

WORLD NEUROLOGY

THE NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

VOLUME 18, NUMBER 2, JUNE 2003

PRESIDENT'S COLUMN

Every issue of *World Neurology* presents the President's Column as a regular feature to cover all the aspects of our Federation. As implied by the name, it has served as a vehicle for presidential commentaries on various issues of interest to the readership in general, and the national delegates in particular. I have enjoyed this traditional task, which gives me a chance to summarize the current activities and concerns of the World Federation of Neurology (WFN) that we face globally. With the growth of the organization and increasing diversity of our projects, it has become difficult for me alone to carry this responsibility. Therefore, with an enthusiastic approval from the Editor, Jagjit Chopra, I have asked Dr. Johan Aarli to also contribute to this column from his perspective as First Vice President as well as Chair of the Public Relations Committee and Liaison to the World Health Organization (WHO). Accepting our invitation, he has thus prepared the first of his contributions, which is printed below for your perusal. To keep the reader informed of various prospects of WFN, we will also ask the other trustees to describe ongoing activities in their own areas of expertise in future issues, whenever we deem it appropriate.

I am happy to report that planning for the next World Congress of Neurology (WCN 2005) is well underway. The Program Committee, which Dr. Sam Berkovic oversees in Australia, is coordinating the effort with the WFN Research Committee directed by Dr. Roger Rosenberg and Education Committee chaired by Dr. Ted Munsat. We hope to be able to finalize the core structure of the scientific program and other activities during the forthcoming WCN planning meeting to be held



Destination Australia — XVIIIth World Congress of Neurology, Sydney, 2005.

in Sydney on July 5–7, which Dr. William Carroll will host as President of the Congress. In addition to the Research Committee, a number of other WFN committees met at the end of March and the beginning of April 2003 during the Annual Meeting of the American Academy of Neurology (AAN) held in Honolulu. These included the Management Committee, Public Relations and WHO Liaison Committee, Publications and Website Committee and Editorial Board meetings of the *Journal of the Neurological Sciences* and *World Neurology*. The committee reports will soon become available on the Web (www.wfneurology.org). The Trustees discussed and approved the possibility of holding various committee meetings in conjunction with a major, general neurology assembly such as the AAN and European Federation of Neurological Societies (EFNS), that draw a large number of international participants. I am pleased that this approach seems to work well especially at a time when international travels have become increasingly difficult because of the current upheaval affecting different parts of the world.

During this interim, I had the pleasure of attending the 9th Pan-Arab Union of Neurological Science (PAUNS) hosted in

Cairo by Professor Anwar Etribi, the President of the Egyptian Society for Neurology, Neurosurgery and Psychiatry. Dr. Johan Aarli, the First Vice President, and Dr. Ted Munsat, a Trustee and the Chair of the Education Committee joined me, representing the WFN. Professor Saleh Al Deeb, the President of PAUNS and a Regional Vice President of WFN, invited me to join the Council of Delegates meeting held at the end of the Congress. It was my joy and privilege to meet the participants representing 21 Arab countries, who together make up this important regional group of WFN. The conference exemplified the spirit of collaboration of many individuals who contributed to this worthwhile venture sharing a common interest
(cont. on p. 4)

ALSO IN THIS ISSUE:

- Editorial
- WFN – a Global Organization
- WFN Committee Reports
- Regional News
- Intl. Danube Symposium
- European Stroke Conference
- Toxic Metals
- Book Reviews & Calendar

Visit the WFN website at <http://www.wfneurology.org>

EDITOR-IN-CHIEF

Dr. Jagjit S. Chopra, # 532 Sector 33-B, Chandigarh - 160 047, India. Fax: +91-172-665532
E-mail: jagjitsc@sify.com, jagjitsc@glide.net.in

EDITORIAL ADVISORY BOARD

Dr. Richard Godwin-Austen, World Federation of Neurology, 12 Chandos Street, London W1G 9DR, UK

Dr. Robert B. Daroff, Case Western Reserve University / University Hospitals of Cleveland, Department of Neurology, 11100 Euclid Avenue, Cleveland, OH 44106-5015, USA

Dr. Jun Kimura, 1203 PCU, 169 Ujimyoraku, Uji-Shi, Kyoto 611-0021, Japan

Dr. Theodore Munsat, Department of Neurology, New England Medical Center, Box 314, 750 Washington Street, Boston, MA 02111, USA

Dr. Johan Aarli, Department of Neurology, University of Bergen, Haukeland Hospital, N-5021 Bergen, Norway

Dr. Julien Bogousslavsky, Service de Neurologie, Centre Hosp. Univ. Vaudois (CHUV), CH-1011 Lausanne, Switzerland

Dr. William M Carroll, c/o AAN Secretariat, 145 Macquarie Street, Sydney, NSW 2000, Australia

Dr. Roberto Sica, Neurology / Buenos Aires University, Hospital Ramos Mejia, Urquiza 609, Buenos Aires 1221, Argentina

Dr. Daniel Truong, The Parkinson's & Movement Disorder Institute, 9940 Talbert Avenue, Suite 204, Fountain Valley, CA 92708, USA

REGIONAL VICE PRESIDENTS

Dr. S.M. Al Deeb (Pan-Arab), Saudi Arabia

Prof. Dr. Leontino Battistin (Pan-European), Italy

Prof. Carlos Chouza (Pan-American), Uruguay

Prof. Najoua Miladi (Pan-African), Tunisia

Dr. Jin Soo Kim (Asian-Oceanian), South Korea

ASSISTANT EDITOR

Dr. I.M.S. Sawhney, Department of Neurology, Morrilton Hospital, Swansea SA6 6NL, UK; e-mail: inder.sawhney@ntlworld.com

WFN ADMINISTRATOR

Keith Newton, World Federation of Neurology, 12 Chandos Street, London W1G 9DR, UK

PUBLISHING STAFF

Publisher:

Peter F. Bakker (p.f.bakker@elsevier.com)

Marketing Manager:

Joyce Hobbelink

Design and Layout:

Helmut Hummelbrunner

Operational Support:

Annemieke van Es

ADVERTISING

Please send inquiries about advertising in *World Neurology* to Bethan Keall, Advertising Sales Executive, Elsevier Ltd., 32 Jamestown Road, London NW1 7BY, UK; Phone: 0207 424 4280, Mobile: 07717 505 470, Fax: 0207 424 4433; e-mail: b.keall@elsevier.co.uk

PUBLISHING INFORMATION**MANUSCRIPTS**

The Editor is happy to receive unsolicited manuscripts or photographs for consideration, but cannot accept responsibility for any loss or damage to such material. Manuscripts should

WORLD NEUROLOGY

THE NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

VOLUME 18, NUMBER 2, JUNE 2003

CONTENTS

President's Column	1
Editorial	3
WFN – A Global Organization	4
WFN Committee Reports	5
Regional News	5
International Danube Symposium for Neurological Sciences and Continuing Education	6
12th European Stroke Conference, May 21–24, 2003, Valencia, Spain	6
GlaxoSmithKline Junior Travelling Fellowship Reports	7
Toxic Metals and their Effect on the Nervous System in Developing Countries	8
Letter to the Editor	11
International Stroke Society – Annual Report of the President	12
Book Reviews	13
Calendar	16



COPYRIGHT © 2003 World Federation of Neurology. All rights reserved. Published by Elsevier, Amsterdam, the Netherlands

Manuscripts accepted for publication become the copyright of the World Federation of Neurology (WFN). Before publication a copyright form will be supplied by the Publisher, ELSEVIER which must be completed by all authors.

be submitted in English, typed on white paper using double spacing with margins of at least 3 cm. Authors should submit material on computer disk (Microsoft® Word® or plain ASCII format) whenever possible. Tables and figures should be separated from the text and should clearly indicate the author's name. Colour photographs and illustrations are encouraged.

EDITORIAL STATEMENT

Although great care is taken to ensure accuracy, the WFN and Elsevier Science BV cannot be held liable for any errors or inaccuracies in this publication. Opinions expressed are those of the authors. Elsevier Science BV, the Editor, the WFN or the Grantor cannot be held responsible for the validity of clinical treatments, dosage regimens or other medical statements made. Any dosage referred to should be checked against the relevant data sheet for the product.

World Neurology, ISSN 0899-9465, is published by Elsevier BV, Molenwerf 1, 1014 AG Amsterdam, Netherlands; phone: +31 (20) 485 3358, fax: +31 (20) 485 3237; e-mail: p.f.bakker@elsevier.com

REPRINTS

Reprint requests and all correspondence regarding the journal should be addressed to the Editor. However, back issues of *World Neurology* can be obtained from the publisher.

CHANGE OF ADDRESS

Notice of change of address should be sent to: *World Neurology*, Editorial Secretariat, 12 Chandos Street, London W1G 9DR, UK. Fax: +44 20 7323 4012; e-mail: WFNLondon@aol.com

Printed by Kay Dee Associates at Chandika Press Ltd, 126 Industrial Phase 1, Chandigarh - 160002, India; e-mail: chandika@glide.net.in

EDITORIAL

As pointed out by President Jun Kimura in his column, the immediate concern of the WFN is the Planning Meeting which will be held in Sydney in the first week of July 2003. The inspection of the venue for the 18th World Congress of Neurology 2005, Sydney and the planning of the scientific programme will be the major events. In depth discussion of the proposals for the future management of WFN activities through a professional organization based in Europe, if approved, is expected to bring drastic changes in the management of WFN affairs. The President has also mentioned in his column an important core issue – the approval by Trustees for the possibility of holding various Committee meetings in conjunction with major, general neurology assemblies such as AAN & EFNS which draw large numbers of international participants – a right approach for the proliferation of knowledge about neurological diseases, their prevention and management.

Johan Aarli, First Vice President WFN, has raised a very pertinent question why there are more than 100 WHO member nations that are not WFN members. The present strength of WHO member nations is 192 but the neurological associations of only 90 of them are members of WFN, a wide disparity which needs correction. Many such nations do not even have one neurologist and a nation with one fifth of the world's population and over 5,000 neurologists is still not a member of WFN. Efforts should be made by developed nations to train neurologists in 'not have' countries and the most populated, China, where more than 50% people live below the poverty line and many have no access to medical facilities, should also join the Federation. Politics need not impede co-operation in the scientific world.

Another neurological organization federated from a few, mostly East European, nations is doing commendable work. A report on the Danube Symposium appears in this issue, written by its honorary President, Dr. Franz Gerstenbrand. Dr. Gerstenbrand is not only a member of the WFN, but has held the Chairmanship of some of its committees. He is also a Past President of the European Federation of Neurological Societies. The Danube Symposium helps in the training of neurologists from East European countries and needs to co-ordinate its activities with the WFN with the overall aim of training neurologists from nations who have no neurologists.

I was invited to participate in the 12th European Stroke Conference held at Valencia, Spain. A report on this conference appears in this issue. Intravenous rt-PA therapy for acute ischaemic 'brain attack' is well established with a window of 3 hours. A presentation at this conference with extended benefit up to 285 minutes has kindled hope for rt-PA therapy in patients outside the 3 hours window. The ECASS III trial is starting to recruit patients beyond the 3-hour window and it is hoped that results will be positive. Convincing evidence was also shown on perfusion-CT for identification of core and penumbra within the 3-hour window where thrombolysis might be futile in case there is no penumbra. Another important presentation of a trial was the percutaneous occlusion of left atrial appendage to avoid long-term anti-coagulation in atrial fibrillation. Brain stroke is one of the devastating neuro illnesses with high morbidity and any advancement in this direction will be a welcome sign for such patients.

During the Editorial Advisory Board meeting of *World Neurology* held on April 1st 2003 in Honolulu, a request from the Pres-

ident of the International Stroke Society, to include small write-ups from ISS in *World Neurology* in the best interests of Neurologists who treat stroke patients, was accepted. The Annual report of the president appears in this issue.

The effect of toxic metals on the nervous system is preventable if all nations of the world take effective measures to keep our environments clean and provide public health education for the masses. Pollution is the major cause. We are grateful to Prof. Devika Nag for making us aware that even in the 21st century these elements are afflicting the nervous system, a totally preventable problem known for centuries. Prof. Nag has been closely associated with the Institute of Toxicology in the largest state of India.

Another recent alarming research report has shown that hormone therapy may also affect the nervous system adversely. A large study in women above the age of 65 taking hormones suggests a doubling of the risk of Alzheimer's disease, the opposite result from that expected i.e. that hormone therapy would prevent this disease. Do the risks outweigh the benefits is the question. It is reported that hormones actually increase the risk of several severe diseases, including some that they were thought to prevent. This study was carried out on 4,532 women at 39 medical centers: half took placebos and the other half took prempo, a combination of estrogen and progestin which is widely prescribed. Forty cases of dementia were noted in the hormone group and 21 in those who took the placebo. Dr. Sally Shumaker, the director of the study and a Professor of Public Health Sciences at Wake Forest University in Winston Salem, North Carolina, USA, reported the findings in the May 2003 issue of the *Journal of the American Medical Association* and two other accompanying reports also showed unfavorable findings on combined hormone therapy and the brain. Hormones are given to prevent postmenopausal symptoms and osteoporosis. All the women were above 65 and whether younger women will be affected is not known. Here is another piece of research which needs attention and perhaps more work is required on women below the age of 65 who are taking hormones. Awareness of Alzheimer's disease is increasing and so are the additions to the list of those things which may perpetuate it.

Jagjit S. Chopra, FRCP, PhD
Editor-in-Chief



From left to right: Werner Hacke (Germany) Julien Bogousslavsky (Switzerland), M.G. Hennerici (Germany), J.S. Chopra (Editor-in-Chief, *World Neurology*), G.A. Donnan (Australia) in Valencia.

(President's Column - cont. from p. 1):
in advancing neurosciences, which may be unique to the area.

The quadrennial meeting of WCN such as the one in Sydney serves as an effective venue for presenting scientific data and interacting with delegates of varied backgrounds. Logistic and fiscal reasons, however, often preclude attendance of colleagues from remotely located areas. To circumvent this problem, I am pleased to work closely with a regional congress, like the PAUNS assembly, to improve interaction between WFN and member societies.

Jun Kimura, MD
President, WFN



From left to right: Prof. Basim Yaqub, Dr. Johan Aarli, Prof. Mahmoud Allam, Prof. Saleh Al Deeb, Minister of Higher Education, Prof. Jun Kimura (President WFN), Prof. Anwar Etribi and Prof. Mohamed El Tamawy

WORLD FEDERATION OF NEUROLOGY – A GLOBAL ORGANIZATION

“It shall be the purpose of the World Federation of Neurology to improve health worldwide by promoting prevention and the care of persons with disorders of the entire nervous system” (Mission Statement).

The World Federation of Neurology has only 89 member countries. For comparison, World Health Organization (WHO) has 192 member states. All countries that are Members of the United Nations may become members of WHO by accepting its Constitution. Other countries may be admitted as members when their application has been approved by a simple majority vote of the World Health Assembly. Why are more than 100 WHO member nations not members of the WFN? It is certainly not because of limitations of uptake. According to the constitution of the World Federation of Neurology, the number of member societies with which the Federation proposes to be registered is unlimited. China is still not a member of the WFN, but that is a special situation, which we hope will be transitory. The country represents one fifth of the population of the world and should be represented within the World Federation of Neurology when a way can be found.

Some WHO member nations have a very small population and have no neurologist at all. But the main reason for the limited number of member national neurological societies in the WFN is that neurology is not yet developed on a global basis. In Western countries, neurological service varies from 1 to 2 neurologists per

20,000 to 1 per 100,000 inhabitants. In major parts of the world, neurology either does not exist or is marginally present. A “neurologist” in some countries might be no more than an internist with an interest in neurology and not a fully trained specialist. Still, almost 1 in 10 people die of nervous system diseases. With increasing age of the population, the portion of the global burden of disease attributable to mental and neurological disorders will rise and more than half of the world’s population over the age of 65 years now lives in developing countries. Some of these countries have no neurologist at all. This is a major challenge for the World Federation of Neurology. World Health Organization has a primary responsibility to provide technical assistance to its Member states in matters related to health. As a nongovernmental organization in co-operation with WHO, the World Federation of Neurology is in a position to contribute with its neurological expertise.

In 2000, WHO launched the Project Atlas initiative to provide information about health resources in different countries. The first book from the project was published in October 2001 and was titled, Atlas: Mental Health Resources in the World. The publication contained the initial global and regional analyses of data that were collected from 185 countries and covered 99.3 % of the world’s population. The second, which is a companion to the first, provides the Country Profiles. Each country - small or large - has about 2 pages. The information was gathered in a series of steps. The first involved sending a stand-

ard questionnaire to the regional WHO offices with a request that they transmit them to the Ministries of Health in each WHO member state. More than two thirds of the countries that had originally responded provided confirmations and corrections.

The first report covered psychiatry. WHO is now producing a similar report for neurology and has prepared a questionnaire covering the profile of neurological resources in its country. The idea is that the Country Profiles will assist health planners and policy-makers within countries to identify areas that need urgent attention. Neurology is one of them. The profiles may also help to set realistic targets by enabling comparisons across countries within the same regions. It was also the hope that professionals and nongovernmental organizations will use the profiles in their efforts to advocate for more and better resources in patient care.

While data collection from the Arab countries, Europe, America, most of Asia and Australia is continuous, available information shows that neurology is not present at all in some countries, while stroke, dementia and epilepsy remain important factors determining mortality and morbidity. It is part of our mission at the World Federation of Neurology to assist developing countries in establishing neurology, engage in preparing guidelines for the assessment and management of neurological conditions, and for staff development. The Zambia project is a good example of how primary health care workers are

WFN COMMITTEE REPORTS

Minutes from the Meeting of the WFN Public Relations and WHO Liaison Committee held at the Hawaii Convention Center, April 2, 2003

Present: Donna Bergen, Michael F. Finkel, Donald Silberberg, Johan A. Aarli (chair)

Executive Committee (EC). The number of members in the full committee (22) makes telephone conferences impossible, and WFN cannot afford to sponsor committee members for face-to-face meetings. The Education Committee has created an EC among its own members, and it seems to be successful. Dr Aarli would therefore like to have an EC with 7–9 members from USA, Latin America, Europe, Africa, Asia, and Arab countries—Drs Bergen, Finkel, Silberberg, Nobrega, Bogouslavsky, Kurdi, and Ichiro Kanazawa. Elly Katabira (Makerere, Uganda) may become the candidate from Africa.

Visibility of the WFN: Since WFN World Congresses take place only every fourth year, and WFN still has no other arrangements in the years in between, the organization is less visible than for example AAN or EFNS who have annual meetings. Regional WFN meetings may be organized in the future, but WFN still needs to increase its image among neurologists. Dr Robert Daroff has suggested a brief information folder that can be put into congress bags. *World Neurology* is the only PR document available today.

WHO and Mental Health: Although the

term “mental health” may seem, on the surface, not to relate to neurology, WFN should not spend time in fighting a structure which has been politically determined, but instead work to influence the system and obtain a position for neurology corresponding to its importance in a health system.

Global Forum for Health Research: Dr Silberberg informed the meeting about the Global Forum for Health Research (GFHR): GFHR was organized in 1996 by international health leaders who were frustrated by the lack of direction of WHO at that time. It holds an annual meeting, alternating between Geneva and a developing country site. It is funded by governments, foundations and The World Bank. Recognizing earlier studies that demonstrated that 25% of the “Global Burden of Disease” worldwide is related to mental and neurological disorders, the Global Forum provided funding (\$160,000) to Dr. Silberberg to develop what became the US Institute of Medicine Study and 2001 Report, *Neurological and Psychiatric Disorders in Developing Countries – Meeting the Challenge in the Developing World*. Several NIH institutes provided additional funding to make the study possible. To date, the Report has stimulated the development of four RFA’s from NIH’s Fogarty International Center. The Global Forum also funded a group of psychiatric leaders to carry out a comprehensive study of mental health policy in developing countries, which will be published in 2003. Individuals from the two groups, IOM Study/Report, and the mental health policy group, have formed the *Global Network for Research in Mental and Neurological Health*. Dr. Silberberg serves as its Vice

(cont. from p. 4)

employed in the provision of neurological service. The Education Committee, under the leadership of Ted Munsat, has taken important steps in this direction, reminding us all that our main mission is to promote the care of persons with neurological disorders worldwide.



Johan A. Aarli
First Vice President, WFN

President.

Among the Global Network’s projects is a workshop. “Mental and Neurological Health in the Work Place” to be held in Berlin later this year:

WFN and WHO: With the new Secretary-General taking office in Geneva in a few months, WFN has the possibility to influence the structure and politics of WHO in matters related to neurology. WFN should have a closer contact with other international organizations in neurosciences, like neurosurgery, psychiatry, child neurology, neuropathology, epilepsy, movement disorders — not as an umbrella organization, but as a “Neuro-Circle”. Such an organization might convene annually, not as a congress, but as a business meeting, where a common health policy might be formed. Informal discussions are needed.

REGIONAL NEWS

The Egyptian Society of Neurology, Psychiatry and Neurosurgery hosted the prestigious 9th Pan-Arab Union of Neurological Sciences. The meeting was held from 13–17 January 2003 and the New Meridian in Cairo was the venue. Prof. Mohamed Anwar Etribi, President of the Conference was very instrumental in the success of the meeting. The scientific program included teaching courses, and plenary sessions with the most up to date knowledge. The meeting covered new areas such as brain catheterization and neurorehabilitation. The President of the World Federation of Neurology, Dr. Jun Kimura and I attended the meeting and offered our full support on behalf of our societies.

Another meeting, the 1st Sharm El Sheikh International Epilepsy Congress, was held in Egypt from 5–8 March 2003. A distinguished faculty covered different topics of

epilepsy with particular emphasis on innovative methods of treatment. With the development of new drugs and different therapies, epilepsy is no longer an imped-



iment to a normal lifestyle for either children or adults. The participants enjoyed their stay and had the opportunity to relax and enjoy the seaside resort of Sharm El Sheikh with its exceptional diving sites and unique beaches. Prof. Farouk Koura was the President of the Congress.

Recently, the Riyadh Armed Forces Hospital, Saudi Arabia conducted an EEG and Epilepsy Course held on 12–14 April 2003.

The course was a great success despite the present situation in Iraq. Prof. Basim Yaqub, the Course Director, was very instrumental in the success of the course. Prof. Giuliano Avanzini, President of the International League Against Epilepsy (ILAE), was one of the faculty members of the course, which was attended by neurologists and technicians coming from the Arab region.



Prof. Saleh Al Deeb, MD
Saudi Arabia

INTERNATIONAL DANUBE SYMPOSIUM FOR NEUROLOGICAL SCIENCES AND CONTINUING EDUCATION

Collaborating Society of the EFNS Central and East-European Association for Neurology (CEEAN)

A Report

The Danube Symposium fosters and coordinates fellowship programs for young neurologists from Danube countries; The Danube Neurology Newsletter is posted to more than 600 addresses, and the electronic version is available free of charge on the Internet as well.

The roots for the foundation of the Danube Symposium can be traced back to 1956, when Prof. Dr. Hans Hoff, leader of the University Clinic of Psychiatry and Neurology, Vienna, was invited to neurological and psychiatric clinics in the former Czechoslovakia, Yugoslavia and Hungary. Numerous Central and East-European scientists had the chance to travel to the strictly neutral Austria and to exchange scientific experience with their Austrian colleagues. As a consequence of these mutual exchange activities, it was finally agreed to organize an International Symposium called the "Donausymposium" in May 1962 in Vienna with the participation

of neurological scientists from Austria, Western Germany, Switzerland and Central, East and South-European countries. The next Donausymposium took place in 1964, again in Vienna, organised by the University Clinic of Psychiatry and Neurology. From that year on, the Meeting was to take place every year and the scientific fields of neurology and psychiatry were separated.

The overall goal of the Donausymposium was the mutual exchange of new scientific developments on topics in the field of neurology; member countries of the Danube Group were: Austria, the former Western and Eastern Germany, and all Central and East-European countries, including the former Soviet Union; those not participating were: Greece, Turkey and Albania.

In the following years, a legal body, the Danube Symposium Curatorium, was organized, headed by Prof. Hans Hoff, and then later on by Prof. Herbert Reisner. After Prof. Reisner's death, Prof. Dr. Franz Gerstenbrand was elected General Secretary. Instead of Vienna, the Danube Symposia were held in Innsbruck, and alternately in one of the member countries. In 1999 Prof. Dr. László Vécsei was elected General Secretary, and the Head Office and Secretariat of the Danube Sympo-

sium was transferred to the Department of Neurology, University of Szeged, Hungary. Colleagues from a Danube country participated in the fellowship-programme founded and coordinated by the Head Office of the International Danube Symposium in Szeged, Hungary.

The 35th International Danube Symposium for Neurological Sciences and Continuing Education will take place in Belgrade, from 11–14 September 2003. Belgrade will have the role of bringing together neurologists from different regions. The 36th International Danube Symposium will be held in (Sept. 2004) Sofia, Bulgaria.

For further important information, please feel free to visit our web site at: <http://www.szote.u-szeged.hu/neur/danube>



Prof. Dr. h.c. Franz Gerstenbrand
Honorary President
Vienna, Austria

12TH EUROPEAN STROKE CONFERENCE, MAY 21–24, 2003, VALENCIA, SPAIN

A Report

This year's European Stroke Conference, with more than 1700 participants, was a great success. The high quality of the scientific presentations and sessions was matched by the hospitality of the Spanish organisers under the responsibility of J. Matías-Guiu, and the excellence of the scientific and programme committees (chairmen: J. Bogousslavsky and M.G. Hennerici). Significant new information presented

at this conference is summarised below.

Acute stroke treatment – During a satellite symposium on modern stroke management, W. Hacke (Germany) reported the conditional approval of intravenous rt-PA use for acute ischaemic stroke within 3 hours by the European Regulatory Agency in late 2002. Given that a post-hoc analysis of randomised controlled trials of iv-thrombolysis with rt-PA suggested a benefit of up to 285 min after stroke on-

set, this agency asked for a new trial in the 3 to 4 hour window. This ECASS-III trial is now starting to recruit patients in specialized centers. The second condition for rt-PA approval in Europe is a prospective registry for monitoring of safety and efficacy of rt-PA-treated patients within 3 hours. This SITS-MOST study (Safe Implementation of Thrombolysis in Stroke – Monitoring Study, N.G. Wahlgren et al., Sweden) has started to enroll centers and patients and strives for an as complete as pos-

sible coverage of the European Community (web-site: www.acutestroke.org). A Spanish group (J. Marti-Fabregas et al.) showed that door to needle time for thrombolysis may be decreased by using portable coagulometers for rapid testing of the coagulation profile.

Brain Imaging – During an educational symposium on upcoming techniques of imaging in acute stroke, R. Meuli (Switzerland) summarized convincing evidence of the value of the *perfusion-CT* for identification of core and penumbra. This easily accessible technique shows excellent correlation with MR-diffusion and perfusion imaging and reliably identifies salvageable tissue thanks to a recently tested threshold model. According to R. Meuli, this new model may identify patients within the 3 hours window where thrombolysis might be futile (if there is little or no penumbra), but may also detect patients beyond the 3–6 hours window where recanalization could still be beneficial (persistent large penumbra). **Atrial fibrillation** – As a potential alternative to chronic oral anticoagulation, percutaneous occlusion of the left atrial appendage may be feasible and safe in uncontrolled trial (S.H.U. Ostermayer, Germany).

Stroke prevention – During a symposium on statins and stroke, B. Dahlöf (Sweden) showed that in the recently published “ASCOT”-trial, patients with multiple vascular risk factors had a significant risk reduction of stroke even when their initial cholesterol values were normal. During a symposium on stroke prevention with antithrombotics, J. Ferro (Portugal) presented data that triflusal, a derivative of aspirin, might cause less haemorrhagic complications than aspirin (studies TAPIRSS, TACIP). The efficacy and safety of combining the antiplatelets aspirin and clopidogrel is currently being tested in two trials (MATCH, CHARISMA), and a trial comparing this combination versus aspirin plus dipyridamol is about to start.

A systematic review of the risks of carotid endarterectomy by R. Bond et al. (UK) showed that the *risk of carotid endarterectomy* is highest after hemispheric ischaemia, less so in asymptomatic stenosis, and lowest for patients with ocular ischaemia.



Convention Centre, 12th European Stroke Conference, Valencia

mic events. The risk was also increased in a second operation after restenosis, and was especially high for urgent endarterectomy for evolving symptoms. Although several large case series with *carotid angioplasty* seem to show acceptable complication rates (K. Rabe et al., Germany, and J. Vivancos-Mora et al., Spain), no new randomised studies of endarterectomy vs. angioplasty were presented beyond the already completed trials (CAVATAS, SAPPHERE).

Data from the Scottish Borders Stroke Study and other stroke incidence studies worldwide showed that age-adjusted incidence is not declining, suggesting an important *increase in stroke incidence* in the next decades because of progressive aging of the population (P. Syme et al., UK). Other work from Great Britain showed that after a TIA, the risk of stroke and other vascular events is not only high (18.8% over 10 years), but does not decline as the years pass, suggesting a continuous need for stroke prevention in TIA patients (E. Flossmann et al.). Furthermore, recurrent strokes in the South London Stroke Register showed *different etiology* than the index event in 48% (R. McGovern et al., UK), confirming the need to search for and treat multiple aetiologies in the same patient. In the hours and days after ischaemic stroke, a dramatic increase in heat shock proteins, adhesion molecules and cytokines, followed by leukocyte trafficking may contribute to tissue damage (A. Chamorro, Spain). Increased levels of

cytokines on admission may be associated with final infarct volume (P. Irimia et al., Spain).

The importance of hyperhomocysteinemia as a risk factor for symptomatic and silent ischaemic stroke was confirmed in several populations, including in Eastern Europe (Z. Banecka-Majkutewicz et al., Poland) and Asia (A. Byung-Ok Choi et al., South Korea). Although elevated homocysteine is often due to low levels of and treatable with B6, B12, and folic acid, it may also be related to mutations of the two main enzymes involved in its metabolism (MTHFR and CBS), according to J. Jakobkiewicz-Banecka et al. (Poland). Certain dysmorphisms of the GPIIb- α gene responsible for specific platelet surface proteins are risk factors for lacunar stroke (A. Slowik et al., Poland).

More detailed information about this 12th European Stroke Conference may be obtained on the website www.eurostroke.org or from web casts of selected sessions on www.prou.com/eurostroke2003/.

P. Michel
Neurology Service, Lausanne,
Switzerland

Julien Bogousslavsky
Trustee and Chairman, WFN Stroke
Affairs & Liaison Committee, Lausanne,
Switzerland

GLAXOSMITHKLINE JUNIOR TRAVELLING FELLOWSHIP REPORTS

Thanks to the award of a GlaxoSmithKline Junior Travelling Fellowship – 2003, I was able to take an active part in the 12th European Stroke Conference, held in Valen-

cia, Spain, May 21–24, 2003. During the conference, I presented a lecture dealing with the problem of comparison of the results of emergent carotid disobliteration

and of conservative treatment in patients suffering an ischaemic stroke due to acute internal carotid artery occlusion. This matter is a little controversial as no results

of bigger randomised studies have been published as yet. I also presented a poster documenting that hypercholesterolaemia, not hypocholesterolaemia is a risk factor for spontaneous intracerebral haemorrhage in the Olomouc region, Czech Republic. This finding is in contradiction with the majority of previously published data; however, it is consistent with some more recent ones. I also took part in the teaching course, Genetics in Stroke. In particular, a lecture on monogenic disorders causing intracranial haemorrhage was very interesting for me. An educational symposium on Imaging: Upcoming Techniques and Implications for Treatment was of benefit as well. Lectures, posters, teaching courses and educational symposia covered the whole range of problems of cerebrovascular diseases, including fields of common interest with internal medicine (such as statins therapy, cardiological problems related to stroke), psychiatry (dementia and higher cognitive dysfunction), radiol-

ogy, neurosurgery, vascular surgery, and rehabilitation. The results of experimental studies and clinical trials, meta-analysis and review papers were presented too. Abstracts from the 12th ESC are available on www.eurostroke.org (Valencia Search-engine subsection). There are available also the whole lectures from the main auditorium in the subsection Conference Webcasts.

Roman Herzig, MD, PhD
Stroke Centre, Clinic of Neurology,
Faculty Hospital,
Olomouc, Czech Republic

I would like to thank the World Federation of Neurology for the GlaxoSmithKline Junior Travelling Fellowships 2003 scholarship for attending the 12th European Stroke Conference in Valencia, Spain (May 21–24, 2003). The conference was interesting and useful, giving an overview

about the latest news and achievements in the research of stroke etiology, pathogenesis and treatment. As my special field of interest is stroke, this was extremely necessary for me. I also performed an oral presentation entitled "First Year Results of the Third Stroke Registry in Tartu, Estonia". This was my first presentation in such a big congress and it encouraged me to continue my work. The conference provided many outstanding lectures from the leading stroke researchers from the whole world. There was a special real-time videoconference to Paris, where cardiac surgeons showed a process of closure of patent foramen ovale. This was certainly the highlight of this congress. Poster sessions were also very interesting, giving a good overview of current stroke research.

Riina Vibo
Dept. of Neurology and Neurosurgery
University of Tartu,
Tartu, Estonia

TOXIC METALS AND THEIR EFFECT ON THE NERVOUS SYSTEM IN DEVELOPING COUNTRIES

Introduction

Elements like lead (Pb), mercury (Hg), manganese (Mn) and arsenic (As) are probably the oldest known toxins. Their increasing levels in the ecosystem and biological tissues in the recent past as revealed by environmental monitoring have made heavy metal exposure a global concern. Whereas the developed nations are taking brisk and active steps to combat the chronic neurotoxic effects on human life, the developing countries with their burden of geophysical natural deposits and current race for rapid industrialisation have made metal pollution a major issue of public concern to all.

For most of the toxic elements, i.e. metals like lead, manganese, mercury, arsenic and fluoride, the nervous system is the target organ. Only major metal toxicities are discussed.

Lead neurotoxicity

Lead poisoning is the number one environmental disease among young children in developing countries of South East Asia including the Indian subcontinent along with China, Indonesia, the Philippines, African countries, South American nations and New Mexico. The problem is also being faced in the USA and Australia but more so in developing countries. There are six major sources of exposures: (1)

gasoline additives (although some countries have started the use of lead-free petrol in the last decade); (2) food-can soldering; (3) lead-based paints; (4) ceramic glazes; (5) cosmetic and folk remedies (Chinese folk medicines and Ayurvedic preparations); (6) industrial emissions from lead smelters and battery recycling plants which contaminate the environment and people living nearby. The action to combat lead pollution in developing nations has been slow and sporadic. In children, slow cumulative lead poisoning leads to neurological syndromes like low intelligence, loss of short-term memory, learning disability, problems with coordination, increase in violent behaviour and, in higher concentrations, seizures, encephalopathy with high mortality and morbidity.

Prenatal exposure causes reduction in birth weight, immune suppression, bronchial asthma and allergies. Adults who work in high lead exposure factories develop peripheral neuropathy subclinical or obvious clinical deficits along with neuropsychiatric or behavioural problems. Exposure to organic lead compounds has been noted to cause decrease in attention, visuomotor function, abstract reasoning, visual memory and restlessness. These subtle signs can be totally missed by the clinician and attributed to psychiatric disorders. History, occupational details and serum lead levels by sophisticated

techniques can identify such cases.

The USA has banned the import of leaded candles, i.e. those that contain lead in the core wicks. Testing revealed that burning a candle with a lead core wick for 4 hours per day for 30–150 days could result in high blood lead levels in children. Many decorative items sold in discount stores are full of lead. Items listed include decorative/perfumed candles, imitation jewellery, artificial flowers and decoration pieces.

Arsenic neurotoxicity

High concentrations of arsenic in drinking water have been documented in India (West Bengal), Bangladesh, Argentina, China, Japan, Mexico, Taiwan and the Philippines. The problem is particularly acute in West Bengal and Bangladesh where an estimated 30 million people are drinking arsenic-poisoned water (WHO, 1997). Some wells contain as much as 400 times the WHO permissible limit. The effects on the nervous system are peripheral neuropathy, along with cardiovascular disorders, kidney damage and skin disease, hyperkeratosis and pigmentation or 'black foot' disease. Evidence of arsenic exposure is confirmed by high levels of As in urine, hair and nails with people having symptoms suggestive of chronic arsenicosis. Average concentration of As in urine is generally below 10 µg/L. In per-

sons with arsenicosis 0.02–0.2 mg/kg or 3–10 mg/kg have been reported. Almost 57 million people in Bangladesh are at risk of arsenicosis. 28–35 million Bangladeshis are drinking water with arsenic concentrations exceeding 0.05 $\mu\text{g/L}$ (WHO guideline 0.01 $\mu\text{g/L}$). In July 2001, data released from a Dhaka based project sponsored by an NGO agency, appeared as "Arsenic crises today: strategy for tomorrow". Ground water contaminants by arsenate in rock, industries manufacturing Paris green pesticide and other pharmaceutical chemicals, and paint pigments also are causes of arsenicosis. Industrial waste effluents in some countries are not treated properly but are discharged into deep bore wells where they seep into drinking water tube wells.

In Northern India, arsenic laced with opium is used by poor-nutritioned, indentured labour as an aphrodisiac and recreational drug. Arsenic is added in indigenous medicines as a panacea for all diseases in some developing countries (Chhuttani and Chopra 1978). Chronic arsenic neurotoxicity has been reported from China due to the use of coal containing arsenites. Treatment for chronic arsenicosis needs to be directed towards stopping the drinking of water from deep tube wells in arsenic rich districts. The usefulness of chelation therapy has not been fully established.

Mercury neurotoxicity

Mercury accumulates at the top of aquatic and marine food chains where fish is the major source of dietary exposure

along with industrial pollution. The principal health risks associated with mercury are damage to the nervous system with symptoms of uncontrollable shaking, muscle wasting, partial blindness and irreversible neural deformities in children exposed in the womb. This is at levels well below WHO limits. It can also damage the foetal and the embryonic nervous system with consequent learning difficulties, poor memory, mental retardation and shortened attention span with hyperkinetic behaviour. Low-level exposure can also adversely affect male fertility. Mercury toxicity is a global problem. High concentration in the environment has been reported from Florida (USA), Europe, Africa, Japan (Minimata disease) and even in Greenland. In the developing nations like India, Pakistan, Turkey, Iraq, Bangladesh, China, Taiwan, the Philippines and other East Asian countries, toxic dumping along with contamination of the environment by small scale industries with no strict enforcement of environmental law aggravates the situation. Methyl mercury is one of the most toxic compounds and was responsible for Minimata disease. The contamination of ground water in some Indian states is due to small units manufacturing pharmaceutical fertilizers and chemicals and unscrupulously pumping back the toxic effluents into the soil and water via deep bore wells and then closing them from the surface. The water is coloured green/or yellow and is not fit for drinking by humans or animals. In Iraq, neurotoxic syndromes in children were due to exposure in utero consequent to maternal ingestion of contaminated grain (wheat grain seeds coated with mercury based pesticides). This

showed several neurotoxic sequelae which were a milder form of mental retardation and ataxia as compared to Minimata disease. The bench mark dose equivalent to 11 ppm mercury in maternal hair has been reported by several research studies in other human populations and recently Japan has recorded new research in which the earlier figure of thousands of people affected fifty years ago at Minimata has reached 2 million. Shigeo Ekirino of Kumamoto University School of Medicine, Japan has concluded that a harmful concentration of mercury remained in the Shirani Sea until 1970, 10 years longer than previously believed. In 1997 Minimata Bay was declared free of pollution but even today the medical and legal problems continue (Jonathan Walts in *Lancet* Vol. 358, Oct. 20, 2001).

Manganese neurotoxicity

This nutritionally essential element (Mn) has benefits as well as risks to health. Dietary insufficiency of Mn is however rare whereas effects of excessive Mn exposure are well documented. The route of exposure of Mn is an important determining factor in Mn toxicity. When ingested, systemic levels of Mn are generally well controlled by haemostatic mechanisms and detoxification by the liver. Inhaled manganese on the other hand first deposits in the respiratory system and causes local effects. These are later absorbed in the circulatory system and then to the CNS, where it crosses the blood-brain barrier.

Neurobehavioural, respiratory and reproductive effects are the primary features of

WINNERS OF THE GLAXOSMITHKLINE JUNIOR TRAVELLING FELLOWSHIPS 2003

Name	Country	Meeting
Ales Bartos	Czech Republic	7th EFNS Congress, Helsinki, Finland, August 30 to September 2, 2003
Roman Herzig	Czech Republic	12th European Stroke Conference, Valencia, Spain, May 21–24, 2003
Seyam Ahmed Salem	Egypt	13th Meeting of the European Neurological Society, Istanbul, Turkey, June 14–18, 2003
Riina Vibo	Estonia	12th European Stroke Conference, Valencia, Spain, May 21–24, 2003
Irina Kharatishvili	Georgia	Collaborative Project, Epilepsy Research Lab., University of Kuopio, Finland
Sumit Singh	India	6th IBRO Congress of Neurosciences, Prague, Czech Republic, July 10–15, 2003
Manjari Tripathi	India	25th International Congress on Epilepsy, Lisbon, Portugal, October 12–16, 2003
Ausra Klimauskiene	Lithuania	7th EFNS Congress, Helsinki, Finland, August 30 to September 2, 2003
Cristian Falup-Pecurariu	Romania	7th EFNS Congress, Helsinki, Finland, August 30 to September 2, 2003
Udaya Ranawaka	Sri Lanka	7th EFNS Congress, Helsinki, Finland, August 30 to September 2, 2003

excessive Mn exposure (1993). The neurotoxic effects of Mn are characterised by phases, progressing from emotional and psychiatric disturbances to neurological and neuromuscular signs such as gait disturbance, dysarthria, clumsiness, muscle cramps, intention tremor, mask like facial expression and possibly irreversible dystonia and hyperreflexia which may not appear until several years after onset of exposure. Resemblance to Parkinson's disease has been noted. Mn exposed workers show impaired performance in tests involving motor speed and coordination. Disturbance in the hypothalamic-pituitary-gonadal axis hormones have been implicated in experimental studies. The elderly have a far greater risk for Mn toxicity. Susceptibility increases in populations residing near ferro-manganese smelter plants or foundries (J.M. Davis U.S. EPA research data, Indo-US Workshop, Lucknow 1998 at ITRC, Lucknow, India).

Neurotoxicity of fluoride

The element fluorine is widely distributed in nature as fluoride. It is present in natural form in almost all food and water and in man-made form by fluoridation of water, toothpastes and some vitamin preparations. Excessive fluoride ingestion results in fluorosis with skeletal and dental changes first reported from India in 1932 by Moller and co-workers. Endemic fluorosis was reported from India in 1973 by Shortt. The wide prevalence in India of fluorosis is due to excessive fluoride >0.5 ppm in ground water. Other reports of this condition come from Sri Lanka, Thailand, Vietnam, Saudi Arabia, the United Arab Emirates, Libya, Tanzania, Kenya, Sudan, Uganda, Ethiopia, Israel, Chile, Argentina and Mexico. Thailand and China have fluorosis due to air pollution caused by the burning of coal containing high fluoride. The clinical picture of skeletal fluorosis is well known. Symptoms consist of bone pain/deformity, joint pains, paresthesia, radiculopathy, decrease in vital capacity, paraparesis, quadriparesis, chronic fatigue osteoarthritis and gastrointestinal symptoms. Fluoride is excreted by the kidneys. X-Ray of bones shows hyperdensity, and calcification of the interosseous ligament in forearm is diagnostic. Fluoride is a cumulative poison and builds up in the body after years and years of ingestion. It can be readily diagnosed by visual examination of teeth with its peculiar brown-black discoloration (due to dental fluorosis) which is permanent and occurs usually during the first decade of life. Fluoride builds up in different organs of the body over decades and disrupts

many key enzymes.

In the mid-20th century, fluoride was given therapeutically to suppress thyroid function in Graves disease. Fluoride tooth pastes were aggressively promoted by dental researchers in developed countries such as the USA to prevent cavities. Researchers in Boston, USA and India have agreed that fluoride compounds and supplements do not provide any statistically significant dental cavity protection. Hard evidence is lacking. Excess fluoride in water can also cause stomatitis, headache, visual disturbance and adverse change in tensile strength of bone causing increase in hip fractures. Some toxicological studies in the UK recorded a 30% higher rate of Down's syndrome in fluoride rich areas. Chile has banned fluoridation of water because of research linking excess fluoride to infant death (Dr. Albert Schatz). Experimental data on rats with drinking water having 1 ppm of NaF demonstrated lesions in brain similar to neurodegeneration seen in Alzheimer's disease. Fluoride does cross the blood-brain barrier (BBB) (Brain Research Vol. 784 No. 12 pp 284-298). Two recent epidemiological studies have tended to confirm the neurotoxicity of fluorosis in the brains of children who had a lower IQ as compared to similar groups who did not live in high fluoride regions. The other finding was an increase in chronic immune system disorders. Chinese investigations have reported neurotoxicity of brain in persons with fluoride exposure. Fluoride appears to accumulate in the hippocampus and thalamus and also damage BBB. Decrease in mental ability, cognition and subsequent behaviour attention deficit disorder (ADD) is a serious problem. Mexico has reported dental fluorosis in 90% of children between 6 and 8 years of age along with slowed reaction time and visuospatial organization test. IQ was not affected but reading and writing were slowed as compared to a comparable group. Li et al. (China) studied 907 children in endemic fluorosis areas and reported reduced mental activity with reduced hair zinc content (1995). To conclude, toxicity of fluoride is not confined to skeleton, teeth and joints but also to the developing nervous system involving cognition, behaviour and immune system. Possible mechanisms postulated for this are the ability of fluoride to cross the BBB, altering enzymes configuration by strong hydrogen bonds with amide group, inhibitory cortical adenylyl cyclase activity and phosphoinositine hydrolysis with interference in neuron calcium channels. Probable factors like hippocampal argentinophilic reac-

tion, beta-amyloid production enhancement in thalamus are some other views.

Conclusion

Today, because of the media and Internet communication and the increase in tourism / trade, we are aware of our global interdependence. Developing nations with demands of trade and industry have a great responsibility for the well-being of persons involved in large and small scale industries. The governments of such nations hold in their hands the positive power to control our global environment to create and benefit people as well as the negative power to maim and destroy human life. All products of new technology are created by the human brain. It would be tragic if awareness of the damage were not kept in mind and our next generation in this 21st century produced severe neurological disorders or a population of mentally defective people with behavioural abnormalities. We are temporary custodians of the earth area we happen to be born in. Several agencies like Earth Watch, EPA and Global Watch, along with evaluation of Environmental Health damage in developing nations, are in action. It is well worth knowing what to look for when faced with disease which could be due to toxic elements in the Earth itself. Knowledge of these disorders caused by toxic metals should be a part of the training of all future physicians and neurologists, especially in developing nations. We need not repeat the mistakes of industrial ecological pollution made by the developed nations in the twentieth century.



Devika Nag
Emeritus Professor Neurology
King George's Medical College
Lucknow - 226001, Uttar Pradesh, India

References

1. Bagla P, Jocelyn K. 1996. India's spreading Health Crisis draws global Arsenic experts Science. Vol. 274, no. 5285 Oct. 11, 1996 pp. 174-175.
2. "Chemical and Biochemical screening tests for identification of High Risk Groups" Nag D, Jaffery FN, Viswanathan PN. Chpa 15, p 285-300 in Risk Reduction Chemicals and

LETTER TO THE EDITOR

The need for a Neuroradiology Training Fellowship Programme open to both radiologists and neurologists

As you know, the performing of invasive neuroradiological procedures is still a big problem area between neurologists and radiologists. As neurologists we say "We must have the rights of cardiologists, with radiologists assisting us". This controversy between the two specialties continues in most countries.

In the early 1960s, cerebral angiographies were administered through direct arterial needle puncture, percutaneous of the carotid artery, but due to massive bleeding into the neck after removal of the needle, the transfemoral catheter angiography procedure was introduced after 1975. Neurologists only used these cerebral angiography techniques in diagnostic studies up to 1990. However, radiologists preferred to assist only in the obtaining of film and did not attempt the procedure by themselves. While this procedure was used for the diagnosis of cerebral vascular disease until the 1990s, it was also introduced in the treatment of cerebrovascular diseases. For instance, the expansion of vessels by balloon angioplasty,

applying stent in the stenotic area of the vessel, repairing aneurysm and arteriovenous malformation with a catheter, and intra-arterial thrombolytic therapies in ischemic stroke are some of the new areas in neuroradiology in recent years. In the light of these new developments, both neurologists and some radiologists began to perform catheter angiographies after 1990. However, cardiologists started to use these techniques before neurologists. Presently, cardiologists continue to perform these procedures by themselves, but radiologists want to work only in the invasive neuroradiologist area and prevent neurologists from performing the procedure themselves. Catheter techniques are very serious and difficult invasive procedures and can cause adverse effects and complications. For this reason, the question of how radiologists can treat complications is still controversial, as they do not usually have the necessary qualifications to treat these types of problems.

Intra-arterial thrombolytic infusion during angiography is one of the current favored treatment methods for patients with cerebral ischemia when administered within the first 6 hours. However, the time necessary to gather together a team to perform this procedure can cause some delays in this urgent therapy. Therefore, it is imperative that a team of neurologists performs this method in a short period of time, without any necessity for another team. Avoiding the use of neurologists in performing this therapy method by creating new rules and regulations, and giving this right to radiologists will cause problems in the performance of this treatment in urgent situations. All over the world, advances in treatment choices are provided by the observations, experience and research of treatment teams. Giving the invasive neuroradiology specialization right only to radiologists will prevent scientific research from going ahead and also affect the important observations and evaluations that can be obtained during these therapies by treating doctors, neurologists. So, neurologists will be taken away from the studies that may advance this treatment method.

At the beginning of 1990s the previously similar internal medicine branches of cardiology and pediatric cardiology started using balloon and stent procedures, yet radiologists have never wanted to perform this method with cardiology patients as they have amongst neurology patients. Cardiologists are performing cardiac angiography and for this reason can dominate the procedure, observe side effects and use this advantage to carry out scien-

tific studies in order to advance this method. With the help of this advantage, both adult and pediatric cardiologists have arrived at a parallel position within world medicine in the performance of balloon and stent or thrombolytic treatments in the early stages. During these procedures, radiology technicians only assist cardiologists. The specializing right for cardiologic radiology was not given to radiologists, so for the same reasons the neuroradiology specializing right in turn should not be given. If it is given, this right should also be given to neurologists. Interventional neurology must be left in neurology as interventional cardiology was left in cardiology.

As is already known, the decade between 1990 and 2000 was accepted as the 'Brain Decade' in the USA and all over the world and by doing much detailed research, new facts about the brain were discovered. The knowledge and research fields for the nervous system became very vast. As can be seen in the fellowship list of the American Academy of Neurology, the number of specializing fields in neurology is 32 (which with the addition of pediatric neurology and the new field of neurosonology will bring the number to 34). It can also be seen in the list that 'Interventional Neurology' and 'Neuroimaging' names are taking part in the neurology specializing fields list of the American Academy of Neurology. These are two subdivisions of neuroradiology. The area of 'Interventional Neurology' includes cerebral invasive angiography, intraarterial thrombolytic treatment, balloon and stent procedures for cerebrovascular diseases, while 'Neuroimaging' includes computerized cerebral tomography and magnetic resonance imaging. These two specializing fields are open to neurologists in the USA and should also be open for some European Neurologists just like the other specializing fields and the new rules and regulations in the entire world must be prepared according to this.

Neurologists must be permitted to be trained in Neuroradiology Fellowship programmes. In this way, both radiologists and neurologists would attend Neuroradiology Training Programmes. Radiology-based neuroradiologists or neurology-based neuroradiologists must be trained in a cerebrovascular unit as neurologists are. And these invasive and non-invasive neuroradiological procedures (cerebral angiography, myelography, CT, MRI and SPECT/PET) must only be performed in Stroke Units that have a strokologist team, a neuroradiologist and all of the modern

(Toxic metals – continued from p. 10)

- energy into the 21st Century Editor M.L. Richardson Pub. Taylor and Francis London, 1996.
3. Chhuttani PN and Chopra JS., 'Arsenic' in Hand Book of Clinical Neurology Vol 36, Chapter 7, Intoxications of Nervous system by Vinken and Bruyn 1978.
 4. Lead Poisoning Prevention and treatment: Implementing a National Program in developing countries. Edited by Abraham M. George Proceedings of the International Conference on Lead Poisoning 1999 sponsors George foundation, The World Bank U.S. CDP, US, EPA, WHO.
 5. Li XS, Zhi JL and Gau Ru Effect of fluoride exposure on intelligence in children: Fluoride. 28:4, pp 189-192, November 1995.
 6. Mullinex PJ, Denvesten P.L, Schirmer A., et al. Neurotoxicol. Teratol. (NAT) 1995, March-April, 17(2), pp 169-77.
 7. Neurotoxicity of fluoride Editorial, (1996). Fluoride 29: 2 pp 57-58
 8. Watts, J. Mercury poisoning victims could increase by 20,000. The Lancet Vol. 358, Oct. 20, 2001, p1349.

diagnostic and therapeutic equipment.

By following these steps they would be better enabled to take responsibility for the patient's treatment strategy with neurology-based neuroradiologists. Both training groups would have the opportunity of training in invasive neuroradiology and this collaborative work would give more benefits to patients and minimize the time window of procedure. In most centers, neurologists take care of stroke patients after invasive procedures, meaning that the primary responsibility for these patients belongs to neurologists.

The idea of Interventional Neuroradiology being provided only by radiologists to stroke patients causes some concerns:

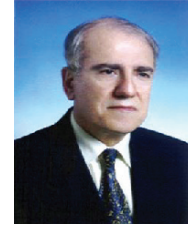
1. As we know, Cardiologists mostly provide invasive procedures that are re-

lated to their specialty but neurologists unfortunately cannot do this and we believe that this is not relevant.

2. Invasive neuroradiology is related to cerebrovascular disease and its aim is to treat strokes. Nevertheless, nowadays neurologists tend to be kept away from this invasive procedure and in the future they would be using only their hammer as a tool.
3. If neurologists are able to both decide the appropriate diagnosis and at the same time perform the procedure, the time interval between diagnosis and procedure will be shortened.
4. Time is the most important thing in acute stroke treatment currently. In order to shorten the therapeutic window, neurologists have to take responsibility for invasive procedures.

5. Our wish and expectation is that a neuroradiology fellowship program must be opened for both neurologists and radiologists.

It is my desire that you discuss our opinions as stated above in the Executive Committee of the Stroke Societies and/or Neurology Federation for consensus among neurologists and radiologists.



Prof. Gazi Ozdemir, MD
Secretary General, Turkish Society of Cerebrovascular Disease

INTERNATIONAL STROKE SOCIETY – ANNUAL REPORT OF THE PRESIDENT

2002 was a very active year for the International Stroke Society. Your Executive Committee and Board have been considering the best means by which to increase the global visibility of stroke, in order to provide help for those who suffer its personal, community, national, and international consequences, as well as those who provide the means by which to reduce its effects and prevent it altogether. Our efforts have been directed to forming a unified global action group with national stroke societies in every nation of the world. The International Stroke Society now has membership of 24 national organizations, which represent only a fraction of the total number, many of which are local and regional, consisting of lay advocacy groups working in parallel with a professional organization. Consequently, the ISS is considering an umbrella organization, the purpose of which is to increase our numbers in order to work with the World Health Organization in ways that the International Stroke Society, with membership consisting only of medical professionals, has not been able to do.

Because strokes occur at all levels of society and in every part of the world, it is shocking to realize that at many levels, including government, stroke is not considered to be a problem of the brain but to be heart related. For this reason, many in the field of heart disease have shown interest in assuming leadership or working with those in the stroke field to form an alliance that could be beneficial for stroke

victims and the public at large. The overlap includes the carotid and vertebral arteries in the neck, the arch of the aorta, as well as the venous circulation, and the heart itself, because they are often a cause for vascular episodes affecting the brain. With the aging population, stroke is becoming more and more prevalent and, when coupled with the problem of dementia which often results from multiple strokes (vascular dementia), it is a neglected area which the international community must address.

Diseases of the vast network of arterioles, capillaries, and venules result in vascular dementia that are usually not classified as stroke because the small size of the vessels affects minute portions of brain. However, these add up to leukoaraiosis, which causes diminished capacity for intellectual work. It is estimated that this may account for as much as 50% of "senile" dementias. Still to be explored are the effects of summation of impaired cardiac pumping action, sclerosed arteries, malfunctioning capillaries, and sluggish venous return. For these reasons, we in the ISS must ally with colleagues in other disciplines in order to develop goals, strategies, and plans for implementation of global action, both through our ISS and other international groups, including the WHO.

Actions so far taken include:

1. Meetings with national groups, including the American Stroke Association

leadership.

2. Meetings with the leadership of the World Heart Forum.
3. On-going discussions with the WHO offices responsible for stroke and its prevention.
4. Arranging for a designee from the ISS to be present in Geneva to develop an action plan.
5. Cooperating with national groups such as the Centers for Disease Prevention and Control of the U.S. Department of Health and Human Services.
6. Formation of a global ISS website for information exchange.
7. Working to develop action plans.
8. Task Force of the ISS Chaired by Professor Antonio Culebras was formed to explore the formation of a physician-patient advocacy group designed to give stroke victims and their families a voice in policy making.

Other actions are listed in Table 1.

During my final year as President of the ISS, it is my intention to strengthen our website, initiate a global registry for stroke, lay the groundwork for stable funding and, in June 2004, announce a global action plan.

Table 1. Accomplishments in 2002

Articles of Incorporation and Bylaws Adopted

U.S. 501C3 Tax Exempt Status Granted for Fund Raising and Tax

Contract Signed with Canadian Stroke Consortium for 2004 Congress, Drs. Vladimir Hachinski, John Norris, Phil Teal, and Ms. Donna Huber

Website Established

Dr. Werner Hacke, Editor, International Board of Directors Appointed, Drs. Harold Adams, Jr., Julien Bogousslavsky, Antonio Culebras, Anna Czlonkowska, Murray Goldstein, Fumio Gotoh, Werner

Hacke, Gian Luigi Lenzi, J.P. Mohr, John Norris, James Robertson, Yukito Shinohara, James Toole, Takenori Yamaguchi, and Frank Yatsu.

ISS Mission Statement Adopted by ISS Members

WHO/ISS Begin Development of a Stroke Registry

Table 2. National Organization Members

Stroke Society in Transcaucasian Countries, Stroke Section of the Polish Neurological Society, Stroke Society of Australasia, Romanian National Stroke Association, Hungarian Stroke Society, Japan Stroke Society, Scandinavian Society for Cerebrovascular Diseases, American

Stroke Association, Salzburg Conference on Cerebrovascular Disease of the WFN, Japan Stroke Association, Hong Kong Neurological Society, Belgian Stroke Council, Korean Stroke Society, Iberoamerican Society of Cerebrovascular Diseases, French Neurovascular Society, European Stroke Initiative (ESC, EFNS, ENS)

German Stroke Foundation, Singapore Stroke Association, The Southern African Stroke Foundation

Argentina Stroke Study Group, Brazilian Stroke Society, Taiwan Stroke Society, National Stroke Association, National Stroke Council - Chinese Society of Neurology.

James F. Toole, M.D.
Former President WFN

BOOK REVIEWS

Subcortical Stroke

Editors: Geoffrey Donnan, Bo Norrving, John Bamford and Julien Bogousslavsky
ISBN: 0 19 263157 8 (Hbk.)
No. of Pages: 456
Price: £79.50
Publication Date: 2002
Publishers: Oxford Medical Publications

The first edition of this book under the title 'Lacunar and other subcortical infarctions' was published in 1995. The present 2nd edition has been updated, particularly in view of the advances since 1995, in neuroimaging and therapy. Research in the fields of genetics and neurochemistry has added to the understanding of stroke and is reflected in this 2nd edition which will help in the management of stroke because of newer findings in neural mechanism and neural protection. Leading international experts have contributed to this comprehensive book on subcortical stroke, which is most useful for physicians, neurologists, those who work in stroke units and researchers in the field of cerebrovascular disease.

Editor-in-Chief

Antiepileptic Drugs: 5th edition

Editors: R H Levy, R Mattson, B S Meldrum, EPerucca
ISBN: 0-7817-2321-3
No. of pages: 900
Price: \$179.00
Publication Date: 2002

Publisher: Lippincott, Williams & Wilkins

It is now seven years since the last (fourth) edition of this standard work of reference. A fourth co-editor has been added and is, usefully, a medical pharmacologist. Other than Section I that deals with General Principles and Section XVIII that is entitled Drugs in Development, all the intervening sections deal with individual drugs or drugs that can be grouped together, eg benzodiazepines.

The book remains the definitive reference work and should be in every neurological library.

F. Clifford Rose
London, U.K.

Neurologic Complications of Critical Illness

Editors: Eelco F.M. Wijdicks
ISBN: 0 19 514079 6
No. of Pages: 415
Price: £79.50
Publication Date: 2002
Publishers: Oxford University Press

Critical Care Medicine is now a well established speciality being practiced in developed and many developing countries of the world. However, it is only in the last decade that Neurologic Intensive Care has developed as a necessity although available mostly in the developed countries. This is the second edition of this book which indeed is a marvellous collection of original work edited by EFM Wijdicks, Professor of Neurology and Medi-

cal Director, Neurological / Neurosurgical Intensive Care Unit, Mayo Medical Center, Rochester, USA. The book is divided into three major parts and 20 chapters, is comprehensive and clinically very practical. Every critical neurological problem is discussed with illustrations. The last chapter deals with withdrawing life support in the intensive care unit. This is a very difficult and crucial decision, and the author has set out his advice and arguments in a most convincing manner, applying basic parameters to help simplify the process. This book is extremely useful for practising neurologists but even more so for intensive care specialists in every field of medicine and surgery.

Editor-in-Chief

Clinical Electromyography: 3rd edition

Editors: Shin J Oh
ISBN: 0-7817-3681
No. of pages: 1,816
Price: \$155.00
Publication Date: 2002
Publisher: Lippincott, Williams & Wilkins

This is the third edition of a classic work in clinical neurophysiology, which was first published in 1984. Technical developments required a second edition nearly ten years later in 1993. One major development since then has been the pivotal place of conduction studies in the diagnosis of multifocal motor neuropathy; this has helped in the understanding and definition of immunologically-mediated neu-

Elsevier your GATEWAY to SCIENCE What's New in Neurology ...

Special Product Highlight

Clinical Neurophysiology, Volume 2 EEG, Paediatric Neurophysiology, Special Techniques and Applications

Edited by: C.D. Binnie, P.F. Prior et al.

The authors treat the three main branches of clinical neurophysiology - peripheral neurophysiology, evoked potentials and electroencephalography - in a consistent and integrated way with emphasis on a clear exposition of practical details of how and why each investigation is done.

Their aim is that the reader should understand exactly how to choose and to undertake appropriate investigations, and how to interpret the findings in the light of the latest evidence-based studies. Using historical evidence and illustrative case reports, they address the scientific principles, both biological and electrical, recording techniques, the development and characteristics of electrical potentials in normal subjects, and the ways in which these are disturbed by physical factors or disease. This foundation should enable the reader to interpret recordings from first principles. The main clinical sections are set in the context of typical referral problems or disease groups, showing how the appropriate sequence of investigations and their interpretation help in diagnosis or surveillance of the patient's condition.

Volume 2

ISBN 0-444-51257-8, 1070 pages

US\$ 250/€ 250, hardbound

Publication date: May 2003

For a complete list of contents please visit <http://www.elsevier.com/locate/isbn/0444512578>



Journal of the Neurological Sciences

The complete collection of articles ever published in the Journal of the Neurological Sciences is electronically available. If your institute has a ScienceDirect subscription, you and guest users will have free access to the articles of the Journal of the Neurological Sciences backfiles. You can download full-text articles published as early as 1964 (Volume 1, issue 1) and use them to:

- Locate Nobel-prize winning articles and the research they have influenced
- Explore scientific history up to present
- Access vital reference material immediately

Visit <http://www.info.sciencedirect.com/backfiles/> for more details on the ScienceDirect Backfiles



THE LANCET Neurology

Clinical research • Reviewed • In Context

The latest issue of this exciting review journal from THE LANCET Publishing Group is now available.

Reviews covered in this issue are:

- Neuropeptides: opportunities for drug discovery
Tomas Hökfelt, Tamas Bartfai, Floyd Bloom
- Clinically important drug interactions in epilepsy: interactions between antiepileptic drugs and other drugs
Philip N Patsalos, Emilio Perucca
- Heparan sulphate proteoglycans in Alzheimer's disease and amyloid-related disorders
Jack van Horsen, Pieter Wesseling, Lambert PWJ van den Heuvel, Robert MW de Waal, Marcel M Verbeek
- Post-stroke plastic reorganisation in the adult brain
Paolo M Rossini, Cinzia Calautti, Flavia Pauri, Jean-Claude Baron

Rapid review

- Memantine for the treatment of dementia
Gordon K Wilcock

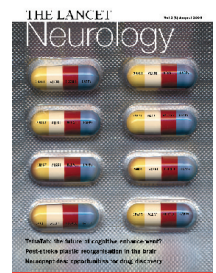
Personal view

- Alzheimer's disease, normal-pressure hydrocephalus, and senescent changes in CSF circulatory physiology: a hypothesis
Gerald D Silverberg, Martha Mayo, Thomas Saul, Edward Rubenstein, Dawn McGuire

THE LANCET Neurology E-Toc alerts now available! Sign-up today at <http://neurology.thelancet.com/profile/etoc>

If you are attending the 7th European Federation of Neurological Societies Congress (EFNS) in Helsinki, Finland, August 30th – September 2nd 2003, please visit the Elsevier stand (#24) and pick up a free sample copy of the latest issue of THE LANCET Neurology. Free 3-month trial subscriptions and special discounts will also be on offer to conference delegates.

For more details on how to subscribe, please visit <http://neurology.thelancet.com> today or contact THE LANCET Neurology, 32 Jamestown Road, London NW1 7BY, UK, Tel +44 (0) 20 7611 4102, or email custserv@lancet.com



Come and meet us

Elsevier Science attends many scientific meetings each year. Below please find a (tentative) list of meetings at which we will have one or more booths in 2003. Please come and visit us to browse the latest releases in our book program, see online demonstrations of our electronic products and services, and to get free sample copies of our journals.



International Society for Autonomic Neuroscience
20–25 September 2002, Calgary, Canada

7th European Federation of Neurological Societies (EFNS)
30–2 September 2003, Helsinki, Finland

AAEM/IFCN Meeting
16–20 September 2003, San Francisco, USA

16th European College of Neuropsychopharmacology Meeting
20–24 September 2003, Prague, Czech Republic

25th Intern Epilepsy Congress (ILAE meeting)
12–16 October 2003, Tunis, Tunisia

Society for Neuroscience (SfN)
8–12 November 2003, New Orleans, USA

American Epilepsy Society
5–10 December 2003, Boston, USA

We look forward to seeing you!

Elsevier your GATEWAY to SCIENCE What's New in Neurology ...

Neurology Publications from Elsevier Your comprehensive resource!



Journal of the Neurological Sciences

Official Journal of the World Federation of Neurology

EDITOR:

Robert F. Usak, Department of Neurology, Wayne State University School of Medicine, Detroit Medical Center, University Health Center, Detroit, MI, USA

www.elsevier.com/locate/jns



PAIN®

Journal of the International Association for the Study of Pain (IASP)

EDITOR IN CHIEF:

Alan I. Basbaum, Department of Anatomy, University of California San Francisco, San Francisco, CA, USA

www.elsevier.com/locate/pain



Journal of Neuroimmunology

Official Journal of the International Society for Neuroimmunology

EDITOR IN CHIEF:

C. S. Raine, Department of Pathology (Neuropathology), Mount Einstein College of Medicine or Yeshiva University, Bronx, NY, USA

www.elsevier.com/locate/jneuroim



Clinical Neurophysiology

Official Organ of the International Federation of Clinical Neurophysiology

Former titles: *Electroencephalography and Clinical Neurophysiology* and *Previous sections: Electroencephalography and Motor Control and Evoked Potentials*

EDITOR IN CHIEF:

M. Hallett, Clinical Neurophysiology, National Institute of Health, Bethesda, MD, USA
M.K. Floster (Assistant Editor)

www.elsevier.com/locate/clinph

For further information, and to order, visit the journals' homepages



SCIENCE @ DIRECT®

Digital library of the future

Visit us at www.sciencedirect.com

ropathies. The book is divided into two sections, Basic and Advanced. The first includes techniques and normal values. The second section deals with factors affecting conduction studies. This monograph still remains the bible for nerve conduction studies.

F. Clifford Rose
London, U.K.

Taenia Solium Cysticercosis: From Basic to Clinical Science

Editors: Gagandeep Singh, Sudesh Prabhakar
No. of Pages: 457
Price: US \$ 168
Publication Date: 2002
Publishers: CABI, Wallingford, UK

This welcome, multi-author book comprehensively covers all aspects of the disorder including basic biology, molecular aspects, geographic epidemiology, clinical science, pathology, immunodiagnosics, radiology, and treatment and prevention. The volume draws on the talent of outstanding authorities in a number of basic and clinical disciplines. The views of several expert authors represent the current state of the art in the particular fields and are the tangible result of their painstaking efforts and often their lifetime achievements. The result is up-to-date, important and relevant information provided in a cohesive and logical sequence comprising six sections: (1) Basic Science, (2) Epidemiology, (3) Clinical Features, (4) Pathology, (5) Diagnosis, and (6) Treatment and Prevention. The "Epidemiology" section begins with an overview of the global epidemiology, which is followed by epidemiology in important geographic regions including Mexico, Peru, Brazil, Central America, Asia, Africa as well as the United States, and which concludes with an historical treatise of the disorder. The "Clinical" section begins with an overview of important clinical presentations, classification and accepted diagnostic criteria. Subsequent chapters cover virtually all clinical problems encountered by neurologists and infectious disease specialists involved in the treatment of neurocysticercosis. Individual chapters are devoted to pediatric, ophthalmic and neurosurgical aspects of neurocysticercosis. The book is fully referenced so that it shall serve as a general reference book for students, teachers and researchers alike for many years to come. An ultimate aim of this book should be to increase awareness of the means to recognize, treat and

eradicate this parasite that has seemingly overwhelmed large portions of the underdeveloped world and is now threatening developed nations.

Editor-in-Chief

CALENDAR

2003

First Congress of the International Society for Vascular Behavioural and Cognitive Disorders

28–31 August, 2003
Göteborg, Sweden
Contact: Congrex Göteborg AB, Ref. VAS-COG 2003, PO Box 5078, SE-402 22 Gothenburg, Sweden
Tel: +46 31 708 60 17, Fax: +46 31 708 60 26; e-mail: VASCOG2003@gbg.congrex.se; website: www.congrex.com/vascog2003/

7th Congress of the European Federation of Neurological Societies

30 August – 2 September 2003
Helsinki, Finland
Contact: Kenes International, Global Congress Organisers and Association Management Services, 17 Rue du Cendrier, PO Box 1726, CH-1211 Geneva 1, Switzerland
Tel: +41 22 908 0488, Fax: +41 22 732 2850, e-mail: efns03@kenes.com, website: www.kenes.com/efns2003

8th Congress of the World Muscle Society

3–6 September 2003
Szeged, Hungary
Contact: University of Szeged, Albert Szent-Györgyi Medical Center, Faculty of Medicine, Department of Biochemistry, Dóm tér 9, H-6720 Szeged, Hungary
Tel: +36 62 545 096, Fax: +36 62 545 097, e-mail: dux@bioch.szote.u-szeged.hu website: http://bioch.szote.u-szeged.hu/ or http://www.wms2003.com/info.htm

8th European Meeting on Glial Cell Function in Health and Disease

3–6 September 2003
Berlin, Germany
Contact: Organizing Office, Meino Alexandra Gibson, Max Delbrück Center for Molecular Medicine (MDC), Berlin-Buch, Robert-Rössle-Str. 10, 13092 Berlin, Germany
Tel.: 030 9406 3133, Fax: 030 9406 3819, e-mail: gibson@mdc-berlin.de, website: http://euroglia2003.glia.mdc-berlin.de/

2nd Annual Dementia Congress

12–14 September, 2003
Washington, DC, USA
Contact: Academy for Healthcare Education, 330 Madison Avenue, 21st Floor, New York, NY 10017, USA, Tel: +1-212-490-2300, Fax: +1 212-557-4729
e-mail: info@dementiacongress.com, website: http://www.dementiacongress.com/

XI Congress of the International Headache Society

13–16 September, 2003
Rome, Italy
Contact: Management office IHC 2003, c/o Lidy Groot Congress Events, P.O. Box 83005, 1080 AA Amsterdam, Netherlands, Tel: +31 20 679 3218, Fax: +31 20 675 8236; e-mail: IHC2003@LGCE.NL, website: http://www.ihc2003.com

2003 AAEM / IFCN (27th International Congress of Clinical Neurophysiology and AAEM's 50th Anniversary)

16–20 September, 2003
San Francisco CA, USA, 421 First Avenue SW, Suite 300 East, Rochester, MN 55902, USA; Tel: +1 (507) 288-0100, Fax: +1 (507) 288-1225; e-mail: aaem@aaem.net, website: http://www.aaem.net/aaem/2003/2003.cfm

4th Leonard Berg Symposium on Neuroimaging - Early Detection of Alzheimer's Disease: Structural, Functional & Molecular Neuroimaging

19–20 September 2003
Chase Park Plaza Hotel, St. Louis, Missouri, USA. For Program & Registration Information: http://alzheimer.wustl.edu/adrc2/BergSymp/2003/default.htm
or e-mail adrcedu@abraxas.wustl.edu

25th International Epilepsy Congress

12–16 October 2003
Lisbon, Portugal
Contact: ILAE / IBE Congress Secretariat, 16 Moundown Road, Dublin 12, Ireland
Tel: +353 1 4097796, Fax: +353 1 4291290, e-mail: info@epilepsycongress.org; website: http://www.epilepsycongress.org/

128th Annual Meeting of the American Neurological Association

19–22 October 2003
San Francisco, CA, USA
Contact: Susan M. Hamilton, Meeting Registrar, 5841 Cedar Lake Rd., Ste. 204, Minneapolis, MN 55416, USA, Tel: +1 (952) 545 6284, Fax: +1 (952) 545 6073, e-mail: anameeting@llmsi.com website: http://www.aneuroa.org/annual-meeting/sanfrancisco.shtml

3rd International Congress on Vascular Dementia

23–26 October 2003
Prague, Czech Republic
Contact: Kenes International, 17 Rue du Cendrier, PO Box 1726, CH-1211 Geneva 1, Switzerland, Tel: +41 22 908 0488, Fax: +41 22 732 2850; e-mail: vascular@kenes.com, website: http://www.kenes.com/vascular

10th Annual Meeting of the American Society of Neurorehabilitation

23–26 October 2003
Tucson, AZ, USA
Contact: American Society of Neurorehabilitation, 5841 Cedar Lake Road, Suite 204, Minneapolis, MN 55416, USA, Tel: +1 (952) 545 6324, Fax: +1 (952) 545 6073, website: http://www.asnr.com/meeting/10th.htm