Serum S-100B protein predicts prognosis in endogenous encephalopathy

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P307 Serum S-100B protein predicts prognosis in endogenous encephalopathy

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Background Cerebrospinal fluid concentrations of S-100B protein, an acidic calcium-binding protein found in astrocytes and Schwann cells, increase after central nervous system damage. Serum S-100B protein thus has potential as a biomedical marker of brain cell damage. Several reports show a relation between the severity of head injury and serum S-100B protein (S-100B) levels in trauma patients, but there are few data about S-100B in endogenous cerebral disease.

Objective The aim of this study is to evaluate S-100B as a marker in endogenous encephalopathy.

Methods Serum S-100B protein concentrations (pg/ml) were measured daily by ELISA until ICU discharge in 19 ICU patients (12 men, seven women; age 9–80 years [mean 57.1 ± 22.8 years]) with endogenous encephalopathy. The APACHE II score and Glasgow coma scale (GCS) were used to assess the severity; electroencephalography (EEG) and computerised tomography (CT) were also examined. Values are expressed as mean ± SD. The unpaired Student's *t* test, or tests of Mann–Whitney's U, Wilcoxon signed-rank, Kruskal–Wallis and Pearson's correlation coefficient were used. $P < 0.05$ was considered statistically significant.

Results There were 10 survivors and nine nonsurvivors with no significant differences in age, APACHE II score or GCS. There was no significant difference in S-100B levels on admission between survivors and nonsurvivors, but S-100B levels were significantly lower in survivors than in nonsurvivors from day 1 (1129 ± 1780 vs 465,370 ± 780,293, $P < 0.05$) until ICU discharge (16.5 ± 15.9 vs 231,120 ± 591,110, $P < 0.05$). In survivors, S-100B levels decreased from 5 day (30.1 ± 18.5) to discharge compared with admission levels ($P < 0.05$); in nonsurvivors, there were no significant changes in S-100B compared with admission levels. There were no correlations of S-100B levels with APACHE II score ($R = 0.3$, $P > 0.05$) or GCS ($R = -0.1$, $P > 0.05$), but EEG and CT abnormalities were correlated with S-100B levels.

Conclusion Serum S-100B concentrations follow different courses in survivors and nonsurvivors in endogenous encephalopathy. Although similar on admission, differences in serum S-100B protein between survivors and nonsurvivors appeared from the first day after admission. In survivors, but not in nonsurvivors, S-100B levels decreased until discharge. There were also significant relationships with the severity of EEG or CT abnormalities and S-100B levels. Serum S-100B protein could be a useful biomedical marker for assessment of brain damage and may predict prognosis in endogenous encephalopathy.

P308 Severe brain injury epidemiology in Western Macedonia: experience of a general hospital as the basis for planning brain injury management

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Introduction Studies on patients with severe brain injury (SBI) are few and are based on data from specialized centers. In Western Macedonia the main reason for transferring trauma patients is SBI, to a neurosurgeon with a travel time as long as 3 hours. Five general hospitals serve the health service needs of a population of 301,522 inhabitants. Bodosakeio General Hospital covers a real population of 100,000 and is the only one in the region backed by an intensive care unit and 24-hour facilities for computerised tomography scanning.

Objective The objective of this study was to evaluate the incidence, distribution, clinical patterns and early outcome of SBI patients admitted to our non-neurosurgical hospital, as a basis for future efforts at improvements.

Methods Cases of SBI patients admitted to Bodosakeio hospital (Glasgow Coma Scale ≤8) were identified retrospectively for a 23-month period (January 2002–December 2003) using data from the District Health System of West Macedonia, the accident and emergency unit, the hospital forms registering interhospital transports and the intensive care unit records. Extracted data concerned the incidence, gender distribution, age, external causes, C–T lesions, associated injuries, early transfer and mortality at the end of acute hospitalization. Additionally, data for the SBI

Table 1

	Epidural haematoma	Subdural haematoma	Contusions	Brainswelling	Cranial fracture	Spinal fracture	Normal CT	Total
Number	6	6	6	5	1	5	3	32
Male/female	3/3	5/1	5/1	4/1	1/0	2/3	2/1	22/10
Mean age (years)	28.16	37	44.16	17.4	3.5	52.2	38.33	31.53
Pediatric	1	0	0	3	1	0	1	6 (18.17%)
Mortality	2 (33.33%)	1 (16.16%)	4 (66.66%)	2 (40%)	0	0	0	9 (28.1%)
Associated injuries	2	1	1	1	0	1	1	7 (21.87%)