International School of Neurology

6th International Summer School of Neurology

3-7 July 2011

ANA Hotels / Eforie Nord / Romania

Final Program and Abstract Book

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Language

The official language is English. Simultaneous translation will not be provided.

Changes in program

The organizers cannot assume liability for any changes in the program due to external or unforeseen circumstances.

Name Badges

Participants are kindly requested to wear their name badge at all times. The badge constiutes admission to the scientific sessions and gala dinners.

Final Program & Abstract Book

The participants documents include the program and abstract book which will be handed out together with the congress bag at the registration counter.

Coffee Breaks

Coffee, tea and mineral water are served morning and afternoon coffee breaks free of charge to all registered participants.

Mobile Phones

Participants are kindly requested to keep their mobile phones turned off while attending the scientific sessions in the meeting rooms.

Currency

The official Romanian currency is RON.

Electricity

Electrical current is 220 volts, 50Hz. Two-prong plugs are standard.

Time

The time in Romania is
Eastern European Time (GMT+2).

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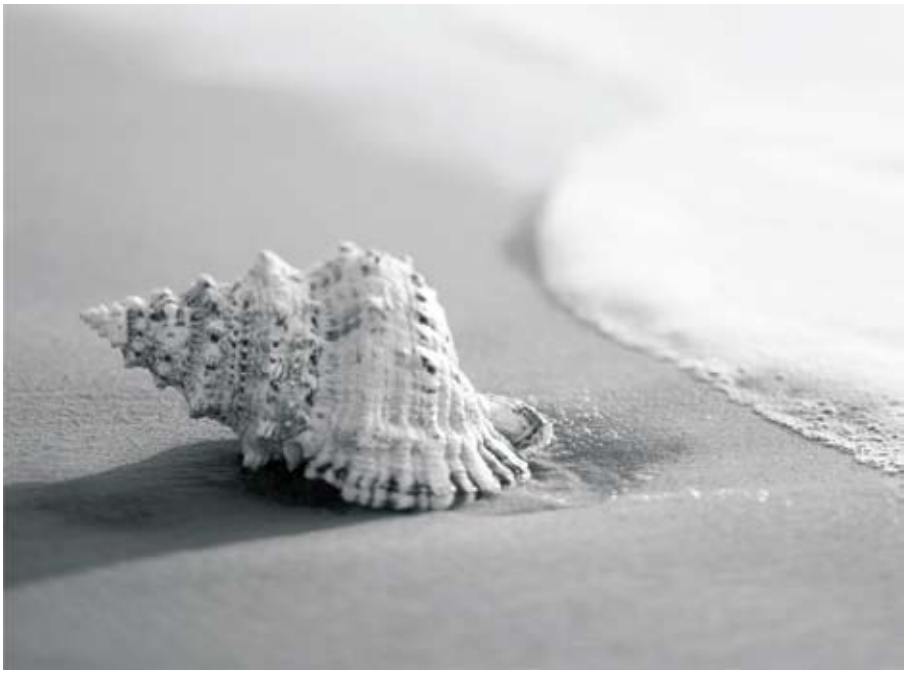


SCIENTIFIC PROGAM

Sunday, July 3rd 2011

17:00 - 20:00	EFNS Scientist Panel on Neurotraumatology / Business Meeting Meeting open to panel members only

Monday, July 4th 2011

08:35 - 08:50	Welcome address: Dafin F. Mureşanu (Romania), Natan Bornstein (Israel), L. M. Popescu (Romania), Ovidiu Băjenaru (Romania)	

Neurorehabilitation
Coordinators: Volker Hömberg (Germany), Heinrich Binder (Austria)

08:50 – 09:30	Hari Shanker Sharma (Sweden)	Honorary lecture: Blood–central nervous system barriers: the gateway to neurodegeneration, neuroprotection and neuroregeneration. New role of neurotrophic factors
09:30 – 10:10	Volker Hömberg (Germany)	The bio–psycho–social paradigm of disease understanding and ICF
10:10 – 10:30	Coffee Break	
10:30 – 11:10	Volker Hömberg (Germany)	Goal setting and monitoring of the neurorehabilitation process
11:10 – 11:50	Volker Hömberg (Germany)	The concept of evidence based medicine and design for clinical studies
11:50 – 12:10	Coffee Break	
12:10 – 12:50	Heinrich Binder (Austria)	Rehabilitation in spinal cord injury
12:50 – 13:30	Leopold Saltuari (Austria)	Management of spasticity
13:30 – 14:00	Volker Hömberg (Germany)	Neurological examination skills
14:00	Lunch	

Monday, July 4th 2011

TBI
Coordinators: Pieter Vos (The Netherlands), A.V. Ciurea (Romania)

18:00 – 18:40	Pieter Vos (The Netherlands)	Current issues in mild, moderate and severe TBI. The importance of clinical assessment and imaging techniques.
18:40 – 19:20	Anton Alvarez (Spain)	Multimodal drugs in traumatic brain injury
19:20 – 20:00	A.V. Ciurea (Romania)	Early neurotrophic factors treatment in traumatic brain injury – a large retrospective, national, multi-centric cohort study
20:30	Dinner	

Tuesday, July 5th 2011

Stroke
Coordinators: Natan Bornstein (Israel), Dafin F. Mureşanu (Romania)

09:00 - 09:40	Natan Bornstein (Israel)	The heart's effect on the brain
09:40 – 10:20	Natan Bornstein (Israel)	Secondary stroke prevention
10:20 – 10:40	Coffee Break	
10:40 – 11:20	Natan Bornstein (Israel)	Paten Foramen Ovale (PFO) – To close or not to close
11:20 – 12:00	Natan Bornstein (Israel)	Management of symptomatic carotid stenosis CEA vs. Stent
12:00 – 12:20	Coffee Break	
12:20 – 13:00	Dafin F. Mureşanu (Romania)	An integrated approach in brain protection and recovery in stroke therapy
13:00 – 13:40	László Csiba (Hungary)	Management of acute ischemic stroke
14:00	Lunch	
18:00 – 20:00	Case presentations	
20:30	Dinner	

Wednesday, July 6th 2011

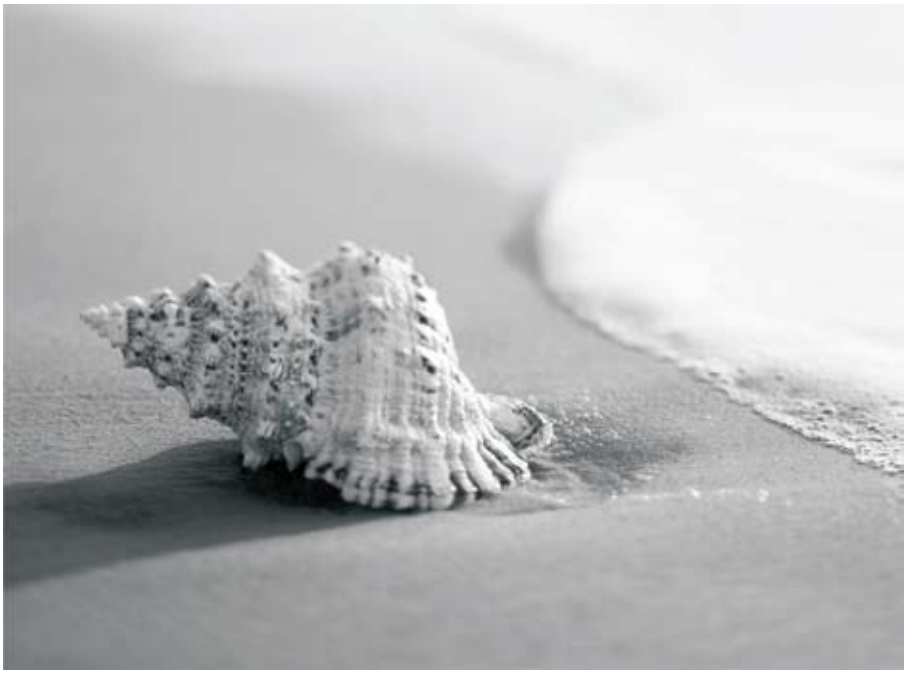
Movement disorders
Coordinators: Amos Korczyn (Israel), Vladimir Kostic (Serbia)

09:00 - 09:40	Amos Korczyn (Israel)	Should we redefine Parkinson's disease?
09:40 – 10:20	Ovidiu Băjenaru (Romania)	The management of patients with advanced Parkinson's disease
10:20 – 10:40	Coffee Break	
10:40 – 11:20	Bogdan O. Popescu (Romania)	Deep brain stimulation in Parkinson's disease - when and what for?
11:20 – 12:00	Anna Czlonkowska (Poland)	Wilson's disease – rare but important metabolic disorder
12:00 – 12:20	Coffee Break	
12:20 – 13:00	Vladimir Kostic (Serbia)	Depression associated with Parkinson's disease?
13:00 – 13:40	Johannes C. Vester (Germany)	Hypothesis testing and statistical significance: the basic concept of a statistical test
14:00	Lunch	
18:00 – 18:40	Johannes C. Vester (Germany)	P-values, effect sizes and confidence intervals: definition and handling in superiority and non-inferiority trials
18:40 – 19:20	Johannes C. Vester (Germany)	Definition and interpretation of common effect sizes for binary, ordinal and continuous data: rate difference, odds ratio, mean, median, Mann-Whitney
19:20 – 20:00	Johannes C. Vester (Germany)	Proper interpretation of study results: examples from recent TBI trials
20:30	Dinner	

Thursday, July 7th 2011

Coordinators: Ovidiu Băjenaru (Romania), Cristian D. Popescu (Romania)

09:00 - 09:10	Dafin F. Mureşanu (Romania) Ovidiu Băjenaru (Romania)	Introduction
09:10 – 09:30	Honorary lecture Ralph Henry (USA)	Treating drug abuse with neuroprotective antibody medications
09:30 – 10:00	Dafin F. Mureşanu (Romania)	Clinical manifestations and differential diagnosis in MS
10:00 – 10:30	Ovidiu Băjenaru (Romania)	Diagnosis and follow-up criteria for MS patients - an update
10:30 – 11:00	Coffee Break	
11:00 – 11:30	Ovidiu Băjenaru (Romania)	Imunomodulatory treatment for MS in 2011
11:30 – 12:00	Ron Milo (Israel)	Balancing risk-benefit ratio in MS therapies
12:00 – 12:30	Mihaela Simu (Romania)	Defining the urgency to treat. Long term benefits of early treatment
12:30 – 14:00	Lunch	
14:00 – 14:30	Cristina Tiu (Romania)	Assessing needs of MS patients. Study cases.
14:30 – 15:00	Cristina Panea (Romania)	Cognitive dysfunction and long-term implications in MS
15:00 – 15:30	Cristian D. Popescu (Romania)	Physical dysfunction and neuro-rehabilitation in multiple sclerosis
15:30 – 16:00	Coffee Break	
16:00 – 17:00	Final examination	
20:30	Dinner	



ABSTRACTS

MULTIMODAL TREATMENT IN TRAUMATIC BRAIN INJURY

ANTON ALVAREZ

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Traumatic brain injury (TBI) is an important cause of morbidity and disability in young people. Chronic sequels, including physical, cognitive and behavioural alterations, are present in approximately 25% of the hospitalised TBI survivors. Since neuronal damage caused by TBI is at the basis of all these derangements, the main objectives of pharmacological interventions in TBI are to reduce neurodegeneration and to promote neurorestorative mechanisms. Apart of the pure traumatic injury, there are several pathogenic mechanisms contributing to produce and/or to aggravate brain damage in TBI patients, like excitotoxicity, inflammation, amyloid deposition and alterations of trophic factors. Thus, therapeutic strategies for TBI must be oriented to modify these pathogenic processes, and to improve neurorestoration and cognitive deficits.
Cognitive impairment and electrophysiological abnormalities are constant findings in TBI. Persistent cognitive difficulties are very common and related to severity in post-acute TBI patients. Deficits of neuropsychological functioning detected in these patients include problems with attention-arousal and reduced performance on acquisition and memory, psychomotor speed, and executive functions. Some of the quantitative electroencephalographic (qEEG) alterations reported in TBI patients correlate with trauma severity, neuropsychological test scores and outcome measures.
In two clinical studies we evaluated the effects of neurotrophic factors, a multimodal drug with neurotrophic-like pleiotropic activity, on cognitive performance, qEEG parameters and clinical outcome in postacute moderate-severe TBI patients. The neurotrophic factors improved cognitive performance and reduced qEEG slowing, a correlate of cognitive impairment in these patients. Positive changes in attention, mental processing speed and executive functions were observed after treatment. These results support the po-tential utility of multimodal drugs to improve functional recovery in TBI patients.

THE MANAGEMENT OF PATIENTS WITH ADVANCED PARKINSON'S DISEASE

OVIDIU BĂJENARU

University Hospital of Emergency Bucharest, Department of Neurology, „Carol Davila" University of Medicine and Pharmacy, Bucharest,

Romania

Patients with clinical advanced Parkinson's disease experience not only worsening of motor behaviour related to the disease itself, but also motor complications due to specific dopaminergic treatment (fluctuations and dyskinesia), motor manifestations due to non-dopaminergic lesions in the central nervous system (mainly gait and balance disturbances, hypophonia), non-motor manifestations due to both dopaminergic and non-dopaminergic lesions of the disease itself and due to some adverse reactions of the treatment (non-motor fluctuations, impulse control disorders, dopaminergic dysregulation syndrome and punding).
The management of the patients in this stage is difficult and is based on understanding the individual clinical manifestations in relation to the pathophysiology of the disease and the synaptic and neuroplastic changes induced by the specific drugs coupled with a continous neurodegenerative process. All these aspects will be discussed and also the practical possibilities we have nowadays to attenuate and to prevent these complex manifestations of the disease, with the main target to improve as much as possible the daily living activity and quality of life of these patients, as long as we are still far to an etiologic curative treatment.

IMUNOMODULATORY TREATMENT FOR MS IN 2011

Long-term sustained immunomodulatory treatment of patients with multiple sclerosis, though is not curative, has changed significantly the evolution and quality of life of most MS patients, in particular those with relapsing-remitting forms (RRMS) and less but still significant in many patients with secondary progressive forms (SPMS), whose disability at the initiation of the treatment is not very severe and the patients are still autonomous. Based on the clinical international experience of the last 20 years, the first line of treatment for these patients, including those with clinical isolated syndrome (CIS) is represented by the three pharmaceutical forms of interpheron-beta and glatiramer acetate which constant use for long term has proven a significant disease modifying effect in most of the patients and a possible, at least indirect neuroprotective effect. A significant more efficient treatment is based on monoclonal antibodies (the only registered representative for clinical practice of this class in this moment is natalizumab) which efficiency is even greater in patients with more active forms of RRMS, but also its use is limited by the risk of some rare but severe complications as PML; for these reason new indications for the evaluation of the PML risk have issued during the last year which could improve significantly the safety of this treatment in most of the patients who need it. Immunosupressive drugs represent today the third line of treatment in these patients due to their important efficacy but problematic safety profile. A new revolutionary step in the treatment of RRMS is represented by the new oral immunomodulatory drugs which have proven their clinical efficacy and beneficial efficacy / risk profile in large phase III international, multicentric, controlled, double-blind clinical trials; the first such drugs are expected to become available in clinical practice in the second part of this year, and it seems that for the moment their positioning will be also in the second line of choice, also due to some aspects of their safety profile. Other drugs which are still in advanced phase III clinical trials will also be shortly discussed.

DIAGNOSIS AND FOLLOW-UP CRITERIA FOR MS PATIENTS - AN UPDATE

Diagnosis of multiple sclerosis is a challenging medical approach which evolution was very dynamic during the last two decades. In 2000 a prestigious international group of experts led by Professor Ian McDonald have published the new criteria for the diagnosis and follow-up of the patients with multiple sclerosis. The core of these "McDonald Criteria" is based on the clinical features of the disease in relation to the very sensitive brain and spinal MRI changes, and completed by immunologic changes in the CSF and electrophysiologic changes in the visual pathways. Since 2000 these criteria have been revised twice - in 2005 and 2010, in accordance with the international experience and the new evolutions both in the clinical diagnosis (the introduction of the clinical isolated syndrome as a diagnosis entity) and MRI imagistic field. The definitions of terms and the significance for the clinical practice of these new revised McDonald criteria in 2010 will be discussed.

REHABILITATION IN SPINAL CORD INJURY

HEINRICH BINDER

Landsteiner Institute for Neurorehabilitation and space medicine

Vienna, Austria

Type and intensity of rehabilitation after SCI depends on the time interval for injury, comorbidity, premorbid health and fitness and not at least on availability of ressources. Rehabilitation measures are intended both to repair or to restore the damage of the spinal cord, to minimize damage-related symptoms and to guarantee best reachable quality of life. State of the art in terms of repair are still neurophysiological methods of training and FES. But increasingly important are different pharmacological and electrical methods getting direct influence on spinal cord. Surgical interventions at the spinal cord itself are justified only in exceptional cases. Relief of various ailments, especially spasticity and pain is possible both by neurophysiological and pharmacological training, electrical stimulation and, ultimately, neurosurgical and orthopedic interventions. To accomplish detailed, careful and comprehensive coverage in response to various accompanying complications is essential from the outset. This is required for customized therapy, but also to assist the further life planning.

NATAN BORNSTEIN

Tel-Aviv University Sackler Faculty of Medicine, Israel

Vice President of the World Stroke Organization (WSO)

Head of Stroke Unit at the Tel-Aviv Medical Center

Chairman of the Israeli Neurological Association

MANAGEMENT OF SYMPTOMATIC CAROTID STENOSIS CEA VS. STENT

Symptomatic severe carotid stenosis (>70%) carries a high risk of subsequent stroke of about ~ 30% over 2 years.
Carotid endarterectomy (CEA) was proved to reduce the risk of stroke significantly, with Relative Risk Reduction (RRR) = 65% and Number Needed to Treat (NNT) = 6 if performed safely (perioperative
S&D =5.8%) and should be executed within 2 weeks of TIA or minor stroke (NASCET & ECST).

For carotid stenting to replace CEA we need to know the comparative safety, durability and efficacy of the procedure. Only a few randomized, controlled studies comparing CEA and stenting were conducted (CAVATAS, SAPPHIRE, EVA-3 and SPACE) with inconclusive results. There are still several ongoing studies (CREST in the USA and ICSS in Europe and Australia). Until more data will be available carotid stenting should be performed only in a selected group of patients with specific indications like: re-stenosis of the CEA, post neck radiation, inaccessible lesion for CEA and contra-indications for CEA.

PATEN FORAMEN OVALE (PFO) – TO CLOSE OR NOT TO CLOSE

Several studies suggest a relationship between PFO and stroke. However, data from the French study and PICSS demonstrated no risk increase of subsequent stroke or death in patients with PFO compared to those without (RR=0.95, 95% CI 0.62 to 1.44). The French PFO/ASA study found a significant risk of recurrent stroke in patients with cryptogenic stroke and an association between PFO and Atrial Septal Aneurysm (ASA) when treated medically. In contrast, PICSS found no association between PFO+ASA with stroke and death.
Regarding therapy, in the meta-analysis among patients with cryptogenic stroke and PFO+ASA, there was no significant difference in stroke or death rate in warfarin-treated patients relative to aspirin-treated patients and the confidence intervals were unable to rule out a benefit of one drug over the other (annual rate=4.7 vs. 8.9, RR=0.53, CI 0.18 to 1.58). However, a subgroup of young patients (> 55 y/o) may benefit from percutaneous closure of PFO, but its efficacy and safety has not yet been assessed by large randomized trials. Currently, closure of PFO is recommended only in a selected group of patients, especially those who are psychologically prepared to close it.

SECONDARY STROKE PREVENTION

1. Secondary stroke prevention in non cardioembolic stroke

Patients with TIA or ischemic stroke carry a risk of recurrent stroke between 5 and 20% per year. In patients with TIA or ischemic stroke of noncardiac origin antiplatelet drugs are able to decrease the risk of stroke by 11-15% and the risk of stroke, MI and vascular death by 15-22%. Aspirin is the most widely used drug. It is affordable and effective. Low doses of 50-325 mg aspirin are as effective as high doses and cause less gastrointestinal side effects. Severe bleeding complications are dose-dependent. The combination of aspirin with slow release dipyridamole is superior to aspirin alone for stroke prevention (ESPS-2 and ESPRIT). Clopidgrel is superior to aspirin in patients at high risk of recurrence (CAPRIE). The combination of aspirin plus clopidogrel is not more effective than clopidogrel alone but carries a higher bleeding risk (MATCH and CHARISMA). None of the antiplatelet agents is able to significantly reduce mortality.

2. Secondary prevention of cardioembolic stroke

Atrial fibrillation (AF) is the most common cause of cardioembolism. The main line of actions of stroke prevention in AF are antithrombotics, mainly anticoagulant (cumadin) or antiplatelet, antiarrhythmics (for rate control and sinus rhythm restore), mechanical means (for occlusion of the left atrial appendage or protection of the internal carotid artery from emboli). Classic pharmacological prevention with warfarin may be overcome by direct thrombin inhibitors like ximelagatran and others. Recent achievements on endovascular procedures deploying carotid artery implants provide an opportunity to divert emboli to nonhazardous locations, whereas cardiac devices can seal left atrial appendages and avoid risk of clot migration in the blood stream. In the next decade, the challenge will be to understand competitiveness between old and new drugs with endovascular implants.

References

Diener H.C, Primary and secondary stroke prevention with antiplatelet drugs. Curr Pharm Des. 2006;12(10):1293-7

Corea F et.al, Secondary prevention of cardioembolic stroke: oldest and newest promises. Clin Exp Hypertens. 2006 Apr-May;28(3-4):413-20.

THE HEART'S EFFECT ON THE BRAIN

Approximately 20%-25% of all ischemic strokes are attributed to emboli from the heart cavities namely, cardioembolic strokes. cardioembolic stroke.

Atrial Fibrillation

Atrial fibrillation is the most frequently found arrhythmia with a prevalence of 0.4 – 0.7% in the general population. The prevalence of AF is 0.5% in the group aged 50 to 59 years, it rises to approximately 6% in population older than 65 years, and up to 10% in people older than 75 years.
About 20% of all ischemic strokes are attributed to cardioembolism, and AF related stroke comprises approximately 45% of all cardioembolic strokes.

Risk for stroke.

Atrial fibrillation is a well-established independent risk factor for stroke, leading to 5.6-fold increase of risk according to data from Framingham study. About 16% to 25% of ischemic strokes are associated with AF, the percentage being higher in patients with large supratentorial infarcts (59%).
The randomized clinical trials of AF confirmed an overall annual stroke incidence of about 5% in the general population of patients with AF not treated with anticoagulation. Risk for recurrent stroke in AF patients without antithrombotic treatment is 12% per year, which is strikingly high comparing with rate of 5% annually after the first year for AF-free patients after first stroke or TIA. An ischemic stroke will occur during lifetime of about 35% non-anticoagulated AF patients.
The attributable risk of stroke from AF is rising from 1.5% in 50-59-year-old age group to 15% in the 70s-old age group. Atrial fibrillation is present in over one third of individuals aged 80-89 years with acute ischemic stroke and is considered to be a leading cause of stroke in the elderly.
Increased stroke severity, disability and mortality in AF patients have been documented.

Recommendations.

According to Class I evidence from previous trials, adjusted-dose warfarin reduces risk of stroke in AF patients by about 70%. Though aspirin has some efficacy in reducing stroke risk in AF patients for about 20%, it is clearly less efficacious than warfarin. For patients with AF aged 75 or younger who are at high risk for stroke and are considered to be safe candidates for anticoagulation, treatment with warfarin is recommended with target INR of 2.5 (range 2.0-3.0). Warfarin dose in elderly AF patients (more than 75 years) is optional, since warfarin may be used with lower INR target of 2.0 (target range 1.6 to 2.5) in order to decrease risk of hemorrhage; however, there are experts who disregard age and accept higher INR target of 2.5 (target range 2.0-3.0), considering it appropriate and safe. For patients with AF considered to be unable to receive an-

ticoagulation therapy or to be at low risk of stroke, aspirin 325 mg/day is recommended. In a group of AF patients with moderate risk of stroke, decision between warfarin and aspirin should be made considering individual patient's bleeding risk and preferences. Decision-analysis models have been developed and can be used in making clinical decision on anticoagulation treatment.

Implementation of treatment in clinical practice. Although benefit from warfarin treatment in AF patients is clear, not all appropriate candidates for anticoagulation actually receive this treatment. Anticoagulation is underused in high-risk elderly patients, especially women, often is used in low risk patients, and frequently used in an inadequate dosage, with a peak of INR in a zone lower than recommended (2.0-2.4), indicating that "the doctors were playing safe". Both physicians and patients influence this problem, risk-versus-benefit evaluation of anticoagulation use being the essential physician-related factor.
Recently new oral direct thrombin inhibitor, Dabigatran., was proven to be similarly effective in reducing embolic events and strokes in NVAF patients with lower rate of major hemorrhage [NEJM 2009; 361:1139-51]. Several other anti-factor Xa drugs are in phase III clinical trials and the results are awaited in the near future. These newly developed drugs might subsitude warfarin as the treatment for stroke prevention in patients with NVAF.

EARLY NEUROTROPHIC FACTORS TREATMENT IN TRAUMATIC BRAIN INJURY – A LARGE RETROSPECTIVE, NATIONAL, MULTI-CENTRIC COHORT STUDY

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Abstract

In this study were included 7769 adult patients with traumatic brain injury (TBI), admitted in 10 departments of Neurosurgery in Romania, between 2005 -2010. Patients

were managed according to the guidelines, part of them (1618 patients) receiving neurotrophic factors add-on treatment, started in the first 48 hours after TBI. Exclusion criteria were: life-threatening multiple trauma, severe other associated conditions, epilepsy, concomitant stroke, pregnancy or lactation or other concomitant medication with neuroprotective or nootropic effects. At baseline, all patients were evaluated according to diagnosis guidelines, fol-lowing a unique protocol in all 10 centers. From the medical records, general data were collected at admission (gender, age, etiology, medical history, concomitant medica-tion, Glasgow Coma Scale score, clinical neurological examination, CT result, whether a surgical intervention was performed) and at days 10 and 30 post-TBI patients were ranked on Glasgow Outcome Scale (GOS) and Modified Rankin Disability Score (RDS). The safety assessments included adverse events, vital signs, laboratory tests and clini-cal examinations, extracted from the patient medical records. The primary objective of this study was to test the outcome in neurotrophic factor treated patients compared to the control group, at 10 and 30 days post-TBI, and the secondary objective to evaluate the safety of multimodal drugs for TBI patients.

MANAGEMENT OF ACUTE ISCHEMIC STROKE

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The re-eopening of occluded vessels improves clinical outcome in acute ischemic stroke. In iv. lysis ca. 50% of recanalisation occurs in the first hour while further re-opening (ca. 20%) might happen in the next five hours period. Re-canalization is associated with significant increase of good functional outcome and a similar reduction in the letal outcome.

The beneficial effect of early recanalisation of cerebral blood flow on stroke outcome may be negatively influenced by other factors such as extent of irreversible brain injury before re-canalization, excessive glucose level at the time of reperfusion, and blood pressure changes during thrombolysis.

The larger the clot volume the smaller is the recanalisation rate . Patients with lower amount of clot were more likely to have an independent functional outcome ($P < 0.001$). In contrast, mortality increased in patients with higher amount of clot. Furthermore, these patients were more likely to have hemorrhagic infarct transformation ($P < 0.003$) and parenchymal hematoma ($P < 0.008$) on follow-up scans. Vascular re-canalization rates vary depending on thrombus location.

Only 10% of carotid occlusions and one third of MCA occlusions could be reopened via iv. lysis. Intra-arterial thrombolysis has higher early re-canalization rate (60%) but the highest re-canalization could be achieved with mechanical devices (80%). The rate of symptomatic intracranial hemorrhages with ia. lysis is 10% vs. 2% in the placebo group. The rate of favorable outcome (mRS) is also higher than that in placebo group (40% vs. 25%). IA tPA may therefore be an option in selected patients with large vessel occlusions and limited response to IV tPA. The re-canalization rates is probably higher with IA thrombolysis than that with iv. approach, but, the clinical benefit may be reduced by the time.With combined IV and IA thrombolysis (0.6mg of IV tPA followed by IA t PA) partial or complete re-canalization was achieved in more than 60% of patients after IA treatment but only a modest trend for good outcome could be seen in clinical outcomes. Mechanical therapies are more effective in removing large thrombi in proximal vessels and associated with lower hemorrhage risk. Disadvantages are:endothelial damage and bleeding.

In a systematic review re-canalization was achieved in 70% and bleeding occurred in 20%. An interesting approach is the ultrasound enhanced thrombolysis with 2MHz ultrasound. Complete re-canalization or dramatic clinical recovery within 2h after the administration of tPA bolus occurred in 49% in the ultrasound group as compared to 30% in the control. Ultrasound enhanced lysis+microbubble combination might further increase the rate of recanalisation.

WILSON'S DISEASE – RARE BUT IMPORTANT METABOLIC DISORDER

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Wilson's disease (WD) (OMIM #277900), i.e. hepatolenticular degeneration, is a rare failure of copper metabolism. The worldwide incidence of Wilson's disease is estimated to be 1 per 30,000 individuals. Higher prevalence is in China and Japan (1:10000), in Sardinia (1:7000), in Iceland and in the Canary Islands (1:2600).

ETIOPATHOGENESIS

Disease occurrence is caused by functional disruption of the copper-transporting protein adenosine triphosphatase 7B (ATP-ase 7B). ATP-ase 7B is a membrane bound form of the enzyme and is expressed predominantly in hepatocytes. Physiological role of ATP-ase 7B is cellular copper transport. The protein structural changes and decreased enzymatic activity are connected with failure of copper transport, inhibition of copper incorporation into apocaeruloplasmin in hepatocytes and disturbance of copper excretion into bile by intestinal tract. This results in toxic accumulation of the copper in the liver. The overload of hepatocytes with copper results in cell death with release of copper into the blood. Non-ceruloplasmin bound copper ("serum free copper") is highly toxic and easily accumulates in various organs including brain, kidneys, cornea.

GENETICS

WDis an inherited disorder with autosomal recessive pattern of inheritance. Responsible for the disease are mutations in ATP7B gene encodes a ATP-ase 7B. The ATP7B gene consists of 21 exons and is located on the long arm of chromosome 13 (13q14.1) At present, approximately 500 mutations of the gene ATP7B have been identified. Most of them are point mutations (insertions, deletions, missense mutations), in some patients WND caused chromosome mutations (duplications, insertions, deletions). Individual mutations occur with different prevalence in different parts of the worldDue to high diversity of mutations in gene ATP7B, and also high phenotypic diversity in WND, trials were undertaken to analyze correlation between genotype and phenotype. The influence of genotype on intensification of copper metabolism, the age when first symptoms appear and ,clinical presentation of the disease, have been analyzed.
In a comparative study of WD phenotype in people who had p.H1069Q mutation (in homo or heterozygotic type) and also in patients having other mutations in ATP7B gene, it has been established that p.H1069Q mutation (both in homozygotic and compound heterozygotic) is connected with significantly less intensified disorder of copper metabolism, and also with later appearance of first clinical WND symptoms in comparison with other mutations. Some studies show that in p.H1069Q/p.H1069Q homozygote, neurological form of WND appears more often.
Results of analysis of genotype-phenotype correlations other than p.H1069Q mutations are unclear. Because of WD rarity and low incidence of mutations in different populations (seldom in homozygous type), it is difficult to conduct analysis of geno-

type-phenotype.
Analysis of Polish WD patients show that „severe" mutation (deletions, insertions, missense mutations) caused much intensive copper metabolism failure and also earlier onset of disease symptoms. The observed effect depended on gene dose containing „severe" mutation.
In spite of observed genotype-phenotype correlations, high variability of phenotype was found in WD persons who had the same mutations. Presumably, the phenotype heterogeneity variability in WD is largely caused by effect of other modified factors, among which are copper in diet, activity of antyoxidative mechanisms and activity of other proteins in copper metabolism.

CLINICAL PRESENTATION

The clinical presentation of Wilson's disease is very variable. First symptoms of the disorder usually appear between the ages of 10 and 40. However, some cases of hepatic symptoms occurrence have been observed in 3 and 5-year-old children, and neurological symptoms in people who are over 60. Most hepatic symptoms occur earlier in the first and second decade of life, neurological or psychiatric signs later. In approximately 40 % of patients, WND manifests as liver disease, in 40% of individuals occurs neurologic presentation and in 15 % patients initial symptoms are psychiatric. In 5 % renal abnormalities. High variability of first symptoms has been noticed in the family.
Hepatic symptoms can be present with hepatitis, chronic cirrhosis, liver failure. In cases where hepatitis is dominant, there are no characteristic clinical signs that allow to distinguish WND from other hepatitis.
Neurological manifestations of WD typically present later than the liver disease. Most patients who initially present neurological features already have hepatic impairment without clinical manifestations (mostly compensated liver cirrhosis). Neurological symptoms are very variable, usually from basal ganglia, brain stem and cerebellum. The most frequent are: speech changes (one of the initial neurological feature), tremor (resting, intention, postural, fine tremor, wing-beating tremor), disturbance of movement coordination, gait difficulties (parkinsonian gait, wide- based, unsteady gait, dystonia (facial dystonia, limbs dystonia or axial dystonia), hypomimia, dysphagia. Neurological symptoms of WND are very difficult to classify and define their intensification. The rating scale was compiled for practical reasons to determine neurological state in WD patients (Unified Wilson's disease Rating Scale; Członkowska A et al. Neurol Neurochirur Pol 2007; 41, 1: 1:12).
Psychiatric signs mostly include emotional lability (sudden attack of irritation, frequent crying, depression), concentration and memory problems, more rarely severe depression, mania or psychosis.
In 50 % patients with hepatic feature and almost always with neurological and psychiatric symptoms is observed golden-brownish Kayser-Fleischer ring, which is caused

because of copper deposition in cornea.

DIAGNOSTICS

UntreatedWD usually leads to death within several years from the onset of symptoms. Early diagnosis and WD treatment in most cases can prevent organs damage caused by copper accumulation.

Due to high diversity of disease symptoms, diagnosis should be supported by laboratory results. The main examination is to measure serum ceruloplasmin concentration (decreased) and copper in serum (decreased), and determine 24-hour urinary copper excretion (increased). More confident diagnostic test is radiocopper study, which lets evaluate the ability to incorporate copper into ceruloplasmin. Liver biopsy with measure of hepatic copper concentration (increased) is useful especially in cases with predominant liver injury. However, due to invasiveness of this examination, it is rarely performed. After WD diagnosis of index case in the family screening, it is necessary to carry out examinations among patient's siblings even if they are older and have no signs indicating WD. It isn't necessary to examine the patient's parents if healthy. It is also unnecessary to examine the patient's children because the risk of disease is small. However , nowadays due to wide accessibility to biochemical study, such examinations are often performed. It can be difficult to estimate copper metabolism failure in children and heterozygotic persons. Borderline results of copper metabolism require repeating examinations after a few years. At present, genetic testing whose aim is to identify mutation in gene ATP7B, is essential in WD diagnosis. WD is inherited in autosomal recessive way and its symptoms are present in persons with pathogenic mutation in both alleles of ATP7B gene. The presence of mutation in both alleles of gene decide about WD diagnosing. However, its absence in one or both alleles ATP7B doesn't exclude the diagnosis. Due to high diversity of mutations in this gene (so far 500 mutations have been recognized), usefulness of genetic testing in routine diagnosis is relatively small because of its high cost, and long awaiting for the results. However, in population where predominancy of 1 or a few mutations in gene ATP7B is observed, it is possible to elaborate cheaper and faster genetic screening which are very useful in diagnostics. Identification of mutation in index case patient facilitate preparation of genetic testing in siblings, because then, it is focused on concrete mutations. It is important, because in presymptomatic form of disease, results of biochemical studies are difficult to interpret. In our centre we prepare radiocopper study in uncertain case. Prenatal diagnostics is not prepared because of the effective pharmacological treatment, so there aren't any indications for abortion.

TREATMENT

The aim of treatment in WD is to eliminate an excess of copper in the tissues to prevent its reaccumulation. At the present time in the treatment of Wilson's disease the

substances are used which assimilate copper and make pass urine (chelating copper: d-penicillamine,), triethylenetetramine) and compounds blocking absorbing copper from alimentary canal zinc salts (sulphate, acetate). Another medicine is tetrathiomolybdate (which has double mechanism of action), however not accessible yet. In most cases the treatment is effective. There is an improvement in liver functioning and regression of neurological symptoms. Clinical and laboratory improvement is usually obtained after a few months of treatment. However, not in all cases the improvement has been observed in patients. The most frequent causes of therapeutic failure is late diagnosis of the disease (when irreversible changes in brain or massive liver damage) and disorganized treatment (intermittent treatment or dose change). Some patients suffer from undesirable side-effects while taking particular medication. It has to mentioned that such medication function symptomatically. Discontinuance of treatment, even when full clinical cure was obtained may lead to rapid recurrence of liver or neurological symptoms often terminating in death.
In case, the disease is recognized in patient's healthy siblings, pharmacological treatment should be introduced immediately and continued for life. The chance of disease development is minimal.
The liver transplantation is reserved only for patients with fulminant liver failure or when liver function is deteriorating despite of proper pharmacological therapy.

The patients with diagnosed WD should be in care of clinic or neurologist or hepatologist if knowledgeable. Our experience shows that doctors who don't know the disease often encourage patients to stop treatment or dose change.

TREATING DRUG ABUSE WITH NEUROPROTECTIVE ANTIBODY MEDICATIONS

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Addiction to stimulant drugs like (+)-methamphetamine (METH) is a growing problem worldwide. For METH and many other stimulant drugs, there is no approved medication to treat patients seeking to overcome their drug dependency. A murine monoclonal antibody (mAb) with the ability to selectively bind METH has been shown to effectively bind circulating METH in rat models of METH abuse and to reduce METH levels in the brain. These antibodies act in the blood stream to bind METH and render it inactive as a reinforcing agent of addiction. High affinity and specificity for METH enable the anti-METH mAb to quickly antagonize the adverse effects of the toxin as soon as the mAb is administered. A chimeric mAb has been engineered for human clinical trials by fusing the murine METH-binding variable region to human constant domains. High affinity of the chimeric mAb for METH is maintained suggesting it will have similar neuroprotective effects in humans. The relatively long elimination half-life (2-4 weeks) of mAbs in humans along with selected structural features in the human constant domain of the chimeric mAbsuggest that chimeric anti-METH mAb can be used for long periods (months - years) in a chronic abuse setting, where recidivism is notoriously frequent.

THE BIO–PSYCHO–SOCIAL PARADIGM OF DISEASE UNDERSTANDING AND ICF

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In medicine today it is standard to describe diseases by the international classification of diseases (ICD). In acute medicine treatment and diagnoses of a particular disease determined in "nosological" terms is the most important point.

In contrast treatment approaches in rehabilitation medicine are centered around a different problem: in the foreground of interest of physicians and patients is the trade-off between actual abilities and disabilities of the patient :what is he/she able and/or willing to do. This is important to describe the extent to which the patient is able or will be able to regain abilities for the future .Therefore in the planning and monitoring of the patients course in rehabilitation we have to use descriptors for the actual abilities, functions and chances of participation for the patient.

To make

such a classification comparable on an international level and to find sort of a "micro language" to describe such differences in function, activities and participation on a societal level the world health organization (WHO) has suggested to use a standardized international classification of function (ICF).

The ICF differentiates between:

1. Body functions and structures
2. Activities
3. Participation

In the course of rehabilitation there is a transition from the acute medical treatment of body structures and body functions towards a more functional activity and participation related view. Within the ICF nine chapters of different activities can be differentiated from elementary mobility to major live areas as social, civic and religious actvities.
Within each domain (e.g. mobility) activities can be further sub defined into sub categories:

It will be demonstrated how ICF classification can be used to plan and monitor the rehabilitation process. Furthermore it is critically discussed in how far the micro language of ICF really reflects the patients ambitions and needs in the rehabilitation process.
It is important to note to that the ICF tries to reflect a bio- psycho- social model of disease rather than a pure biological understanding.

GOAL SETTING AND MONITORING OF THE NEUROREHABILITATION PROCESS

As mentioned earlier modules the International Classification of Functions (ICF) has become sort of a gold standard for the classification of functions , abilities and the societal level of participation of patients.Of course such a framework can be used to ease the definition of rehabilitation goals and the "language-like" properties of ICF may eventually be usable as descriptor terms for rehabilitation monitoring. In this module practical exercises will be done how to extract from the ICF a reasonable matrix for the definition of rehabilitation goals.

It is important in the process of rehabilitation that goals can be clearly and operationally defined in the interaction between physicians and the patient as well as relatives. An attempt will be made to give real live oriented examples for definition of goals for various domains within the ICF framework.

THE CONCEPT OF EVIDENCE BASED MEDICINE AND DESIGN FOR CLINICAL STUDIES

Historically the concept of evidence based medicine goes back to the French encyclopedists of the 18th century who tried to find a way to base decisions (political,religious,societal even medical) on a compilation of available knowledge marking the entry into what history has called the " age of reason". The first medical applications of such an approach will be reviewed. The different levels of evidence will be introduced and the general properties of randomized controlled trials as a key element of the modern concept of evidence based medicine will be demonstrated.

In addition a critical epistemiological discussion about the usefulness of this concept of evidence based medicine in neuro -rehabilitation in contrast to concepts of individualized medicine will be presented.The concept of randomized controlled trials (RCT) is introduced and the problem of interpretation of meta-analyses of multiple RCTs and the design of "Number of 1" studies as an alternative design will be discussed.

Exercises are made to design a usable RCT. Finally a systematic review of treatments based on evidence based medicine which today are widely used in neurologic rehabilitation is provided.

IS THERE A NEED TO REDEFINE PARKINSON'S DISEASE?

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Parkinson's disease (PD) has initially been described as a clinical syndrome, although the exact definition has changed over the past centuries. The inclusion of the pathological changes added another level of complexity, with Lewy bodies, synuclein deposits and neuronal loss in the substantia nigra being used alternatively. A third level of complexity was added with the recognition of genetic mutations resulting in parkinsonism, sometimes with and sometimes without Lewy body deposition, and the identification of frequent additional important pre-motor manifestations.
These different points of view on the definition of PD have important implications on the study of the etiology and even the therapy of PD.

DEPRESSION ASSOCIATED WITH PARKINSON'S DISEASE?

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Depression, frequently associated with Parkinson's disease (PD), is one of the most important variables determining the quality of life (QoL). It may be a reactive process to progressive and disabling symptoms, but several lines of evidence supported the concept that depression associated with PD is a part of the pathobiological substrate of the disease. Mayberg et al. (1990) reported a selective glucose hypometabolism in the inferior orbitofrontal cortex (OFC) in depressed PD (PD-Dep) patients as compared with both non-depressed PD (PD-NDep) and control subjects. Depression in PD has been associated with a specific loss of integrity of noradrenergic and monoaminergic projections of the limbic system, including the anterior cingulated cortex, the amygdala, and the ventral striatum. In general, existing data suggest dysfunction of basal ganglia circuits (BG), particularly those involving the inferior regions of the frontal lobe. In our recent study using MRI and VBM, PD-Dep patients experience a more severe white matter (WM) loss in the right frontal lobe, including the AC bundle and the inferior OF region, but the severity of depression significantly correlated only with the WM loss in the right inferior OF region.

In the longitudinal study, patients with PD and major depression had a significantly greater cognitive decline, deterioration in activities of daily living, and increased motor symptoms than patients with either minor or no depression (Starkstein et al., 1992). Herein, we will present our investigations (a) on the effect of depression on different cognitive parameters; (b) effects of depression on gait in PD patients and in particular to the freezing of gait.

BALANCING RISK-BENEFIT RATIO IN MULTIPLE SCLEROSIS THERAPIES

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Available first line immunomodulators for relapsing MS (interferons and glatiramer acetate) are only partially effective, and reduce disease activity by approximately 1/3. Their long term benefit and safety profile are well established and acceptable, however, treatment adherence and insufficient effect in a considerable proportion of active patients call for more effective and better tolerated therapies. The therapeutic pipeline for MS is loaded with newly emerging therapies (oral agents, monoclonal antibodies and other biological, immunomodulatory and neuroprotevtive agents), many of which are highly effective. On the other hand, new and serious adverse events have also emerged with these powerful therapies, such as opportunistic infections (especially PML), malignancies, secondary autoimmunity and others. Assessing the risk-benefit ratio of these new therapies in is important for their proper implementation in the armamentarium of MS therapy. Calculating the number needed to treat (NNT) and number needed to harm (NNH) for various treatment-related variables may help in evaluating the benefit-risk ratio for these agents and overcoming some of the drawbacks in direct comparison of different clinical trials. Most new therapies provide better benefit than the older ones and are better tolerated. Their serious adverse events that may raise safety concerns are mostly rare and show high NNH's, but still should be seriously considered in every patient. Appropriate patient selection, risk management programs, clinical vigilance, research for markers of increased risk or clinical response and early diagnosis and treatment of the potential serious adverse events may maximize benefit and minimize risk.

PLEIOTROPIC MULTIMODAL DRUGS IN BRAIN PROTECTION AND RECOVERY AFTER STROKE

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The old concept that neuroprotection means suppressing pathophysiological processes, the idea that a single mechanism molecule might be effective in clinical practice are obsolete today, and represents the root cause of failure.
The effects of etiological agents on the brain traditionally are conceived as a linear sum of independent pathophysiological processed (excitotoxicity, inflammation, apoptosis-like, oxidative stress, misfolding protein, etc.) generating the pathways of pathological cascades in acute and chronic disorders.
The pathway approach has produced a very detailed understanding of molecular changes in the postlesional brain but it possesses blind spots that are critically related to the failure of pharmacological neuroprotection treatment in neurodegenerative disorders.
This is due to the simplistic way of understanding the neurobiological processes supporting brain protection and recovery and pathophysiological mechanisms. The failure of modifying disease therapies in many pathological conditions is measuring the failure of the reductionistic approach to the problem.
Every lesion in the nervous system initially triggers an endogenous neuroprotective reaction followed by an endogenous repair process, combining neurotrophicity, neuroprotection, neuroplasticity and neurogenesis, overlapping and acting under genetic control to generate endogenous defense activity (EDA) which continually counteracts pathophysiological processes - damage mechanism (DM).
All these biological processes are initiated and regulated by biological molecules.
Neurotrophic factors are probably the best example in this respect. They are acting in a pleiotropic neuroprotective way against pathological cascades.
The same molecules, due to a complex genetically regulated process, are able to regulate further on neurotrophicity, neuroplasticity and neurogenesis as well. Therefore, they have not only pleiotropic neuroprotective activity but also multimodal mechanism of action. Beside the concept and therapeutical effects of pleiotropic multimodal molecules, this presentation will give an overview on the evolution of clinical treatment concept with neurotrophic factors on brain protection and recovery in stroke, including the latest positive results of a prospective, randomized, placebo-controlled, double-blind, multicenter, parallel group, phase II clinical trial, neurotrophic factors and recovery after stroke (CARS).

CLINICAL MANIFESTATIONS AND DIFFERENTIAL DIAGNOSIS IN MS

In this presentation will focus on most suggestive clinical manifestation of multiple sclerosis with special highlight on optic neuritis, acute transverse myelitis, sensory loss, cognitive impairment, fatigue, spasticity, depression, pain, sexual dysfunctions and paroxysmal symptoms in MS. Also, differential diagnosis will be discussed, in the context of diseases considered as MS variants and diseases clinically resembling MS.

COGNITIVE DYSFUNCTION AND LONG-TERM IMPLICATIONS IN MS

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Often under recognized, cognitive dysfunction occurs in more than 50% of patients with MS and may have a negative impact on quality of life as much as motor dysfunction. Apart from the disease, there are multiple factors which affect cognitive performance: depression, fatigue, MS medication.
The main cognitive domains affected are verbal and visual memory, attention, information-processing speed, executive function, visuospatial function - which can be evaluated with proper screening and diagnostic tools
Cognitive dysfunction affects also CIS or early MS patients and correlates with both relapses and brain atrophy.
There is still no effective symptomatic treatment for cognitive impairment but accumulating data is increasingly suggesting that treating MS effectively maintains cognitive function.

PHYSICAL DYSFUNCTION AND NEURO-REHABILITATION IN MULTIPLE SCLEROSIS

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Motor deficits are among the most frequent and the most disabling symptoms encountered in multiple sclerosis (MS). At least 40% of the MS patients have some pyramidal tract disfunction. Transcranian magnetic stimulation (TMS) is an investigation technique that allows an evaluation of both the cortico-spinal pathway and of the lower motor neuron. Central motor conduction time (CMCT) is calculated by substracting the cervical or lumbar latencies from the cortical ones. There are normal values of the CMCT calculated from latencies recorded on different muscles - Biceps brachii, Triceps brachii, Abductor digiti minimi, Vastus lateralis, Tibial anterior, Extensor digitorum brevis. This investigation allows us to check the functional status of the fibers that form the pyramidal tract. Demielination or axonal loss lead to elongated CMCTs. Remielination processes may facilitate a normalization of the CMCT. The same TMS method may be used to appreciate therapeuthical efficacy during relapses, or the effects of disease modifying therapies.

In normal individuals latencies are shortened and cortical excitability is increased during physical exercise. This physiological mechanism is changed in MS patients. Values of the CMCT above 8 ms for the upper limbs and above 15 ms for lower limbs are pathological, and they correlate with central and spinal conduction abnormalities. CMCT correlates with the EDSS score, and may reach values as high as 3 times the normal range. Conduction block may prevent the motor evoked potential recording and the measurement of its latency. If multiple lesions are present, especially spinal ones, MEPs may have an abnormal morphology, and may appear as polyphasic potentials. If kinesitheraphy is not followed by a latency shortening and/or a cortical excitability increase, we may conclude that the pyramidal tract might be severelly damaged, and different rehabilitation approaches need to be used.

DEEP BRAIN STIMULATION IN PARKINSON'S DISEASE - WHEN AND WHAT FOR?

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Among the surgical interventions for advanced Parkinson's disease (PD), during the last two decades deep brain stimulation (DBS) became the procedure of choice, with over 80.000 PD patients receiving this therapy. DBS has demonstrated to reduce cardinal PD symptoms, such as rigidity, bradikinesia and tremor with a sustained effect over long periods of time. The main benefit of DBS in fluctuating PD patients is the significant improvement of 'off' periods and a better quality of life. Dyskinesia is also alleviated in these patients and a reduction of antiparkinsonian medication is almost always achieved after DBS initiation. In this lecture I will review the selection criteria for DBS in PD patients, which are essential for the success of the procedure, and I will discuss the benefits depending on target selection (subthalamic versus pallidal), PD symptoms, age and comorbidities.

MANAGEMENT OF SPASTICITY

LEOPOLD
SALTUARI

Spasticity as defined as velocity-dependent increase of resistance on passive stretch is one component of the Upper Motor Neuron Syndrome (UMNS).
In clinical practice, when we refer to a spastic patient, we normally imply all symptoms of the UMNS, which are divided into positive and negative signs.
The range treatment of UMNS reaches from a very simple approach such as reducing pain and discomfort to complex therapeutic approaches such as intrathecal therapy or surgical interventions.
On the other hand, the UMNS can be interpreted as the most simple expression of motor control, and from this point of view, can be also beneficial in the course of the rehabilitation process.
Especially pharmacological antispastic treatment can lead to serious side effects which hamper the neurological remission.

The different therapeutical options and their pros and cons will be discussed during the session.

BLOOD–CENTRAL NERVOUS SYSTEMBARRIERS: THE GATEWAY TONEURODEGENERATION, NEUROPROTECTION ANDNEUROREGENERATION. NEW ROLE OF NEUROTROPHIC FACTORS

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The microenvironment of the central nervous system (CNS) is precisely and meticulouslymaintained by a set of dynamic physiological barriers located within the cerebral microvessels of thebrain (blood–brain barrier, BBB) and the spinal cord (blood–spinal cord barrier, BSCB), as well as withinthe epithelial cells of the choroid plexus separating the blood and cerebrospinal fluid (CSF) interface(blood–CSF barrier, BCSFB). The physicochemical properties of these cellular barriers are quite comparableto that of an extended plasma membrane. The BBB and the BSCB are quite tight to small molecules (12A °, Lanthanum ion), whereas BCSFB is less restrictive in nature. On the other hand, the ependymal cell liningsof the cerebral ventricles and spinal canal referred to as CSF–brain barrier do not normally restrict passageof several molecules of small sizes. However, protein transport across this blood–CNS barriers (BCNSB) isseverely restricted. Entry of proteins into the CNS microenvironment induces vasogenic edema formationthat is primarily responsible for cell and tissue injury. These BCNSB are often compromised under a widevariety of psychological, traumatic, metabolic, ischemic, environmental, or chemical insults leading toneuronal, glial, and axonal damage. Opening of the BCSNB to various endogenous or exogenous substancesand proteins alters the molecular, cellular, biochemical, immunological, and metabolic environment of theCNS leading to abnormal neuronal function and/or brain pathology. This review is focused on currentstatus of the BCSNB breakdown in experimental models of emotional stress, traumatic injuries, psychostimulantsas well as key environmental health hazards, i.e., nanoparticles and heat exposure. Breakdown ofthe BCNSB in these conditions altered gene expression and induced brain pathology leading to neurodegeneration.Attenuation of the BCNSB disruption with neurotrophic factor, a mixture of various neurotrophic fac-tors, markedly reduced the development of brain pathology. Takentogether, these novel observations strongly point out the role of BCNSB as a ‘‘gateway’’ to the neurodegener ation,neuroprotection, and/or neuroregeneration in neurological diseases.Furthermore, the neurotrophic factors could play importantroles in achieving neuroprotection by restoring the blood-CNS barriers in various experimental neurological disorders.

DEFINING THE URGENCY TO TREAT - LONG TERM BENEFITS OF EARLY TREATMENT

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The early diagnose of multiple sclerosis is now possible due to the integration of MRI parameters into the diagnostic criteria. This provides a window of opportunity for treating patients with disease-modifying therapies before clinically-manifest tissue destruction and disability has occurred. There are a number of proofs that an early treatment strategy will be particularly beneficial for the patients.

Firstly, immunopathological studies have shown that the irreversible axonal damage which correlates with the accumulation of disability occurs very early in the course of the disease. In the same line natural history studies demonstrate that frequent relapses and accumulation of a high T2 lesion, load in the first years following diagnosis, are predictive of poor long-term disability outcome.

An early treatment strategy for patients with a clinically isolated neurological syndrome highly suggestive for multiple sclerosis appears to have a greater beneficial impact on relapse frequency (as one of the clinical marks of disease activity) than a later treatment initiation in their disease course.

The latest data come from placebo-controlled randomized studies in patients with a clinically isolated syndrome, either with IFN such as CHAMPS, CHAMPIONS and BENEFIT or with glatiramer acetate in the PRECISE study.

All these studies provided robust evidence that this line of treatment significantly reduced the risk of conversion to clinically definite multiple sclerosis. Thus both in the IFN and GA cohort treated patients the time to conversion has been significantly prolonged in comparison with placebo treated patients.

ASSESSING NEEDS OF MS PATIENTS

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Assessing patients needs should be a main concern for every doctor in every illness, but these becomes particularly important in MS patients. While the doctor is confronted mainly with the challenges of diagnosis and prescription of a disease modifying treatment- DMT (particularly difficult sometimes, due to economical reasons), the patient has to confront the fear of uncontrolled disease, the burden of neurological disability, the chronic administration of a drug (until recently only by injections) and the side effects of the drug.

The primary condition of a successful therapy in MS is the adherence of the patient to the treatment, meaning that the patient must not miss more than one DMT dose in one month. The GAP Study (Global Adherence Project) revealed the main reasons of non-adherence in over 2500 patients treated with all types of basic DMT. Forgetting one dose was on top of the list of reasons, but side effects of the drug, or the dosing schedule were also mentioned by an important number of patients.

Since "no drug works, if is not taken" it is important to discuss with the patient before starting the treatment and to understand what a patient is looking for from the therapy, clearly explaining the benefits and risks of different treatments and strategies to minimize the risk.

Monitoring the patient should include not only the neurological examination, evaluation of relapses and in certain cases of MRI activity, but also a continuous surveillance of the balance between efficacy on one side and safety and tolerability on the other side, searching solutions to adjust the existing therapies to the changing needs of the patients.

JOHANNES C. VESTER

Senior Consultant
Biometry and
Clinical Research

idv - Data Analysis and
Study Planning,

Germany

The primary goal of the statistical lectures is to provide non-statisticians with an basic understanding of the interconnections and relationships which are important in practice and the ability to implement and apply this basic knowledge in the proper interpretation of study results.

The lectures will adress the following issues:

1. Hypothesis testing and statistical significance: the basic concept of a statistical test. One-sided and two-sided tests. Definition and interpretation of P-values. Level of significance. Correct and false interpretation of significance through examples from the literature.

2. Effect sizes and confidence intervals: Basic principles and interpretation. Relationship with significance tests. Definition and handling in superiority and non-inferiority trials. Why confidence intervals rather than P-values?

3. Definition and interpretation of common effect sizes for binary, ordinal and continuous data: rate difference, rate ratio, odds ratio, mean, median, Mann-Whitney. Examples from clinical research.

4. Proper interpretation of study results: examples from recent TBI trials. Pros and cons of dichotomization. Univariate vs. multidimensional approach. Current recommendations. What can we learn from „failed" studies.

TRAUMATIC BRAIN INJURY: CLINICAL CHARACTERISTICS AND PATHOPHYSIOLOGICAL MECHANISMS OF FOCAL AND DIFFUSE PATHOLOGIES

PIETER E. VOS

Radbound
University Nijmegen
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Nijmege and Future
Diagnostics, Wijchen
The Netherlands

Traumatic brain injury is a heterogeneous disease that may affect people of all ages. Severity may range from mild with a low frequency (1 per 100) of life threatening intracranial hematoma that needs immediate neurosurgical operation and very low mortality (1 per 1000) to severe with a high likelihood of life threatening intracranial hematoma (up to 1 per 3) and a 40% case fatality rate and a 50-60% disability rate in survivors. TBI is heterogeneous in definitions, pathology, age of onset and in the presence of additional injury to other body regions.

Traumatic Brain Injury (TBI) encompasses the functional disturbances and structural damage of the brain caused by direct impact, by external acceleration, deceleration and/or rotation forces to the head.
Pathophysiologically, TBI is characterized by diffuse damage of grey matter and white matter tracts in the brain, and by contusion, laceration and intracerebral or extracerebral haemorrhage signifying focal and/or diffuse damage (primary damage). Secondary brain injury consists of the damage that occurs in the hours-dayas post injury. Both intracranial and systemic insults (e.g. hypoxia and/or hypotension) may exacerbate secondary damage.
The incidence of TBI is high, in the international literature varying between 100 and 300 per 100,000, with the highest incidence occurring in men, aged 15 to 24 years. The average age of patients with TBI is 30-40 years(1;2). Recent data indicate an increase in average age and a larger contribution of elderly patients with TBI. Approximately 90–95% of all TBIs are considered mild. Intracranial complications of mild traumatic brain injury (MTBI) are infrequent but potentially life-threatening, and may require neurosurgical intervention in a minority of cases (0.2–3.1%). Because of the importance to exclude the small chance of a life-threatening complication in large numbers of individual patients much research has been dedicated to the prediction of these complications.

The Glasgow Coma Scale (GCS) a measure of level of consciousness , has been the primary clinical variable to grade initial brain injury severity in mild (GCS 13–15), moderate (GCS9–12) or severe (GCS ≤8). In terms of survival the GCS score, is one of the strongest predictors. However, from the GCS the underlying cerebral pathology cannot be inferred and two people with the same GCS score can have very different underlying brain injuries. This finds its cause in the distribution of structural brain damage after TBI.

In the presentation clinical diagnosis, ancillary investigations and consequences of traumatic brain injury will be discussed. A second topic will be how to read the CT and MRI scans with respect to relevant intracranial focal and diffuse lesions in mild, moder-

ate and severe TBI.
If time allows we will go into detail in addressing traumatic axonal damage (diffuse axonal injury (DAI)). In terms of pathophysiology, anatomical localization and extent of the damage TBI can be very heterogeneous. Impact to the head on one end of the spectrum may induce large focal cortical lesion(s) like hematomas and contusions in or near the cortex (in 30%) while at the other end pathology may consist of diffuse widespread microstructural subcortical lesions of the white matter (diffuse axonal injury or traumatic axonal injury)(in 50%). In 20% combined focal and diffuse pathologies are found. The cellular and molecular biochemistry involving different genes underlying focal and diffuse lesions is very different which has significant implications for recuperation of brain tissue(3). DAI usually results from shearing stresses on brain parenchyma, stretching axons (and or myelin) and bloodvessels, causing oedema and axoplasmic leakage. DAI is microscopic in nature and poorly visualized on CT. DAI is a white matter disorder, consisting of myelin dysfunction/ demyelination, axonal dysfunction/ injury or both. DAI causes immediate and often prolonged unconsciousness and is present in 75% of cases with moderate/severe TBI. Currently no accurate method is available for diagnosing and assessing the distribution and severity of diffuse axonal injury. The importance of the clinical aspects of DAI, the diagnosis of DAI using MRI techniques inlcuding diffusion tensor imaging(DTI), susceptibility weighted imaging (SWI) is emphasized. In addition although no efficacy of any (drug) treatment has been proven untill now, some of the available evidence and the possible treatment mechanisms will be discussed.

Untill recently TBI was a neglected research topic, with few documented randomized controlled trials(less than 20), receiving little public and pharmaceutical attention and government funding.(4-6) This has been alluded to the pathological heterogeneity of TBI resulting in a scarcity of successful evidence based strategies to restore the normal physiological state of the injured brain and in a complete lack of randomized controlled trials of targeted drug interventions with a positive effect on mortality and long term outcome. But a positive change emerges because of: 1) Increased awareness of the fact that TBI is a disease (and not merely an incident) that may lead to chronic disability and reduced quality of life years and enormous societal costs. 2) The appearance of systematic reviews and guidelines stating that TBI may benefit from an evidence based interdisciplinary approach to improve early conventional management and rehabilitation.(6-8) 3) The use of new MRI techniques like DWI, SWI & DTI in the acute stages of TBI demonstrating the pathological heterogeneity of TBI which may open ways for new drug intervention studies.(9;10) 4) Finally it is increasingly recognized that outcome may be influenced by other factors than injury alone and that the patients previous history or pre-injury characteristics may modify the response of injured individuals. TBI can be classified according to aetiology, the clinical condition and patho-anatomical abnormalities.

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(4) Andlin-Sobocki P, Jonsson B, Wittchen HU, Olesen J. Cost of disorders of the brain in Europe. Eur J Neurol 2005 Jun;12 Suppl 1:1-27.

(5) Roberts I, Shakur H, Edwards P, Yates D, Sandercock P. Trauma care research and the war on uncertainty. BMJ 2005 Nov 12;331(7525):1094-6.

(6) Maas AI, Marmarou A, Murray GD, Teasdale SG, Steyerberg EW. Prognosis and clinical trial design in traumatic brain injury: the IMPACT study. J Neurotrauma 2007 Feb;24(2):232-8.

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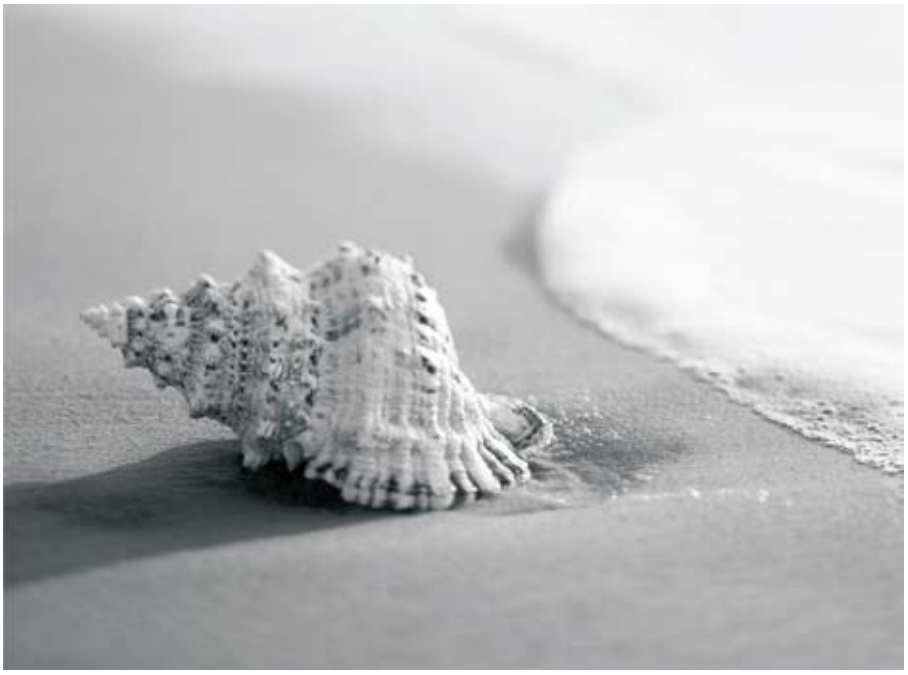
(8) Bratton SL, Chestnut RM, Ghajar J, Connell Hammond FF, Harris OA, Hartl R, et al. Guidelines for the management of severe traumatic brain injury. J Neurotrauma 2007;24 Suppl 1:S1-S95.

(9) Mannion RJ, Cross J, Bradley P, Coles JP, Chatfield D, Carpenter A, et al. Mechanism-based MRI classification of traumatic brainstem injury and its relationship to outcome. J Neurotrauma 2007 Jan;24(1):128-35.

(10) Firsching R, Woischneck D, Klein S, Reissberg S, Dohring W, Peters B. Classification of severe head injury based on magnetic resonance imaging. Acta Neurochir 2001;143(3):263-71.



CURRICULUM VITAE

ANTON ALVAREZ
/SPAIN

Medical Doctor (M.D.), University of Santiago de Compostela (1987)
Diploma of Specialist in Neuroendocrinology, University of Santiago de Compostela (1988)
Graduate in Psychology, University of Santiago de Compostela (1988)
Doctorate in Psychiatry, University of Santiago de Compostela (1988-1990)
Resident Research Fellow of the Ministry of Education and Science (1988-1992)
Department of Psychiatry, Santiago University (1988-1991)
Madrid Complutense University (1992)
Psychiatry Doctor (PhD), Department of Psychiatry, Madrid Complutense University (1997)
Dr. Alvarez has 22 years experience in Basic and Clinical Research on Alzheimer's disease.
He was involved in more than 150 research projects, including projects funded by Public Institutions, pharmaceutical R&D studies, industrial and R+D+I projects, epidemiological
studies and two projects funded by the European Comunity: (1) MimoVax: Alzheimer's disease treatment targeting truncated AB40/42 by active immunisation (an STREP -Specific Targeted Research Projects- Project approved through the Six Framework Programme of the European Community to develop and test a vaccine for Alzheimer's disease). Period: 2006-2010. (2) BIOMED-PL-950523-European Concerted
Action on Pick's Disease. Period: 1995-1998.
As a result of the research activity developed during this period, Dr. Alvarez published more than 120 scientific articles in national and international journals and books. In addition, Dr. Alvarez is actively involved in several scientific forums of his specialty (Congresses, Research Groups, Scientific Journals and Associations).

OVIDIU BĂJENARU /ROMANIA

1983 : M.D. at the Faculty of Medecine of University of Medecine and Pharmacy "Carol Davila" Bucharest
1989 : specialist in neurology, confirmed by the Ministery of Health of Romania
1993 : Ph.D. at the University of Medecine and Pharmacy "Carol Davila" Bucharest
1999 (since) : Professor of Neurology at the University of Medicine and Pharmacy " Carol Davila" Bucharest, Chairman and Head of the Neurology Department of the University Hospital of Emergency Bucharest
2000-2004 : Vice-Dean of the Faculty of Medecine - University of Medecine and Pharmacy "Carol Davila" Bucharest
2001(since) : President of the Romanian Society of Neurology
2003 – 2009 : member of the Scientific Committee of ECTRIMS
2004 - 2009 : Member of the Executive Committee of the European Society of Neurology
2008 (since) : Romania official delegate in UEMS – EBN (Board of Neurology)
*sept. 2010 : elected Sectretary of the Executive Committee of UEMS-EBN
POST GRADUATE TRAINING:
1992 - 1994 : post graduate training in clinical neurology and functional investigations of the nervous system at University "Rene Descartes"(Paris)
FIELDS OF INTEREST FOR THE SCIENTIFIC RESEARCH
- stroke, dementia and neurodegenerative diseases (in particular Alzheimer and Parkinson's disease), multiple sclerosis
- more than 300 scientific papers published and reported in different national and international scientific meetings, 5 medical books and monographies (published in Romania), co-author (1 chapter) to the "International Neurology - A Clinical Approach", Wiley-Blackwell, 2009; Principal Investigator in 12 research grants from the Romanian National Council for Science and Research, Coun try Principal Investigator in an International Program of Research for genetic factors in stroke patients; Country Principal Investigator – in more than 30 international, multicentric clinical trials; Principal Investigator of the research site – in more than 30 international and national multicentic trials
AFFILIATION:
- Romanian Society of Neurology (president), European Neurological Society European Stroke Organization, European Federation of Neurological Societies, American Academy of Neurology, Romanian Brain Council (foundation member), Danube Neurological Association (member in the Board), New York Academy of Sciences, American Academy for Advancement in Science, Movement Disorders Society

HEINRICH BINDER /AUSTRIA

Born 03.12.1947 in Vienna / Austria

After the study of the medicine at the Viennese university graduated Binder his education as specialist for neurology and psychiatry in the neurological university clinic of Vienna where he was working clinical as well as scientifically in the field of neurointensive care, neuroimaging and neurorehabilitation. 1982 the title Dozent was awarded to him which is comparable the PhD because of his scientific research and 1988 he got the professorship for neurology at the Viennese medical university.

Among other things during this time he built up one of the first model wards for neurological early rehabilitation. In 1989 he took over the administration of one of the biggest neuro-logical departments of Austria the "Maria Theresia Castle" originally founded of former but in the meantime no longer existing Rothschild Foundation.

Since that time he developed there the concept of neurological early rehabilitation into a continuous care concept by taking the example of consistent stroke care from the acute phase till day clinic and outpatient rehabilitation.

During this time he also established and led there the Ludwig Boltzmann Institut for restorative neurology and neurorehabilitation which in many years' has cooperated with Texas Houston Medical Center and which has changed 2008 to the Landsteiner Institute for neurorehabilitation and space medicine. Main topics of his research during this time were neurorehabilitation of brain and spinal cord injury.

Binder is founding member and at that time also president of the Austrian society for neuro rehabilitation foundet 1985 and founding president of the European Federation of neurorehabilitation societies which exists since 2 years and has set itself the task to establish neurorehabilitation all over Europe on an important public-health subject, particularly offering aid in contemporary education and practice.

Not at least he is chairman of the special interest group for spinal cord as well as early neurorehabilition of the WFNR and of the Panel on Brain recovery and rehabilitation of the EFNS.

Below you find a choice of publications from him or his work-group:

- Binder H., Draxler V., Sporn P., Gerstenbrand F., Watzek C.: Das spinale Reflexgeschehen beim sogenannten „Hirntoten". Anaesth. und Intensivmedizin 129, 103-109, 1979.
- Binder H.: Die neuropsychiatrische Symptomatik des sogenannten „Coma hepaticum". Beilage zur Wr.Klin.Wsch. 93, 1-19, 1981
- Reisner Th., Binder H.: The value of the CT in various lesions of the spine and spinal cord. In: Neuroimaging. Eds.: Gerstenbrand F. ,Grcevic N., Aichner F., G. Fischer, Stuttgart, New York 1985.
- Oder W., Binder H., Baumgartner Ch., Zeiler K., Deecke L.: Is asphasia an additional prognostic factor in ischemic stroke with regard to the severity of hemiparesis in the suacute stage? Acta Neurol. Scand 78, 85-89, 1988.
- Oder W., Goldenberg G., Spatt J., Poderka J., Binder H., Deecke L.: Behavioural and psychosocial sequelae of severe closed head injury and regional cerebrale blood flow a SPECT study, J. Neurology, Neurosurgery and Psychiatry 55, 475-480, 1992.

• Wöber Ch., Oder W., Kollegger H., Prayer L., Baumgartner Ch., Wöber-Bingöl C., Wimberger D., Binder H., Deecke L.: Posturographic Measurement of Body Sway in Survivors of Severe Closed Head Injury. Arch. Phys. Med. Rehabil. Vol, 74, 1151-1156, 1993.
• Friedl-Francesconi H., Binder H.: Kognitives Funktionstraining in der neurologischen Rehabilitation von Schädel-Hirn-Traumen. Z. Exp Psychol 1996; 43 (1): 1-21
• Friedl-Francesconi H., Balazs S., Binder H.: The need for information for relative of inpatients with severe brain damage. In: European journal of neurology, Volume 3 Supplement 2 May 1996, Seite 126, 1996.

• Pinter M., Alesch F., Murg M., Seiwald M., Helscher R.J., Binder H.: Deep Brain Stimulation of the subthalamic nucleus for control of extrapyramidal features in advanced idiopathic parkinsons disease: one year follow up. J.Neural Transmission, 106, 693-709, 1999

• Pinter M., Alesch F., Murg M., Helscher R.J., Binder H.: Apomorphine test: a predictor for motor responsiveness to deep brain stimulation of subthalamic nucleus. J. Neurol. 246, 907-913, 1999.

• Pinter M., Birk M., Helscher R.J., Binder H.: Short-term effect of amantadine sulphate on motor performance an reaction time in patients with idiopathic Parkinson's disease. J. Neural. Transm. 106, 711-724, 1999.

• Murg M., Binder H., Dimitrijevic M.R.: Epidural electric stimulation of posterior structures in the human spinal cord: 1.Muscle Twitches -–A functional method to define the site of stimulation. Spinal Cord. 2000, Jul; 38 (7) 394-402

• Jilge B, Minassian K, Rattay F, Pinter MM, Gerstenbrand F, Binder H, Dimitrijevic MR. Initiating extension of the lower limbs in subjects with complete spinal cords injury by epidural lumbar cord stimualtion. Exp Brain Res. 2004 Feb; 154 (3): 308-26. Epub 2003 Oct. 25
• Minassian K, Jilge B, Rattay F, Pinter MM, Binder H, Gerstenbrand F, Dimitrijevic MR: Stepping-like movements in humans with complete spinal cord injury induced by epidural stimulation of the lumbar cord: electromyographic study of compound muscle action potentials. Spinal cord. 2004; 42(1):401-416

• Stepan Ch, Haidinger G, Binder H: Prevalence of persistent vegetative state/apallic syndrome in Vienna. Eur J Neurol. 2004 ;11(7) :461-466

• Balazs S, Stepan Ch, Binder H, Bodis-Wollner I, Gizycki HV: Slow Ballistic Eye Movements and Gamma-Modulation in Persistent Vegetative State. Clinical EEG and Neuroscience, Vo. 36, No. 3, p 231, 2005

• Balazs S, Stepan C, Binder H, von Gizycki H, Avitable M, Obersteiner A, Rattay F, Selesnick I, Bodis-Wollner I. Conjugate eye movements and gamma power modulation of the EEG in persistent vegetative state. J Neurol Sci. 2006 Jul 15;246(1-2):65-9.

NATAN
BORNSTEIN
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EDUCATION
1970-73 University of Sienna, Medicine, Sienna, Italy
1973-79 Technion Medical School, Hifa, Medicine, MD, 1979
Date of receiving specialixation certificate: 11 September, 1984
Title of Doctoral dissertation: Dextran 40 in acute ischemic stroke
Name of Supervisor: Dr. Jacob Vardi
FURTHER EDUCATION
1978-83 Tel-Aviv University, Sackler Faculty of Medicine, neurology (residence), Israeli Board certified in Neurology, 1983
1979-83 Tel-Aviv University, Sackler Faculty of Medicine, Post graduate studies in Neurology
1984-87 Sunnybrook Medical Center, University of Toronto, M.R.C stroke, Fellowship
ACADEMIC AND PROFESSIONAL EXPERIENCE
1982-1995 Tel-Aviv University, Neurology, instructor
1991-present European stroke Conference (ESC), Executive committee
1995-1999 Tel-Aviv University, Neurology, Senior lecturer
1995 Eliprodil CVD 715 clinical trial, Steering Committee
1995-1997 International Stroke Study (IST), Steering Committee
1995-1999 American Academy of Neurology, Member of the International Affairs Committee
1996 Asymptomatic Carotid Stenosis and Risk of Stroke(ACSRS), Advisory Committee
1996-present The Mediterranean Stroke Society (MSS), President
1996-2002 EFNS, Management Committee
1997-2009 Israeli Neurological Association, Secretary
1999-present Tel-Aviv University, Neurology, Associated Professor
2001- present European Society Neurosonology and Cerebral Hemodynamics (ESNCH) Executive committee
2005-present Neurosonolgy Research Group, Executive committee
2006-present European Master in Stroke Medicine, Member of faculty
2006-2008 NEST II clinical Trial, Steering Committee
2006-present SENTIS clinical Trial, Steering Committee
2006-present CASTA Trial, Steering Committee
2006-present Brainsgate clinical Trial, Steering Committee
2008- present World Stroke Association (WSO), Vice president
2009-present Israeli Neurological Association, Chairman
2009-present European Stroke Organization (ESO), Member on the board of directors
2010- NEST III clinical Trial, Steering Committee

PROFESSIONAL ACHIEVEMENTS- EDITORIAL BOARD
1991-present Neurological Research Journal, Guest Editor
1991-present STROKE, Member of the editorial board
1998-present European Journal of Neurology, Member of the editorial board
1999-present Journal of Cerebrovascular disease, Member of the editorial board
2000-present Journal of Annals of Medical Science, Consulting Editor
2001-present Journal of Neurological Science (Turkish), Member of the editorial board
2001-present Acta Clinica Croatica, Member of the editorial Counsil
2003-present Italian Heart Journal, International Scientific Board
2003-present Journal of Neurological Sciences, Guest Editor
2004-present Turkish Journal of Neurology, International Advisory Board
2005-present Archives of Medical Sciences (AMS) , Member of the Editorial Board
2006-present Journal of Cardiovascular Medicine, International Scientific Board
2006-present International Journal of Stroke, Editorial Board
2006-present Acta Neurologica Scandinavica, Editorial Board
2009-present American Journal of Neuroprotection& Neurogeneration (AJNN) Member of the Editorial Board
2010 Neurosonology, International Editorial Board
2010 Frontiers in Stroke, Review Editor
PROFESSIONAL ACHIEVEMENTS- REVIEWER
1998-present Lancet, Ad Hoc reviewer
1998-present Diabetes and its complications, Ad Hoc reviewer
1999-present Journal of Neuroimaging, Reviewer
1999-present Journal of Neurology, Ad Hoc reviewer
2000-present Neurology, Ad Hoc reviewer
2003-present Israeli Medical Association Journal (IMAJ), Reviewer
2003-present Acta Neurologica Scandinavica, Ad Hoc reviewer
2006-present Journal of Neurology, Neurosurgery & Psychiatry, Reviewer
2010- European Neurology, Ad Hoc reviewer
MEMBERSHIP IN PROFESSIONAL SOCIETIES
1977-present Israeli Medical Association
1983-present The Israeli Neurological Association
1985-present Stroke Council of the American Heart Association (Fellow)
1986-present American Academy of Neurology
1986-present Neurosonology Research Group of the World Federation of Neurology
1987-present Stroke Research Group of the World Federation of Neurology
1990-2008 International Stroke Society
1995-2008 European Stroke Council
1995-present Mediterranean Stroke Society (MSS)
1998-present European Neurosonology Society
2005-present World Stroke Organization (WSO)
2008-present Fellow of the European Stroke organization (FESO)

A.V. CIUREA
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Honorary President of the Romanian Society of Neurosurgery, Chairman Neurosurgical Clinic 1, "Bagdasar-Arseni" Hospital, 10, Av. Berceni, Bucharest 4, ROMANIA
EDUCATION
1958-1964 - Medical School (IMPh - Institute of Medicine and Pharmacy) of Bucharest,
1972 - Specialist in neurosurgery, Neurosurgical Clinic, Hospital "Dr. Gh. Marinescu",
1976 - "Doctor in Medical Sciences" (Ph.D.), Neurosurgical speciality
1979 - Senior Neurosurgeon, M.D., in Neurosurgical Clinic Hospital "Dr. Gh. Marinesco"
1989 - Chairman of 1st Neurosurgical Department, Neurosurgical Clinic, "Prof. Dr. D. Bagdasar" Hospital, Bucharest.
1993 - Associate Professor UMPh (University of Medicine and Pharmacy), "Carol Davila" Bucureşti, Neurosurgical Clinic 1, "Prof. Dr. D. Bagdasar" Hospital, Bucharest.
1997-2005: - Director of "Bagdasar-Arseni" Clinical Hospital, Bucharest
1997-present - Professor of Neurosurgery UMPh (University of Medicine and Pharmacy), "Carol Davila" Bucureşti, Head & Chairman Neurosurgical Clinic 1, Hosp. "Prof. Dr. D. Bagdasar - Arseni" Hospital, Bucharest.
PROFESSIONAL AFFILIATIONS
1980 - Member I.S.P.N. (International Society of Pediatric Neurosurgery)
1982 - Member E.S.P.N. (European Society of Pediatric Neurosurgery)
1994 - New York, New York Academy of Sciencies. Member I.D. 383884 - 4.
1995 - Member International Society for Pediatric Skull Base.
1997 - Munster, EMN (Euroacademia Multidiciplinaria Neurotraumatologica)
1998 - Marsilia, Member SNCLF (French Society of Neurosurgery).
1999 Neurorehabilitation Committee of the WFNS
Memmber CNS (Congress of Neurological Surgeons)
President of the Romanian Society of Neurosurgery (RSN)
2001 General Secretary of the EMN (Euroacademia Multidisciplinaria Neurotraumatologica)
International Honorary Member of Executive Committee of ACNS (Asian Congress of Neurological Surgeons)
2002 CNS (Congress of Neurological Surgeons) Ambassador.
2003 - Secretary, Founder Member AMN (Academia Multidisciplinaria Neurotraumatologica)
2005 - Vice-President WFNS "at large" (World Federation of Neurosurgical Societies).
- President, Society of Neuro-Oncology from Romania (SNOR).
2007 - Corespondent Member of Romanian Scientists Academy
2008 - Vice-President AMN (Academia Multidisciplinaria Neurotraumatologica)
- Doctor Honoris Causa Medical University "N. Testimitianu", Chisinau, Republic of Moldavia
- Honorary President of the Romanian Society of Neurosurgery (RSN)
2009 - Member of Romanian Academy of Medical Science
- Vicepresident of EMN (Euroacademia Multidiciplinaria Neurotraumatologica)
2010 - Chairman of WFNS Nominating Committee

László Csiba was born in 1952, Sajószentpéter, Hungary. Now he is the Chairman of Department of Neurology of University Debrecen and Chair of Board of Director's (European Stroke Organisation), President of European Society of Neurosonology and Cerebral Hemodynamics. He is the chair of European Cooperation Committee of EFNS.
His research interests are stroke and stroke-prone diseases, ultrasonic studies in cerebrovascular
diseases and clinicopathological studies on cerebrovascular diseases. He published numerous papers on stroke and stroke-related diseases, associated editor of Frontiers on Stroke and member of editorial committee (Intern. J Stroke)

LÁSZLÓ CSIBA
/HUNGARY

ANNA CZŁONKOWSKA /POLAND

Prof. Anna Członkowska MD, PhD finished Medical Academy in Warsaw in 1966. She has been working in the Institute of Psychiatry and Neurology in Warsaw from 1969, and since 1985, she is the Head of the 2nd Department of Neurology. She carried out a
lot of fellowships, for example in the Guy's Hospital in London or Max Planck Institute of Psychiatry in Munich and Martinsried.
Constantly she is cooperating with many neurological centers all over the world. Her main interests are: stroke (epidemiology, treatment, rehabilitation), neuroimmunology (mutiple sclerosis, local and systemic immunity in neurodegeneration), Wilson's disease. She was coordinating the National Program for Prevention and Treatment of Stroke and the neurological part of the National Cardiovascular Disease Prevention and
Treatment Program in years 1997-2008.
Professor Anna Członkowska is the member of Polish Academy of Arts and Sciences, member correspondent of Polish Academy of Science of American Academy of Neurology,
American Neurological Association, the German Society of Neurology and she is Fellow of the Royal College of Physicians of Edinburgh. In 1996-99, she was the President
of the Polish Society of Neurology.
She was promoting 32 doctor theses, from her team 4 persons successfully finished habilitations.
Professor Anna Członkowska is an author/co-author of over 250 original papers, mainly
published in international journals, as well as author/co-author or co-editor of many books.

RALPH HENRY
/USA

•Professor, Dept. of Biological Sciences, University of Arkansas
•Co-Founder and VP of Biopharmaceutics for InterveXion Therapeutics, LLC

Dr. Henry received his Ph.D. in 1991 from Kansas State University in Biology where he developed synthetic peptides antibodies as tools to examine membrane protein structure. His postdoctoral work in Plant Cell and Molecular Biology at the University of Florida focused on understanding how proteins are routed to specific cellular compartments. Dr. Henry joined the faculty at the University of Arkansas in 1996 and has established an international reputation in the field of protein targeting for his mechanistic studies of conserved protein export systems.
Notably, the same protein export system functions in the synthesis and secretion of antibody medications being developed by InterveXion Therapeutics LLC, an Arkansas-based company co-founded with UAMS researchers Dr. Mike Owens (CSO) and Dr. Brooks Gentry (CMO).

Dr. Henry has over 20 years of experience using DNA design and molecular expression technologies to engineer and produce recombinant proteins, including antibodies. He is co-director of the protein production facility within the Center For Protein Structure And Function at the University of Arkansas. For the past 11 years, Dr. Henry has worked with Dr. Owens, Dr. Gentry and the InterveXion team to develop alternative antibody production systems and human chimeric antibodies that are immunologically silent and neuroprotectivefor the treatment methamphetamine abuse.

VOLKER HÖMBERG /GERMANY

Medical Career

1973 - 1980	Medical School, Universities of Düsseldorf and Freiburg; Electives in Neurology at Boston City Hospital, Boston, Mass.; National Hospital for Nervous Diseases, London
1975-1980	Junior researcher in the Department of Neuropsychology at the C. & O. Vogt Institute for Brain Research, Düsseldorf and the Depart ment of Neurology, Freiburg (Prof. R. Jung)
1980 - 1981	Research fellow in the Department of Neuropsychology (Prof. G. Grünewald) at the C. & O. Vogt Institute for Brain Research, Düsseldorf
1981-1986	Clinical training in the Department of Neurology (Prof. H.-J. Freund), Heinrich-Heine-University Düsseldorf
since 1985	Senior registrar in the Department of Neurology, Heinrich-Heine-University Düsseldorf
1987-1996	Senior investigator for the German Research Council Special Task Force in Neurology at Heinrich-Heine-University (SFB 200 and SFB 194)
1987-2005	Medical director of the Neurological Therapy Center (NTC), Heinrich-Heine-University Düsseldorf
Since 1988	Board examiner for Neurology at the local examination board (Ärztekammer Nordrhein)
1989-1997	Vice president of the German Society for Neurological Rehabilitation
1993	Habilitation in Neurology, Heinrich-Heine-University Düsseldorf
Since 1995	Board examiner for physical medicine and rehabilitation (Ärztekammer Nordrhein)
1997-2005	Medical director of the Neurological Therapy Center, Cologne
1998-2004	President of the German Society for Neurological Rehabilitation
2000 to 2010	Medical director and head of neurology, St. Mauritius Therapy Hospital, Meerbusch
Since 2003	Secretary General World Federation for NeuroRehabilitation (WFNR)
10/2004 to 12/ 2010	Vice president of the German Society for Neurological Rehabilitation
2005 to 2010	Panel-Chairman Neurorehabilitation for European Federation Neurological Societies (EFNS)
Since 12/2010	Member of the board (DGNR)
Since 2011	Secretary General European Federation of Neurorehabilitation Societies
Health poltics	Vice chairman Bundesverband Neurorehabilitation (Federal organisation for Neurorehabilitation) (since 2006)

Areas of scientific interest	Motor control Neuropsychology, Brain plasticity Epistemology of rehabilitation sciences Pharmacology in neurorehablitation

Publications	see separate list
Journal Co Editor	Journal of Neural Repair
Journal Referencer	BRAIN Cerebrovascular disease Annals of Neurology Neurology Archives of Neurology Neurologie und Rehabilitation
Congress organisation tation DGNR	Annual meetings Deutsche Gesellschaft für Neurorehabili- World Cngresses on Neurorehabilitation: HongKong(2006) Brasilia(2008) Vienna(2010)
Concept formation /start up management	Neurological Therapy Center at University Duesseldorf (1986/87) Neurological Rehab Center Magdeburg (first in east Germany after reunification)1990 Neurological Therapy Center Hamburg (for MEDIAN group) 1994 Neurological Therapy Hospital Hilchenbach 1995 (for AHG group) Neurological Therapy Center Cologne 1996/1997 Neurological Rehabilitation Hospital Magdeburg 1996 (for MEDIAN group) St Mauritius Therapy Hospital Meerbusch 1998-2001 (for VKKD group)
Further management exp	CEO Neurological Therapy Center at Heinrich Heine University (1987-2005) CEO Neurological Therapy Center Cologne (1997-2005) CEO St. Mauritius Therapy Hospital Meerbusch 1998-2001 Member of the board (Aufsichtsrat) Bank im Bistum Essen (2002-2010)
Sports:	Horse riding,skiing
Hobbies	History ,Philosophy, Mind sciences,Cooking

AMOS D. KORCZYN /ISRAEL

Professor Amos D. Korczyn is the Sieratzki Professor of Neurology at Tel-Aviv University.
Professor Korczyn graduated from the Hebrew University – Hadassah Medical School in Jerusalem in 1966 (MD), where he also received an MSc degree in pharmacology (cum laude) in 1966. He trained in neurology at Beilinson Hospital and at the National Hospital for Nervous Diseases, Queen Square, London. He was the Chairman of the Department of Neurology at the Tel-Aviv Medical Center since 1981 until 2002. Professor
Korczyn has a particular interest in dementia. He has authored or co-authored over 600 articles in peer-reviewed journals, as well as chapters in books, etc. Professor
Korczyn is or has been an Editorial Board member of 15 international journals, and organized several neurological conferences, mainly in the field of dementia, Parkinson's
disease and other degenerative brain disorders, as well as CONy – the International Congress on Controversies in Neurology.

VLADIMIR KOSTIĆ
/ SERBIA

Vladimir S. Kostic (1953), Professor of Neurology at the Medical School, University of Belgrade, Member of the Serbian Academy of Science and Arts, Chairman of the Institute of Neurology, Clinical Center of Serbia, has focused his scientific interest in degenerative disorders of the central nervous system, mainly etiopathogenesis and treatment.

In the course of his training and subsequent academic carrier he spent two months at the Middlesex Hospital in London (UK) (1987), as a Fulbright Fellow and visiting-professor 15 months (1989/1990) in the Neurological Institute of the Columbia Univesity (New York; USA), and finally, in the same institution as a visiting research scientist 13 more months (1995/1996).

He was awarded the October Prize of the City of Belgrade for scientific achievements in 1988 and 1994. Also, he got Annual Research Award of the Serbian Medical Society in 1997. Since 2000 he has been a Member of the Serbian Academy of Science and Arts.

He is the author of 5 textbooks and editor of 12 monographs. He is also the author or co-author of >100 original peer-reviewed papers and 12 chapters in international books. He is heading several scientific projects mainly devoted to the genetic background of neurodegenerative disorders.

RON MILO
/ ISRAEL

Dr. Ron Milo is the Chairman of the Department of Neurology and the Director of the Multiple Sclerosis Center at the Barzilai Medical Center in Ashkelon, the Ben-Gurion University of the Negev, Israel.

Dr. Milo received his medical degree from the Hadassah School of Medicine, the Hebrew University, Jerusalem, and completed his training in neurology at Assaf Harofeh Medical Center, Tel-Aviv University. Between 1992 and 1994, he completed a postdoctoral research fellowship in neuroimmunology at the University of Maryland in Baltimore, where he studied the immunomodulatory properties of new treatments for multiple sclerosis. He is involved in basic and clinical research in MS, and accumulated 20 years of experience in conducting clinical trials in MS and other fields of neurology. He is also involved in teaching neurology and neuroimmunology to medical students and residents in neurology since 1987, and has received teaching awards.

Dr. Milo serves on the boards of the Israel Neurological Association and the Israel MS Society, and as the secretary of the Israel Society of Neuroimmunology. He is also a member of the American Academy of Neurology, the Council of the European committee on Treatment and Research in Multiple Sclerosis (ECTRIMS), the Panel on Demyelinating Diseases of the European Federation of Neurological Societies (EFNS), and the European Neurological Society (ENS) Subcommittee on Multiple Sclerosis and Demyelinating Diseases.

His scientific and clinical interests include immunology of MS, immunomodulation and new therapies in MS, cognitive dysfunction in MS and the conduction of clinical trials in MS.

DAFIN F. MUREŞANU
/ROMANIA

CURRENT POSITIONS
Chairman and Professor of Neurology, Department of Neurology, University CFR Hospital, Cluj Napoca, Romania

Vice Dean of the Faculty of Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

President of the Society for the Study of Neuroprotection and Neuroplasticity

Member of the Romanian Academy of Medical Sciences, Romania

OTHER ACADEMIC DEGREES

2002-2004 MBA, School of Health Care Systems Management, The Danube University, Krems, Austria

1998 Specialization in Leadership, The Arthur Anderson Institute, Illinois, USA

PAPERS PUBLISHED IN INTERNATIONAL JOURNALS (INDEXED IN ISI AND PUBMED)
30 articles

PAPERS PUBLISHED IN OTHER JOURNALS, (INDEXED IN OTHER DATABASES)
44 articles

PAPERS PUBLISHED IN ROMANIAN JOURNALS
46 articles

MONOGRAPHS
7 monographs

CHAPTERS IN PUBLISHED BOOKS
5 chapters
Fluent in: English, Italian

ACADEMIC MEMBERSHIPS

INTERNATIONAL SCIENTIFIC SOCIETIES
World Academy for Multidisciplinary Neurotraumatology (WAMN); Chairman of the Scientific Committee (2008-2010); Secretary (2010-present)

Danube Neurological Society; Executive Management Committee

European Society of Clinical Neuropharmacology; Secretary General

European Federation of Neurological Societies (EFNS); Member of the Neurotrauma Panel

Global College for Neuroprotection and Neuroregeneration (GCNN); Vice-President, Chairman of the Clinical Committee

The Society for the Study of Neuroprotection and Neuroplasticity (SSNN); Founder and President

European Neurological Society (ENS)

Society for Neuroscience

European Stroke Organization

New York Academy of Science

EDITORIAL BOARD

Frontiers in Neuroscience; Associate Editor

International Journal of Neuroprotection and Neuroregeneration

The Romanian Journal of Neurology

Romanian Journal of Clinical Anatomy and Embryology

Acta Neurologica Transilvaniae

American Journal of Neuroprotection and Neuroregeneration; Guest editor

Journal of Cellular and Molecular Medicine; Guest editor

Journal of Medicine and Life

AWARDS

2010 University of Medicine and Pharmacy Cluj-Napoca, Faculty of Medicine

"Octavian Fodor" Award for the best scientific activity of the year

2009 Romanian Academy "Gheorghe Marinescu Award" for contribution to neuroprotection and neuroplasticity

2009 Excellence Award; "Viata Medicala Romaneasca" Medical Journal
2007 Award for the best Medical TV Series Program; Romanian Television Channel 2.

CRISTINA
PANEA
/ROMANIA

Cristina Aura Panea has graduated the University of Medicine and Pharmacy "Carol Davila" Bucharest in 1986. She has started the neurology specialty and her university teaching career in the Neurology Department of the University Emergency Hospital of Bucharest in 1991 and has obtained her PhD in Medical Sciences in 2000. Starting with 2003, she is Associated Professor and the Head of the Neurology Department of Elias Emergency University Hospital.

The main fields in which she has activated are epilepsy, multiple sclerosis and movement disorders – fields in which she had elaborated over 100 papers and has carried out numerous clinical researches.

She is a member of the Romanian Neurology – which treasurer she was between the years 2001 to 2009; also she is a member of the European Neurology Society, American Academy of Neurology and of the International Movement Disorders Society.

C.D. POPESCU
/ROMANIA

Cristian Dinu POPESCU is a professor of Neurology at the University of Medicine and Pharmacy "Gr. T. Popa" Iasi. He graduated from the same University in 1975 and holds a PhD from 1991.
He is the head of the Neurology Clinic in The Clinical Rehabilitation Hospital in Iasi, Romania, where he conducts his clinical and scientific activity.

Since 2008 he is chief of the Neurology Department and also the chief of the VI th Medical Chair of the Iasi Medical University.

He is a member of national and international professional associations (vice president of the Romanian Society of Neurology, member of the Society for Study of Neuroprotection and Neuroplasticity, Society of Parkinson's Disease and Movement Disorders, European Council of Neurological Rehabilitation, Balcanian Medical Union).

He was an invited speaker in most of the important national neurology scientific events during the last years.

He is a local coordinator for MS immunomodulatory treatment. He initiated and coordinated the organization of the National Multiple Sclerosis Conferences during the last 5 years.
He has authored or coordinated 5 books and took part in writing of 12 other books as coautohor, and more than 150 papers.

His main fields of interest have been aging of the brain and its vascular system, multiple sclerosis, rehabilitation in stroke and other neurological diseases. Neurorehabilitation and neuroplasticity are among the main topics of concern, both in current clinical practice and regarding the research activities.

His group was among the first to use functional electrical stimulation in Romania - current research targets applications and effects of FES in stroke, MS and Parkinson's disease.
He is the coordinator of one of the first groups in our contry to use transcranian magnetic stimulation in neurology – both in clinical practice (diagnostic and therapeuthical TMS) and for research (cortical neuroplasticity and neuromodulation).

BOGDAN O. POPESCU /ROMANIA

Academic Education and Appointments
1996 MD, 'Carol Davila' University School of Medicine, Bucharest, Romania
1997- 2002 Resident in Neurology, University Hospital Bucharest
2000 - Assistant Professor, 'Carol Davila' University School of Medicine
2001 PhD, 'Carol Davila' University School of Medicine - suma cum laudae
2002 - Neurologist, University Hospital Bucharest
2004 PhD, Karolinska Institute, Stockholm, Sweden
2005 - Head of Laboratory of Molecular Medicine, 'Victor Babeş' National Institute of Pathology, Bucharest, Romania
2008- Senior Neurologist, University Hospital Bucharest
2009 - Lecturer, 'Carol Davila' University School of Medicine
2009 - Senior Researcher, 'Victor Babeş' National Institute of Pathology, Bucharest, Romania
Awards
1999 Beaufour-Ipsen prize for the best research study in neurology
2000 Young histochemist award - International Society of Histochemistry and Cytochemistry
2004 Diploma of scientific merit – 'Victor Babeş' National Institute of Pathology
2007 Romanian Academy award for medical research
2010 'Science and Art National Foundation Award of Excellence for research in the field of Neuroscience and Neuropathology
Other current activities
Guest editor for Alzheimer's review series at Journal of Cellular and Molecular Medicine
Executive editor of Romanian Journal of Neurology
Secretary General of the Romanian Society of Neurology
Research director of the Society for the Study of Neuroprotection and Neuroplasticity
Director, Victor Babeş' National Institute of Pathology, Bucharest, Romania
Spokesman for University Hospital Bucharest
Selected publications
1. Popescu BO, Toescu EC, Popescu LM, Bajenaru O, Muresanu DF, Schultzberg M, Bogdanovic N. Blood-brain barrier alterations in ageing and dementia. J Neurol Sci, 283:99-106, 2009.
2. Popescu BO. Still debating a cause and diagnostic criteria for Alzheimer's disease. J Cell Mol Med. 2007;11:1225-6.
3. Romanitan MO, Popescu BO, Winblad B, Bajenaru OA, Bogdanovic N. Occludin is overex in Alzheimer's disease and vascular dementia. J Cell Mol Med. 2007;11(3):569-79.
4. Cowburn RF, Popescu BO, Ankarcrona M, Dehvari N, Cedazo-Minguez A. Presenilin-mediated signal transduction. Physiol Behav. 2007;92:93-7.
5. Hansson CA, Popescu BO, Laudon H, Cedazo-Minguez A, Popescu LM, Winblad B, Ankarcrona M. Caspase cleaved presenilin-1 is part of active gamma-secretase complexes. J Neurochem. 2006;97:356-64.
6. Popescu BO, Ankarcrona M. Mechanisms of cell death in Alzheimer's disease: role of presenilins. J Alzheimers Dis. 2004;6:123-8.
7. Popescu BO, Cedazo-Minguez A, Benedikz E, Nishimura T, Winblad B, Ankarcrona M, Cowburn RF. Gamma-secretase activity of preseni-

lin 1 regulates acetylcholine muscarinic receptor-mediated signal transduction. J Biol Chem. 2004;279:6455-64.
8. Cedazo-Mínguez A, Popescu BO, Blanco-Millán JM, Akterin S, Pei JJ, Winblad B, Cowburn RF. Apolipoprotein E and beta-amyloid (1-42) regulation of glycogen synthase kinase-3beta. J Neurochem. 2003;87:1152-64.
9. Popescu BO, Oprica M, Sajin M, Stanciu CL, Bajenaru O, Predescu A, Vidulescu C, Popescu LM. Dantrolene protects neurons against kainic acid induced apoptosis in vitro and in vivo. J Cell Mol Med. 2002;6:555-69.
10. Popescu BO, Cedazo-Minguez A, Popescu LM, Winblad B, Cowburn RF, Ankarcrona M. Caspase cleavage of exon 9 deleted presenilin-1 is an early event in apoptosis induced by calcium ionophore A 23187 in SH-SY5Y neuroblastoma cells. J Neurosci Res. 2001;66:122-34.

HARI SHANKER SHARMA
/SWEDEN

Education
1. Higher Secondary 1969 Bihar School Examination Biology, Phy, Chem. IIndBoard Math
2. Intermediate (Sci) 1970 LS College, Bihar Univ. - do- Pass Muzaffarpur
3. B. Sc. (Hons.) 1973 -do- Zoology (Hons) , 2nd Cl.1st Bot, Chem
4. M. Sc. (Cytology) 1977 Bihar University Zoology, Cytology 1st Cl. 1st Muzaffarpur
5. Dr. Phil. (Sci) 1982 Banaras Hindu University Physiol/Zool Awarded Inst. Med. Sci, Varanasi
6. Dr. Med. Sci. 1999 Uppsala University, Neuroanatomy Awarded Med. Fac. Uppsala
7. Dr. Sci. 2009 Univ Med & Pharmacy, Neurobiology Conferred (Doctor Honoris Causa) Cluj-Napoca, Romania

Positions
1. Jun. Res Fellow 1977-1978 Minist. Science & Technol. Inst Med Sci Research UP State Govt. BHU
2. Sr. Res Fellow 1978-1981 Univ. Grants Commission - do- Research Govt. of India
3. Post Doct. Fellow 1981-1982 Indian Council Med Res -do- Research Govt. of India
4. Res. Associate 1982-1986 Univ. Grants Commission -do- Leader/Res Govt. of India
5. Res. Officer 1986-1986 Council Sci & Tech, (Eqv. Assist. Prof.) Govt. of India
6. Res. Scientist A 1986- Univ. Grants Commission (Equiv. Assoc. Prof.)
7. Visiting Scientist 1988-1989 Uppsala University Inst. Pathology CNS/Res Uppsala, Univ. Hospital
8. Humboldt Fellow 1989-1991 Alexander von Humboldt Free Univ. Leader CNS/Res Foundation, Bonn. Germany West Berlin
9. Res Scientist 1991- Uppsala University Univ. Hospital/ CNS/Res.Lead. BMC CNS-Injury
10. Prof. Neurobiology 1999- Med Res Counc -do- CNS Research Leadership
11. Docent 2004- Uppsala University Univ. Hospital CNS Res/Neuroanat

Award Year Organization Subject/Details
1. Silver Medal 1974 L.S.College, BU, Muzaffarpur 1st position in B.Sc. Hons. (Zoology), L.S.College
2. Gold Medal 1977 Bihar University, Muzaffarpur 1st position, M.Sc, Zoology, Bihar University
3. SIRI Research Award 1986 Ind. Assoc. Biomedical Sci. Best Research Paper
4. Shakuntala Amir Chand 1988 Ind. Counc. Med. Res. Best Work on BBB in Stress during 1983-1988 Research Prize
5. Career Award 1988 Grants Commis Neurobiology/Res
6. Neuronal Plasticity Award 1991 Soc. Brain Dysfunct. Best Res Paper, Sicily on “CNS and Thermal Plasticity”
7. Ronnöws Prize 1996 Dept. of Human Anatomy Best Res in Neuroanatomy UU 1994-1996
8. Distinguished Leadership 1998 Am Bio Res Assoc Neuroscience Award
9. Hwassers Prize 1999 Uppsala Medical Association Best Thesis in Medical

Faculty (Basic Res)
10. Gold Record 1998 Am Bio Res Assoc Outstanding Achievement in Neuroscience
11. Life Time Achievement 1998 Am Bio Res Assoc Neurobiology Res/Citation Award
12. Outstanding People of the 2000 Int Bio Cent, Cambridge, UK Dedication to Neuroscience 20th Century,
13. Certificate of excellence 2005 US FDA/NCTR, Ar. USA Dedication to Neurosci Drugs of Abuse Research at Nat Ctr Toxicol Res
14. DISCA 2006 NIH/NIDA Dedication on Research on Drugs of Distinguished International Scientist Collaboration Award (DISCA) Abuse
15. DISCA (IInd time) 2007 NIH/NIDA -do- National Institute on Drug Abuse
16. Outstanding Researcher Award 2007 EOARD, London, UK Research on Nanoparticles in Eur Off Aerospace Res Dev Blood-Brain Barrier
17. Hall of Fame, Neuroscience 2009 Am Bio Res Inst Dedication to Neuroscience Research/ Citation/Novelty
18. Neuroscience Icon 2010 DST/New Delhi, India
Invited Key Membership in August Bodies
19. Swedish Strategic Research Foundation, Stockholm, Sweden
20. American Association of University Professors, Washington, DC
21. Swedish Social Democratic Party (Socialdemokraterna), Stockholm, Sweden
22. European Nanomed Expert Committee, Brussels
23. American Association of Advancement of Science, Washington DC
International Scientific Journal/Editor/Advisory Board
24. American Journal of Neuroprotection and Neuroregeneration, American Scientific Publishers, Los Angeles, CA, USA, Editor-in-Chief (2008-)
25. Journal of Nanoneuroscience, American Scientific Publishers, Los Angeles, CA, USA, Editor-in-Chief (2009-)
26. Journal of Nanoscience /& Nanotechnology, American Scientific Publishers, Los Angeles, CA, USA, Associate Editor (2006-)
27. CNS Drug Targets, Bentham Science, USA, Advisory Board Member (2009-)
28. CNS Drug Delivery, Bentham Science, Advisory Board Member (2010-)
29. Journal of Neurodegeneration and Regeneration, Weston Medical Publishing, Boston, MA, USA, Advisory Board member (2004-)

MIHAELA SIMU
/ROMANIA

Mihaela Simu is presently working as Professor and Chairman of the Neurology Department II of University of Medicine and Pharmacy "Victor Babes" - Timisoara.
Professor Simu is currently Vicepresident of the Romanian Society of Neurology, one of the coordinators of the National Programme for the treatment of Multiple Sclerosis in Romania, active member of ENS, EFNS, American Academy of Neurology, and MDS.
Professor Simu has been and is involved as principal investigator in more than 20 international and national multicentric trials and 4 national research grants, and is presently the Romanian project leader in the BIOMARK HURO project (cooperation between Szeged and Timisoara medical Universities). Her interests are directed mainly in clinical neurology, in particular in multiple sclerosis, Parkinson disease, dementia, cerebrovascular and focal dystonias.
As author or co-author, has published and reported more than 100 national and international scientific papers, 3 medical books and 2 neurology courses in a bilingual (Romanian /English) version.

CRISTINA TIU
/ROMANIA

I always considered myself an optimistic person but still there are certain things which I find depressing, and a CV is one of those things. Suddenly it is not about you anymore, but about a person who had a number of achievements which are rarely the things you find interesting about yourself, and all your life is compressed in half a page.

I have graduated the University of Medicine and Pharmacy "Carol Davila" in Bucharest in 1987 and I started my career in neurology in 1991, as a resident in the Department of Neurology of the University Hospital Bucharest, the same place where now I am Associated Professor and Head of the Stroke Unit. I have two favorite domains: vascular pathology and multiple sclerosis. My main interest is in cerebrovascular diseases, I am coordinating a teaching course for cervical and cerebral ultrasonography and I followed the European Master in Stroke Medicine Programme in Austria.

My involvement in MS field started in year 2000, when the first patients in Romania were treated with DMTs due to a constant effort (read fight) of three people: Prof. Ioan Pascu, Prof. Alexandru Serbanescu and Prof. Ovidiu Bajenaru. Since then, I have followed-up hundreds of patients with MS, and I am now the coordinator of the University Hospital Bucharest Center for the National Programme for treating the Patients with Multiple Sclerosis. I have participated, together with my colleagues in the majority of the main International Clinical Trials in MS in the last decade and we had also several original scientific work related to clinical aspects of MS patients. I am one of the two representatives of the Romanian Society of Neurology in the Board of ECTRIMS.

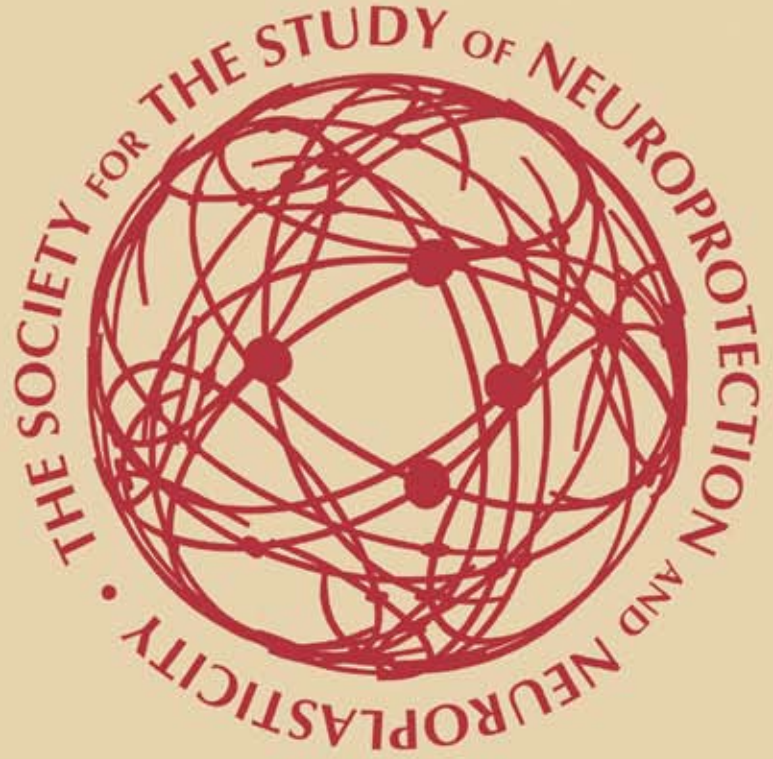
In the end of my half page, I am looking forward to future goals: development of basic research in MS in Romania, a National MS Registry, better drugs, a better education for patients and doctors, a better me...

JOHANNES C. VESTER
/GERMANY

Born, 1952, he specialized in Veterinary Medicine between 1971 and 1974 at the University in Munich, then changed to the University in Cologne in 1974 and specialized in Human Medicine from 1974 to 1980. In 1976 to 1979, he additionally studied biometric methods for pharmacology and clinical research at the Institute for Data Analysis and Study Planning in Munich.
While studying human medicine, he completed research work on pattern recognition in the visual brain and developed a pharmacodynamic Neuron Simulation Model at the Institute for Medical Documentation and Statistics of the University at Cologne.
From 1985 to 1995, he was member of the Ultrahigh Dexamethasone Head Injury Study Group and leading biometrician of the German GUDHIS Study.
Since 1982 he holds advanced training courses on biometry for professionals in clinical research and university establishments. His work also involves human engineering of biometric software and GCP-compliant tutorials for biometric appraisal of clinical studies.
Since 1995 he cooperates closely with the Institute for Data Analysis and Study Planning as Senior Consultant for Biometry & Clinical Research. He planned and evaluated about 150 randomized clinical studies worldwide and is member of various international advisory boards including participation as biometric expert in regulatory authority panels and in FDA, EMEA, and BfArM hearings.

PIETER E. VOS
/THE
NETHERLANDS

Pieter Vos is neurologist at the Institute of Neurology at Radboud University Nijmegen
Medical Centre, The Netherlands. His research activities are connected with traumatic brain injury, traumatic spinal cord injury and other acute neurological disorders. Focus of the research activities consist of studies aiming to unravel the clinical, biochemical and genetic determinants of neuroplasticity and recovery after mild, moderate and severe traumatic brain injury. Pieter Vos is founder of the Dutch working group on Neurortraumatology. Current international activities are chairman of the scientist panel on neurotraumatology and head of the task force mild traumatic brain injury, both residing under the European Federation of Neurological Societies.



International School of Neurology