The Relationship between Serum Levels of Interleukins 6, 8, 10 and Clinical Outcome in Patients with Severe Traumatic Brain Injury

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Background: Clinical outcome in patients with severe traumatic brain injury (TBI) depends on both primary and secondary brain injuries. Neuroinflammation is an important secondary mechanism, which occurs by releasing interleukins (ILs). Increased levels of ILs may affect clinical outcome following TBI.

Objectives: This study aimed to determine the relationship between the serum levels of interleukins 6, 8 and 10 and clinical outcome in patients with severe TBI 6 months after injury.
**Patients and Methods:** In a descriptive-analytical study, 44 patients with GCS ≤ 8 (Glasgow coma scale) and age ≥ 14 years were included. Their blood samples were collected at first 6 hours after injury. Clinical outcome was determined based on GOS (Glasgow Outcome Scale) at 6 months after head injury. Serum levels of interleukins 6, 8 and 10 were measured using the ELISA method. Spearman's rho, independent T-Test, and Mann-Whitney Test were used for data analysis.

**Results:** Comparing the serum levels of interleukins in two groups with favorable and unfavorable clinical outcomes showed that the mean serum levels of interleukins 6 and 8 in group with favorable outcome was 85.2 ± 51.6 and 52.2 ± 31.9, respectively lower than those of group with unfavorable outcome with 162.3 ± 141.1 and 173.6 ± 257.3 (P < 0.03) and (P < 0.01).

**Conclusions:** Increased serum levels of interleukins 6 and 8 as a predictive marker might be associated with unfavorable clinical outcome in patients with severe TBI.

*Keywords:* Head Injury; Interleukin; Brain