Conclusions: In patients with anoxic encephalopathy, cortical lesions may be responsible for isoelectric EEG without clinical criteria of brain death and without cerebral circulatory arrest.

| P1329 | **Non-invasive Monitoring of Intracranial Pressure and Compliance** |

K. Paulat[1], R. Brucher[1], D. Russell[2]. [1]*Ulm University of Applied Sciences, Germany;* [2]*University of Oslo, Norway*

Background: Changes in intracranial pressure (ICP) and compliance are often a very serious complication of intracranial disease. Monitoring of these parameters would provide the physician with data for rational treatment management, but to date this must carried out by invasive methods which carry a considerable risk of serious complications.

Objectives: The aim of this study was to assess a new non-invasive method for measuring ICP and compliance.

Methods: Ten healthy controls took part in the study. ICP variations were assessed by measuring tympanic membrane ICP propagation using a specially designed pressure transducer. This is possible since ICP and its infrasonic pressure waves are transmitted through the aquaeductus chochleae and the middle ear towards the tympanic membrane. The middle ear and the tympanic membrane act as a pressure transformer. Cerebral compliance was measured by simultaneously assessing the Windkessel volume displacement of the cerebral arteries. This is achieved by measuring the cross-section transcranial Doppler power index in the middle cerebral arteries with corrections for the Doppler frequency distributions (frequency corrected power). ICP was increased step-wise using a tilt-table (11–12 measurements in all subjects). This increases cerebral venous pressure which is the hydrostatic pressure relative to the right atrium and is known to be transformed into an equivalent ICP increase due to the valve function of the bridging veins. Compliance was calculated at each ICP value.

Results: The pressure increases measured by tympanic membrane propagation and the calculated ICP increases showed a linear relationship in all 10 subjects. Compliance curves also showed typical decreases in compliance with increasing ICP.

Conclusion: This study has shown that it is now possible to non-invasively monitor intracranial pressure and compliance. This new method is now being assessed in extensive clinical studies.

| P1330 | **Rating Scale for Patients with Apallic Syndrome/Vegetative State** |

F. Gerstenbrand[1], H. Binder[2], G. Birbamer[4], C.H. Spepan[3]. [1]*Ludwig Boltzmann Inst. Restaurative Neurology;* [2]*Neurologische Krankenhaus MTS, Vienna;* [3]*Neurologische Krankenhaus MTS, Vienna, Austria;* [4]*Klinikum Staffelstein, Germany*

The number of patients with apallic syndrome/vegetative state due to acute severe brain damage but also caused by chronic progressive diffuse brain disease is remarkably increasing.

Clinical and technical assessment methods for reliable diagnoses have been under discussion for many years. Though there exists a long string of rating scales relating to the comatose state of conditions of impaired consciousness, none of them is capable of covering the profile as well as all longitudinal sections regarding patients with apallic syndrome/vegetative state and all remission phases. Therefore there is an urgent necessity for a homogenous, widely accepted nomenclature describing patients with long lasting impairment of consciousness. Undoubtedly this is also inseparable from an accurate documentation of symptoms and signs for which

a standardised rating sheet has to be developed. Such a rating sheet could be the basis for an international data bank, necessary for harmonisation of assessment, standardised treatment and rehabilitation programmes.

A rating scale was published 1977 (Gerstenbrand et al.) based on the modified Glasgow Coma scale with the compartments consciousness, reactions, motor functions including opto-motor system, autonomous functions, primitive motor patterns, emotional reactions. The presented version has been developed on the basis of the first scale using a graduation from 0–4. The new rating scale gives support for documentation and could be used as aid for prognostic discussion.

| P1331 | **Predictors of Mechanical Ventilation in Patients with Myasthenia Gravis Exacerbation** |

J. Suarez[1], K. Boonyapisit[1], O.O. Zaidat[1], H.J. Kaminski[1], R.L. Ruff[2]. [1]*University Hospitals of Cleveland;* [2]*VA Medical Center - Cleveland, USA*

Background: Independent predictors of prolonged mechanical ventilation (MV) in patients with MG exacerbation are well established. However, predictors of MV in these patients upon admission are less well defined.

Objective: To determine predictors of need for MV in patients with MG exacerbation admitted to the hospital.

Methods: We retrospectively reviewed medical records of MG patients admitted to our hospital (Jan 1992 - June 1999) with exacerbation (Myasthenia Severity Scale <10). We collected: demographics, past medical history, functional status at baseline, clinical exam on admission, precipitant factors, laboratory and radiologic data on admission and during hospitalization, serial NIF, complications during hospitalization, treatment received, and outcome upon discharge (home vs rehabilitation or nursing home). Univariate analysis was done using extended Mantel-Hanszel chi square or Fisher's exact test. Significant covariates (p<0.05) influencing MV were analyzed using logistic regression.

Results: Most of our patients were white (77%) female (89%) and the mean age was 52 ± 24. MV was necessary in 36% of episodes. Predictors for need of MV included: -precipitants: pneumonia, medications, systemic infection, atelectasis, or no clear cause; -Abnormal CXRay on admission; -Complications during hospitalization: atelectasis, cardiac arrhythmias, and anemia requiring transfusion. MV patients were significantly treated with plasmapheresis. Serial NIF was a poor predictor of MV.

Conclusion: Prompt identification and aggressive management of certain medical comorbidities may impact upon frequency of MV institution in MG exacerbation. These patients should be cared for in ICU setting from admission.

| P1332 | **8-Iso-Prostaglandin F2-Alpha (8-Iso-PGF2-Alpha) is Elevated in Ventricular CSF Patients With Subarachnoid Hemorrhage** |

R. Diaz-Arrastia, S. Misra, K. Scott, E. George, D. Samson. *University of Texas Southwestern Medical, USA*

Isoprostanes are generated by free-radical mediated oxidation of arachidonic acid, and are potent vasoconstrictors of the cerebral vasculature in animals. Subarachnoid hemorrhage (SAH) results in elevated levels of oxygen free radicals, which are believed to result in delayed vasospasm, but the specific vasoconstrictor substance(s) have not been identified. We studied six patients with aneurysmal SAH underwent clipping of their aneurysm and required ventricular drainage for management of hydrocephalus. Another patient with

Journal *of the*
Neurological
Sciences

OFFICIAL BULLETIN OF THE WORLD FEDERATION OF NEUROLOGY

The Editor, in consultation with the World Federation of Neurology, reviews requests for publication of symposia on topics of interest to readers of the *Journal of the Neurological Sciences*. The decision to publish a symposium as a supplement to JNS is based on the topic, the Supplement Editor, and the contributors. Once a decision is made to publish a symposium as a supplement, it is not peer-reviewed by the Editorial Board of JNS. The individual authors are responsible for their contributions and the Supplement Editor is responsible for the overall quality of the Supplement.

Abstracts of the

XVII World Congress of Neurology

London 17–22 June 2001