



Dynamics of cellular immunity in critical conditions in patients with traumatic brain injury

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ABSTRACT

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

Keywords:

CD3+,CD4+,CD8+. C subpopulation

The postoperative period in patients with penetrating eye injuries (PTH) is often complicated by the development of intraocular inflammation associated either with direct infection inside the eyeball, or with autoimmune processes due to a violation 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 pro-inflammatory mediators in endogenous and post-traumatic uveitis [1,2], largely reflect systemic immune disorders. On experimental models and in patients with uveitis, a quantitative and functional imbalance of subpopulations of CD4+ cells was established, manifested by polarization of differentiation of postthymic progenitor T cells in the direction of type 1 T helpers (Th1) and a decrease in the activity of regulatory T cells [2,4,6]. In this regard, the identification of features of the state of cellular immunity in the postoperative period in patients with PTH

seems to be a very urgent and practically demanded 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: A group of 93 people with acute post-traumatic uveitis of various localization aged 15 to 70 years was selected from these patients to study the dynamics of cellular immunity parameters. In most patients, the injury was domestic or criminal in nature. In 46 people, an intraocular infection developed, in 47, the post-traumatic period proceeded without infectious complications. 61% of patients with uncomplicated PTH were admitted on day 1 after injury, 35% on days 2-3, and 4% on day 4. In 23 people (48.6%) corneal wounds were observed, in 24 (32.4%) - corneal-scleral, in 14 (18.9%) - scleral. 67% of patients with complicated course of post-traumatic period hospitalized on the 1st day after the injury, 20% - on the 2nd-3rd day, 13% - on the 4th day. Corneal localization of PTH was observed in 11 patients (23.9%), corneal-scleral

localization in 27 (58.7%) patients, scleral localization in 7 (15.2%) patients and penetrating localization in 1 (2.2%) patients. The severity of PTH was determined as described in [7]. The activity of the inflammatory process was presented as a total score of the main manifestations of this process [8,10]. The study of the parameters of cellular immunity was carried out on the 1-3rd day after the primary surgical treatment (PSD) of the wound, then on the 8-10th day, 14-16th day, after 1 month and after 3 months on the basis of the immunological laboratory of the Republican Control 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 [9]. To assess the functional state of the activity of these cells, a spontaneous NBT test was used [11]. The activity of myeloperoxidase of neutrophilic granulocytes was determined according to the method [9].

Quantification of T-lymphocytes and their subpopulations was carried out as described by Zemskov A.M. and co-authors [12,14]. To identify the reference values of the studied parameters, blood samples of 40 healthy students of the medical faculty of KBSU named after I.I. NM. Berbekov at the age of 17 to 25 years. The obtained data were processed according to generally accepted methods of statistical processing [16] using the STATGRAF program and presented as the mean \pm standard deviation. Intergroup comparisons were made using Student's t-test for normally distributed measures and nonparametric Mann-Whitney and Wilcoxon tests for non - normal distributions.

Literature

1. Ауторегуляция мозгового кровообращения как ориентир для управления параметрами искусственной вентиляции легких в остром периоде тяжелой черепно-мозговой травмы / Е.А. Козлова, А.В. Ошоров, В.Л. Анзимиров [и др.] // Вопросы нейрохирургии. — 2005. — № 1. — С.24—29.
2. Усмонов, У. Р., & Иргашев, И. Э. (2020). Changes in the morphofunctional properties of thymus and spleen under the influence of mites of different origins. *Новый день в медицине*, (2), 242-244.
3. Влияние вентиляции легких, контролируемой по объему и по давлению, на результаты лечения больных с геморрагическим инсультом / А.И. Грицан, А.А. Газенкампов, Н.Ю. Довбыш, А.В. Данилович // Вестник анестезиологии и реаниматологии. — 2012. — № 3. — С.26—31.
4. Rizoyevich, U. U., Olimjonovich, J. O., Khusenovich, S. S., & Sharifboevna, K. D. (2021). Changes in the morphofunctional properties of thymus, spleen and lymphoid system under the influence of mites of different origins. *Web of Scientist: International Scientific Research Journal*, 2(12), 533-540.
5. Дифференцированный подход к применению гиперЗ. вентиляции в остром периоде тяжелой черепно-мозговой травмы в зависимости от состояния мозгового кровотока / А.В. Ошоров, Е.А. Козлова, А.К. Молдоташова [и др.] // Вопросы нейрохирургии. — 2004. — № 2. — С.26—31.
6. Rizoyevich, U. U., Olimjonovich, J. O., Khusenovich, S. S., & Sharifboevna, K. D. (2022). CHANGES IN THE MORPHOFUNCTIONAL PROPERTIES OF THYMUS, SPLEEN AND LYMPHOID SYSTEM UNDER THE INFLUENCE OF MITES OF DIFFERENT ORIGINS. *Web of Scientist: International Scientific Research Journal*, 3(1), 23-29.
7. Makhmanazarov, O. M. (2022). Risk factors and complications during operations on abdominal organs in patients with cirrhosis of the liver. *Eurasian Research Bulletin*, 15, 201-207.

8. Khayotovich, K. D., & Ikromovich, T. I. (2022). SPECIFICITY OF RESUSCITATION MEASURES IN PATIENTS WITH ISCHEMIC HEART DISEASE AND ARRHYTHMIA. *World scientific research journal*, 10(1), 150-155.
9. Хайитов, Д. Х., & Болтаев, Э. Б. (2022). ПОСТРЕАНИМАЦИОН КАСАЛЛИК НАТИЖАСИДА КЕЛИБ ЧИКАДИГАН АСОРАТЛАРНИ БАРТАРАФ ЭТИШДА ЗАМОНАВИЙ ИНТЕНСИВ ТЕРАПИЯ. КЛИНИК АМАЛИЕТДА УЧРАГАН ХОЛАТ. *Academic research in modern science*, 1(9), 172-178.
10. Khayotovich, K. D., & Ikromovich, T. I. (2022). Specific Morpho functional Changes of the Lymphatic System in Patients Suffering from Burns. *Eurasian Research Bulletin*, 15, 81-84.
11. Yarashev A.R., Boltaev E.B., Shabaev Y.K. A retrospective analysis of complications of percutaneous dilated tracheostomy // *New day in medicine*, 2020. 4 (32). P. 301-304.
12. Khayotovich, K.D., & Bekmurodugli, B.E. (2022). Case in clinical practice: Modern intensive care in the treatment of post-resuscitation complications caused by cardiac arrhythmias. *ACADEMICIA: An International Multidisciplinary Research Journal*.
13. Кассиль, В. Л. Искусственная и вспомогательная вентиляция легких / В. Л. Кассиль, М. А. Выжигина, Г. С. Лескин. М. : Медицина, 2004. - 480 с.
14. Rizaeva, M. Z. (2022). The clinical course of atrial fibrillation in patients with coronary heart disease. *European journal of molecular medicine*, 2(1).
15. Крылов В.В., Талыпов А.Э., Пурас Ю.В., Ефременко С.В. Вторичные факторы повреждений головного мозга при черепно-мозговой травме // *Российский медицинский журнал*. – 2009. – № 3. – С. 23–28.
16. Ризаева, М. Ж. (2020). ЭФФЕКТИВНОСТЬ И БЕЗОПАСНОСТЬ ЭЛЕКТРИЧЕСКОЙ КАРДИОВЕРСИИ ПРИ ПЕРСИСТИРУЮЩЕЙ ФОРМЕ ФИБРИЛЛЯЦИИ ПРЕДСЕРДИЙ. *Новый день в медицине*, (4), 322-325.17. Потапов А.А., Крылов В.В., Лихтерман Л.Б. и др. Современные рекомендации по диагностике и лечению тяжелой черепно-мозговой травмы // *Журнал вопросы нейрохирургии*. – 2006. – № 1. – С. 3–8.
17. Qoyirov, A. Q., Kenjaev, S. R., & Xaitov, S. S. (2020). Egamova NT, Boltaev EB The role of delirium in patients with myocardial infarction of complicated acute heart failure. *New Day in Medicine*, 3(31), 68-71.
18. Kh, P. S., & Ganiev, N. S. (2022). The Importance of Cardioprotective Artificial Ventilation of The Lungs in Intensive Care. *Eurasian Research Bulletin*, 15, 208-212.
19. Эшонов, О. Ш., & Болтаев, Э. Б. (2020). СПОСОБ ЭКСТРЕННОГО ОПРЕДЕЛЕНИЯ СТЕПЕНИ ТЯЖЕСТИ ЭНДОТОКСИКОЗА ПРИ НЕОТЛОЖНЫХ СОСТОЯНИЯХ. *Новый день в медицине*, (1), 462-464.
20. Influence of a long-term, high-dose volume therapy with 6% hydroxyethyl starch 130/0.4 or crystalloid solution on hemodynamics, rheology and hemostasis in patients with acute ischemic stroke. Results of a randomized, placebo-controlled, double-blind study / R. Woessner, M.T. Grauer, H.J. Dieterich [et al.] // *Pathophysiol*.
21. Ураков, Ш. Т., & Ризаева, М. Ж. (2019). КЛИНИЧЕСКИЙ СЛУЧАЙ ПАЦИЕНТА С СИНДРОМОМ МАРФАНА. *Новый день в медицине*, (4), 439-440.
22. Lang. E.W., Lagopoulos J., Griffith J. et al. Cerebral vasomotor reactivity testing in head injury: the link between pressure and flow. *J Neurol Neurosurg Psy-chiatr* 2003
23. Oliveira-Abreu, M.30. Management of mechanical ventilation in brain injury: hyperventilation and positive end-expiratory pressure / M. Oliveira-Abreu, L.M. de Almeida // *Rev. Bras. Ter.*

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- Intensiva. — 2009. — Vol. 21, № 1. — P.72—79.
24. Piechnik S.K., Yang X., Czosnyka M. et al. The continuous assessment of cerebrovascular reactivity: a validation of the method in healthy volunteers. *Anesth Analg* 1999; 89: 944-949.
25. Czosnyka M., Picard J.D. Monitoring and interpretation of intracranial pressure. *J Neurol Neurosurg Psy-chiatr* 2004; 75: 813-821.