

applied epidurally over 10s. The HBO-group (n=10) underwent 90 minute HBO-sessions with 100% oxygen at 2.5 bar (1h, 24h±2h, 48h±2h after CIBT). Cerebral tissue pO₂-measurements were performed during the three HBO-sessions and on day 4. The control-group (n=10) underwent no treatment. pO₂ was measured 60 minutes after CIBT and on day 2, 3 and 4. Animals were sacrificed on day 4 and brains were analysed histologically.

Results In the HBO-group pO₂-measurements showed a significant increase in pO₂ between day 1 and day 4 (p=0.005), whereas no significant changes were observed in the control group (p=0.363). pO₂-measurements showed a significant increase after consecutive HBO-sessions (p=0.047, p=0.005). During the first HBO-session mean pO₂ was 169 mmHg, during the second 305 mmHg and during the third 420 mmHg. In the HBO-group mean area of necrosis was 16.2 mm², in the control-group 19.9 mm² respectively. There was no significant difference (p=0.146). Significantly smaller areas of brain oedema were found in the HBO-group (p=0.004). In the HBO-group mortality was 0%, in the control-group 20%.

Conclusion The positive effects of HBO-treatment should be examined in further studies to define the number of HBO-sessions needed and the elapsed time between trauma and first HBO-treatment which might still have beneficial effects.

P 1129

Terminology of mild traumatic brain injury, results of a survey in Austria 2000

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Introduction In the year 2000, an inquiry about mild traumatic brain injury was conducted in neurological, neurosurgical and traumatological departments in Austria. The aim was to get more information about terminology, the use of additional examinations and the treatment programmes in patients with mild traumatic brain injury.

Method A questionnaire based on a European questionnaire, presented by J.D. Kruijck at the 4th EFNS Congress in Seville 1998, was used. 105 departments were contacted.

Results The return rate was 65%. The most frequently used term was commotio cerebri, "Gehirnerschütterung" (more than 90%). Only 5% of the hospitals used mild traumatic brain injury. The main symptoms are retrograde amnesia (88%), loss of consciousness (86%) and posttraumatic amnesia 82%. 73% of the departments used their own guidelines for diagnosis and treatment. Only 10% answered the question about guidelines in treatment programmes. The duration of hospitalisation ranges from outpatient examination to 48h of patient observation.

Conclusion Commotio cerebri is the most widely used diagnosis in Austria. There is no common therapeutic concept in the different units admitting patients with mild traumatic brain injury. The results of this questionnaire show the necessity for international harmonisation of diagnosis and treatment of patients with mild traumatic brain injury.

P 1130

Different remission stages of transient apallic syndrome (Innsbruck remission scale)

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Objective Apallic syndrome is one of the severest neurological diseases. Due to improvements in neurological rehabilitation, most cases can be treated successfully. The course of apallic syndrome is characterized by an initial stage after acute coma, followed by a transitory stage, full stage and a remission stage in 80% of patients. The clinical symptomatology of the full stage of apallic syndrome may be transient in many patients and eight different stages of remission can be differentiated (Innsbruck remission scale). In the last 4 decades Gerstenbrand and co-workers observed more than 1500 patients with apallic syndrome. The aim of this paper is to present the clinical picture of the different remission stages of apallic syndrome, to improve a better understanding of the clinical course and management of this kind of patients.

P 1131

Optimisation factors of cranioplasty in patients after severe head injury

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Introduction Cranioplasty is an important part of rehabilitation of patients after severe craniocerebral trauma. The clinical signs of short-term and long-term outcomes of head injury connected with skull defects are shown by headaches, gravity, seizures, mental disorders, nervous-emotional strain. The indications for cranioplasty after decompressive craniotomy are cosmetic repair, and, mainly, restoration of cerebral protection. The main reason for neurological improvement is the improvement of cerebral blood flow, both arterial and venous.

Method We investigated cerebral hemodynamic changes (arterial and venous) by Transcranial Doppler (TCD) in 32 patients with posttraumatic skull defects in various terms after head injury.

Results The analysis of TCD data up to cranioplasty has shown a decrease of blood flow velocity (BFV) in one or two arteries on defeat area in all patients. A more pronounced decrease of flow velocity was found at a large defect. We revealed increasing of BFV up to 57–64 sm/sec in straight sinus in 25 patients. Small skull defects had no changes in venous blood flow. Long-term investigation (within 2 years) has shown improvement of cerebral circulation—decrease or disappearance of arterial blood flow asymmetry and decrease of BFV in straight sinus within 3–6 months in 19 patients, who underwent cranioplasty up to 6 months after head injury. TCD data correlated with neurological improvement. 13 patients, who underwent cranioplasty a long period after craniocerebral trauma, showed no marked disappearance of BFV asymmetry. Thus, early cranioplasty lead to faster restoration of cerebral blood flow, better functional recovery and rehabilitation of these patients.

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