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ASSESSMENT OF THE IMPACT OF RISK FACTORS ON THE MANIFESTATION AND CLINICAL COURSE OF DILATED CARDIOMYOPATHY IN BOYS

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Summary. Dilated cardiomyopathy is one of the common forms of cardiomyopathy, characterized by severe treatment, hemodynamic disorders and bad prognosis. The severity of this disease is due not only to the development of heart failure, but also to the severity of heart rhythm disturbances. These questions are reflected in our article.

Key words: dilated cardiomyopathy, dyspnea, left ventricular failure, biventricular heart failure.

RELEVANCE

Dilated cardiomyopathy (DCM) is one of the most severe forms of myocardial disease and occurs at any age, including in infants. The course and prognosis of DCM in children are characterized by significant variability. In most cases, however, outcomes are unfavorable due to the progression of treatment-resistant chronic heart failure and severe arrhythmias leading to death [1,4,6].

The factors determining the course of the disease remain unclear. To date, it is not fully understood why DCM follows different patterns: in some patients, the condition may regress during treatment, even leading to complete recovery, whereas in others it progresses steadily. It

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is possible that the mechanisms and causes of myocardial injury differ, which determines the variability in prognosis [2,10].

The prognosis of DCM is very serious and in most cases unfavorable. Death may result from progressive heart failure, fatal arrhythmias, or thromboembolic complications [1,2,3].

The study of gender-related characteristics of DCM is of particular interest. According to recent studies, boys are more likely to have a more severe and progressive course of the disease, which may be associated with genetic factors (including X-linked mutations), as well as особенностями neurohumoral regulation and myocardial remodeling [5,7,9]. In this group of patients, earlier development of heart failure, marked dilation of cardiac chambers, and decreased myocardial contractility are more frequently observed [2,4,8].

To assess the impact of risk factors on the manifestation and clinical course of dilated cardiomyopathy in male children.

MATERIALS AND METHODS

The study was conducted in the cardiology department of the Regional Children's Multidisciplinary Medical Center in Andijan. A total of 42 male children aged 2 to 16 years diagnosed with DCM were examined. Dilated cardiomyopathy was diagnosed based on the presence of clinical signs of heart failure, cardiomegaly due to dilation predominantly of the ventricles (mainly the left ventricle), minimal or absent myocardial hypertrophy, and reduced systolic myocardial function. Inclusion criteria were the absence of congenital heart defects and other diseases that could cause this pathology. Data collection was based on the analysis of medical history obtained from interviews with parents, extraction of information from medical records, and the results of comprehensive clinical examinations.

RESULTS OF THE STUDY

The analysis of antenatal and perinatal risk factors allowed us to identify the most significant ones. It was established that the majority of children were born from second and third pregnancies.

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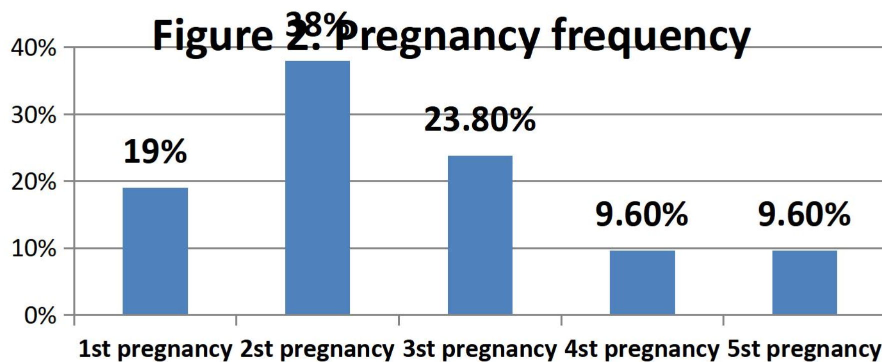

A complicated obstetric history in mothers was mainly represented by anemia (100%), recurrent acute respiratory viral infections (100%), and a threatened miscarriage in 23.8% of women.

Most children were delivered vaginally (90.4%), with birth weights ranging from 3000 to 4000 g (66.7%).

It was established that the disease had a prolonged course without pronounced clinical symptoms or with minimal manifestations. In 55.9% of cases, the etiology of dilated cardiomyopathy (DCM) remained unidentified, whereas in the remaining cases a direct association was found with a previously experienced acute respiratory viral infection in the child, with varying times of disease manifestation.

Analysis of anamnestic data showed that 57.1% of boys with DCM were admitted during primary hospitalization in severe condition with heart failure class IIB, whereas during the second (61%) and third (39%) hospitalizations, their condition was of moderate severity with clinical manifestations of heart failure class IIA. The severity of the disease was determined not only by the intensity of clinical symptoms but also by late diagnosis.

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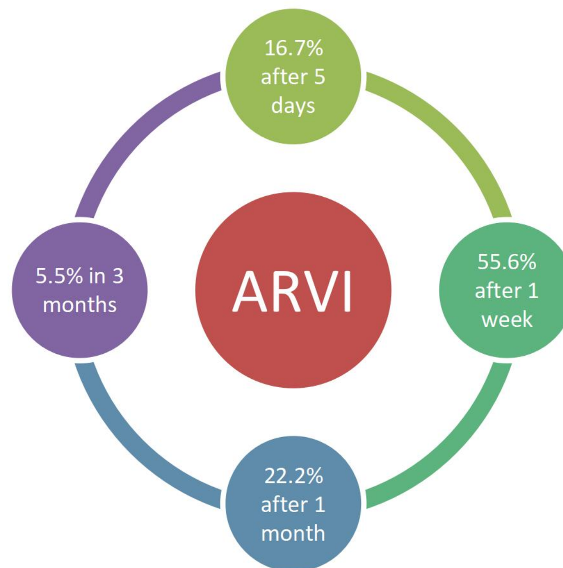

Most examined children older than 5 years (64.3%) complained of weakness (100%) and fatigue (100%). Dyspnea at rest was noted in 57.1% of cases, while in the remaining patients it occurred during physical exertion. Chest pain and retrosternal pain of varying intensity were reported by 48.5% of boys, and headaches were observed in about one-third of the children. In 28.6% of boys, the disease was accompanied by arrhythmias and episodes of suffocation.

Children under 5 years of age were unable to describe their subjective symptoms; according to their mothers, they experienced episodes of unexplained anxiety (46.7%), refusal to eat, poor sleep, and irritability (88%). All children with DCM had frequent respiratory infections.

Objective examination revealed pallor of the skin in all boys, with 57.1% showing cyanosis of the nasolabial triangle. A cardiac hump was detected in 64.3% of patients. Cardiomegaly varied in severity: marked enlargement of the cardiac borders to the left and right was observed in 21.4%, while the remaining patients showed moderate leftward enlargement. In all cases, a weakened first heart sound at the apex was noted. A systolic murmur of varying intensity was heard in the mitral valve area in all children; in 57.1% of cases, it was combined with a systolic murmur at the base of the heart, more often localized to the left of the sternum. Arrhythmic heart sounds were noted in 28.6% of children.

Clinical manifestations of left ventricular failure were observed in 78.6% of children, including dyspnea, persistent cough, decreased vesicular breath sounds in the lower lung fields, crepitation, and fine moist rales. In 21.4% of patients, signs of biventricular failure were noted, including jugular vein distension, hepatomegaly (2–5 cm), and edema of the lower extremities.

CONCLUSIONS

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1. In boys with dilated cardiomyopathy, significant risk factors included a complicated obstetric history in mothers (anemia, recurrent acute respiratory viral infections, threatened miscarriage), as well as prior acute respiratory viral infections in children.

2. In most cases, the disease remained asymptomatic or mildly symptomatic for a long time, contributing to late diagnosis and primary hospitalization at the stage of advanced heart failure.

3. In 55.9% of the examined children, the etiology of DCM could not be established; however, in the remaining cases, an association with prior acute respiratory viral infection was observed, confirming the possible role of an infectious factor in disease manifestation.

4. In most children (78.6%), manifestations of left ventricular failure predominated, whereas 21.4% had biventricular failure, indicating the progressive nature of the disease and the need for early detection of DCM in boys.

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