DYNAMICS OF CELLULAR IMMUNITY IN CRITICAL CONDITIONS IN PATIENTS WITH TRAUMATIC BRAIN INJURY

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Summary: This article will discuss changes in cellular immunity in patients with multiple severe traumatic brain injury. Changes in the functional activity of neutrophils and lymphocytes, including subpopulations CD3+, CD4+ and CD8+, can be observed in seriously ill patients with trauma and in the intensive care unit. Most severe traumatic brain injuries are complicated by infectious diseases, and the cause of these complications is secondary infections.

Key words: CD3+, CD4+, CD8+. C subpopulations .

The postoperative period in patients with penetrating ocular trauma (PTH) is often complicated by the development of intraocular inflammation associated either with direct infection inside the eyeball, or with autoimmune processes due to disruption of the blood-ophthalmic barrier. Autoimmune reactions play a significant role in damage to the choroid and in the infectious genesis of post-traumatic uveitis . Inflammation of the uveal tract is the main cause of subatrophy and atrophy of the eyeball and post-traumatic enucleation. Local disorders immunoregulatory mechanisms, accompanied by excessive production of proinflammatory mediators in endogenous and post-traumatic uveitis [1,2], largely reflect systemic immune disorders. In experimental models and in patients with uveitis , a quantitative and functional imbalance of subpopulations of CD4+ cells has been established, manifested by polarization of the differentiation of postthymic T-cell precursors in the direction of T-helper type 1 (Th1) and a decrease in the activity of regulatory T-cells [3,4,5]. In this regard, identifying the features of the state of cellular immunity in the postoperative period of patients with PTH seems to be a very relevant and practically in demand task, the solution of which will facilitate the search for promising approaches to targeted correction of systemic immune disorders for the prevention/complex treatment of post-traumatic uveitis .

Materials and methods of research : From these patients to study the dynamics of cellular parameters immunity, a group of 93 people with acute post-traumatic uveitis of various localizations aged from 15 to 70 years was selected. In most patients, the injury was of a domestic or criminal nature. In 46 people, an intraocular infection developed; in 47, the post-traumatic period proceeded without infectious complications. 61% of patients uncomplicated PTG were admitted on the 1st day after

injury, 35% on the 2-3rd day, 4% on the 4th day. 23 people (48.6%) had corneal wounds, 24 (32.4%) had corneal-scleral wounds, and 14 (18.9%) had scleral wounds. 67% of patients with complicated during post-traumatic period were hospitalized on the 1st day after injury, 20% on the 2-3rd day, 13% on the 4th day. Corneal localization of PTH was observed in 11 people (23.9%), corneal-scleral - in 27 (58.7%), scleral - in 7 (15.2%) and through - in 1 (2.2%). The severity of PTH was determined as described in [6]. The activity of the inflammatory process was presented as a general summative assessment of the main manifestations of this process [2]. The study of cellular immunity parameters was carried out on days 1-3 after primary surgical treatment (PST) of the wound, then on days 8-10, days 14-16, after 1 month and after 3 months on the basis of the immunological laboratory of the Republican Fighting Center with AIDS and infectious diseases of the Ministry of Health of the Kabardino-Balkarian Republic (Nalchik). Neutrophil granulocytes were isolated from peripheral blood according to the method [7]. To assess the functional state of the activity of these cells, a spontaneous NBT test was used [8]. The activity of myeloperoxidase in neutrophil granulocytes was determined according to the method [9].

Quantitative assessment of T lymphocytes and their subpopulations was carried out as described by A.M. Zemskov. and co-authors [10]. The obtained data were processed according to generally accepted methods of statistical processing [11] using the STATGRAF program and presented as the mean ± standard deviation. Intergroup comparisons were performed using Student's t test for normally distributed indicators and nonparametric Mann-Whitney and Wilcoxon tests for non - normal distributions.

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