

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ВИЩИЙ ДЕРЖАВНИЙ НАВЧАЛЬНИЙ ЗАКЛАД УКРАЇНИ
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



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**SEASONAL DYNAMICS OF BIOLOGICAL RHYTHMS OF MICROBIOTA OF THE
LARGE INTESTINE CAVITY CONTENT
OF INTACT WHITE RATS**

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Virtually all pathological processes in the human and animal body are accompanied by disturbances and disorganization of biological rhythms of normal physiological functions, which is associated with desynchronization. Knowledge of the state of the seasonal organization of the biological system in norm and at desynchronization is a key point in the search for ways and methods of purposeful correction of disregulatory disorders in these systems.

Microorganisms, which form a normal microbiota, are among themselves in various interrelationships (neutrality, competition, mutualism, synergism, commensalism, parasitism, etc.) . Lack or excess of one or another substrate or metabolite, as well as a change in the qualitative or quantitative composition of microorganisms in the corresponding biotope serves as a signal for adaptive or irreversible changes in the appropriate link of the microecological system.

The purpose of our study is to establish the seasonal dynamics of biological rhythms of microbiota content of the colon cavity of intact white rats. For the study, 55 intact white rats weighing 220-250 g were taken in different seasons of the year. Studies on animals were conducted on a monthly basis. The digital research results were processed in accordance with the known statistical methods.

Summing up the results of our studies of the qualitative composition of the intestinal cavity microbiota in intact animals, it has become known that autochthonous bonds of anaerobic bifidobacteria, lactobacilli, bacteroids, aerobic transient gram-positive streptobacilli and aerobic optional intestinal sticks are stably detected. All anaerobic, aerobic and optional anaerobic bacteria are constantly revealed in 80.0-100.0% in each season of the year and they are constant organisms. Additional and residual microflora is subjected to seasonal dynamics.

Species composition, index of constancy and frequency of occurrence of autochthonous obligate bifidobacteria of lactobacillus are not the subject to changes in seasonal biological rhythms.

Quantitative indices of autochthonous obligate bifidobacteria, lactobacillus, autochthonous facultative anaerobic fusobacteria, bacteroids, predominates, aerobic and optionally anaerobic enterobacteria, streptobacillus and yeast-like fungi of the genus *Candida*, as well as the quantitative dominance factor and the coefficient of significance are subjected to significant changes in biological rhythms.

Detection of seasonal biological rhythms of microbiota is the basis for studying the lunar biological rhythms of the microflora of the colon of intact white rats of each season.

Sydorchuk I. I.

IMMUNE STATUS OF PATIENTS WITH SUPERFICIAL STAPHYLODERMIA

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Significant progress in the study of immunobiology and immunopathology of the skin in recent decades has led to changes in traditional views on both the nature of dermatoses and their etiology. The doctrine of lymphoid clusters associated with the skin, establishment the role of keratocytes, and Langerhans cells, dendritic cells in the regulation of the immune response and apoptosis, the discovery of cytokine mechanisms of the relationship between lymphocytes and antigen presenting cells, revealed pathogenesis of majority of skin disease. The study of the impact of separate taxons (staphylococci, streptococci, etc.) on the immune status of patients requires further fundamental and clinical laboratory studies.



We investigated the effect of coagulase-positive *Staphylococcus aureus*, which was isolated and identified in pure culture from 27 patients with superficial staphylocodermia, and on leading indices of immune status.

Conducted immunological studies aimed at determining the absolute and relative numbers of T-, B- and 0-lymphocytes, TCD4 +, TCD8 + by indirect immunofluorescence method using a panel of appropriate monoclonal antibodies, showed changes in immune status in patients with superficial staphylocodermia. In patients is established a decrease in the relative (by 14.87%) and absolute (by 10.55%) number of lymphocytes in the peripheral blood, due to the deficiency of the total number of T-lymphocytes, actually the relative number of TCD3 + by 10.82%, absolute – 25.22%. In superficial streptodermia, the absolute (by 3.65%) and relative number (by 6.53%) of TCD4 + is reduced in the peripheral blood, indicating the violation (decrease) of the pathogens recognition processes, which results in blocking the formation of a specific immune response to *S. aureus*. This reduces the relative (by 14.87%) and increases the absolute number (by 21.73%) of TCD8+ that indicates a violation of the immunoregulatory function of T lymphocytes. The relative BCD19 + number did not change despite a 36.11% increase in the absolute number of mature B lymphocytes. With these changes, the relative number of 0-lymphocytes, which play a significant role in nonspecific anti-infection protection, increases by 23.32%. Important, in our opinion, is the violation of factors and mechanisms of nonspecific anti-infectious protection (innate immunity). Thus, in patients with superficial staphylocodermia, the activity of lysozyme and the complement system is significantly reduced due to the fact that *S. aureus* (the leading pathogen) exhibits anti-lysozyme activity at $0.214 \pm 0.022 \mu\text{g/ml}$. The high level of anticomplementary activity is manifested at 5 CH50/ml, 10 CH50/ml and at 20 CH50/ml. Changes in the humoral factors of anti-infectious protection contribute to the reduction of the processes of phagocytosis of neutrophilic granulocytes and monocytes, which is manifested in both the first and final stages. The phagocytic activity of neutrophilic granulocytes decreases by 61.35%, the phagocytic index of neutrophils - by 70.59%, and of monocytes, respectively, by 88.16% and 2.08 times.

Obtained and presented results from the study of the immune status of patients with superficial staphylocodermia show the need for inclusion of immunotropic drugs to improve the treatment that stimulate factors and mechanisms of both nonspecific and specific immune anti-infectious protection.

Sydorchuk L.I.

TAXONOMIC COMPOSITION AND MICRO-ECOLOGICAL INDICES OF PALATINE TONSILS MICROBIOME IN PATIENTS WITH CHRONIC TONSILLITIS

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In case of a local immunodeficiency state and the intervention of pathogenic and opportunistic microorganisms on the surface of the palatine tonsils, a local infectious process is characterized by inflammation, accumulation of purulent discharge in crypts and their blockage - the formation of acute tonsillitis, which is often transformed into a chronic-recurrent process. Many infectious diseases today have changed their course, their severity with an increased rate of hidden, asymptomatic forms, and in some cases, not only the properties of pathogens have changed, but their taxonomic composition, which resulted in multiple antibiotic resistance.

The study was aimed at investigation of the taxonomic composition, micro-ecological indices of palatine tonsils microbiome in patients (age: 19-54 years) and the sensitivity of leading causative agents to antimicrobial drugs.

Samples of secretions from palatine tonsils from 85 adult patients with chronic tonsillitis underwent microbiological study. Among them there were 47 females (55.29%) and 38 (44.71%) males (average age: 28.36 ± 4.67 years). Seeds of facultative anaerobic and aerobic microorganisms were incubated in a thermostat at 37 °C. Obligate anaerobic bacteria were grown in a stationary anaerostate "CO₂ – incubator T-125 »(Sweden). Anaerobic bacteria were grown on a Shaedler-agar