



Based on the results obtained and the fact that the number of intestinal infections significantly increases in the summer period, probiotics, containing bifidobacteria for the prevention of intestinal infections, are recommended to be used in summer.

**Popovych V.B., Sydorochuk I.Y., Yakovychuk N.D., Koval G.M.\***

**MONTHLY ISOLATION CHRONOGRAMS, POPULATION LEVEL AND MICROECOLOGICAL INDICATORS OF MICROORGANISM MICROBIAL MICRO-ORGANISMS MICROBIOTA OF THE COLON CAVITY OF PRACTICALLY HEALTHY PEOPLE OF NORTHERN BUKOVINA**

*Department of Microbiology and Virology  
Higher State Educational Establishment of Ukraine  
"Bukovinian State Medical University"*

*Department of Microbiology, Virology and Immunology with the course of Infectious Diseases  
«Uzhgorod National University»\**

The physiological significance of *Bifidobacterium* and *Lactobacillus* bacteria for the human body and their exceptional significance in the functioning of the «microorganism-macrobiorota» ecosystem has been proved by numerous studies and is no doubt in it. Deficiency of the quantity in the large intestinal cavity of these anaerobic bacteria leads to a violation of the digestive processes, absorption of nutrients, assimilation of iron, calcium, vitamin D; synthesis and adsorption of endogenous vitamins; the activity level of individual enzymes, biologically active substances decreases: hypoproteinemia, hypovitaminosis, bacteremia develops; the reactivity of the digestive tract and colonization resistance of the mucous membrane to colonization of the intestine by pathogenic and opportunistic microorganisms, which contributes to the development of purulent-inflammatory processes reduces.

The objective of the work was to investigate the persistence level of *Bifidobacterium* and *Lactobacillus* bacteria to their population level and microecological parameters that characterize their decontaminating and regulating function in self-regulation of the taxonomic composition and population level of large intestinal cavity of practically healthy people in winter, depending on the month chronorhythms. In previous research it was shown that the best indicators in bifidobacteria and lactobacilli of taxonomic composition, population level and microecological value were established in winter time.

The research proved that *Bifidobacterium* and *Lactobacillus* bacteria are found in the intestinal cavity of each practically healthy person and have a high value of Margaleff species richness index, Whittaker species diversity, Simpson and Birger - Parker species domination.

The research of the population level of these bacteria shows that their quantitative indices depend on month chronorhythms. The population level of bifidobacteria in winter is  $8.83 \pm 0.37$  lg CFU/g, lactobacilli is  $7.46 \pm 0.23$  lg CFU/g. The average annual bifidobacteria level is  $8.87 \pm 0.13$  lg CFU/g., lactobacilli is  $7.38 \pm 0.11$  lg CFU/g, which practically responds to winter season.

Indicators of the population level of bifidobacteria and lactobacilli are specifically considered in each month. It is possible to conclude that in December, the population level of bifidobacteria is reduced to 5.64 %, lactobacilli to 3.23 %. In January, the population level of bifidobacteria increases to 7.32 %, lactobacilli to 5.70 %. In February the population level of these bacteria is going on to increase. Under such conditions, the regulatory role in the self-regulation of associative microbiocenosis in the large intestinal cavity in February in bifidobacteria and lactobacilli increase to 8.06 %. While in December, the dominant role of bifidobacteria is reduced to 5.44 %, lactobacilli – to 3.98%. Thus, in practically healthy people aged 18 - 30, living in Northern Bukovina, *Bifidobacterium* and *Lactobacillus* bacteria in the large intestinal cavity are exposed month chronorhythms of winter time.

**Sydorchuk I.Y.**

**GENERAL IMMUNOLOGICAL REACTIVITY OF PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA**

*Department of Microbiology and Virology  
Higher state educational establishment of Ukraine  
"Bukovinian State Medical University"*

The purpose of the work is to establish the general immunological reactivity of the body of patients with community-acquired pneumonia in the first two days of clinical course according to the immune-hematological indices and coefficients.

Dizziness, cough with predominantly mucosal-purulent sputum excretion was noted in patients aged 19-25 years (average age  $23.91 \pm 4.27$ ) who complained of general weakness, fatigue, loss of appetite, increased sweating, body temperature, palpitation, diffuse headache. Exaggerated or diminished breath sounds and dry, fine moist rales from the side of the lungs, damaged by inflammatory process, were also heard over the pulmonary areas. The diagnosis was confirmed by X-ray in each case.

At primary examination, we took the peripheral blood for the general examination and determination of the absolute and relative number of major populations of immunocompetent cells, on the basis of which the overall immunological reactivity was defined. It has been established that in patients with community-acquired pneumonia, according to the index of immune reactivity, the overall immunological reactivity of patients tends to decrease 19.44 % ( $p > 0.05$ ). Against a background of immunological reactivity decrease (in this period the first stage of the immune response takes place) the activity of the non-specific reactivity of the organism increases 57.50 % ( $p < 0.05$ ), which is



confirmed by the decrease of the index of leukocyte shift 39.87 %, the leukocyte index – 80.46 %, as well as a decrease in the ratio of lymphocytes and monocytes – 20.30 %; neutrophilic – lymphocytic coefficient – 47.13 %; the relation between neutrophils and monocytes –76.73 %; the correlation of agranulocytes and the rate of erythrocyte shedding – 82.23 % and the ratio of leukocytes and the rate of erythrocytes shedding – 46.5 %.

The increase of the value of the lymphocytic index 46.15 % and the lymphocytic granulocytic index 44.74 %, as well as the formation of a positive tendency of the immune system sensitivity increase to the agents of the infectious and inflammatory process 71.43 %, highlights the positive beginning of the formation of an adaptive specific protection, manifestations of which will be evident in 4-7 days. The use of immunotropic drugs for the activation of a specific immune response in patients with community-acquired pneumonia is discussed. The above cited shows that when examining the patient in the first stages of the development of hospitalized pneumonia in the active state there are factors and mechanisms of nonspecific protection, and the factors and mechanisms of specific immune protection begin to intensify to form the corresponding humoral and cellular immune response, depending on the taxonomic composition of the pathogen.

**Sydorchuk I.Y., Blinder O.O., Sydorchuk L.I.**

#### **ADAPTATIVE TENSION AND CELLULAR REACTIVITY LEVEL IN PATIENTS WITH PURULENT-NECROTIC PROCESSES OF SOFT TISSUES**

*Department of Microbiology and Virology  
Higher state educational establishment of Ukraine  
"Bukovinian State Medical University"*

Purulent-necrotic diseases at the beginning of the XXI century remain an actual medical and social problem. Thus, during the last two decades, the share of this group of diseases remains rather high and has no positive tendency to decrease. The problem of hospital purulent-necrotic processes, occurring in hospitals of various profiles, where the treatment of patients with acquired immunodeficiency status is often carried out, has the particular significance.

The purpose of this research is to study the level of adaptive tension and cellular reactivity of the body of patients with purulent-necrotic processes of the soft tissues by immune-hematological indices and coefficients.

An immuno-hematological examination was conducted in 29 patients with purulent-necrotic processes of the soft tissues. The control group is represented by 14 practically healthy people of the corresponding age. Venous blood, studied on a hematological analyzer of the HB type, was taken for the research.

The blood system plays a leading role in ensuring the adaptive activity of the body. This role is determined, first of all, by the function of the transport of nutrients and oxygen - the main sources of energy for cells and tissues. The blood system is also one of the most important carriers of information concerning processes occurring on the level of tissue structures, and immunocompetent peripheral blood cells are very sensitive to changes in the external environment and internal state (illness, immunodeficiency state, etc.). Thus, changing blood parameters can expand or restrict the adaptive capacity of the body. Study of the level of the adaptive tension of the patients' body with purulent-necrotic processes of the soft tissues have shown that the adaptive index in patients increases 9.84 %, which confirms the positive prognosis for the clinical course of the disease. At the same time, in 3 patients (10.34 %) the value of the adaptation index is in the stress zone. Just in these patients the clinical course of the disease has a torpid course and transformation into a chronic process is possible.

Adaptive tension is closely related to the cell reactivity of the organism. Investigation of immune-hematologic indices, characterizing cell reactivity, also showed a significant increase. So, the leukocyte index of intoxication for Y.Ya. Calf-Caliph 49.02 % ( $p<0.05$ ) for B.A. Rais - 94.57 %, the nuclear index of the degree of endotoxiosis - 4.11 times, the total leukocyte index of intoxication -70.45 % ( $p<0.01$ ), as well as the overall indicator of intoxication - 39.74 % ( $p<0.05$ ) showed the significant increase. Issues of use of different methods of treatment are discussed.

Thus, the level of non-specific adaptive tension and cellular reactivity of the patient's body increases in patients with purulent-necrotic processes of the soft tissues that must be taken into account when elaborating the methods of therapy for such patients. The questions concerning different methods of treatment are discussed.

**Sydorchuk I.Y., Sydorchuk L.I.**

#### **CELLULAR LINK OF NONSPECIFIC ANTI-INFECTIOUS REACTIVITY OF THE PATIENT'S BODY TO DIFFUSE GOITER**

*Department of Microbiology and Virology  
Higher state educational establishment of Ukraine  
"Bukovinian State Medical University"*

The purpose of the study was to investigate the absolute and relative numbers of leukocytes, O-lymphocytes, natural killers (NK CD3+, CD16-), natural regulatory cells (NRC CD3+, CD25+), neutrophil granulocytes prepared for apoptosis with CD95+, phagocytic activity of neutrophil granulocytes, phagocytic peripheral blood capacity patients with diffuse toxic goiter.

Factors and mechanisms of non-specific reactivity of the organism are functioning in the human body continuously, causing in case of microbial or other destabilizing effect the formation of an inflammatory reaction that is similar to mechanism to different antigenic characteristics. The development of an infectious and inflammatory reaction contributes to the formation of specific immune response that can be considered as the development of the following, more adequate line of defense against genetically foreign substances, microorganisms, cells and other antigens.