

or fracture comminution. Patients who have tension band wiring more often require a second procedure for removal of symptomatic metalwork.

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The effect of baseball pitching injuries on ulnar nerve conduction velocity

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Objective The purpose of this study was to compare the ulnar nerve conduction velocity of baseball pitchers without injury to baseball pitchers with injury and to individuals who do not play baseball.

Method Eight college baseball pitchers without injury, 8 age-matched individuals that do not play baseball, and 8 college baseball pitchers with elbow injury participated in the study. Supra-maximal electrical stimulation was applied superficially to the ulnar nerve of both the dominant and non-dominant arms of all subjects. M-waves were recorded from the abductor digiti minimi muscles. The ulnar NCV of both arms of the 3 groups were compared using a 2x3 analysis of variance. Alpha levels of 0.05 were used to test for significance.

Results The ulnar NCV were 64.40m/s(sd=7.34), 54.97m/s(sd=8.67), and 59.18m/s(sd=4.10) for the pitchers without injury, pitchers with injury, and the individuals that were not pitchers, respectively. The pitchers without injury were significantly faster than the other two groups. In pitchers without injury the ulnar NCVs of their dominant arms were significantly faster than their non-dominant arms 56.26m/s(sd=2.63). No significant difference was found between the dominant and non-dominant arms for the group of injured pitchers and the group of individuals that were not pitchers.

Conclusion The above normal NCV observed in the non-injured pitchers may be an adaptive response to trauma associated with ball throwing. The sub-optimal NCVs observed in injured pitchers may be associated with less than optimal pitching performance. We suggest that the rehabilitation program consider monitoring ulnar NCV to establish their ability to predict outcomes.

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Neurological and psychosomatic disorders of medical personnel of "critical" specialties in socially stressful conditions with poor professional adaptation

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FEDERATION

Objective Study of psychological adaptation disorders that doctors of "critical" specialties (surgeons, oncologists, psychiatrists, etc.) and medical personnel have, are actual problems of health care.

Method Modern clinical experimental-psychological, sociopsychodiagnostic methods of psychosomatic (neurological) disorders, personality features and their changes depend upon the influence of social-stressful factors and professional hazards. Detection of personal and professional lack of adaptation and copying-behaviour were used. 46 oncologists, 102 psychiatrists, 64 paramedical workers of oncological institutions and hospi-

ces, 26 therapeutic nurses were among the persons examined. Average age of oncologists and nurses of oncological institutions was 41.7 and 34.3, respectively; psychiatrists and nurses - 46.1 and 32.3. Among oncologists there were 54.3% men, 45.7% women; among psychiatrists 39% and 61%, respectively. We studied the appearance of neurological and psychological disorders, personality changes and structure, changes in the emotional sphere depending upon intensity and level of acute and chronic stress; traits of social-psychological and professional stressful factors leading to psychological maladaptation of doctors and medical personnel.

Results Both correlative and non-correlative peculiarities of individually typical features of oncologists and psychiatrists in the types of reactions and emotional disorders of paramedical personnel were detected. Professional and social-stressful factors contribute to forming psychological maladaptation and non-adequate psychological protections of doctors and personnel of "critical" specialties causing psychosomatic disorder and "difficult" conditions, to which dynamic states due to stress are related, neurotic and somatically forming disorders connected with them, and other disturbing disorders. The study of these problems will promote timely detection of psychosomatic disorders, development of complex clinico-psychological, socio-cultural psychotherapeutic programmes of rehabilitation of doctors and of the personnel of "critical" specialties.

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A biomechanical examination of brain dynamics as a result of a minor impact

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P 1146

Cerebral metabolism of glucose in patients with apallic syndrome due to clinical course

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P 1147

Headache and EEG changes in assessment of patients' recovery after mild traumatic brain injury

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Closed head injury - frequency and character of brain lesions

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New classification of severe brain injury

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Pelotherapy in immunologic rehabilitation of patients with diabetic polyneuropathy

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Painful torticollis unresponsive to botulinum toxin following thyroidectomy

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The Klüver Bucy syndrome in the remission of traumatic apallic syndrome – a positive prognostic feature

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Cancelled

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The state of immune homeostasis in patients with gunshot injuries of peripheral nerves

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Child neurology

Sleep disorders

P 1155

Ascorbic acid and glutathione CSF concentration in newborns with bacterial meningitis

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Introduction Pathophysiological mechanisms of meningeal inflammations are very complex. Free oxygen radicals play an important role. Non-enzymatic antioxidants are also important for prognosis of illness. Two of them are ascorbic acid and glutathione.

Objective We tested the hypothesis that ascorbic acid and glutathione are important non-enzymatic protective factors.

Methods We tested CSF and blood serum of 32 newborns with bacterial meningitis in the first seven days of illness. We used a method with 2,4-dinitrophenyl-hydrasine for ascorbic acid and a method with Elman's substance for glutathione. We formed control groups of newborns with high risk for bacterial meningitis.

Results The mean value of CSF ascorbate concentration in groups of sick newborns is 112.93 µM/L and in control group's 102.79 µM/L. There is no statistical difference. Dehydroascor-

bate concentration in CSF is 75.42 µM/L and in control group 75.10/L, $p > 0.05$. Blood serum concentration of ascorbic acid is 161.00 µM/L in the group of sick newborns and 128/L in the control group < 0.05 .

But ascorbat/dehydroascorbat ratio (which is constant) shows statistically important changes between two groups. There is no statistical significance in correlation between concentration of ascorbic acid with prothrombin and numbers of leukocytes. Mean CSF concentration of glutathione is 13.37 µM/L in groups of sick newborns and 14.50 µM/L in control groups. There is no statistical correlation between prothrombin and number of leukocytes with glutathione concentration.

Conclusion Ascorbic acid and glutathione are not important antioxidant protectors in early stages of neonatal bacterial meningitis. Change in ascorbat/dehydroascorbat ratio shows that dynamic has been changed but that only as reparative protectors they may be more important in another stage of illness.

P 1156

Arnold-Chiari malformation, the character of epileptic seizures, particular features of EEG

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Introduction Arnold-Chiari malformation (ACM) becomes a problem of paediatric neurology because of the increasing frequency in clinical practice.

Methods 28 patients aging from 4 to 13 years have been examined. MRI and MR-angiography proved the diagnosis of ACM.

The first degree of ACM was in 5 cases, the second in 19 and the third in 4 patients. EEG registration was performed. International System 10–20 of electrode positioning.

Results On the basis of clinical and physiological data several types of epileptic attacks were detected: simple partial (sensory; with vegeto-visceral manifestation) complex partial, with secondary generalisation.

Particular features of EEG pattern:

- 1) Basic activity is slow, increasing percentage of slow waves in posterior area;
- 2) Registration of slow rhythmic waves, tracing more than 10% of registration time in caudal area (there is no reaction to eyes opening);
- 3) Generalised bilateral paroxysmal activity (polymorphic sharp slow waves, sharp waves).

Conclusions In all groups of patients with frequency of epileptic seizures, the EEG pattern correlated with the degree of ACM.

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Hypothalamic hamartoma presenting as true precocious puberty and gelastic seizures

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Hypothalamic hamartomas (HH) are congenital lesions usually located at the floor of the third ventricle, containing LHRH-secreting cells, that can cause true precocious puberty (TPP) and in some cases gelastic seizures.

P 1149

New classification of severe brain injury**G. Birbamer¹**, F. Gerstenbrand²¹Klinik Angermühle, Deggendorf, GERMANY, ²EFNS Head Office, Vienna, AUSTRIA.

The reconstruction of the force acting on the skull, an accurate neurological examination, immediate CT or cerebral MRI permit assesment of the damage with a view to primary traumatic lesion and secondary traumatic injury.

A new classification based on comparison of clinical data, neuroimaging findings and neuropathological knowledge is helpfull for the diagnostic evaluation of traumatic brain damage.

Methods:

95 patient with suspicius inner cerbral trauma (ICT) in different stages after severe brain injury underwent CT and cerebral MRI examination. All MR studies were performed on a 1.5 T unit.

Results:

the correlation of traumatic impact on the head and clinical findings togheter with neuropathological findings allows a basic distinction of a linear outer and a upper and lower inner cerebral trauma. MRI was superior in the detection of ICT-related lesions to CT in all stages of traumatic brain disease.

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