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THE EFFECT OF THE NUCLEINAT ON FUNCTIONAL ACTIVITY OF BLOOD GRANULOCYTES IN SCHOOL-AGE CHILDREN WITH ASTHMA DEPENDING ON ACETYLATION PHENOTYPE

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Bronchial asthma (BA) is one of the most common and impressive problems in pediatrics now. According to epidemiological studies conducted in different countries, the population suffering from BA ranges from 2 to 30 % of children. The clinical practice is indicative of the fact that by means of standard treatment regimens the diseases can be controlled only in every second patient. The lack of anti-inflammatory therapy effectiveness in some cases necessitates the administration of new drugs in children, such as Nucleinat which will help to improve the course of disease. Nucleinat possesses immunomodulatory and anti-inflammatory effects, therefore its administration can be suggested in a comprehensive basic therapy of asthma in children with decreased activity of the immune system.

Considering this fact the objective of our scientific study was to assess Nucleinat effect in the treatment of BA on indicators of the functional activity of blood granulocytes of school-age children depending on their acetylated phenotypes.

To achieve this purpose we have conducted our study following the two main tasks: to analyze the dynamics of oxygen-dependent metabolism of neutrophilic blood granulocytes due to parameters of spontaneous and Nitroblue tetrazolium stimulated test in children in both clinical groups. And, as well, to analyze clinical-epidemiological index of the therapy effectiveness in school-age children.

36 school-age children with BA in remission were comprehensively examined. All pupils in the complex basic therapy received Nucleinat 0,25 g per day for 21 days. Due to the type of acetylation patients were divided into two clinical groups. The first (I) clinical group included 16 patients with a slow type of acetylation. 20 students formed the second (II) clinical group who had a rapid type of acetylation. The analysis of oxygen-dependent metabolism of neutrophilic blood granulocytes was made for all the children due to parameters of spontaneous and Nitroblue tetrazolium stimulated test (NBT-test).

The results of the study were evaluated from the perspective of clinical epidemiology to the definition of relative risk and odds ratio indicating their 95% confidence intervals (95% CI). The number of formazan positive neutrophils in spontaneous NBT-test less than 0,42 S.U. was determined in 16,6% of patients with slow type of acetylation before treatment and in 83,3% of patients after it ($R\phi < 0,05$). In the II clinical group the number of school-age children with the same value of NBT-test before and after treatment was 50,0% and 60,0% respectively ($R\phi > 0,05$). This definition of a relative risk above the absolute number of neutrophils in formazan positive spontaneous NBT-test in pupils with a slow type of acetylation after therapy was 1,9 (95% CI 1,6-2,4). However, absolute number of formazan positive neutrophils of blood due to stimulated NBT-test after therapy decreased in 83,3% patients from the first clinical group while in 60,0% pupils in the second clinical group only ($R\phi > 0,05$). Thus, the risk of reducing the number of formazan positive neutrophils in patient of I clinical group was higher as compared to the second one, and the odds ratio was 3,3 with 95% confidence interval 1,7-6,4.

Administration of Nucleinat with basic treatment leads to the reduction of severity of chronic inflammation. A significantly higher number of children with slow acetylation phenotype is found with decreased oxygen-dependent metabolism eosinophilic granulocytes of the blood due to possible reduction of inflammatory activity in the body.

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THE FEATURES OF DIAGNOSTICS AND TREATMENT OF THE ATYPICAL RESPIRATORY DISEASES IN CHILDREN

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The atypical respiratory pathogens *Chlamydia pneumoniae*, *Mycoplasma pneumonia* and *Legionella pneumophila* are now recognized as a significant cause of acute respiratory-tract infections, implicated in community-acquired pneumonia, acute exacerbations of chronic bronchitis, asthma, and less frequently, upper respiratory-tract infections. *Mycoplasmas* and *Chlamydia* are the obligate, intracellular bacteria, transmitted from person to person by the respiratory rout. Both produce pneumonia or bronchitis, which is usually clinically mild, but may be associated with pharyngitis, sinusitis, and laryngitis.

Determining the etiology of these clinical manifestations is a challenge, because the diagnostic tests of respiratory samples that are noninvasively obtained are insufficiently sensitive to identify the causative pathogen. A specific diagnosis is important, because β -lactam antibiotic treatment of infections due to these atypical pathogens is ineffective, whereas the use of antibiotics such as macrolides can markedly reduce the duration of the illnesses. Since it is difficult to detect. *M. pneumoniae* and *C. pneumoniae*, in clinical practice specific etiologic diagnoses, are established in only a minority of cases. The detection of antibodies in paired serum samples has been considered the standard laboratory diagnostic method, but PCR has recently been found to be useful for rapidly detecting these pathogens in respiratory secretions.

The aim of this study was to optimize the diagnosis and treatment of atypical respiratory diseases in children.