

ACADEMIA MULTIDISCIPLINARIA NEUROTRAUMATOLOGICA

BRIEF HISTORY

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World Academy for Multidisciplinary Neurotraumatology, abbreviation AMN, was initiated and established in Munich on May, 2004. The key goal of AMN is the advancement of neurotraumatology all over the world regarding basic molecular and epidemiological research, practical application and teaching concerning pre-hospital, emergency medical, and in-hospital medical care, early neurosurgical and - long-term neurological- neuropsychological rehabilitation and social reintegration, trauma prevention and the social-economic health care aspects. Head and spinal cord injuries can happen to everybody, everywhere and at any time. The AMN is involved directly and exclusively in non-profit activities.

Keywords: molecular and epidemiological research, neurotraumatology, trauma prevention

INTRODUCTION

The Academia Multidisciplinaria Neurotraumatologica, in English World Academy for Multidisciplinary Neurotraumatology, abbreviation AMN, was initiated and established on invitation of Klaus von Wild in Munich on May 19th, 2004 (Fig. 1) when Giorgio A. Brunelli, Italy, Anwar El Etribi, Egypt, Mario Prosiegel, Germany, Wai S Poon, Hong Kong, Motoi Shoda, Japan, and Klaus von Wild, Germany, appended their signatures to the foundation document. Dr. T. Kanno, Director of Fujita Health University, Toyoake, Aichi, Japan, has given him good reason to transfer the original philosophy of EMN to neuroscientists worldwide when he had been honoured Honorary Member of the European Academy of Multidisciplinary Neurotraumatology and gained his own experience of our academicians close multidisciplinary cooperation and close friendship since these people were especially interested in challenging fields of neurotrauma. Besides academic persons therapists, politicians, social health care people could

meet and discuss beyond geographic, cultural and socio-economic borders in Europe.

The key goal of AMN is the advancement of neurotraumatology all over the world regarding basic molecular and epidemiological research, practical application and teaching concerning pre-hospital, emergency medical, and in-hospital medical care, early neurosurgical and - long-term neurological- neuropsychological rehabilitation and social reintegration, trauma prevention and the social-economic health care aspects. Head and spinal cord injuries can happen to everybody, everywhere and at any time. One has to keep in mind that lower social income and lower education are the risk factors that count for the major burden of neurotrauma in both developing and developed countries. Starting with aid of accident prevention (education) up to the victim's social reintegration (neuropsychology) mark the beginning and the final target of the ongoing (holistic) chain of our multidisciplinary efforts to finally improve

the patients (and next of kin) health related quality of life (HRQoL) after brain and spinal cord injuries and impaired higher cortical and spinal cord functioning in the world. The AMN is involved directly and exclusively in non-profit activities.

METHODS

The purpose of the World AMN is the advancement of neurotraumatology in research, practical application and teaching. This purpose is to be attained by, in particular,

1. The organisation of international congresses as well as participation in such events including regional and national workshops and educational meetings in all fields of neurotraumatology.

2. Commitment to excellence in education through organisation of workshops and intensification of cooperation with scientific academies, societies, associations as well as research institutions and companies who are concerned with questions related to neurotraumatology.

3. The communication between national and international academies, societies and associations concerned with neurotraumatology in research, practical applications and education.

4. The goal of the annual/biannual AMN congresses would be to bring the best minds we could gather at a single time to focus on a specific problem that resulted in better knowledge and clinical care over a certain problem within the area of neurotraumatology. For this model to be successful, the meetings by necessity would be small and different people would be attending at different times, depending on the focus of the discussion.

5. The goal of AMN would be a true continuum of knowledge that could be transferred into a continuum of care. It is also extremely important AMN congresses will have a variety of speakers at different levels of their professional development

6. The site of any meeting should be dependent on the scientific value and theme that that meeting will foster. Dr. Prigatano attempted to establish that tone for the AMN Phoenix meeting when his focus was clearly

on neurosurgical and neuropsychological collaboration in the treatment of TBI patients. Future meetings should also have a theme and draw on areas of expertise in the locale in which the meeting will be held (quotes GP Prigatano).

7. Each meeting should also provide for poster sessions and encourage dialogue between senior and junior colleagues, as well as across disciplines.

8. It is now apparent that intervention has to be based not only on integrated knowledge about anatomical location of lesions, plasticity of the brain, influence of neurobiology and neurochemistry, but mainly on integration of psychological treatment strengthening life transaction (quotes A-L Christensen

8. AMN academicians welcome for more informal opportunity for interaction with colleagues and the possibility of extended discussion on walks, at dinner or over drinks. Something that cannot be easily done when confronted with a huge group of attendees (quotes D. Stein).

RESULTS

AMN Congresses

1st AMN Brescia, Italy, Giorgio A. Brunelli; 29 – 30 March 2004

Main Topic:Recent advances in neurotraumatology. A multidisciplinary approach

In conjunction with 5th International Symposium on Experimental Spinal Cord Repair

and 3rd conference of the WFNS Committee for Neurorehabilitation

2nd AMN Phoenix, Arizona, USA, George P Prigatano; 11 – 13. November, 2004

Main Topic:Neuropsychological and neurosurgical collaboration in the treatment of TBI patients

3rd AMN Nagoya, Japan, Tetsuo Kanno, 10 March, 2005

Main Topics: Prevention and pre-hospital care of TBI and SCI; trauma at hyperacute, acute, and chronic stage, surgical neurorehabilitation, psychiatric aspects, quality of life after SCI, basic research

4th AMN Copenhagen, Denmark, Anne-Lise Christensen; 18 – 20 May, 2006
Topic: Mind and brain in neurotrauma

5th AMN Düsseldorf Germany Volker Hömberg and Klaus von Wild

Main Topics: Neuropsychology in childhood; motor rehabilitation I childhood, pharmacology in rehabilitation; High end imaging in TBI; TBI management; Cognition; Brain and the art

Hands on workshop 1-6: 1: Evidence based motor therapies in children

2: Non invasive assessment of human brain plasticity.3: Neuropsychology in pediatric TBI;

4: Spinal cord repair, 5: Management of epilepsy after TBI.6:Management of spasticity after TBI

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2nd AMN2005 Congress President Tetsuo Kanno, M.D., Ph.D., Professor of Neurosurgery, Director, Fujita Health University, Toyoake, Aichi, Japan.

1st AMN2004 Congress President Giorgio A. Brunelli, M.D. Ph.D., Prof. of Orthopaedics, Director ESCRI, Director Foundation for Research on Spinal Cord Lesions, Prof. emeritus and former Chairman of the School of Specialisation in Orthopaedics and Traumatology, University of Brescia, Italy Honorary member.

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COMMENTARY

SUMMARY OF 4TH WORLD AMN CONGRESS COPENHAGEN, DENMARK MAY 2006, Respectfully Submitted Donald G. Stein, Ph.D.

Emory University, Atlanta Georgia, U.S.A. Chair, Scientific Committee AMN

One of the major issues facing the field of brain injury rehabilitation is how to bring together the various approaches to patient care and treatment—from the early, acute stage of the injury cascade to the longer-term reintegration of the TBI survivor back into the family and community. Thanks to tremendous advances in laboratory technologies and noninvasive imaging of brain activity, considerable progress is being made in understanding the molecular-biological mechanisms initiated by a TBI and the genomic and proteomic changes that unfold over the days and weeks following the primary damage. Unfortunately, much of the new work in molecular neuroscience is published in arcane and often obscure journals read only by specialists. New journals appear almost daily, becoming more and more reductionistic, cellular and molecular in their approaches, with little or no discussion of the functional and holistic consequences of the findings and their implications for the treatment of brain-damaged individuals.

Neuroscientists themselves often disparage translational research in which the end result is the development of a therapy or treatment for a disease condition. In the United States, hardly any graduate students in neuroscience programs ever get to see a patient to understand better the complexities faced by

individuals with TBI or other CNS disorders, as they try to adapt to their circumstances. Many rehabilitation clinicians find it difficult to communicate with their basic science colleagues because their terminology, methods, and perspectives on what is important are so different, and because basic researchers are often dismissive of clinical practice as having no 'scientific' base and being unconcerned with 'mechanism'—where mechanism means finding a genetic or at least a molecular basis for the condition without regard to psychological implications or outcomes.

The Academy of Multidisciplinary Neurotraumatology was founded in recognition of the growing disparity of viewpoints between clinicians and basic researchers in the field of traumatic brain injury. AMN exists to bring together medical, neuropsychological and basic neuroscience investigators in a collegial environment in which participants can present and discuss their approaches to improving the lives of people with brain injuries. Each year, the two-and-a-half-day meetings focus on a theme. For 2006, this theme was "Bridging the Gap Between Brain and Mind," organized and hosted in Copenhagen, Denmark by Drs. Anne-Lise Christensen and Frank Humle of the University of Copenhagen and the Center for the Rehabilitation of Brain Injury. The Center, the first of its kind in Europe, was founded over 21 years ago with Dr. Christensen as its first director.

The Copenhagen Congress was ambitious in its attempts to address one of the most complex philosophical and practical issues in the field—bridging the gap between mechanistic brain processes and the psychological manifestations of these processes in intact and brain-damaged people. Clinical practitioners in neurorehabilitation, medical specialists in neurology, neurosurgery and pediatrics, and students from neurosurgery, neurology and psychiatry came together to discuss a number of sub-themes related to the overall program of what can be done to measure and improve functional outcomes after traumatic brain and spinal cord injuries across the developmental spectrum. Several historical presentations traced the development of ideas across the last few centuries and showed that the growing contemporary recognition of more holistic approaches to rehabilitation had been developed early

in the 20th century by advanced thinkers such as Alexander Luria, Kurt Goldstein and others who pioneered many of the concepts almost taken for granted in neurorehabilitation training and research today. Discussions included how to define "functional outcomes"; dealing with coma and "consciousness"; definitions of consciousness in its various manifestations; and the problems of treating patients as unique individuals in the context of their history, learning experiences, cultural influences and stage of maturational and personal development.

There were also sessions on what is currently known in basic research about early 'physiologic' intervention in the treatment of TBI-that is, in the first few hours of the injury cascade-and how such early interventions could theoretically impact later rehabilitation and physical and cognitive therapy. In other words, can neuroprotection and neuroregeneration therapies, by preserving nervous tissue in the early stages of the injury cascade, provide for a better matrix to enhance developmental, cognitive and social rehabilitation processes in the later stages of the patient's recovery? Another important question that was discussed was whether there is sufficient evidence to show that early alterations in molecular and physiological changes in damaged brain tissue can be

'predictive' of the extent of later deficits or improvements in cognitive and social functions.

The meeting ended with a general discussion of goals and strategies for future basic research and clinical practice in neurotrauma and neurorehabilitation. Participants agreed that a new, less mechanistic, more holistic, patient-oriented perspective is needed--one that recognizes that many higher cognitive processes have a social basis and that complex cognitive, motor and sensory function can no longer be seen as simply mediated by specific genes, receptors or highly localized brain regions. If acute-stage treatments and later-stage cognitive rehabilitation strategies are to realize their full potential and if molecular neuroscience is to contribute to our understanding of how and under what conditions rehabilitation works, the participants agreed that a better dialog between basic researchers in molecular neuroscience and clinical rehabilitation specialists will be essential. These collegial discussions at AMN meetings are only the first step in the development of more effective treatments, but they are an important and critical step in promoting cross-disciplinary teaching, research and progress in finding a "cure" for TBI and its related disorders.