

ACUTE MYOCARDITIS IN CHILDREN ON THE BACKGROUND OF COMMUNITY-ACCOMPANIED PNEUMONIS: FEATURES OF THE CLINICAL PICTURE

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Pneumonia in children is one of the serious problems of pediatrics, which is determined by the continuing high incidence and severe prognosis, especially in young children. The aim of the study was to evaluate the effectiveness of carnitine in the treatment and prevention of myocarditis in children. We examined 46 children aged 6 months to 7 years with pneumonia, which we divided into 2 groups. Group I (control) included 23 children who were on standard treatment. Group II (main) included 23 sick children with pneumonia who had a violation of the cardiovascular system, the presence of which was confirmed by instrumental methods. The obtained results emphasize that against the background of community-acquired pneumonia, all the symptoms of acute heart failure are masked, the cause of which in most cases is acute coronary insufficiency, changes in the heart muscle in this pathology in children increase the risk of severe unwanted complications from the heart.

Key words: acute myocarditis, community-acquired pneumonia, children.

Relevance. For several decades, severe pneumonia has remained one of the urgent problems of modern medicine due to the steady upward trend in the number of patients and consistently high mortality, despite the use of new principles and methods of treatment [3,4]. The probable reason for this is the untimely diagnosis and, as a result, the late start of treatment, as well as the impossibility of adequately assessing the effectiveness of therapy. The diagnosis of pneumonia in children often causes difficulties, especially if signs of respiratory failure developed against the background of SARS. The problem of acute myocarditis is currently due to its wide distribution, especially in childhood.

One of the main causes of acute myocarditis today is acute respiratory viral infections (ARVI), which remain the most common and global diseases in children. Cardiovascular insufficiency is typical of pneumonia, especially in young children. It develops rapidly, already in the early stages of the disease. In an uncomplicated course of the disease, clinically hidden heart failure occurs, which is diagnosed using instrumental studies such as ECG, echocardiography. With community-acquired pneumonia in children, dysfunction of the cardiovascular system can be clinically manifested as coronary insufficiency, and more often as cardiovascular insufficiency. [2,7.8]. Each influenza epidemic accompanied by a complication of pneumonia in children is associated with an increase in the number of cases of acute myocarditis, which determines the relevance of studying this problem.

An even more serious task is the timely diagnosis of complications of pneumonia, especially myocarditis, since the identification of this cardiac complication allows avoiding severe, and sometimes fatal consequences for the patient. Previously developed clinical criteria and diagnostic criteria for diagnosing heart failure are not always objective enough to detect circulatory disorders in young children. For example, anxiety, loss of appetite, poor sleep in children are almost always noted. Tachypnea and tachycardia can be not only a sign of pneumonia, but also occur in a healthy child during examination, feeding, etc. Shortness of breath, tachypnea always accompany diseases of the bronchi and lungs. The frequency of myocarditis in

pneumonia, according to different authors, varies from 1% to 15. From a diagnostic point of view, there are no specific electrocardiographic changes characteristic only of myocarditis.

Myocarditis is an inflammatory lesion of the heart muscle of infectious, toxic-infectious, infectious-allergic, autoimmune and toxic etiology [6]. It is a disease predominantly of childhood and young people, although the disease can develop at any age. The cause of myocarditis can be any viral or bacterial agents, as well as non-infectious factors. Viruses are the most common cause of the disease. In 6-8% of cases, myocarditis develops during or shortly after various sporadic or epidemic viral infections [1].

Of the bacterial myocarditis, the most dangerous are diphtheria (infectious-toxic), myocarditis with scarlet fever, typhoid fever and salmonellosis, tuberculosis, yersiniosis (intestinal and pseudotuberculosis), with generalized streptococcal and staphylococcal infections and tonsillogenic myocarditis associated with these pathogens [7,10] .

Purpose. To determine the clinical characteristics of acute myocarditis in children against the background of community-acquired pneumonia.

Materials and research methods.

We examined children aged 6 months to 7 years with community-acquired pneumonia, who were hospitalized in the departments of emergency pediatrics and pediatric intensive care of the SF RRCEMMP. The average age of the examined children was 2.5. The exclusion criteria were: a previous infectious disease within a month before hospitalization, the presence of organic heart disease (congenital and acquired heart defects, cardiomyopathies), the presence of signs of rheumatic fever and pathology of the coronary vessels. A total of 46 patients with community-acquired pneumonia who met the exclusion criteria were included in the study.

Patients were randomly divided into 2 groups. Group I (control) included 23 children who were on standard treatment. Group II (main) included 23 sick children with pneumonia who had a violation of the cardiovascular system.

Evaluation of the effectiveness of the ongoing therapy of pneumonia according to the standard was carried out on the basis of objective signs of cyanosis, congestive rales in the lungs and tachycardia. The assessment of the severity of cyanosis in patients was assessed by central and peripheral distribution, and cough according to a 4-point system: 0 points - no cough, 1 point - a single cough, 2 points - moderately expressed cough and 3 points - frequent, painful cough. Tachycardia and cyanosis were the main signs of heart damage in pneumonia, which tended to continue even when intoxication from the underlying disease disappeared.

Additional criteria for the effectiveness of therapy were the duration of oxygen therapy and the duration of hospitalization. Patient management was carried out in accordance with the specifics of the work of the Emergency Medical Service, diagnostic and treatment standards (the recommended deadlines for inpatient treatment of bronchopulmonary diseases were observed). Discharge criteria were: satisfactory condition, $SpO_2 \geq 95\%$, reduction of cough, shortness of breath and tachycardia. The presence of changes in the electrocardiographic study of a “metabolic nature” according to the conclusion of a cardiologist and a slight remaining oral cyanosis were not a contraindication for discharge. The observation of patients continued until the complete resolution of the main symptoms of the disease.

Research results

After the study, the main indicators of patients in the compared groups were analyzed and compared upon admission to the hospital. The analysis showed that the patients selected in the main and control groups were comparable in terms of gender, age, and address indicators. Upon re-examination of children with heart failure at discharge, the following hemodynamic parameters remained: LV EF in the treatment group decreased $45.6 \pm 9.6\%$ to $26 \pm 6.7\%$ to placebo, where there was a decrease in EF from $27.7 \pm 5.6\%$ to $21.3 \pm 5.3\%$; of course, diastolic volume in the treatment group decreased from 25.7 ± 50.1 to 140.7 ± 50.6 vs. placebo, where there was an increase in EDV from 245 ± 46.3 to 280.6 ± 48.9 . The most frequent change recorded on the ECG is sinus tachycardia, which was observed in 18 (39.1%) patients, ST segment changes in

12, AV block in 4 (8.7%), left bundle branch block in 22 (47.8%) of patients. Thus, the most valuable electrocardiographic parameter in patients suffering from myocarditis is changes in the QRS complex.

The discussion of the results.

The results of our study show that it is necessary to conduct an echocardiographic and electrocardiographic study of children with pneumonia, which leads to a decrease in complicated cardiorespiratory syndromes and posthypoxic changes in the ventricular myocardium, which allows us to conclude that preventive examination has a certain advantage to prevent the development of chronic cardiovascular pathology. The most frequent change recorded on the ECG is sinus tachycardia, which was observed in 18 (39.1%) patients, ST segment changes in 12, AV block in 4 (8.7%), left bundle branch block in 22 (47.8%) of patients.

Studies have shown that at present the criteria for early detection of cardiac pathology in patients with community-acquired pneumonia have not been sufficiently developed. Due to the fact that the number of cardiac pathology at autopsy significantly exceeds its lifetime detection, the problem of early diagnosis of cardiovascular pathology and risk factors for its development in sick children with community-acquired pneumonia still remains an urgent issue in clinical medicine [4].

Conclusion. Thus, the clinical manifestations of heart failure in early childhood are non-specific, and in order to clarify the diagnosis, it is necessary to conduct a complete clinical and instrumental study, including ECG with the calculation of central hemodynamic parameters. Conducting an echocardiographic study of children with pneumonia causes a decrease in complicated cardiorespiratory syndromes and posthypoxic changes in the ventricular myocardium, which allows us to conclude that a preventive examination has a certain advantage to prevent the development of chronicity of cardiovascular pathology under the "mask" of community-acquired pneumonia in children and further transformation of the disease in various cardiopathy.

LITERATURE

1. Afonaskov O.V. Acute myocarditis in young patients with community-acquired pneumonia / Dis. . cand. honey. Sciences.- Khabarovsk, 2005.- 127 p.
2. Bakirova V.E. Evaluation of the variability of respiratory and cardiac rhythms in patients with community-acquired pneumonia 7 Dis. .cand. honey. Sciences.-Ufa, 2006.-159 p.
3. 3.Basargina, E.N. Myocarditis in children: a guide for doctors / E.N. Basargin. - M., 2008. - 27 p.
4. Bort L.B., Chernik M.B. Factors affecting the course of community-acquired pneumonia // Abstracts of the 13th National Congress on Respiratory Diseases. November 10-14, 2003. St. Petersburg, 2003. - S. 236.
5. Vishnyakova L.A., Nikitina M.A., Petrova S.I. The role of Streptococcus pneumoniae, Mycoplasma pneumonia and Chlamydia pneumonia in community-acquired pneumonia in children // Pulmonology. - 2008. - No. 3. - S. 43-47.
6. Grigoriev K.I. A modern view of pneumonia in children and approaches to its treatment and prevention // Medical assistance. - 2005. - No. 2. - S. 3-9.
7. Clinical guidelines for pediatric cardiology and rheumatology / ed. M.A. Shkolnikova, E.I. Alekseeva. - M., 2011. - 143 p.
8. Ruzhentsova, T.A. Metabolic therapy of myocarditis and cardiomyopathy in children with common acute infectious diseases / T.A. Ruzhentsova, A.V. Gorelov, T.V. Smirnova, L.A. Happy // Infectious diseases. - 2010. - V. 8, No. 3. - P. 39-45.
9. Strelyaeva A.V. Toxic cardiopathy and myocarditis of pecilomycotic and other etiologies in children / A.V. Strelyaeva, Kh.N. Shadyeva, N.B. Lazareva [et al.] // Russian Journal of Cardiology. - 2010. - No. 3. - P. 46-52.
10. Plouffe JF, File TM Jr, Breiman RF. et al. Reevaluation of the definition Legionnaire's disease: use of the urinary antigen assay. Community Bas Pneumonia Incidence Study Group. Clin Infect Dis 1995; 20: 1286-91.