CYTOCHEMICAL CHARACTERISTICS OF PERIPHERAL BLOOD MONOCYTES WITH COMMUNITY-ACQUIRED PNEUMONIA IN THE BACKGROUND OF CONGENITAL ANOMALIES OF CLEFT LIP AND PALATE

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Abstract. *The research is to analyze the clinical and biochemical features of the course of severe pneumonia in young children against the background of congenital anomalies of the cleft lip and palate. Material and methods.Anamnesis, clinical observations, x-ray, biochemical studies. Results. The clinical and biochemical features of the course of severe pneumonia in young children against the background of congenital anomalies of the cleft lip and palate were determined. Revealed cytochemical changes in sick children.*
Keywords: *infants, pneumonia, congenital anomalies of cleft lip and palate, biochemistry.*

Acute pneumonia in young children remains a significant cause of morbidity and mortality, despite the introduction of potent broad-spectrum antimicrobials, the availability of complex supportive treatment regimens and preventive measures.

The effectiveness of the treatment of such patients depends not only on the virulence of microbes, but also on the resistance of the organism, its compensatory capabilities.

An unfavorable background for the course of the pneumonic process in young children is rickets, protein-energy deficiency, anemia, congenital anomalies, dysbacteriosis, atopic dermatitis and others. They largely determine the recurrence of pneumonia in a child, the duration of their course, the tendency to exacerbations, relapses and complications.

Essentially, there is no biochemical process that would be carried out without the direct and indirect participation of membranes, therefore, the pathogenesis of many diseases is associated with a change in their structure and function (1). In characterizing the immunological status of a child with acute pneumonia against the background of congenital anomalies of the cleft lip and palate, the state of the macrophage system is of no small importance, in connection with which the functions of mononuclear phagocytes and the role of their protective reactions of various types have been and remain the subject of research. The most indicative, in our opinion, are myeloperoxidase (MP), acid phosphatase (AP), succinate dehydrogenase (SDH), in connection with which it was of interest to study the activity of SDH, MP, AP depending on the period of the disease.

Material and methods: 60 children aged from 3 months to 3 years were examined, including 30 children with ordinary pneumonia, 30 with pneumonia against the background of congenital anomalies of the cleft lip and palate, and 20 with purulent-destructive pneumonia. The control group consisted of 22 healthy children of the same age.

In all patients, except for general clinical, x-ray studies, the activity of MP, CP, SDC of peripheral blood monocytes was determined at admission, during the acute period of the disease, during the period of improvement in the general condition and during recovery.

MP activity was determined by the method of Goloberg and Barka, followed by the determination of the average cytochemical indicator (SCP, SDH) - by the quantitative cytochemical method of R.P. Narcissov. When making a diagnosis of pneumonia, we used the ICD-10 classification (2010).

Results and discussion: Parents of sick children complained mainly of fever in the child, anxiety, the presence of catarrhal phenomena, cough, severe weakness, shortness of breath, sleep disturbance, loss of appetite, dyspepsia, itching of the skin.

The semiotics of respiratory organs damage was manifested, first of all, in dyspnea of a mixed nature in all patients, as well as an increase in airway resistance on exhalation in 12 children. At the same time, in 16 patients, expiration was especially difficult and lengthened, that is, there was a pronounced obstructive syndrome. Violation of the function of external respiration was manifested in the swelling of the wings of the nose in 30 patients, retraction of the pliable places of the chest - in 41 patients. The frequency of individual toxic, aggravating the manifestation of pneumonia syndromes in the main group was as follows: obstructive 22 (0.24), cardiorespiratory 5 (0.05), dyscirculatory 8 (0.1), DIC - syndrome 2 (0.02), exsicosis 1 (0.01). In the comparison group, these syndromes had a different frequency of severity: obstructive 16(0.23), cardiorespiratory 23(0.32). Neurotoxic 17(0.03), circulatory 6 (0.084), DIC - syndrome 2 (0.03). The syndrome of bronchial obstruction was clinically manifested by expiratory dyspnea, and in children of the first months of life, mixed dyspnea. As a rule, distant rales were diagnosed. Exhalation was carried out with the participation of auxiliary muscles, the children noted anxiety, there was swelling of the chest, in some places bronchophony, percussion box sound.

Pneumonia in children with anomalies occurred more often against the background of subfebrile, normal temperature in 67% of patients with abundant catarrhal phenomena from the nasopharynx - rhinitis, conjunctivitis, pharyngitis with frequent cough. At the same time, various exudative changes were observed on the skin and mucous membranes, in the main group there were the following: erythematous 43 (0.86), erythematous papular rashes 29 (0.58), eschar 16 (0.32), gneiss and strufulus 10 (0. 20), areasofweepingeczema 20 (0.40), geographicaltongue 34 (0.68).

Radiologically, long-lasting small-focal infiltrative shadows were noted. On the part of the blood, eosinophilia, leukocytosis, and ESR acceleration up to 15-25 mm/hour were often noted.
In the comparison group, these syndromes were: erythematous 34 (0.85), erythematous-papular rashes 24 (0.60), eschar 17 (0.42.5), gneiss and strufulus 24 (0.60), areas of weeping eczema 20 (0.50), geographical language 30 (0.75). The effect of antibiotic therapy in these children was insignificant.

In 41 children (0.4), hypokalemia and hypocalcemia were found in 29 children (0.28), an increase in hematocrit value of more than 0.47 l/l was noted in 36 children (0.35). In the study of acid-base metabolism in the majority of patients noted respiratory and metabolic acidosis, hypokalemia.

As shown by our biochemical studies, SDH showed the greatest activity at the time of recovery of children, while in the acute phase of the disease, its indicators were significantly lower than those in the group of healthy children ($P<0.001$). The decrease in SDH activity in congenital anomalies of the oral cavity during the period of the developed clinical picture was assessed by us as a response to metabolic changes in the child's body, which manifested themselves in most children in the form of acidosis or one or another degree of severity.

Diametrically opposite, depending on the stage of development of the pneumonic process, the activity of AP changed. The highest activity of the enzyme was found in the acute period of the disease (P<0.001). Gradually decreasing by the time of recovery, it remained higher than in healthy children. Our results indicate the activation of blood cells by lysis in response to the impact of an infectious agent on the child's body.

MP activity was unstable, and we did not find a clear dependence of it on the level of infection of the anomaly. The level of the enzyme more clearly correlated with the form of pathology. This was especially evident in patients with purulent-destructive pneumonia. MP activity significantly increased in these patients during all periods of the disease, and by the time of recovery it was 1.5 times higher than the age norm (P<0.001). Changes in MP levels can be explained by a high concentration in the cell of the components of the myeloperoxidase system involved in phagocytosis.

When analyzing the data, the greatest increase in CP activity was also noted in children with rapid, destructive pneumonia, and its maximum increase compared to the control was registered in the acute period of the disease (P<0.001) exceeded control.

Assessment of the level of SDH in purulent-destructive pneumonia against the background of congenital anomalies of the cleft lip and palate showed severe depression in the acute period (P<0.001). And more rapid than with other forms of anomaly, an increase in enzyme activity in the dynamics of the pathological process.

The results of our studies have shown that acute pneumonia with congenital anomalies of the upper lip and palate differs from a severe course. Cytochemical changes in monocytes in peripheral blood show that the inflammatory process with acute pneumonia developed against the background of pathology depends on the degree of its severity and causes changes at the level of the body, organ tissue, cells. Based on these prerequisites, the cytochemical study of the enzyme spectrum of blood cells, in particular monocytes, can be used to assess the depth of metabolic disorders and the state of the body's reactivity at the cellular level. This gives us a basis for further study of these patients with acute pneumonia developed against the background of congenital anomalies of the cleft lip and palate and the development of new methods of therapy, as well as a logical approach to the algorithm for the introduction of these patients.

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