TBI is one of the major causes of morbidity and mortality. Outcome for brain-injured patients is determined by the type, severity, location of the injury, ischemia and inflammatory response following TBI. Aim of the study: We focused on the relevance of a risk factor, kinetics of all markers in the blood reflecting different types of pathophysiological changes of the BBB in focal and diffuse injuries. We analyzed the BBB impairment in focal and diffuse brain injuries by immunohistochemistry and electon microscopy. Methods: The patients (n=38) were divided into group of diffuse axonal (DAI, n=10) and focal (n=28) brain injuries. Blood samples were collected during 10 days after admission to the hospital. Serum protein (S-100B, NSE) concentrations were measured on immunoassay analyzer Roche Cobas e411, GFAP by Biotrak activity assay systém, NF-H by ELISA immunoassay, and inflammatory markers on immunoassay analyzer. The BBB was studied by immunohistochemistry and electon microscopy. Results: With regard to the kinetics of NSE and S-100B we found the decrease of value of NSE and S-100B protein in survived patients with focal brain injury, on the other hand the increase of NSE (32,72 μg/l up to 86,95 μg/l) and S-100B protein (3,41 μg/l up to 5,80 μg/l) 2 up to 3 day was observed in 5 patrients who died. Within 1 up to 3 days after traumatic brain injury, an increased values of S-100B protein and IL-6 were proved in patient with expansive lesion compared to patients without expansive contusion, serum NF-H was higher in DAI compared to focal TBI. The serum S-100B concentration was higher in patients with focal mass lesions compared to patients with DAI. The highest peak of serum S-100B values were found in expansive lesions. The serum GFAP was higher in group with focal injury compared to group with diffuse injury.