According to the World Health Organization, traumatic brain injury (TBI) is currently the third most common cause of overall mortality. However, the status and role of the immune system in the formation of clinical manifestations, possible complications in victims with TBI is still a poorly studied problem. Goal. Evaluation of clinical and immunological data in patients with traumatic brain injury of various severity in the acute period of the disease.

**Materials and methods.** Three groups of patients were identified; patients with mild TBI (n = 23), with moderate to severe TBI (n = 23), and control group, relatively healthy individuals (n = 40).

Main survey methods:
- Anamnesis;
- Assessment of the physical status of patients;
- Assessment of the neurological status of patients;
- Neuropsychological examination;
- Application of structural methods of neuroimaging;
- Immunological examination: clinical blood test, determination of concentration in immunoglobulins in blood serum, level of T- and NK-cell differentiation, analysis of subpopulations of regulatory T cells, analysis of T-helper subpopulations, analysis of B cell subpopulations, determination of cytokine level (PV, PT, chemokines) in the cerebrospinal fluid.

**Results.** During the research, it was found that in patients with craniocerebral trauma of mild severity, the number of cells with the phenotype CD3+CD4+ (Th2, Th1), naive Th (Th17/Th22, Th1/Th17, DP Th17, Th17/Th22), CM Th (Th1/Th17, Th17 / Th22), p <0.05 increased in comparison with the parameters in the control group. Also, in patients of this group there was a decrease in the number of memory cells. Among them, CM Th cells (CXCR5-CXCR3-CCR6-CCR4-, Th17/Th22, Th17 / Th17), EM Th (CXCR5-CXCR3-CXCR6 + CCR4+) significantly decreased (p<0.05). TEMRA Th (Th1). In patients with moderate to severe TBI, there was an increase in the number of cells with the phenotype CD3 + CD4 + (Th2), naive Th (Th17 / Th22, Th17 / Th17, DP Th17), CM Th (Th17/Th22, Th22, Th17 / Th17, Th17/Th22) p <0.05, and there was a reduction of cells with phenotype CM Th (CXCR5-CXCR3-CXCR6-CCR4+, DP Th17), EM Th (CXCR5-CXCR3+ CCR6-CCR4+, Th1). (p<0.05).

When conducting a comparative analysis of the indicators of the immune status, we found that in patients with moderate to severe TBI the number of cells with the phenotype CD3 + CD4 + (Th2), naive Th (Th17 / Th22, Th17 / Th17, DP Th17) is significantly (p <0.05) higher, and the number of cells with the phenotype of CM Th (Th17) is significantly lower (p <0.05) compared with the indices in the group of patients with mild TBI.

Prospects. The results of the study contribute to the construction of an optimal plan for therapeutic and diagnostic work aimed at timely early detection of complications and consequences of brain trauma. Based on the obtained research materials, algorithms for predicting intracranial purulent-inflammatory complications, disorders of liquor dynamics, as well as the risk of the formation of certain neurological syndromes at the end of the acute period of TBI will be developed.

**References:**


FEATURES OF THE IMMUNE STATUS IN PATIENTS WITH CONGENITAL HUMORAL IMMUNITY

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Primary immunodeficiency diseases (PIDs) are a topical problem of modern clinical immunology. The most common is a congenital humoral immunity. The prevalence of such a PID as common variable immunodeficiency (CVID) according to domestic and foreign authors is 1:25000 – 50000 [1], but a selective immunoglobulin A deficiency (sIgAD) is 1:163 people in the world [2]. Primary immunodeficiency with a defect of humoral arm is characterized by a high incidence of chronic respiratory and gastrointestinal diseases [3], severe allergic disorders [4], development of recurrent parasitic infestations, malabsorption syndrome and celiac disease [5], as well as the development of different autoimmune and cancer [6]. Despite the urgency of this problem, so far there is no single point of view on the etiopathogenesis of this disease and approaches to treatment and control of these forms of immunodeficiency. Materials and Methods. We have identified several groups of patients during our work. 49 patients were surveyed in general aged 18 to 60 years with a diagnosis of immunoglobulin A deficiency and common variable immunodeficiency, observed at the PIDs Center in Saint-Petersburg Pasteur Institute. The control group consisted of 25 healthy persons. All the patients underwent the immunological testing, which included determination of concentration of immunoglobulins in the blood serum, nasopharyngeal swabs and urine, as well as full of lymphocytes and their subpopulations. Results. When conducting the research, we have identified the different clinical forms of the course of the immunoglobulin A deficiency (patients with mainly chronic diseases of the respiratory system - 16, and patients with autoimmune pathology - 10). Laboratory studies have shown that the concentration of immunoglobulin A in nasopharyngeal swabs in the patients with immunoglobulin A deficiency was reduced to 14.6 mg/l (concentration at healthy persons is 37.5±4.2 mg/l), and the level of immunoglobulin M increased sharply to 8.4 mg/l (concentration from healthy individuals was 1,6±0.8 mg/l). Although the concentration of IgA in the serum is reduced to 0.04 g/l in comparison with the values in the control group was 2.35±1.65 g/L. It was also found the increase in number of cells with the phenotype level Tfh2 – 3.2% (the rate of conditionally healthy people -1.98±0.63%), Tfh1 from 3.62% (the rate of conditionally healthy individuals – a 2.85±0.92%) in the patients with sIgAD. During the examination of the patients with common variable immunodeficiency a significant decrease of IgA level (8.8 mg/l) and IgG (0,0775 mg/l) in nasopharyngeal swabs in comparison with the values in the control group (IgA - 37.5±4.2 mg/l IgG - 14.3±2.20) and the indicators in the group of patients with immunoglobulin A deficiency (IgA – 1.4,6 mg/l IgG is 3.0 mg/l) was revealed. The revealed changes require the further study and the statistical treatment that is planned in our work. Prospects of further researches. When conducting our research, we plan to continue to evaluate the general and local humoral profile, determining the number of cells with different phenotypes, as well as to begin the definition of the secretory component, pro-inflammatory and anti-inflammatory cytokines in various biological fluids in the patients with immunoglobulin A deficiency and common variable immunodeficiency.

References: