



Nonspecific anti-infective protection and adaptive immunity are implemented by the interaction of immune-competent cells and humoral factors that lead to the formation of the cellular and humoral link of systemic immunity.

In patients with diffuse toxic goiter, the absolute amount of O-lymphocytes is increased in 3.13 times, the relative - in 2.21 times. But the main subpopulation of O-lymphocytes - the relative number of natural killers (NK CD3⁻, CD16⁺) is reduced by 2.18 times, the absolute amount in the peripheral blood is reduced by 2.2 times. Based on the results of the study in patients with diffuse toxic goiter, the activity of the killing reactivity of natural killers in relation to pathogenic and opportunistic microorganisms, xenogenic and allogenic cells and to their own pathologically altered or over-active cells has been reduced. It is important to reduce twice the absolute amount of natural regulatory cells (CD3⁺, CD25⁺), which can lead to limiting suppressive function and disruption of the cellular immune response. In addition to relative amount (2.06 times) of these regulatory cells decreases, which confirms the conclusion about the deterioration of the suppressive link in the immune response.

The phagocytic activity of polymorphonuclear leukocytes in patients with diffuse toxic goitre reduced by 39.81 % and the phagocytic number by 47.06 %, which is indicative of disorders of phagocytosis at its first stages, and this is confirmed by the study of the migration activity of neutrophil granulocytes, which is also lowered 59.33 %. The mentioned above results in the reduction of phagocytic capacity of peripheral blood by 87.5 % due to the decrease in the number of active phagocytic cells by 92.86 %. From our point of view, it is possible to be substantiated by the accelerated (by 59.68 %) apoptosis of neutrophil granulocytes.

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MICROECOLOGY OF MICROBIAL CONTENTS OF THE COLON CAVITY OF ALBINO RATS WITH EXPERIMENTAL THYROTOXICOSIS

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Production of the intestinal microflora of numerous biologically active compounds and their metabolites, interaction with the immune and other systems, actualize the issues of studying of its changes in various diseases, one of which is thyrotoxicosis. So, the objective of this study was to determine the degree of microbioma disorder in the contents of the large intestine cavity of white rats with experimental thyrotoxicosis (ET).

Studies were carried out on 25 mature male albino rats (15 – control group, 10 – research group). ET was simulated by intragastric administration of L-thyroxine for 14 days. After laparotomy was performed, a section (1.5 - 2 cm) of the large intestine with its contents was taken. To the content was added a sterile 0.9 % NaCl solution with further preparation of a series of ten-fold dilutions with a concentration of the initial mixture of 10⁻² to 10⁻¹¹. From each test tube 0.01 ml was inoculated on solid nutrient media with isolation and identification of microorganisms by morphological, tinctorial, cultural and biochemical features. To disclose the mechanisms of colonization of the pre-epithelial biofilm by microbes it was used an ecological method that give possibility to clarify the microbiological characteristic of the coexistence of the representatives of the association of "microorganism - microbial ecosystem" and the changes in the microecology of the cavity of the colon during destabilization of microbiocenosis in thyrotoxicosis.

It is shown that in animals with ET the main microbioma is represented by bacteria of the genus *Bifidobacterium*, *Lactobacillus*, *Bacteroides*, and also opportunistic *Enterobacteria* (*Escherichia*, *Proteus*, *Klebsiella*), *Peptococcus*, *Staphylococci* and *Clostridia*. This is accompanied by the elimination from biotope of bacteria of the genus *Peptostreptococcus*, *Enterococcus* and the contamination of *K. oxytoca* and *Staphylococci*. There was a pronounced deficit of *Bifidobacteria* by 42.81 %, *Lactobacillus* – by 22.57 %, normal intestinal bacillus – by 16.48 %. The deficiency of *Bifidobacteria* and *Lactobacilli* in the colon microbiocenosis of animals with thyrotoxicosis contributes to the growth of the population level of opportunistic *Enterobacteria*: *Proteus* by 16.57 %, *Peptococci* – by 2.13 times, *Clostridia* – by 2.06 times, as well as contamination of the colon with *K. oxytoca* and *Staphylococci*, reaching a high population level, which promotes the formation of an immunodeficiency state in a macroorganism. By the population level, the coefficient of quantitative dominance and the significance factor, the leading place is occupied by *Bacteroids*, role of which is increased by 21.72 %, and *Lactobacillus* – decreases by 39.31 %, *Bifidobacteria* – decreases by 51.48 % and *E. coli* – decreases by 57.49 %. In this case, the role of *Peptococcus* increases by 3.37 times, *Clostridia* – by 4.53 times, and by 72.93 % by the number of *Proteus*.

It has been shown that ET in albino rats affects microecological interactions in the "macroorganism - microbial ecosystem", which may negatively affect the functional complex of processes performed by the intestinal microbial. Under conditions of ET, there is an elimination of bacteria of the genus *Bifidobacterium*, *Lactobacillus*, *Peptostreptococcus*, *Enterococcus* and contamination of the biotope with conditionally pathogenic *Enterobacteria* (*Proteus*, *Klebsiella*) and *Staphylococci*. Deficiency of *Bifidobacteria* and *Lactobacilli* leads to changes in taxonomic composition and formation of dysbiosis of II and III stage.