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ЖУРНАЛ ГЕПАТО-ГАСТРОЭНТЕРОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ

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FEATURES OF THE CURRENT OF ACUTE MYOCARDITIS IN CHILDREN ON THE BACKGROUND OF COMMUNITY-ACQUIRED PNEUMONIA

ANNOTATION

Pneumonia in children is one of the urgent problems in pediatrics, which is determined by the continuing high incidence and severe prognosis, especially in young children. The aim of the study was to determine the clinical characteristics of acute myocarditis in children with community-acquired pneumonia. 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 had only respiratory complaints. 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 results obtained emphasize that against the background of community-acquired pneumonia, all 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 increases the risk of severe unwanted heart complications.

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

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ОСОБЕННОСТИ ТЕЧЕНИЯ ОСТРОГО МИОКАРДИТА У ДЕТЕЙ НА ФОНЕ ВНЕБОЛЬНИЧНОЙ ПНЕВМОНИ

АННОТАЦИЯ

Пневмония у детей - одна из актуальных проблем педиатрии, что определяется сохраняющейся высокой заболеваемостью и тяжелым прогнозом, особенно у детей раннего возраста. Целью исследования явилась определить клиническую характеристику острого миокардита у детей на фоне внебольничной пневмони. Было обследовано 46 детей в возрасте от 6 месяцев до 7 лет с пневмонией, которых мы разделили на 2 группы. В I группу (контрольную) включили 23 детей, которые были только с респираторными жалобами. Во II группу (основную) вошло 23 больных детей с пневмонией, имевшие нарушение со стороны сердечно-сосудистой системы, наличие которых был подтверждены инструментальными методами. Полученные результаты подчеркивают, что на фоне внебольничной пневмонии маскируется все симптомы острой сердечной недостаточности, причиной которого в большинстве случаев является острая коронарная недостаточность, изменение сердечной мышцы при этой патологии у детей повышает риск возникновения тяжелых нежелательных осложнений со стороны сердца.

Ключевые слова: острый миокардит, внебольничная пневмония, дети

Relevance. For several decades, severe pneumonia has remained one of the urgent problems of modern medicine due to the steady trend towards an increase in the number of patients and a consistently high mortality rate, despite the use of new principles and methods of treatment [3,4]. The probable reason for this is the delayed diagnosis and, as a consequence, late initiation of treatment, as well as the impossibility of conducting an adequate assessment of the effectiveness of therapy. The diagnosis of pneumonia in children is often difficult, especially if signs of respiratory failure have developed against the background of ARVI. The problem of acute myocarditis is currently due to its widespread occurrence, 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 failure is common in pneumonia, especially in young children. It develops rapidly, already in the early stages of the disease. With an uncomplicated course of the disease, clinically latent heart failure occurs, it is diagnosed with the help of instrumental studies such as ECG, Echo CG. With community-acquired pneumonia in children, dysfunction of the cardiovascular system can clinically manifest itself in the form of coronary insufficiency, and more often cardiovascular failure. [2,7.9,]. Each flu epidemic accompanied with a complication of pneumonia in children is associated with an increase in the number of cases of acute myocarditis, which determines the urgency 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 you to avoid severe and sometimes fatal consequences for the patient. Previously developed clinical criteria, diagnostic criteria for the diagnosis of heart failure are not always objective enough to identify circulatory disorders in young children. For example, anxiety, decreased 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 are always accompanied by 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 for myocarditis.

Myocarditis is an inflammatory lesion of the heart muscle of an infectious, toxic-infectious, infectious-allergic, autoimmune and toxic etiology [6]. This disease is predominantly of children and young people, although the disease can develop at any age. Any viral or bacterial agents, as well as non-infectious factors, can be the cause of myocarditis. The most common cause of the disease is viruses. 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, 10 pathogens associated with these [8]

Purpose. To determine the clinical characteristics of acute myocarditis in children with 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 emergency pediatrics and children's intensive care units of the SB of RSCEMA. 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, cardiomyopathy), the presence of signs of rheumatic fever and coronary artery disease. A total of 46 patients with community-acquired pneumonia who met the exclusion criteria were included in the study.

The patients were randomly divided into 2 groups Group I (control) included 23 children who had only respiratory complaints. Group II (main) included 23 sick children with pneumonia, who had a violation of the cardiovascular system.

Evaluation of the effectiveness of the therapy for pneumonia according to the standard was carried out on the basis of objective signs of cyanosis, congestive wheezing in the lungs and tachycardia. Assessment of the severity of cyanosis in patients was assessed by central and peripheral distribution, and cough by 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 against the background of the disappearance of intoxication from the underlying

disease.

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 Emergency Medical Service, diagnostic and treatment standards (the recommended deadlines for inpatient treatment of bronchopulmonary diseases were observed). Discharge criteria were: satisfactory condition, SpO2 ≥95%, reduction in cough, shortness of breath and tachycardia. The presence of changes in the electrocardiographic study of "metabolic nature" according to the conclusion of the cardiologist and insignificant preserved oral cyanosis were not a contraindication for discharge. The observation of the patients continued until the main symptoms of the disease were completely resolved.

Research results and discussion. After the study, the main indicators of patients in the compared groups were analyzed and compared at admission to the hospital. The analysis showed that the patients selected for the main and control groups were comparable in terms of gender, age, target indicators. Upon repeated examination of children with cardiac disorders at discharge, the following hemodynamic parameters remained: LVEF in the treatment group decreased 45.6 ± 9.6% to 26 ± 6.7% to in the placebo group, where there was a decrease in EF from 27.7 ± 5.6% to 21.3 ± 5.3%; of course, the diastolic volume in the treatment group decreased from 25.7 ± 50.1 to 140.7 ± 50.6 vs in the placebo group, where EDV increased from 245 ± 46.3 to 280.6 ± 48.9. The most frequent changes recorded on the ECG are sinus. tachycardia, which was noted in 18(39.1%) patients, ST segment changes in 12, AV block in 4(8,7%), left bundle branch block in 22(47,8%) patients. Thus, the most valuable electrocardiographic parameter in patients with myocarditis , is a change in the QRS complex.

The results of our study show that it is necessary to conduct echo cardiographic, as well as electrocardiographic studies of children with pneumonia, causes a decrease in complicated cardiorespiratory syndromes and post hypoxic changes in the ventricular myocardium, which allows us to conclude that there is a certain advantage of preventive examination to prevent the development of chronic cardiovascular pathology. The most frequent changes recorded on the ECG were sinus tachycardia, which was noted in 18 (39.1%) patients, ST segment changes in 12, AV block in 4 (8.7%), left bundle branch block in 22 (47 , 8%) 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 remains an urgent issue of clinical medicine [4].

Among the pulmonary and extrapulmonary complications of community-acquired pneumonia, an important place is occupied by lesions of the cardiovascular system [2,4]. According to many authors [1,10], dysfunction of the cardiovascular system is an almost constant companion of community-acquired pneumonia and develops from the first hours; at the same time, circulatory disorders often determine the prognosis and outcome of pneumonia itself.

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

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