8. INFECTIOUS IMMUNOLOGY AT THE PRESENT STAGE

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CREATION OF THE IMMUNOFERMENTIC TEST SYSTEM FOR DETECTING C3 COMPLEX COMPONENT WITH THE USE OF PEPTIDOGLYCAN

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Any inflammatory process is accompanied by activation of the complement system, as well as increased production of the acute phase protein — C3. C3 binds to the surface membrane of the bacterial cell and enhances the formation of new C3b. It is known that corynebacteria colonize all the mucous open cavities of a person, and their metabolites play a role in the system of immunity.

The aim of the study was creation of an ELISA system for participation in C3 activities due to its ability to bind to peptidoglycan corynebacteria.

The ELISA method offers sorption in the wells of a micro-panel of peptidoglycan. Then, a solution containing a human complement component C3 with unknown activity is introduced into the wells. The incubation is carried out in the presence of EDTA to block all pathways of complement activation. C3 binds to the sorbed peptidoglycan, followed by removal of the onion content and introduction of the enzyme conjugate with antibodies against the human C3 component, washing out the unbound conjugate, introducing the substrate of the conjugated enzyme, and calculating the components of C3 by the amount of the product of the enzymatic reaction.

The kit contains a flat-bottomed micro-panel with sorbed peptidoglycan, a conjugate combined with antibodies to C3 components as a standard. The incubation takes place in the presence of EDTA.

Use of the proposed test system to identify the identified deficiencies in the blood serum of patients with ENT pathology (bronchitis, tonsillitis, sinusitis, otitis) is determined by the increased content of C3 complement components in comparison with its content in the sera of healthy individuals by 2 times.

Obtained data that with ENT — pathology in blood serum of sick people there is activation of C3, responsible for the subsequent launch of the entire complement system.

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FEATURES OF THE SUBPOPULATION COMPOSITION CYTOTOXIC T-LYMPHOCYTES IN CHILDREN WITH CONGENITAL CHRONIC HEPATITIS B

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Hepatitis B is an infectious disease caused by the hepatitis B virus, which has a high tropicity to hepatocytes and is capable of transitioning to a chronic form (HBV). The highest frequency of chronization is in children, especially with perinatal infection (up to 90%). An effective mechanism for protecting the body from viral infections is the development of a cytotoxic immune response, during which naive cytotoxic T lymphocytes proliferate and undergo several stages of differentiation, acquiring the ability to kill infected cells. In congenital CHB, the development of an ineffective variant of such a response in children can be a consequence of both immaturity of their immune system and disorders during its formation in the presence of the virus. The determination of the ratio of groups of cells at different stages of this differentiation can contribute to the study of the mechanisms of this pathology.

Purpose of the study was to evaluate the effectiveness of the formation of effector cytotoxic T-lymphocytes in children with chronic hepatitis B acquired due to perinatal infection.

The material of the study was peripheral blood of 9 children diagnosed with CHB, after perinatal infection and without severe accompanying pathologies, as well as 6 conditionally healthy children, aged 7 to 14 years. The following populations of cytotoxic T-lymphocytes ($CD45^+/CD3^+/CD8^+$) were analyzed by multicolor analysis on a BD FACS Canto II device: naive ($CD45RA^+/CD62L^+$), central memory cells (CM, $CD45RA^-/CD62L^+$), effector memory cells (EM, $CD45RA^-/CD62L^-$) and "terminally differentiated" EM (TEMRA, $CD45RA^+/CD62L^-$).

In the blood of the patients studied, a significant decrease in the absolute amount of cytotoxic T lymphocytes was found: 0.41 (0.33–0.60) 10^9/L versus 0.64 (0.48–0.76) 10^9/L in healthy subjects, $p = 0.0496$; the tendency to decrease the absolute number of TEMRA cells is 0.06 (0.05–0.09) 10^9/L versus 0.16 (0.08–0.27) 10^9/L in healthy and relative number of cells — 3.5 (2.6–4.5)% versus 6.6 (3.6–11.2)%. Also, there were no differences in the number of naive cytotoxic cells — 0.22 (0.16–0.29) 10^9/L and 10.2 (8.5–13.9%) versus 0.25 (0.23–0.28) 10^9/L and 10.6 (9.6–12.2)%, the central memory cells — 0.03 (0.02–0.05) 10^9/L and 1.6 (1.2–2, 4)% versus 0.04 (0.04–0.06) 10^9/L and 1.9 (1.5–2.5)% in healthy and effector memory cells — 0.10 (0.05–0.0, 17) 10^9/L and 4.2 (2.7–8.8)% vs. 0.14 (0.08–0.21) 10^9/L and 5.6 (3.9–9.0)% in healthy.

As a result of the study, it was shown: in the peripheral blood of children with congenital CHB, absolute amounts of cytotoxic T-lymphocytes were reduced; there is a tendency to decrease absolute and relative amounts of "terminally differentiated" cytotoxic T-lymphocytes, which may indicate the depletion of this pool of cells due to migration to the injured organ, or a violation of their formation. At the same time, there are no pathologies in the content of naive cytotoxic cells and memory cells.

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INFLUENCE OF MONOSTRAIN AND MULTISTRAIN AUTOPROBIOTICS ON MICROBIOTA AND IMMUNITY OF RATS WITH INTESTINAL DYSBIOSIS

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The aim of the study was to find the differences in autoprobiotics effects on intestinal microbiocenosis and immune system of rats with antibiotic associated dysbiosis.