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Traumatic brain injury (TBI) is one of the most common causes of disability and death. The consequences of not only severe but also a mild head injury are unpredictable and can cause the development of gross mental disorders. An important task is to identify the main factors determining the prognosis of traumatic brain injury. The aim was to determine the risk factors for poor prognosis of TBI, resulting in severe mental disorders. Using clinical examinations, psychometric scales, flow cytometry, and determining the level of melatonin we have examined 437 patients with a history of head injury, which caused different psychopathological symptoms (study group). The patients who had brain injury in the past, which did not lead to distant psychotic effects (72 patients), represented the control group. 1.5-2 years after the brain injury in the study group, reduction of level and disorders of melatonin rhythm synthesis were detected in 69%, which was associated with insomnia, flattened diurnal temperature curve and uncontrollable asthenia. In the future, patients with disorders of melatonin synthesis have so-called psychopathological 'heat lightning'. 3 years after traumatic brain injury in the study group patients using the flow cytometry, we were able to detect active caspase cascade self-destruction of the target cells. Clinically, it led to appearance of hallucinatory-paranoid features and cognitive impairment. In the control group, such symptoms were not detected. Functional disorders in patients, who have had mild TBI lead to permanent adjustment disorders.