Introduction:
Establishment of prognostic models in traumatic brain injury (TBI) would improve the classification based on predictive risks and will better define treatment options [1]. In recent years, one of the most intensively studied glycoprotein is YKL-40. It is expressed as a consequence of broad spectrum of inflammatory and malignant diseases [2]. This is study aimed to investigate the level of YKL-40 in TBI patients and its relationship with several clinical models.

Methods:
We determined plasma and cerebrospinal fluid (CSF) YKL-40 levels in six (6) patients – on the 24th and 96th hour after the TBI. Each patient was examined by physical and instrumental methods for somatic and neurological status, clinical assessment and prognostic scales (GCS, Marshall Classification, APACHE III). Routine haematological and biochemical tests were also performed. As control served the CSF of age-matched suddenly deceased healthy individuals (n = 11), which was examined post mortem for YKL-40 levels.

Results:
We found no significant difference between plasma YKL-40 levels till 24th and 96th in all patients (mean difference ± SD: 57 ± 237 ng/ml). Significantly higher CSF YKL-40 levels till 24 h in TBIs compared to the control group was detected (p=0.014). A correlation between CSF YKL-40 concentrations till 24 h and Marshall Classification (p=0.042) was determined. No association of YKL-40 concentrations with GCS and APACHE III was observed neither for the plasma glycoprotein nor for the one in CSF.

Conclusion:
Our preliminary results show that YKL-40 protein levels are related to the inflammation and to the prognostic model reflecting the pathophysiology of TBI. Acknowledgements: The financial support by the National Science Fund of Bulgaria (Contract DM 03/2 12.12.2016) is gratefully acknowledged.

References: