phase of sites for the 2015 Congress, which was discussed later in the meeting. The Education Committee cochairs, Stephen Sergay and Wolfgang Grisold, reported that

the committee was active in supporting teaching programs, visiting professorships, and travelling fellows; the distribution of Continuum, an educational product from the American Academy of Neurology; and assisting with the arrangements for African neurologists to train in Turkey. Donna Bergen, who oversees the Applied Research Groups, said that she has been in liaison with these groups and other subspecialty societies in neurology. She noted that groups "come and go," and that a new group focusing on disorders of consciousness is being formed.

Alfred Njamshi, the Pan-Africa Regional Director, gave an important report on the African Initiative, a major focus of WFN activity that began during the presidency of Johan Aarli. He emphasized educational initiatives.

Training is improving in many centers on the continent, and opportunities are arising for African neurologists to train elsewhere in Africa as well as countries outside of Africa. There are fellowships for African neurologists to attend meetings around the world, including the WCN, and three regional meetings were sponsored by the European Fed-

eration of Neurological Societies, the International Brain Research Organization, and the WFN. Amadou Gallo Diop of Senegal spoke about the use of "neurocaravans" to facilitate the education of local health care workers and delivery of neurological care in isolated rural areas. The neurocaravan is a van that transports neurologists into the country for several days at a time during which they conduct consultations and can even do EEGs.

Ryuji Kaji, an WFN Elected Trustee from Japan, spoke about the Asian Initiative. In addition to supporting local neurological meetings and the Asian Oceanic congresses, the group is trying to help smaller countries establish neurological associations. Gustavo Roman, an Elected Trustee from the USA, reported on the Latin American Initiative, noting upcoming educational activities and local meetings, including the Panamerican Congress.

WFN Secretary-Treasurer General Raad Shakir gave his report, which included approval of the minutes of the last council of delegates meeting and discussion of the finances. The auditors were reappointed by vote. Dr. Shakir noted that there are currently 113 WFN member societies. Moldova had been approved for membership by the Membership Committee and was admitted into membership in the WFN by unanimous vote of the Council. The next action was voting for an Elected Trustee. The candidates were Gustavo Roman, running for re-election, and John Wokke; Dr. Roman was successful in his bid.

The final part of the discussions dealt with upcoming World Congresses. The 2013 Congress will be in Vienna, and the organization committee is already working developing the scientific and social programs. The business of the current meeting was to vote for the site of the 2015 Congress, specified to be in the Americas. Dr. Francisco Cardoso of



Renato Verdugo Latorre (Chile; left) and Francisco Cardoso (Brazil).

PHOTOS COURTESY DR. MARK HALLETT

Brazil and Dr. Renato Verdugo Latorre of Chile presented the bids for the 2015 Congress on behalf of their respective countries. Dr. Shakir and Dr. Hacke gave their site visit reports and Kenes, the Congress organizers, reported on the technical aspects of the sites. After much discussion, Chile received the most votes and will likely host the 2015 Congress, pending successful negotiation of price for use of the congress center.

Following this vote, there being no further business, the meeting adjourned. ■

## NEUROLOGICAL HISTORY

## A Failed Bid to Revive the Early Brain Commission

BY BERND HOLDORFF, MD

In 1929, the Swedish neurologist Salomon Henschen (1847-1930), known for his research in aphasia and the retinal and cortical optic system, planned an Academia Neurologica Internationalis to promote cooperation between international neuroscientists. Letters between Henschen and the neurologists Cécile and Oskar Vogt, who at the time were at the Kaiser Wilhelm Institute for Brain Research in Berlin-Buch, Germany, suggest that a great number of international neuroscientists supported the project. The Vogts were Henschen's most important partners in the project; Cécile would take over the office of secretary and as a person of French origin, was to expand the French as well as the international framework.

**An Erudite Body**

Henschen hoped that the academy would serve as a revival of the International Brain Commission, which had been founded in London in 1903 under the patronage of the International Association of Academies. Between 1906 and 1912, some brain research institutes were accredited through the commission, including those of Paul Flechsig (Leipzig), Heinrich Obersteiner (Vienna), Constantin von Monakow (Zurich), Ludwig Edinger (Frankfurt am Main), Wladimir Bechterew (St. Petersburg), Cornelius Ubbo Ariens Kappers (Amsterdam), and Karoly Schaffer (Budapest).

By 1915, more than 50 high-ranking scientists, Henschen among them, were members of the commission and two, Ramón y Cajal and Camillo Golgi, were Nobel laureates.

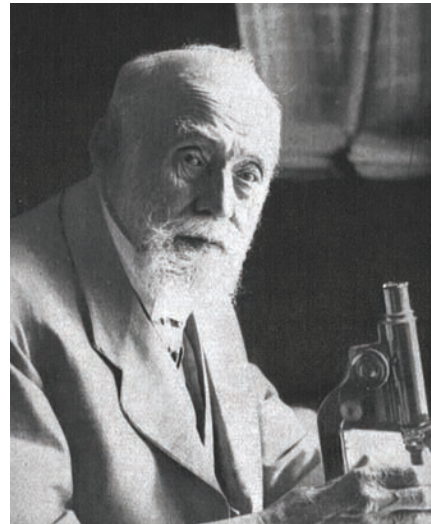
Although many of Henschen's esteemed colleagues initially were enthusiastic about the project, it was not necessarily an indication that they would participate in the conference. After numerous endorsements, Henschen arranged a provisional program of papers and discussions. As an old and sickly man – he was 82 at the time – he planned to spend his remaining years establishing a sustainable institution. However, within 2 months (March–April 1929), the number of active conference participants decreased so that the provisional program had to be revised a number of times. Moreover, the intended headquarters location in the Netherlands had to be transferred to Stockholm after Henschen's Dutch colleagues (Bernardus Brouwer, Kappers, and Cornelius Winkler) opposed the formation of an international body. The Germans remained loyal to Henschen. The invitation for the conference from 28–30 May, 1929, had hardly been printed when the conference had to be called off because of the dearth of international attendees.

Was Henschen's designation of the organization as an academy too ambitious and might the term "conference" have been more appropriate? The proposed program was actually just that and thus it could not function as a re-

placement for the Brain Commission. There were other obstacles:

► Brouwer, Kappers, and Winkler believed that an academy could only be created as a national institution by a state and could not become a supranational organization.

► von Monakow was convinced that the



COURTESY ACTA PSYCHIATR NEUROL, 1931

**Salomon Henschen wanted to promote cooperation among neuroscientists.**

Brain Commission should remain under the umbrella of the League of Nations and cooperate with the Institut International de Coopération Intellectuelle of Paris; he also believed that Henschen was not the most suited person for the task.

► Ten neuroscientists of the Brain Commission, including Henschen, were advanced in age and hardly able to serve as

a driving force for the neurological academy, except for bolstering it through their name and reputation.

The project failed, though two other projects took shape: the opening in 1931 of the Kaiser Wilhelm Institute, one of the largest modern brain research institutes by the Vogts, and the inaugural International Neurological Congress in Bern that same year. For decades, the Brain Commission remained without successors until the International Brain Research Organization (IBRO) was created in 1961. ■

**Reference**

Holdorff, B. Salomon Henschen's Short-Lived Project of Academia Neurologica Internationalis (1929) for the Revival of the International Brain Commission: Documents from the Cécile and Oskar Vogt Archives (J. Hist. Neurosci. 2011;20: 93–105).

DR. HOLDORFF is extraordinary professor of neurology at the Charité, Humboldt-University in Berlin, Germany, former head of the department of neurology at Schlossparkklinik in Berlin, and chairman of the Deutsche Gesellschaft für Geschichte der Nervenheilkunde ([www.dggn.de](http://www.dggn.de)).

PETER J. KOEHLER, MD, PHD, is the editor of this column. He is a neurologist in the department of neurology at the Atrium Medical Centre, Heerlen, the Netherlands. Visit his website at [www.neurohistory.nl](http://www.neurohistory.nl).

## Brazilian Researchers Take on Dengue Fever

BY CRISTIANE SOARES, MD, PHD

Brazil is the largest country in South America, with a population of just under 191 million. Given its tropical and subtropical region climates and population demographics – an aging population and social inequality – it is no surprise that dengue fever, malaria, and yellow fever are endemic problems.

Brazil has the most areas enzootic for yellow fever on continental America. It is endemic in the impoverished northern region of the country and emerges sporadically as epidemic/endemic in the central western region.

Since 2000, it has been spreading progressively beyond its usual boundaries and into areas that were formerly known as enzootic. The last urban outbreak of yellow fever in Brazil occurred in 1942. The last indigenous cases were reported in the state of São Paulo 47 years ago,

but in 2000, two cases of indigenous yellow fever were reported along the border of the state of Minas Gerais. Circulation of yellow fever virus in the São Paulo state has been described, but it has been sporadic. These occurrences reinforce the importance of vaccination against yellow fever in areas considered at risk.

Dengue fever is endemic in tropical and subtropical countries, especially in southeast Asia, the Caribbean Basin, South America, and Pacific Islands. It is one of the most common arboviruses, consistent with its being a unique arbovirus fully adapted to the human host and its environment. About 3 billion people worldwide live in areas that are at high risk for dengue fever, and 80% of cases in the Americas occur in Brazil. There were more than 1.2 million reported cases of dengue fever during the Brazilian outbreak of 2002. In that outbreak, Rio de Janeiro was considered the dis-

persion center of the epidemic on the Brazilian coast because of the prevalence of mosquitoes. In Brazil, serotypes DEN-1, DEN-2, and DEN-3 have coexisted since 2000.

Despite 5 decades of intensive effort to control malaria, the disease remains a major cause of morbidity in Brazil. The most recent available data are for 2008, when 314,420 slide-confirmed malaria cases were reported countrywide, 99.9% of which were acquired in Amazonia. About 52% of malaria cases occur among adults older than 20 years. These data represent 57.4% of all clinical malaria cases recorded in the Americas and the Caribbean. It is still not clear why malaria remains so difficult to control in Brazil.

As a neurologist, I am part of a research team led by Dr. Marzia Puccioni-Sohler, working in the CSF Laboratory at Hospital Universitário Clementino Fraga Filho in Rio de Janeiro, Brazil. We study neurological

infections, using CSF analysis. Our focus is on viral infections of the central nervous system, especially the dengue virus.

Clinical neurological research is also done at the neuroinfection ambulatory service of the Federal Hospital dos Servidores in Rio de Janeiro. The coordinator of the ambulatory clinic selects patients for clinical and CSF studies. Our neurology residents learn how to investigate and treat patients who present with a range of different neuroinfections.

We are particularly interested in viral meningitis and encephalitis because their etiology was unknown in HIV seronegative adults living in our region. This lack of information is very common in developing countries since almost all studies on the epidemiology of these diseases have originated in coun-

tries in the northern hemisphere. Thus, we sought to determine if tropical areas in Brazil have viral prevalence similar to countries in Europe or North America. It came as a surprise to us that dengue virus was the main cause of encephalitis.

For future studies we are



COURTESY DR. CRISTIANE SOARES

**Dr. Cristiane Soares (center) with Dr. Marzia Puccioni-Sohler and Dr. Luiz Claudio Faria.**

planning to work with dengue viral load in patients who present with neurological manifestations that have been caused by dengue virus. ■

BEFORE THE RESEARCH  
IS PUBLISHED...

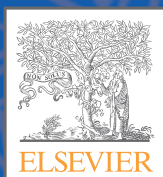
BEFORE THE DRUG  
IS APPROVED...

BEFORE THE GUIDELINE  
IS ISSUED...

YOU READ  
IT FIRST IN



THE LEADER  
IN NEWS  
AND  
MEETING  
COVERAGE



# Clinical Neurology News

— We Write Medicine's First Draft —

[www.clinicalneurologynews.com](http://www.clinicalneurologynews.com)

Interested in relocating? Go where the jobs are ...  
**IMNG medjobs.com**  
[www.imngmedjobs.com](http://www.imngmedjobs.com)

## Update on Africa

Prevention • from page 1

lecture titled, Stroke: The Global Agenda, as did Vladimir Hachinski in his presidential lecture on Hypertension and the Brain. Vice President Werner Hacke, also speaking in the Presidential Symposium, emphasized the challenges ahead in implementing preventative NCD measures: an increase in population, an aging the population, discrepancies in the distribution of resources, and the increasing costs of medical care. He also noted that prevention is critical for moving forward successfully.

The status of neurology in Africa was reviewed during an excellent session sponsored by the Pan African Association of Neurological Sciences (PAANS). The speakers were Adesola Ogunniyi of Nigeria, Gilbert Dechambenoit, a neurosurgeon from the Ivory Coast, Charles Newton of Kenya, and Alfred Njamnshi of Cameroon. They listed a number of problems that hampered neurological practice in Africa, including the small number of neurologists and their maldistribution

in favor of urban areas and to the detriment of remote rural areas, the dearth of training programs, and the significant treatment gaps because of the unavailability of medications for diseases such as epilepsy. The prevalence of other NCDs such as epilepsy, migraine, and Alzheimer's disease are increasing. However, there are some solutions that are being put in place. Education is increasing, thanks in part to WFN efforts together with the European Federation of Neurological Societies and the International Brain Research Organization. Traditional healers, to whom many patients go first, are now beginning to work with physicians. Telemedicine is also beginning to have an impact on the delivery of care, especially to remote regions, and this could be considerably expanded with modern technology. Dr. Njamnshi emphasized the effectiveness of the TEAM approach, Together Everyone Achieves More.

In addition to the talks by President Hachinski and Vice President Hacke during the Presidential Session, the Moroccan Society of Neurology's Mostafa El Alaoui Faris, President of the WCN 2011, spoke about the neuropsychology of the Arabic language. Lord Walton of Detchant was awarded a medal for services to international neurology, and Richard T. Johnson received a medal for scientific achievement in neurology.

The Fourth Tournament of the Minds pitted teams from different countries against each other, testing them on their knowledge of clinical neurology. After several opening rounds, the finals were held at the closing event of the Congress. Teams from Australia, Ireland, India, and Malaysia made it through to the final round. Ironically, it was the questions about the infectious diseases that presented the greatest challenge to the participants. Given the importance of this topic as was evident during many of the presentations at the Congress, this might be the take-away message for all neurologists, from clinicians, to researchers, and especially the educators. In the end, the team from Ireland was victorious, and the Australian team came in second. The "team" from Ireland was not the usual group of four, but a single person, Dan Healy, who received a loud ovation as he accepted the winners' trophy for Ireland.

There were 3,242 Congress attendees, including about 600 from Africa, from 123 countries. His Majesty the King Mohamed VI sponsored a gala dinner attended by almost 2,000 people at Chez Ali. The guests enjoyed traditional Moroccan food and a magnificent show featuring dancers, musicians, acrobats, and Berber horsemen on Arabian horses. Already, many neurologists are looking forward to the next World Congress of Neurology in Vienna, Sep. 21–26, 2013. ■



The WFN's Raad Shakir with Dan Healy, Ireland's winning team of one in the Tournament of the Minds.

PHOTOS COURTESY DR. MARK HALLETT



Richard T. Johnson, left, received a medal for scientific achievement in neurology, and Lord Walton of Detchant for his services to international neurology.



Bo Norrving (Sweden) emphasized the importance of the WHO's four-by-four action plan for identifying and managing noncommunicable diseases.



First Vice-President Werner Hacke (Germany), and Secretary-Treasurer General, Raad Shakir (UK).



WFN Elected Trustee Wolfgang Grisold (Austria; left), with Co-Opted Trustees, Stephen Sergay and Donna Bergen (both USA).



Michel Dumas (France) was a cochair in a session that addressed neuroepidemiological issues in Africa.



International AIDS Society president, Elly Katabira (Uganda), presented a paper about neuro-HIV.



Bruno Mamoli (Austria) invited attendees to the 2013 World Congress of Neurology in Vienna, Sep. 22-27.



Editor of the new WFN Web site, Dr. J. (Pete) Engel (USA).



The Secretary of WCN 2011, Maria Benabdeljil (Morocco).



Matthew Kiernan (Australia; left), Japan's Ryuji Kaji, Ching-Piao Tsai (Taiwan), Beom S Jeon (Korea).



WFN President Vladimir Hachinski's address focused on hypertension and the brain.



Vladimir Hachinski and his wife Mary Ann, and Gallo Diop (Senegal) and his wife Fatou.



Mostafa El Alaoui Faris, WCN 2011 president, and Khadija Al Zemmouri of the local organizing body.



Bill Carroll (Australia; left) and Alan Barber (NZ).



Past WFN presidents, Johan Aarli (Norway; left) and James Toole (USA).



Mostafa El Alaoui Faris, left, Congress President, Carlos Ketzoian (Uruguay), Chafiq Hicham, WCN Vice-President.



Guests at the opening ceremony of the Congress received a warm welcome to the host city by Moroccan performers and singers (above).



Yomi Ogun (Nigeria) delivered a paper on the epidemiology of neuro-HIV in Africa.



Keith Newton, the London-based Executive Director of the WFN.

COURTESY WORLD FEDERATION NEUROLOGY

COURTESY WORLD FEDERATION NEUROLOGY

# Suggested Algorithm for Tuberculous Meningitis Might Help Streamline Diagnosis

The burden of tuberculosis and its complications is largest where the need is greatest. In many of the world's regions, resource-poor environments bear the burden of tuberculous disease with their limited resources to manage such epidemics.

The TB-HIV syndemic has compounded this problem and has increased the number of new and recurrent TB patients.<sup>1</sup> Last year, the World Health Organization (WHO) recorded about 5.78 million new and recurrent pulmonary TB (PTB) cases, of which about 850,000 were extrapulmonary tuberculosis (EPTB). A large proportion of those cases were in sub-Saharan Africa, the Eastern Mediterranean, and South East Asia.<sup>2</sup> In TB and HIV endemic populations, a significant number of patients have EPTB, of which 5%–18% have tuberculous meningitis (TBM).

TBM is a difficult diagnosis to confirm or exclude, given the low yields for microscopy and culture seen in routine laboratory processing. A cerebrospinal fluid (CSF) volume of less than 6 mL and a 30-minute examination within 60 minutes of the sample being taken are factors that are known to improve the yield for microscopy,<sup>3</sup> but are not always possible because of the human resource and workload constraints in endemic settings. Attempts to define predictive factors for TBM have consistently identified a history of symptoms for more than 5 days, CSF lymphocyte predominance, CSF glucose below 2.2 mmol/L, or a CSF-blood glucose ratio of 0.5.

If an HIV-positive patient presents with a meningitic illness and a weeklong history, then a CSF lymphocytosis, a negative cryptococcal latex agglutination test, a CD4 count of more than 200 cells/mm<sup>3</sup>, and a CSF-blood glucose ratio of 0.2 are, together, predictive for TBM. However, neutrophil predominance (15% of cases) and a normal CSF-blood glucose ratio (about 30% of cases) may be seen. There is a greater occurrence of neutrophilia in HIV-positive individuals, possibly because of a compromised adaptive arm but a relatively well-functioning innate arm. Normal CSF findings have also been described in these patients. In those cases in which CSF findings are normal, a reliable test to confirm or exclude TB as a meningitic etiology is required.

## Test Specificity, Sensitivity Varies

Various attempts using liquid culture media such as PCR (sensitivity, 56%; 95% confidence interval, 0.46-0.66; and specificity, 98%; 95% CI 0.97-0.99),<sup>4</sup> as well as antigen and antibody tests (sensitivity, 56%; sensitivity range, 0.26-1.00; and specificity, 98%; specificity, range 0.59-1.00),<sup>5</sup> have not realized their promised potential. Yields for the microscopic observation drug susceptibility assay (MODS), when compared with those of the Mycobacteria Growth Indicator Tube (MGIT) and Lowenstein-Jensen media (sensitivity, 52.6%, 64.9%, and 70.2%, respectively), may be promising for quicker results.<sup>6</sup>

Newer tests, such as antigen-specific region of difference interferon-gamma response assays (IGRAs), may hold promise and have been shown to have a specificity and sensitivity of 82% (95% CI, 66-92) and specificity of 100% (95%CI, 78-100; cut point, equal to or greater than 46 spot-forming cells). CSF interferon-gamma levels hold similar promise in TB and

HIV endemic populations. The accompanying figure suggests a diagnostic algorithm for TBM in patients from TB and HIV endemic environments. Application in different populations is required to confirm the utility of this algorithm.

When CSF changes are atypical, or if patients present with clinical meningitis after already having been on TB therapy for TB elsewhere in the body, or with immune reconstitution inflammatory syndrome (IRIS), the pathogenesis of clinical

meningitis may be difficult to elucidate. There is an increased risk for IRIS in HIV-positive patients with low CD4 counts. In a patient with possible IRIS, there may be an emergent TBM, alternative etiology, or unmasking of existing TB infection in the CSF space. Management of such patients varies from stopping TB therapy to adding steroids to the existing regimen. This is largely empirical, however; a recent randomized, controlled trial showed benefit for steroid use.<sup>7</sup> Hydrocephalus and basal enhancement may support TBM in appropriate populations; however, this may occur less frequently in HIV-positive individuals.

Regarding TB therapy, 9-12 months of initial therapy with four drugs (rifampicin, isoniazid, ethambutol, and pyrazinamide), followed by two drugs (rifampicin, isoniazid) are recommended. Therapy for multidrug resistant (MDR) TBM and extensively drug-resistant (XDR) TBM is largely empirical. Moxifloxacin may hold promise as it has good CSF penetration and has been found to achieve adequate minimum inhibitory concentrations.<sup>8</sup>

In HIV-positive patients on TB therapy who devel-

op CNS symptoms, management is uncertain, as it is when patients present with possible IRIS. In one study, investigators recorded a frequency of 19% of patients with neurologic TB-IRIS, of whom 23% had paradoxical TB-IRIS.<sup>9</sup> Exclusion of alternative etiologies and steroids is currently recommended.

## Poverty a Factor in Prevalence

Complications such as hydrocephalus occur in up to 70% of patients, more often in children and less so in HIV-positive individuals. Devastating cerebrovascular incidents occur in about 60% of patients, according to findings in MRI-based studies.<sup>10</sup> Therapy to prevent cerebrovascular incidents is uncertain. Other complications include spinal myelitis and arachnoiditis with significant morbidity.

TBM remains a devastating illness, particularly in TB- and HIV-endemic environments that have poor resources, and studies relating to the pathogenesis of complications with emphasis on specific management would be valuable. Further studies on optimal therapy for MDR and XDR therapy in TBM are also needed. Finally, I would add that a very important aspect in the reduction of TBM prevalence is poverty alleviation, as this would help with both the TB and HIV epidemics. ■

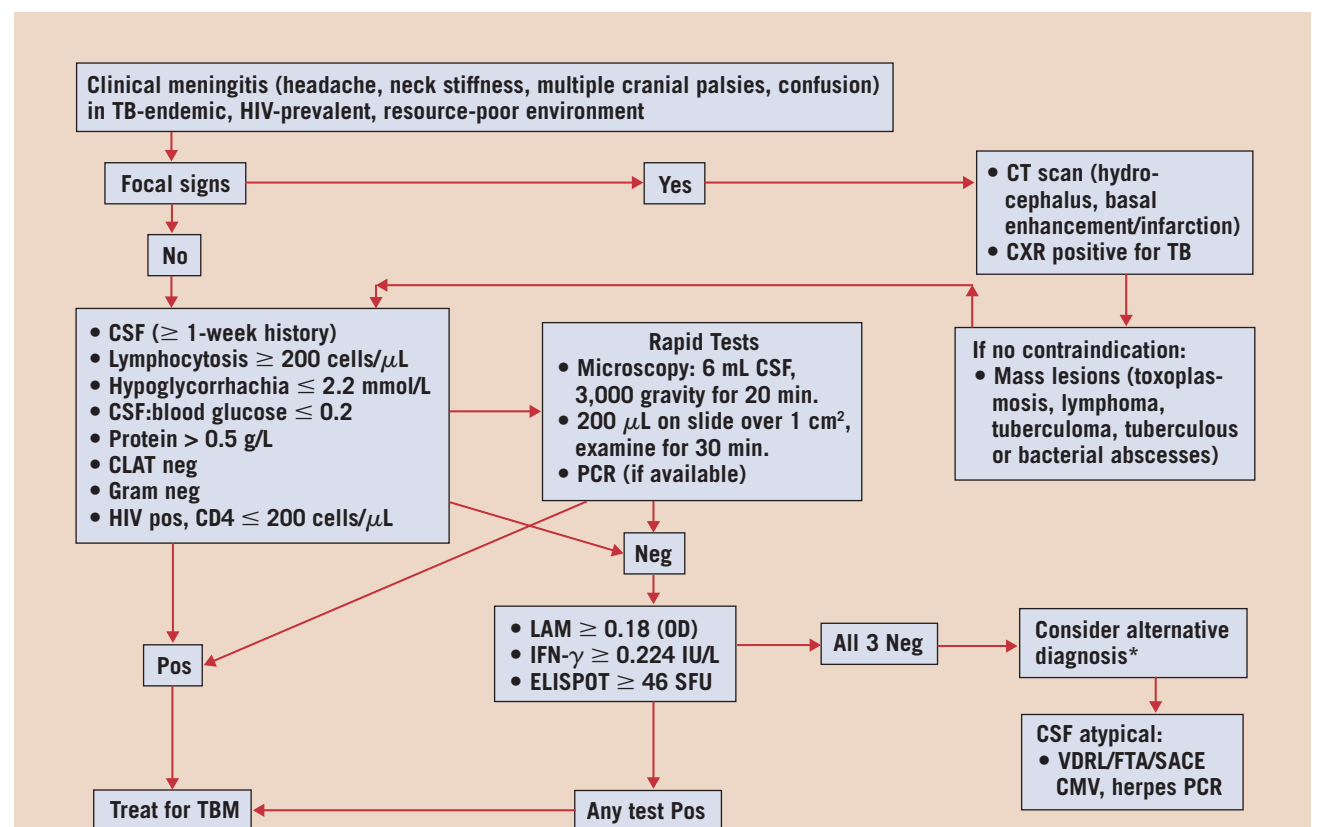
## References

1. Clin. Microbiol. Rev. 2011;24:351-376
2. World Health Organization 2010. Report WHO/HTM/TB/2010.7 (Accessed Feb. 2, 2011)
3. Clin. Microbiol. Rev. 2008;21:243-261
4. Lancet Infect. Dis. 2003;3:633-643
5. Thorax 2007;62:911-918
6. PLoS One 2007;2:e1173
7. AIDS 2010;24:2381-2390
8. Tuberculosis (Edinb) 2010;90:279-292
9. Clin. Infect. Dis. 2009;48:e96-107
10. J. Infect. 2009;59:156-166



BY VINOD PATEL, MD

Dr. Patel is in the department of neurology at the University of KwaZulu-Natal, Durban, South Africa.



\*List of alternative diagnoses is longer than shown here. More etiologies need consideration at this point. Those depicted here are frequently associated with HIV-positive patients in our environment.

Notes: CLAT = cryptococcal latex agglutination test; CMV = cytomegalovirus; CXR = chest x-ray; ELISPOT = enzyme-linked immunospot; FTA = fluorescent titer antibody; IFN- $\gamma$  = interferon-gamma; LAM = lipoarabinomannan; PCR = polymerase chain reaction; SACE = serum angiotensin-converting enzyme. This is a suggested algorithm.



# We are pleased to announce the **Impact Factor\*** increase for our leading titles in *Neurology* portfolio.



We would like to thank our readers, authors, reviewers and editors for their support and contribution to this outstanding achievement.



## Alzheimer's & Dementia

EDITOR-IN-CHIEF: *Zaven Khachaturian, PhD*

ISSN: 1552-5260 • [www.alzheimersanddementia.com](http://www.alzheimersanddementia.com)

## Neurobiology of Aging

EDITOR-IN-CHIEF: *P. D. Coleman, PhD*

ISSN: 0197-4580 • [www.neurobiologyofaging.org](http://www.neurobiologyofaging.org)

## Pediatric Neurology

EDITOR: *K.F. Swaiman, MD*

ISSN: 0887-8994 1.513 • [www.pedneur.com](http://www.pedneur.com)

## Seminars in Pediatric Neurology

EDITOR: *John B. Bodensteiner MD*

ISSN: 1071-9091 • [www.sempedneurjnl.com](http://www.sempedneurjnl.com)

First Impact Factor!

## Sleep Medicine Reviews

EDITORS-IN-CHIEF: *J. Krieger • M. V. Vitiello*

ISSN: 1087-0792 • [www.smrj-journal.com](http://www.smrj-journal.com)

## Parkinsonism & Related Disorders

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

EDITORS-IN-CHIEF: *R. F. Pfeiffer • Z.K. Wszolek*

ISSN: 1353-8020 • [www.prd-journal.com](http://www.prd-journal.com)

**Make an impact  
Get published, get read, get cited**

To learn more about Elsevier portfolio of journals in **Neurology** please visit [www.journals.elsevierhealth.com](http://www.journals.elsevierhealth.com)

To submit your manuscript for fast editorial and review process please visit [www.elsevier.com/authors](http://www.elsevier.com/authors)

\*2010 Journal Citation Reports®, published by Thomson Reuters, 2011

# Working to Rid Africa and Asia of Rabies and Tetanus

BY MOHAMMAD WASAY, MD

**R**abies is one of the oldest known diseases, with some documentation of this deadly disease dating back almost 3,000 years. In Asia and Africa, its prevalence is closely linked to the number of dog bites, and the prevalence of dog bites is due largely to the very high human-to-dog ratios about 12:1 in Africa and 10:1 in Asia. No cases of dog rabies have been reported in Europe or the United States for some years, although last year, there were four reported cases of bat rabies in Europe.

## Few Rabies Cases Reported

There are about 10 million dog-bite cases reported worldwide annually, of which about 9 million are in Asia. The highest incidence of dog-bite cases occur in China (human-to-dog ratio, 48:1), India (8:1), Vietnam, Pakistan (10:1), Bangladesh, Thailand, and Nepal. About 7.5 million of the victims in Asia receive postexposure treatment for rabies (5.5 million in China alone).

However, it is estimated that only 3% cases of rabies are reported and that the real incidence of rabies is 100 times higher than reported. The World Health Organization (WHO) estimates that there about 55,000 rabies-related deaths worldwide annually, with 56% of those deaths occurring in Asia and 44% in Africa.

The cost of postexposure prophylaxis with human rabies immunoglobulin (RIG) is US\$110 per patient, and US\$25 per patient with equine RIG. Tissue culture vaccine costs about US\$10 per patient, whereas nerve tissue vaccine is about US\$0.40 per patient but is not effective. The annual cost of postexpo-

sure prophylaxis and vaccination in Asia is about US\$563 million and in Africa, close to US\$20 million. The economic cost of disability-adjusted life years is in the region of US\$1.74 billion.

Public awareness regarding seriousness of rabies is low. A population-based survey of 1,200 people from Pakistan (in press, J. Pak. Med. Ass.) showed that only 11% victims of dog bites received some kind of vaccine or postexposure prophylaxis. Most of the respondents (81%) reported that they knew or had heard about rabies, but only 45% knew that dog bites could cause rabies and 16% knew that rabies is a fatal disease. When the respondents were asked what they would do if they suffered a dog bite, 41% said they would visit district or civil hospital; 24%, a local hospital; 26%, a local physician; and 7% said they would use home remedies. After the respondents were informed that rabies could be fatal but was also preventable, 85% were willing to take rabies vaccine or postexposure prophylaxis, and 80% were willing to pay the costs of the vaccine or postexposure prophylaxis.

## High Prevalence of Neonatal Tetanus

Each year, there are about 1 million reported cases of tetanus worldwide (more than 70% those occur in Asia), and about 400,000 of those cases are neonatal tetanus. The high prevalence of neonatal tetanus is largely a result of the high number of home deliveries and the lack

of maternal and adult vaccination. Few cases of childhood or adolescent tetanus are reported because of the WHO's expanded program of immunization. In 2000, the reported overall tetanus-related mortality worldwide was 309,000 deaths, and 200,000 of those were from neonatal tetanus. Ninety percent of neonatal tetanus deaths occur in Asia and Africa.

Physician awareness of the importance of tetanus vaccination and postexposure prophylaxis is limited. A study in Pakistan reported that 25% of family physi-

about the predisposing factors of tetanus infection, 43% reported that the organism is located on rusty iron pieces, 26% reported that it is found in soil, 5% thought it is ingested with the food, and 3% believed that it is an airborne infection.

## Drawing on the Polio Eradication Model

In the same study, 85% of respondents did not know tetanus could be a fatal disease, and 70% did not know that it could affect and kill newborns. When asked about preventable nature of neonatal tetanus, 59% of respondents did not know that tetanus injections during pregnancy could prevent tetanus in newborns. After the respondents were informed that tetanus could be fatal and that timely diagnosis could prevent it, 87% were willing to get the antitetanus vaccine, and 77% were willing to pay money to get the vaccine.

Public and physician awareness of the disease and availability of vaccines and postexposure prophylaxis are key interventions for the eradication of rabies and tetanus, as they were in the eradication of the polio virus. Accurate data is dependent on as many cases as possible being reported to health authorities. Neurological, medical, and professional organizations should work to eradicate these diseases. The World Federation of Neurology should establish a task force for coordinating data collection, advocacy, and liaison with the WHO. A tetanus and rabies eradication campaign in affected areas will change the public perception of the disease and the practices of health-care provider. ■

DR. WASAY is professor of neurology at Aga Khan University in Karachi, Pakistan.



Dr. Mohammad Wasay, right, is working to eradicate rabies and tetanus in Asia. He is shown here at the WCN 2011 with Dr. Man Mohan Mehndiratta of India.

cians were aware of the correct procedures for pre-exposure prophylaxis (vaccination), and that 13% were aware of the correct procedures for both pre- and postexposure prophylaxis. The researchers found that only 2% of family physicians were using pre- and postexposure prophylaxis in eligible patients.

In the aforementioned population-based study, 80% of the same respondents reported that they knew or had heard about tetanus. When they were asked

## Seizure Frequency May Be Key

Epilepsy • from page 1

trial registers for randomized trials conducted between 1960 and 2010. From each study, they extracted the description of treatment groups, baseline and treatment period duration, seizure type, number of withdrawals and deaths per group, and the reasons for any deaths that occurred after the first dose and less than 7 days after the last one. They also asked the sponsors of relevant trials to provide a detailed narrative for every recorded death.

Next, the investigators classified the cause of death as possible, probable, or definite SUDEP, or another cause, and separated patients into groups who received AEDs at efficacious doses, AEDs at nonefficacious doses, and placebo. They defined AED doses approved as adjunctive therapy for refractory epilepsy as efficacious against the form of epilepsy or seizure they were approved for in Europe or in the United States. Unapproved doses or indications or drugs that failed to reach the market or are still under development were deemed efficacious when they were proven significantly better than placebo in at least one parallel-group randomized trial.

After retrieving 6,718 reports, the researchers identified 112 eligible randomized trials (106 that involved refractory partial epilepsy and 6 that involved refractory primary generalized tonic-clonic seizures) to be included in the meta-analysis. The trials assessed 21,224 patients and 5,589 patient-years, with 27 AEDs used at 86 doses, 8 of which did not prove to be efficacious.

Thirty-three deaths occurred in 19 trials. Eleven patients were diagnosed with definite SUDEP, 7 with probable SUDEP and 2 with possible SUDEP. The remaining 13 died of other causes.

A total of 10 deaths occurred among patients who took efficacious doses of AEDs, including 3 instances of SUDEP. The nonefficacious group experienced four deaths, including three instances of SUDEP. Deaths were reported in 19 patients who took placebo, including 14 instances of SUDEP.

SUDEP occurred from day 1 to day 192 following randomization, with a mean delay of 77 days in the placebo group, 70 in the efficacious treatment group, and 73 in the nonefficacious group.

The rate of definite or probable SUDEP was 0.9 per 1,000 person-years in patients who received efficacious AED doses, 3.7 in those who received nonefficacious doses, and 6.9 in those who received placebo. The incidence of SUDEP in the placebo group was in the highest range of those previously reported in refractory epilepsy and about twice the rate recorded in open-label add-on AED studies, according to the researchers.

The odds of probable or definite SUDEP were significantly lower among patients randomly assigned to AEDs at efficacious doses than they were among those assigned to placebo (odds ratio, 0.17). The association did not change when possible cases of SUDEP were also considered. "In our view, the most probable explanation for the very low SUDEP rate recorded in patients allocated to AEDs at efficacious doses during the blinded phase of randomized trials is the treatment-related reduction in seizure frequency," they wrote.

Patients and caretakers also might take specific precautions during randomized trials, including better compliance or reinforced supervision, thereby reducing the risk of SUDEP, the researchers suggested.

However, many consider the risk-to-benefit ratio of adjunctive AEDs in re-

fractory epilepsy to be low due to very low rates of long-term seizure freedom, disputable clinical relevance of an incomplete reduction in seizure frequency, and frequent side-effects. Previous case-controlled studies also have found that the risk of SUDEP rises with the number of prescribed AEDs, which might make physicians reluctant to prescribe additional AEDs to the baseline regimen of patients with refractory epilepsy even though the association is probably confounded by the relation between the number of AEDs and epilepsy severity, the researchers said.

"Our data suggest that add-on AEDs at doses effective on seizure frequency reduce the risk of SUDEP despite increasing the drug load, at least during the average 3-month duration of randomized trials," the researchers wrote. "This finding provides an argument not only for active revision and optimum management of treatment in patients with uncontrolled seizures, but also for further prospective and long-term investigation of this unsettled issue."

Dr. Ryvlin has received speaker or consultant fees from Pfizer, GlaxoSmithKline, UCB Pharma, Eisai, and BIAL. Another author reported receiving speaker fees from Pfizer and UCB Pharma. ■

# Leading resources in clinical neurology!

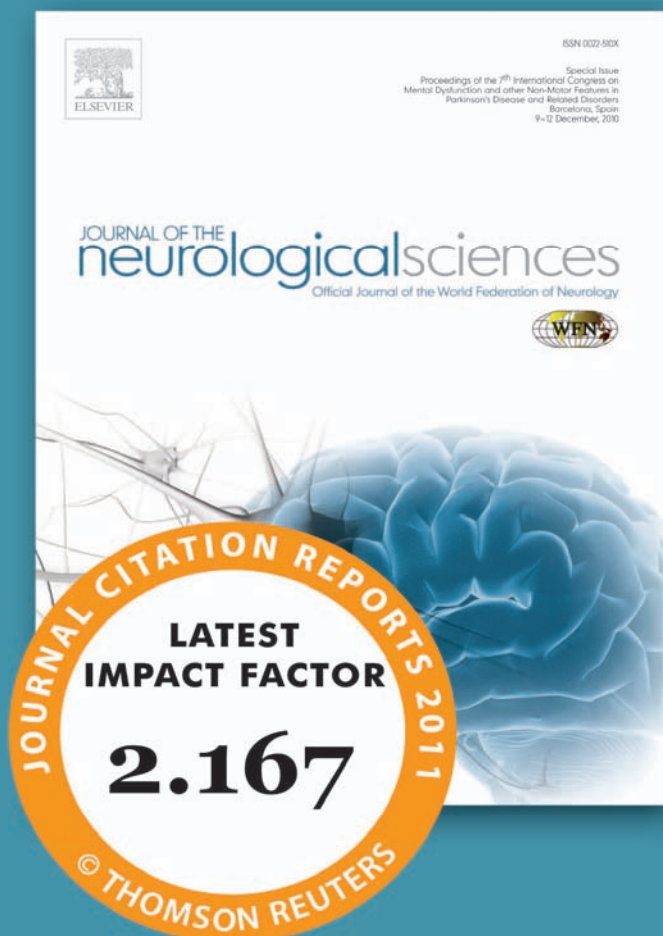
## Journal of the Neurological Sciences Official Journal of the World Federation of Neurology

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.

[www.jns-journal.com](http://www.jns-journal.com)



## Parkinsonism and Related Disorders

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

Editors-in-Chief

**R. F. Pfeiffer**, *University of Tennessee HSC*

**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](http://www.prd-journal.com)



## Calendar of International Events

2012

### 8th Annual Update Symposium on Clinical Neurology and Neurophysiology

Feb. 22-23

Tel Aviv, Israel

www.neurophysiology-symposium.com

### XIII Pan American Congress of Neurology

March 4-8

La Paz, Bolivia

www2.kenes.com/PCN2012

### 6th World Congress on Controversies in Neurology

March 8-11

Vienna, Austria

www.comtecmed.com/cony/2012/

### 64th Annual Meeting of the American Academy of Neurology

April 21-28

New Orleans, USA

www.aan.com/go/am12

### 13th Asian Oceanian Congress of Neurology

June 4-8

Melbourne, Australia

www.aocn2012.com

### 22nd Meeting of the European Neurological Society

June 9-12

Prague, Czech Republic

www.congex.ch/ens2012

### 16th Congress of the European Federation of Neurological Societies

Sep. 8-11

Stockholm, Sweden

www.efns.org/efns2012

### 10th European Congress on Epileptology

Sep. 30-Oct. 4

London, England

www.epilepsylondon2012.org

### 8th World Stroke Congress

Oct. 10-13

Brasilia, Brazil

www2.kenes.com/stroke/Pages/Home.aspx

## BOOK REVIEWS

# Electroencephalography Resources

BY MARK HALLETT, MD

Editor in Chief

*Niedermeyer's Electroencephalography: Basic Principles, Clinical Applications, and Related Fields*  
Edited by DL Schomer and Fernando H Lopes da Silva  
Wolters Kluwer/Lippincott Williams & Wilkins, Philadelphia, 2011

*Blume's Atlas of Pediatric and Adult Electroencephalography*  
By WT Blume, GM Holloway, M Kaibara, GB Young  
Wolters Kluwer/Lippincott Williams & Wilkins, Philadelphia, 2011

**E**lectroencephalography (EEG) is a traditional laboratory test for neurology, still useful even after the onslaught of neuroimaging with its pretty pictures, and still read by neurologists. In the United States, all neurologists can read EEGs, but special expertise can be demonstrated by taking the examination in Clinical Neurophysiology by the American Board of

Psychiatry and Neurology (ABPN) and/or the examination by the American Board of Clinical Neurophysiology (a freestanding Board). The ABPN certification has to be renewed every 10 years. The two books arrived for review by WORLD NEUROLOGY just as I was studying for my ABPN recertification, and I was happy to see them.

Niedermeyer's book has been the standard comprehensive textbook in the field. With 1,275 pages and 58 chapters, all written by experts in the field, it should contain everything you want to know. This sixth edition of the book certainly contains lots of information, but because each chapter has a different author, the depth of coverage in each area differs by author so there is little continuity from chapter to chapter.

It is a book for the expert, not the beginner. It is also not a book you can just pick up and read; it is so heavy, that it needs to be kept on the table! Fortunately, the book is also available online

after purchase, and I found it easier to read it that way. The book covers a range of topics including evoked potentials, intraoperative monitoring, cognitive function, neuropharmacology, and polysomnography. This is an excellent resource for reading an occasional chapter or looking up a detail and is nice to have

on the shelf for anyone wanting to call him or herself an expert.

Blume's Atlas, while a first edition, follows two earlier editions of separate volumes of adult and pedi-

atric EEG. There is nothing that can replace actually seeing and reading a wide variety of EEGs in order to maintain expertise. The book is published with wide pages that look like an EEG page. Each section is preceded by some text. The book is also best left on the table, but that's not unreasonable for reading EEGs, and it is also available online after purchase. The examples are good, clear, and abundant. The book can be read cover to cover and can be used as a ready source of examples of EEG patterns. ■

**BLUME'S ATLAS, WITH ITS WIDE PAGES THAT LOOK LIKE AN EEG PAGE, IS A GREAT RESOURCE FOR HONING OR REFRESHING ONE'S EXPERTISE.**

## Text on Central Nervous System Tumors Focuses on a Dynamic Area of Study

*Primary Central Nervous System Tumors: Pathogenesis and Therapy*  
Edited by Andrew D. Norden, David A. Reardon, and Patrick Y.C. Wen  
Humana Press, 2010

**W**hen judging the value of books, it does well to remember Sir Francis Bacon's comment "... some books are to be read only in parts, others to be read, but not curiously, and some few to be read wholly, and with diligence and attention." *Primary Central Nervous System Tumors* fits solidly into the last category in that its intellectual content is



BY ALI K. CHOUCAIR, MD

Dr. Choucair is a neurologist in Salt Lake City, Utah, USA.

as reflective of current knowledge as it is possible for any scientific book. I say that because the shelf life of a book such as this could well be relatively short given that it focuses on a rapidly expanding field of knowledge.

The coverage of the topics and the list of contributors are impressive. The

book is organized into three sections: General Principles (7 chapters), Gliomas (5 chapters), and Other Tumor Types (10 chapters) and, in general, the chapters are well written and each is highly informative. Some chapters' content (such as the one on ependymomas) is of limited scope because the role of chemotherapy in this disease in adults is yet to be defined.

The chapter on pediatric brain tumors is well written, but a single chapter on the subject in a book that is written primarily for an audience of adult neuro-oncologists does not do justice to the field of pediatric neuro-oncology in which many pioneering clinical trials have been conducted. The book does not address neurological complications of systemic cancer, but that is understandable since it is about CNS tumors.

One shortcoming of the book is its lack of summary tables. In a field such as neuro-oncology, in which much of the new information is gleaned from clinical trials, this book would be more helpful to the reader if the data were organized in table form.

The purpose of writing a book should be as effective as any other teaching activity: It is not enough to present

excellent content in a format that does not help the learner retain the information. In the chapter on low grade glioma (LGG), the authors did not make mention of an important fact about the role of gross total resection

**THIS BOOK'S INTELLECTUAL CONTENT IS AS REFLECTIVE OF CURRENT KNOWLEDGE AS IS POSSIBLE FOR ANY SCIENTIFIC BOOK.**

in a group of patients with low-risk, low-grade glioma (LRLGG).

The RTOG 9813 clinical trial, which the authors quote in their chapter, enrolled patients with LRLGG as well as patients with high-risk, low-grade glioma (HRLGG). The HRLGG patients were randomized to radiation alone vs. radiation plus chemotherapy, and the LRLGG was a no-treatment, observation-only group.

In the LRLGG group, the size of residual tumor on the postoperative MRI was highly predictive of the risk for recurrence. These data have been useful in the design of ongoing clinical trials in LGG. ■

## BOOK REVIEWS

# Update on the Neurological Exam Includes Much Information That Is Not Readily Available

*DeMyer's The Neurologic Examination:  
A Programmed Text*

By José Biller, Gregory Gruener,  
and Paul Brazis  
McGraw-Hill Professional, 2011

This updated sixth edition of DeMyer's classic textbook presents detailed information on how to perform a neurological examination, lavishly illustrated with excellent and clear diagrams and occasional photographs.

The student is first provided with an outline of the standard neurological examination, which is somewhat daunting in its length. As with previous editions, each chapter begins with a discussion of neuroanatomical information relevant to the neurological examination and an understanding of the physical signs.

In fact, it is more than a description of how to examine the neurological system; there is a detailed presentation of the techniques, common abnormalities, and a differential diagnosis of some of the abnormal signs. The text encourages the reader to participate in the learning process with the inclusion of interactive questions to which answers are provided

in the margin of the page.

Terms are defined (very useful for those unfamiliar with neurological jargon), and there are clinical examples to illustrate the significance of signs and their localization.

The first six chapters of the book are devoted to the examination of the head and face – including a description of common facial and skull abnormalities – as well as the cranial nerves; and a brief review of clinical neuroanatomy. Examination of the special senses (taste, smell, hearing, and vestibular function), however, are dealt with in Chapter 9 (after the cerebellar system) and, in my view, would better fit in the section on cranial nerves.

Chapters 7, 8, and 10 detail the examination of the somatic motor, cerebellar, and somatosensory systems, respectively.

The chapter on the somatic motor system includes a valuable section on the principles underlying the evaluation of muscle strength; and the chapter on the somatosensory system provides a detailed guide to examining entrapment neuropathies and on the techniques used for examining low back pain and the sciatic syndrome.

The mental status examination (Chapter 11) is laid out in great detail and includes the evaluation of acute and chronic dysfunction, agnosias, apraxias, aphasias, and primitive reflexes.

The neuroanatomical basis of consciousness and the unconscious state (Chapter 12) is comprehensively detailed and supplemented with lavish il-



BY PIERRE BILL, MB, BCH

Dr. Bill is a consultant in neurology at the Albert Luthuli Central Hospital and emeritus professor of neurology at University of KwaZulu-Natal, both in Durban, South Africa.

ustrations. Chapter 12 also addresses the evaluation of the locked-in syndrome, the persistent vegetative state, and – of great value – how to interrogate the patient presenting with a seizure disorder and syncope.

The neurology of breathing and the localization of brainstem symptoms and signs are also discussed.

Chapter 13 deals with ancillary investigations, including lumbar puncture, CSF abnormalities, neuroimaging, and magnetic resonance spectroscopy. The penultimate chapter (14) focuses on the examination and physical signs relating to conversion disorders and malingering, and the features of nonepileptic seizures are also presented. The book ends with a synopsis of the neurological examination and a formulation of the neurological diagnosis.

This textbook will continue to fulfill the requirements and expectations of students and trainees in neurology. It provides more than a description of the tools and techniques that are pertinent to undertaking a neurological examination.

Some may feel that there is too much information and may find the lengthy text overwhelming, but the authors did not intend the book as a quick crash course on how to perform a neurological examination. Rather, it is a substantial text and a source of much information that is not provided in many other texts on the neurological examination. ■

## Filling in the Gaps in Information About Stroke

*Evidence-Based Management of Stroke*

Edited by José Biller, MD and

José M. Ferro, MD, PhD

Tfm Publishing Ltd., Shrewsbury, UK, 2011

In recent decades, the outlook for patients with or at risk for a stroke have improved significantly because of the development and use of new pharmacological, surgical, and endovascular interventions, and neurologists' growing understanding of the risks, benefits, and indications of those interventions. We have also identified some interventions that might seem intuitively sensible, such as using stents for patients with intracranial stenosis or dual antiplatelet therapy for patients with small subcortical strokes, but that are in fact harmful.

Clinicians who care for stroke patients have to identify and appraise an ever-expanding pool of clinical trials and epidemiological studies. This is a daunting task, and there is a great need for concise, comprehensive textbooks that summarize what is known about stroke management, identify gaps in knowledge, and are accessible to nonspecialists since most stroke patients worldwide not treated by vascular neurologists. This new text book edited by José Biller and José Ferro fills that gap.

In its 15 chapters – many by well-known experts in the field – the book covers the gamut of cerebrovascular disease from the treatment of acute ischemic stroke with thrombolytics to the management of intracerebral hemorrhage, subarachnoid hemorrhage, and vascular malformations. The chapters on stroke in children and during pregnancy and the puerperium are particularly valuable, as these topics are often overlooked in short textbooks on stroke.

Most of the chapters are very good and up to date, and some are excellent. I particularly liked the chapters on surgery for acute stroke, management of unruptured aneurysms and subarachnoid hemorrhage, management of spontaneous intracerebral hemorrhage, cerebral venous thrombosis, management of cerebrovascular complications in cardiac procedures, and antithrombotic therapies in stroke prevention because they are clearly written, include all of the relevant literature, and have practical recommendations for care and management.

Although the book was published in Europe, the senior authors of 12 of the 15 chapters are based in the United States, and many of the guidelines and practical issues that are discussed are most relevant to clinical practice in North America. Future editions of the book might do well to include lists of links to resources for readers in other parts of the world and chapters on stroke management in regions with different resources and needs.

The editors begin the book with a table on levels and grades of evidence and had asked the authors to quote levels and grades of evidence for each major point in their respective chapters. For the most part, the authors complied. A table at the end of each chapter summarizes the interventions and the evidence that supports it.

These tables are very helpful because they show what interventions have been tested in randomized trials or large epidemiological studies. They are also illuminating because they show that many of the

treatments we currently use are not supported by solid evidence.

One of the pillars of evidence-based medicine is the use of clinical situations as the starting point to search and appraise the literature. This book is eminently practical, but I would like to have read one

BY DR. JOSE MERINO, MD

Dr. Merino is medical director of the Suburban Hospital Stroke Program, and an investigator at the National Institute of Neurological Disorders and Stroke, Bethesda, MD, USA.



or two vignettes in each chapter to illustrate how the evidence is applied to specific cases. The book is not a systematic review of the literature (the criteria used to identify papers for each chapter are not listed), the quality of the studies that are used to make recommendations is not appraised, and not all of the available evidence is presented. The chapter on interventions for carotid artery disease and intracranial stenosis, for example, includes a brief discussion of the results of CREST but not the earlier angioplasty and stenting studies. These shortcomings, however, are inevitable with such a short textbook and do not diminish the value clinicians will derive from this volume.

Vascular neurologists will find this book interesting and helpful, though I think it will be particularly valuable for general neurologists and physicians from other specialties who take care of stroke patients.

Dr. Biller and Dr. Ferro have furthered the case for applying rigorously evaluated therapies that are effective and safe to enhance the care of our patients with cerebrovascular disease. ■

# Sleep Disorder Tied to Risk for Dementia, Parkinson's

BY JEFF EVANS

Elsevier Global Medical News

Mild cognitive impairment or Parkinson's disease developed in 34% of patients with probable REM sleep behavior disorder during nearly 4 years of follow-up in a longitudinal, population-based cohort study.

Patients with the sleep disorder had 2.2-fold greater risk for mild cognitive impairment (MCI) or Parkinson's disease (PD) than did those without, which is in line with three previous studies of risk for neurodegenerative syndromes in patients referred to sleep or movement disorder clinics, according to Dr. Brendon P. Boot and his colleagues at Mayo Clinic locations in Rochester, Minn., and Jacksonville, Fla. Those studies estimated that the rate of parkinsonism or dementia in patients with REM sleep behavior disorder (RBD) varies from 18% to 65%.

The researchers analyzed data from 44 participants with probable RBD and 607 without probable RBD who had agreed to participate in the Mayo Clinic Study of Aging after they had been randomly selected from the population of Olmsted County in Minnesota (Ann. Neurol. 2011 Oct. 31 [doi:10.1002/ana.22655]).

Unlike the previous three studies, participants with probable RBD in the current study developed MCI "far more frequently than a movement disorder." Overall, 14 developed MCI and only 1 developed PD, compared with 90 with MCI and 4 with PD among individuals without probable RBD (15% of 607). The higher risk for MCI or PD associated with probable RBD in the study was not substantially altered after adjusting for

obstructive sleep apnea symptoms (which can mimic the symptoms of RBD), after including individuals who withdrew from the study, or after excluding two people with probable RBD who had antidepressant-associated RBD.

Diagnoses of probable RBD were based on a bed partner's responses to the Mayo Sleep Questionnaire, which is a validated screening test with 100% sensitivity and 95% specificity for polysomnogram-confirmed RBD.

The study involved patients with at least one follow-up visit (with a median follow-up period of 46 months). The patients had a median duration of probable RBD symptoms of 7.5 years, and the median time from the onset of these symptoms to diagnosis of MCI or PD was 20.7 years.

Earlier studies did not rigorously assess all patients for possible MCI. They found higher rates of Parkinson's disease, dementia with Lewy bodies, Alzheimer's disease, or multiple systems atrophy in patients with polysomnography-confirmed RBD. Only one of the three previous studies included MCI diagnoses.

The investigators suspected that the MCI/PD pattern that they observed in the study may have resulted from the 70- to 89-year-old age range of participants, which may have excluded patients with RBD who developed PD prior to age 70. They noted that the median age of onset of PD in Olmsted County has been reported to be 71 years.

They also suggested that the pattern of diagnoses may reflect the exclusion of many subjects with severe RBD as a result of their reliance on information provided by the participants' bed partners.

The authors said dementia diagnoses

may rise over time in individuals with probable RBD in the study because of the higher rate of conversion to dementia for people who have MCI, compared with those who do not. This is supported by evidence from recent clinicopathologic analyses that show that individuals with RBD and MCI "very likely reflect evolving Lewy body disease."

The study was funded by grants from the National Institutes of Health, the

Robert Wood Johnson Foundation, and the Robert H. and Clarice Smith and Abigail Van Buren Alzheimer's Disease Research Program. Several of the researchers reported serving as researchers for clinical trials sponsored by Cephalon, Allon Pharmaceuticals, Baxter Healthcare, Elan Pharmaceuticals, and/or Forest Pharmaceuticals. Several also serve as consultants to Novartis, Janssen, Elan, and/or GE Healthcare. ■

## COMMENTARY

This is an excellent study, which represents a true advance in the field. It is the first study to estimate neurodegenerative syndromes emerging from a population-based study of RBD. This is an extremely important distinction because it avoids the potential selection bias involved in using sleep-clinic-based patient groups. (Sleep clinics may have more severe cases, with potentially higher risk.) It

demonstrates that persons with probable RBD are at increased risk of developing neurodegenerative syndromes. They found an increased risk of MCI and PD, although this was much more dramatic for MCI. No patients developed dementia, but this is not surprising because patients were free of MCI at baseline. To develop dementia, a patient would have to develop new MCI and then develop dementia in only 4 years.

Obviously, the main disadvantage

of a population-based study in this context is the absence of polysomnographic confirmation of diagnosis. However, the authors

have done their best to deal with the potential confounding. It is important to realize that the inability to confirm the diagnosis on polysomnography would likely underestimate disease risk because the 'probable-RBD' group would contain a substantial proportion of people without

RBD, who are not at increased risk. It will of course be very important to continue to follow this cohort, because the true risk of degenerative disease will become apparent after only longer follow-up periods.

RONALD B. POSTUMA, M.D., is an assistant professor in the department of neurology at McGill University and Montreal General Hospital in Canada. He has no relevant disclosures related to this study.



# Urgent Intervention After TIA Reduces Stroke Risk

BY JEFFREY S. EISENBERG

Elsevier Global Medical News

Urgent intervention after a transient ischemic attack by an acute care team followed by nurse-conducted health counseling can substantially reduce the risk of new vascular events within the first year, according to results of the Aarhus TIA study.

Careful evaluation and use of preventive measures helped the team lower the cumulative risk of stroke below predicted levels 7 days and 90 days after TIA.

Immediate intervention is important because TIA can increase patients' risk of ischemic stroke by more than 30% within the first 3 months after the attack. Studies have shown that urgent intervention can substantially reduce this risk, but little is known about the stroke risk beyond these first 90 days. Additional studies have shown poor treatment and compliance rates for preventive measures such as cholesterol and blood pressure reduction and smoking cessation.

Dr. Paul von Weitzel-Mudersbach and his colleagues at Aarhus (Denmark) University Hospital established an acute TIA team that served patients with TIA on the stroke unit and the TIA clinic, and examined all patients with TIA who were referred to the hospital between March 1, 2007, and Feb. 28, 2008. A total of 306 patients (56.2% men) with a median age of 65.8 years met the study's inclusion criteria. The patients underwent a detailed diagnostic work-up and received 150 mg aspirin immediately after CT/MRI. Patients with symptomatic

## VITALS

**Major Finding:** Urgent intervention after TIA resulted in a significantly lower cumulative stroke risk than what was predicted with ABCD<sup>2</sup> criteria after both 7 days (1.6% vs. 4.5%) and 90 days (2% vs. 7.5%).

**Data Source:** Evaluation of 306 patients with TIA referred to Aarhus University Hospital between March 1, 2007, and Feb. 28, 2008.

**Disclosures:** The study was supported by the Danish Heart Foundation and the Research Council in the former Aarhus County. The authors had no disclosures to report.

carotid or intracerebral stenosis also received 300 mg clopidogrel unless carotid endarterectomy was planned within 1 week. A nurse discussed lifestyle changes, including smoking cessation, healthy diet, and physical exercise at baseline and during follow-up telephone interviews at 7 days and 90 days (Eur. J. Neurol. 2011;18:1285-90).

Urgent treatment was associated with a reduced risk of adverse clinical outcomes, the researchers found. Within 1 year, 16 (5%) of the 306 patients had a stroke, non-fatal MI, or vascular death. The cumulated stroke risk was 1.3% after 2 days. The intervention resulted in a significantly lower cumulative stroke risk than what was predicted with ABCD<sup>2</sup> criteria after both 7 days (1.6% vs. 4.5%) and 90 days (2% vs. 7.5%).

At the end of 1 year, the cumulated stroke risk was 4.2% (13 patients, all had ischemic stroke), and the cumulated mortality was 2.9%, or 9 patients; 5 of these deaths were

due to vascular causes, and the remainder were caused by cancer and sepsis. TIA recurred in the first year in 10.2% of patients. There were no non-fatal MIs.

The investigators found that 8.1% of patients underwent carotid endarterectomy, with a median time to operation of 11 days after the first contact with the acute TIA team, 12.5 days after the call for attention, and 17.5 days after the index TIA.

The number of patients who achieved the secondary prevention target increased

from 34% of patients at baseline to 48% after 1 year. The secondary prevention target was considered attained if a patient fulfilled at least three of the following four criteria: systolic blood pressure 130 mmHg or less and diastolic 80 mmHg or less; total cholesterol less than 4.5 mM; no smoking; and self-reported adherence to antithrombotic treatment. At least 95% of patients fulfilled at least one prevention measure after 1 year.

Patients with large artery disease (LAD) had the best compliance: 55% reached the secondary prevention target and 100% were adherent to antithrombotic treatment. LAD was not a predictor for vascular events within the first year, possibly due to good adherence to secondary prevention, the researchers said.

They noted that limitations of the study included a lack of a control group; use of MRI in only 20% of patients; and the exclusion of patients with a modified Rankin score greater than 2, which might have caused some bias. ■

## OBITUARY

## Shaul Feldman (1923-2011)

BY ODED ABRAMSKY, MD, PHD

Shaul Feldman was born in Odessa, the Ukraine, in 1923. His father was a neuropsychiatrist and leader in the Zionist movement, and the family immigrated to Palestine-Eretz Israel in 1934. The home atmosphere instilled in him a devotion to Israel and set him on the outstanding path he took in neurology.

In 1943, Prof. Feldman graduated from Herzelia High School in Tel Aviv. He studied medicine at the University of Geneva from 1946 to 1948, when he returned to Israel and served in the medical corps of the Israel Defense Forces during the War of Independence.

He resumed his medical studies in Jerusalem in 1949, graduating with honors in 1952 from the first graduating class of the Hebrew University-Hadassah

Medical School. The school had been established by the Hadassah Women's Organization (HWO) in the United States and the Hebrew University of Jerusalem (HUJI) in 1949, a year after the creation of the State of Israel. The HWO was founded in 1912 in New York to alleviate disease in Palestine. In 1918, the organization opened the Rothschild Hadassah Hospital in Jerusalem. HUJI was founded in 1925 by a group of Jewish visionaries from Europe and the United States, including Albert Einstein, Otto Warburg, Chaim Weizmann, Sigmund Freud, and Martin Buber. After 1933, many physicians and scientists fled Europe for Jerusalem, where they continued their clinical practice and academic research at Hadassah and at the university. But it was only in 1949 that the HWO and HUJI established the Hebrew University-Hadassah Medical School (HUHMS), which included the Hadassah University Hospital (HUH).

After graduating, Prof. Feldman completed his residency in neurology at the Hadassah University Hospital and became a lecturer in neurology in 1957. He was committed to clinical and academic excellence. He and some of his colleagues from the first classes of HUHMS believed that research and science should be integrated into clinical service and that excellent academic medicine was a condition for excellent clinical medicine.

From 1957 to 1959, Prof. Feldman did postgraduate training in basic and clinical neurosciences. He spent the first year studying experimental neurophysiology and neuroendocrinology at the University of California, Los Angeles with Richard William Porter and Horace Magoun, and the second studying clinical neurophysiology and neurology at

Mount Sinai Medical School in New York with Irving Wagman and Morris Bender. Back in Jerusalem, he established the neurophysiology laboratory in the department of neurology. It was the first step in turning the traditional clinical department to an academic department.

From 1969, Prof. Feldman was professor and chair of the neurology department at Hadassah University Hospital for 2 decades. He led the department in developing a strong clinical neurosciences orientation, making it the leading department in Israel and renowned worldwide.

Prof. Feldman doted on his students. They are among many of the leading physicians, trained in Jerusalem, who have brought about great advances in academic neurology in Israel and globally. I am proud to have been the first neurology resident accepted by Prof. Feldman when he became department chair.

In 1970, Prof. Feldman was elected chairman of the Israel Neurosychiatric Association. The combination of neurology and psychiatry was a continuation of the clinical-academic orientation that Central European clinicians and scientists had introduced when they moved to Israel before World War II. Prof. Feldman represented the American approach to scientific medicine and succeeded in establishing by 1971 a new academic neurological association, separate from the psychiatric discipline. Today, the Israel Neurological Society has several hundred members.

Prof. Feldman also contributed in a monumental way to the advancement of the medical practice in Israel. During his tenure as chairman of the Scientific Council of the Israel Medical Association from 1970 to 1977, he established a national system of board certification examinations at the end of residency. In so doing, the level of practice in all specializations and disciplines in medicine improved significantly throughout Israel. As dean of the faculty of medicine at the Hebrew University from 1977–1981 Prof. Feldman established the BSc Med degree for medical students, and by so doing raised the academic requirements of the students at the medical school. He was also instrumental in setting up academic frameworks for the schools of nursing, occupational therapy, and community health within the medical faculty.

For more than 40 years, Prof. Feldman conducted research in the neurophysiology and neuroendocrinology of the limbic system, which plays an important role in autonomic, endocrine and behavioral mechanisms. He studied the electrophysiological connections of the limbic system and the effect of adrenocortical hormones on its electrical activity, and the role of

neural pathways and neurotransmitters in the activation of the hypothalamo-pituitary-adrenocortical axis in response to neural stimuli. His studies showed that the responses to stressful stimuli are not a uniform phenomena but that different stressors involve different neural pathways. He showed that hypothalamic implants of adrenocortical hormones inhibited the response of the hypothalamo-pituitary-adrenocortical axis to different stressful stimuli and that extra-hypothalamic limbic structures modify the neuroendocrine responses as well as the effects of the negative feedback of the adrenocortical hormones at the hypothalamic level.

His studies contributed to our understanding of the role of neural and hormonal mechanisms in response to stressful stimuli, which are essential for the preservation of life. He contributed enormously to the elucidation of relations between the physiology of the brain and the functioning of the nervous system.

Because of Prof. Feldman's personal and public achievements and his devotion and contribution to neurological research, he attained national and international status and was elected to key positions in global neurology organizations and received many important awards. He was Vice President of the World Federation of Neurology; member of the executive committee of the European Federation of Medical Deans; the Israeli delegate to the

Councils of the International Brain Research Organization and to the scientific Medical Council of the European Science Foundation. Prof. Feldman was honorary member of the American Neurological Association and the European Neurological Society; Fellow by Distinction of the Israel Medical Association; and Israel Prize Laureate in medical research (2005).

Prof. Feldman was a superb clinician and teacher and researcher and brilliant intellectual with a phenomenal memory and depth of knowledge. He was charismatic and humane, a leader of the highest order, and a kind and loyal friend who did his utmost for his patients, students, and colleagues. His last years were difficult: his beloved wife Aviva suffers from neurodegenerative disease and he was deeply moved by her condition. His sight and his hearing began to fail but he retained all his faculties until his death on Sept. 15, 2011.

We shall remember him and achievements, and his drive to advance neurology to the forefront of medical achievements nationally and internationally. We mourn the passing of a dear friend, colleague, teacher, and mentor. ■

DR. ABRAMSKY is a professor of neurology and Chairman Emeritus of the department of neurology, Hadassah University Hospital, and Dean Emeritus of the Hebrew University Hadassah Medical School, Jerusalem, Israel.



Dr. Shaul Feldman, a noted clinician and researcher, and an inspiring teacher.

COURTESY DR. ODED ABRAMSKY

# WORLD NEUROLOGY

## Editor

WORLD NEUROLOGY is the official newsletter of the World Federation of Neurology, published 6 times a year by Elsevier Inc. The newsletter covers Federation news, regional and international meetings, and current clinical news. It provides a global perspective on the practice of neurology and the clinical, research, and educational issues pertaining to all areas of the neurological sciences.

We are looking for a new Editor to take over from Dr. Mark Hallett to drive forward this successful newsletter. The position will begin in April 2012.

The successful candidate will be a highly motivated neurological clinician-scientist with a broad knowledge of the clinical neurosciences, an appreciation and understanding of neurology as a global specialty, and willingness to be involved in the affairs of the WFN.

### Please contact:

Prof. Christopher Kennard  
Chair, WFN Publications Committee  
[chris.kennard@clneuro.ox.ac.uk](mailto:chris.kennard@clneuro.ox.ac.uk)

### Submission deadline:

January 31, 2012



# Announcing the launch of MULTIPLE SCLEROSIS AND RELATED DISORDERS

Register for a **FREE**  
one-year subscription!\*

## Chief Editors

Dr. Brenda Banwell, Prof. Gavin Giovannoni,  
Prof. Christopher H. Hawkes, Prof. Fred D. Lublin

***Multiple Sclerosis and Related Disorders*** —  
New title published by Elsevier

This quarterly published journal will start its official publication in January 2012.

Register for a **FREE one-year subscription** for this journal today!\*

Submit your registration form online at: <http://bit.ly/ndCw9W>

*Multiple Sclerosis and Related Disorders* is a wide ranging international journal supported by key researchers from all neuroscience domains that focus on Multiple Sclerosis and associated disease of the nervous system. The primary aim of this new journal is the rapid publication of high quality original research in the field. Important secondary aims will be timely updates and editorials on important scientific and clinical care advances, controversies in the field, and invited opinion articles from current thought leaders on topical issues.

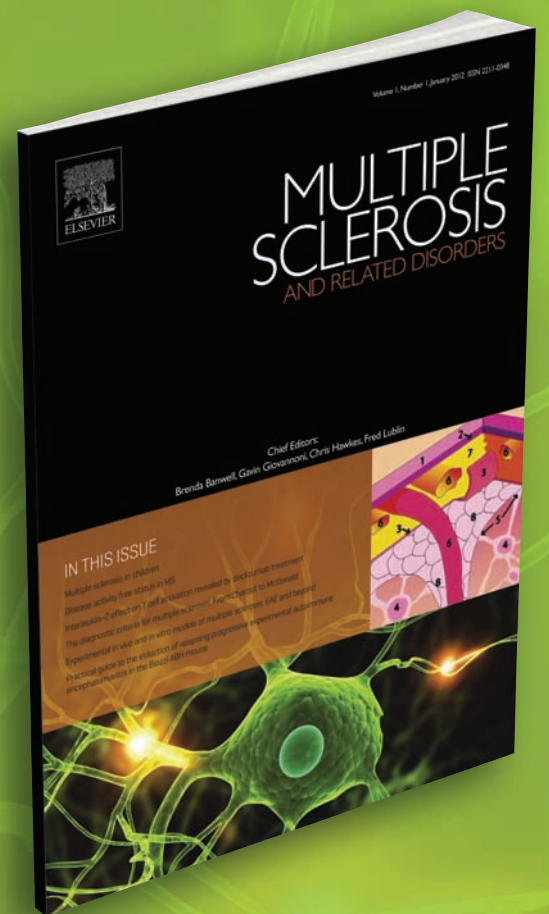
## With your annual subscription, you will receive...

- Four print issues of MSARD covering the very latest high quality original research, review articles and commentaries in the field
- Searchable online access to the full text content resource of all current and past issues
- Clinically relevant original articles, abstracts, and more

Register for **FREE One-year subscription** today!  
Scan the code with your smart phone

Need a code reader for you phone? [www.getneoreader.com](http://www.getneoreader.com)

\*Limited number of free subscriptions available.



ISSN: 2211-0348

Catalogue 2012: Volume 1, 4 issues  
Advance issue, October 2011

[www.MSARD-journal.com](http://www.MSARD-journal.com)

