Schwarzmaier S.M., Kim S.W., Trabold R., Plesnila N. 2010. Temporal profile of thrombogenesis in the cerebral microcirculation after traumatic brain injury in mice. J. Neurotrauma. 27 (1) : 121–130.

Stein S.C., Chen X.H., Sinson G.P., Smith D.H. 2002. Intravascular coagulation: A major secondary insult in nonfatal traumatic brain injury. J. Neurosurg. 97 : 1373–1377.

Stein S.C., Spettell C., Young G., Ross S.E. 1993. Delayed and progressive brain injury in closed-head trauma: Radiological demonstration. Neurosurgery. 32 : 25–30.

Tercan M., Bekerecioglu M. 2002. Decreased serum nitric oxide level in experimental frostbite injury: A preliminary study. Ann. Plast. Surg. 48 : 107–108.

THE ROLE OF ENDOTHELIAL CELLS OF LIVER SINUSOIDAL CAPILLARIES IN THE VASCULAR-PLATELET HEMOSTASIS PATHOGENESIS DURING THE ACUTE PERIOD OF TRAUMATIC BRAIN INJURY

G. A. Boyarinov[a, *], E. I. Yakovleva[a], A. V. Deryugina[b, **], O.D. Solov'eva[a], L. V. Boyarinova[a], A. V. Polozova[a, b], E. V. Moshnina[a], and L. A. Shegol'kov[a]

[a] *Privolzhsky Research Medical University of the Ministry of Health of the Russian Federation, Department of Anesthesiology and Intensive Care, Nizhny Novgorod, 603005 Russia*

[b] *Lobachevsky State University of Nizhny Novgorod, Department of Physiology and Anatomy, Nizhny Novgorod, 603950 Russia*

**E-mail: boyarin46@mail.ru*

***E-mail: derugina69@yandex.ru*

The number of platelets, ultrastructural changes in sinusoidal hemocapillaries (SH) of the liver and microcirculation disorders in their lumen were studied in rats that have suffered a craniocerebral injury (TBI) during the period of acute development of traumatic disease. Thrombocytopenia, severe liver SH damage and intra-sinusoidal microcirculation disorders are detected on the 3rd day and are aggravated on the 7th day of the post-traumatic period of a local brain injury in rats. The endothelium of sinusoids is determined by the usual form, but there are still areas of its swelling and edema 12 days after TBI. The blood flow is restored in 79% of sinusoidal hemocapillaries, macro- and microaggregates of erythrocytes, blisters, cell debris and platelets are determined in 21%. Analyzing the data presented in this work, we can conclude that the detected damage to endothelial cells of the liver SH in the acute period of TBI allows us to consider them as one of the key and earliest links in the pathogenesis of vascular platelet hemostasis.

Keywords: sinusoidal hemocapillaries of the liver, platelets, microcirculation, traumatic brain injury