

Correlation of ubiquitin c terminal hydrolase and s100 β in predicting deficits in cognitive control in young adults with mild traumatic brain injury

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Objective: To study the acute phase serum biomarkers in patients with mild traumatic brain injury (mTBI) and to correlate them with short term cognitive deficits.

Materials and Methods: This is a prospective observational study conducted at a tertiary care center for neurotrauma. The participants included patients with mTBI (n = 20) and age, gender, and education-status matched healthy controls (n = 20). In both the groups, the serum concentrations of biomarkers ubiquitin C terminal hydrolase (UCH-L1) and S100 calcium-binding protein B (S100B) were measured. Both the groups underwent neuropsychological tests. The serum tests were done in the acute stage after injury and the neuropsychological tests were done 3 months after injury.

Results: There was no significant increase in the serum S100B and UCH-L1 levels in patients with mTBI. Patients with mTBI had significant cognitive deficits at 3 months after injury, which was suggestive of involvement of diffuse areas of the brain, in particular, the premotor, prefrontal, and medial inferior frontal lobes and the basitemporal region. The correlation of biomarkers with cognitive deficits in patients with mTBI was found in the following domains: working memory, verbal learning, verbal fluency, and visual memory.

Conclusion: The serum biomarkers of mTBI have a correlation with selective domains of neuropsychological outcome.

Biography

Subir Dey is heading the department of neurosurgery at Command Hospital Lucknow, India. He has done his graduation and post-graduation from Armed Forces Medical College. Later he did his Mch from NIMHANS, Bangalore. He has a keen interest in the Neurotrauma and Rehabilitation of Indian soldiers their relatives and veterans. It gives him immense pleasure to see and treat or operate the head injury individuals who come in comatose condition and go on their foot walking. He is instrumental in designing the neurorehabilitation programme at our centre.

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