COURSE OF PNEUMONIA IN THE BACKGROUND OF CONGENITAL HEART DEFECTS IN EARLY CHILDREN

Andapulatov Azamjon Akmalovich

Independent seeker

Abstract: This article discusses the features of the clinical course of pneumonia in 30 children with congenital heart defects (CHD) were studied. The importance of timely use of pathogenetic complex therapy, including relief of circulatory failure, etiotropic antibacterial and cardioprotective drugs.

Keywords: Congenital heart disease, treatment, pneumonia, young children.

INTRODUCTION

Congenital heart defects (CHD) are developmental anomalies that rank third after malformations of the central nervous system and malformations of the musculoskeletal system. More than 350 types of congenital defects are known, and many heart defects are so complex in their anatomical combination that children die from their complications at very early stages of life, often even during the neonatal period. Clinical manifestations depend on the type and severity of the heart defect. Symptoms often appear early in life, but some congenital disorders may remain undetected throughout life. Some children have no symptoms, while others may experience shortness of breath, cyanosis, fainting, heart murmurs, underdevelopment of limbs and muscles, poor appetite or short stature, and frequent respiratory infections.

MATERIALS AND METHODS

Reducing mortality and improving the life prognosis of infants with congenital heart disease and blood vessels is largely determined by the timeliness of cardiac surgical treatment [1]. Advances in pediatric cardiac surgery in recent decades have made it possible to perform primary radical correction of congenital heart disease in the neonatal period and early infancy due to the improvement of artificial circulation (CPB), perfusion, surgical techniques, the introduction of minimally invasive and endovascular methods, and improvement of prenatal and early postnatal diagnostics [2]. However, operations are forced to be delayed due to frequent intercurrent pathology caused by secondary immunosuppression, documented for this category of patients [3]. The main forms of intercurrent pathology are viral, bacterial or mixed infections of the lower respiratory tract, mainly pneumonia, occurring in infants. It is known that frequent respiratory infections in patients with congenital heart disease often lead to the development of pneumonia against the background of chronic congestion of the lungs (for defects with increased pulmonary blood flow) or chronic hypoxia (for defects with reduced pulmonary blood flow). Most often, pneumonia with defects with increased pulmonary blood flow occurs in the first year of life, has a protracted course, and is difficult to treat. Therefore, in this situation, a timely assessment of the sick child's condition and high-quality therapy are required, taking into account hemodynamic disorders and the morphological form of pneumonia [3].

RESULTS AND DISCUSSION

We examined 30 children with various congenital heart defects who were undergoing treatment at the Republican Research Center for Emergency Medicine in 2022-2023, including 14 (46.5%)

boys and 16 (53.5%) girls. Average age – 1.2. All children underwent a routine examination (hemogram, urogram, coprogram). Specific examination methods included ultrasound examination of internal organs and electrocardiography as indicated. The diagnosis of congenital heart disease was verified based on the results of echocardiography. Among those hospitalized, 6 (18%) children were on mechanical ventilation for an average of 6.7 days due to the severity of their condition. All children with congenital heart disease admitted to the Republican Research Center for Emergency Medicine were registered with a cardiac surgeon. The reason for admission to the RRCEM was a sharp deterioration in the child's condition, which was accompanied by shortness of breath, severe anxiety, bluish skin, increased body temperature, and weakness.

Among the children with congenital heart disease we examined, there were 10 (33.3%) with a ventricular septal defect (VSD), 3 (3.3%) with an atrial septal defect (ASD), and 1 (3.3%) with tetralogy of Fallot.). The remaining 16 (53.4%) patients had severe combined defects (transposition of the great vessels, double origin of the great vessels, tricuspid atresia, VSD, ASD, pulmonary stenosis, atrioventricular communications, single ventricle in various combinations). All admitted children had pneumonia of various morphological forms, including focal – in 19 (63.5%), focal-confluent – in 6 (20%), segmental – in 2 (6.5%), polysegmental – in 3 (10%).

Laboratory and instrumental studies were carried out according to indications, taking into account clinical symptoms. In the general blood test, neutrophilia was mainly noted - segmented on average 57.8%, the hemoglobin level was increased to 121.3 g/l, which, in our opinion, is associated with a compensatory reaction of the body to chronic hypoxia . Leukocytes averaged 7.8x109/l, other indicators were within the age norm. The electrocardiogram recorded ventricular hypertrophy, overload of the left or right parts of the heart depending on the type of defect, sinus tachycardia, and right bundle branch block. Ultrasound examination mainly noted compaction of the liver parenchyma and an increase in its size. During bacteriological examination, mainly hospital strains were cultured from the throat, such as Staphylococcus aureus (18.6%), klebsiella pneumoniae (20.4%), Pseudomonas aeroginosa (15.8%), Streptococcus viridans (13.2%) and etc.

CONCLUSION

A feature of the clinical picture of pneumonia with congenital heart disease is its severe course and the rapid development of various complications. When clinical symptoms of respiratory tract damage appear, children with congenital heart disease should be hospitalized in a hospital to avoid complications. Optimization of treatment, in our opinion, should be based on the timely use of pathogenetic complex therapy, including relief of circulatory failure, etiotropic antibacterial, cardioprotective drugs. Children with congenital heart disease need to undergo general strengthening and rehabilitation measures to achieve the phase of relative compensation of clinical manifestations.

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