195

SERUM S-100B PROTEIN AS AN OUTCOME BIOMARKER IN NEONATES AFTER PERINATAL ASPHYXIA

D.Z. Nagy[1], E. Borbély[1], P. Lakatos[2], D. Kelen[2], M. Szabó[2]

[1]*Semmelweis University,* [2]*I.st Department of Pediatrics, Semmelweis University, Budapest, Hungary*

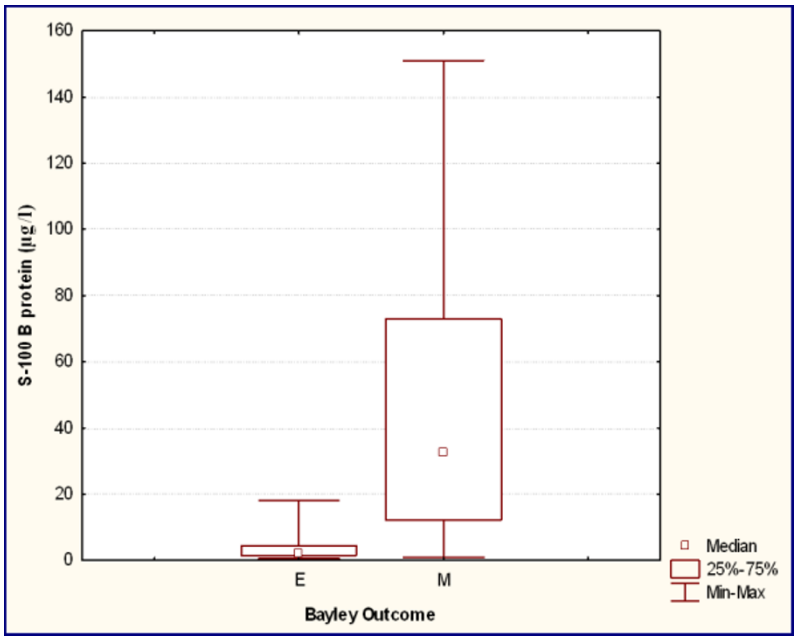
Background: Early biomarkers predictive for long-term morbidity and mortality are needed following perinatal asphyxia. S-100B specific for glial cells of CNS is elevated in the serum after brain damage in adults and in neonates.

Aim: To assess the relationship of serum S-100B levels and neurodevelopmental outcome in asphyxiated neonates.

Methods: 30 newborns with perinatal asphyxia were studied. Serum S-100B was measured using chemiluminescence method at 6 hours of age. Neurodevelopmental assessment (Bayley II test) was performed between 18-22 months. Infants were classified into two groups: i) healthy infants and infants with mild neurological impairment (MDI or PDI> 70; group M) [n = 19] ii) infants with severe developmental delay or death (MDI or PDI< 70; group S) [n = 11]. Mann-Whitney U-test was used for statistics.

Results: The anthropometric characteristics of the two groups were comparable. S-100B values were significantly lower in group E compared to group M (µg/l) [median; min-max]: 2,15; 0,52-18,1; and 32,81; 0,88-151, (p< 0,0005) respectively. 20 µg/l S-100B level was chosen as cut-off value (sensitivity: 0,58; specificity: 1; PPV: 1; NPV: 0,78 for the adverse outcome).

Conclusions: Serum S-100B was significantly higher in the adverse outcome group compared to the optimal outcome group. S-100B appears to be a good biomarker for early prognosis, it correlates with the severity of neurological impairment but further studies are necessary.



[Mann-Whitney U test]