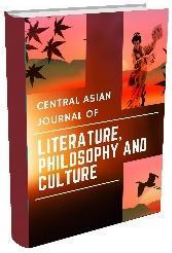

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Echocardiographic and Anthropometric Analyzes of Children Born with Tetrad of Fallot

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ANNOTATION

This article in the literature explains the causes and complications of congenital heart disease in children, comparative diagnosis. This article presents information on the frequency and risk of congestive heart failure in the sympathetic nervous system in children.

KEYWORDS: heart, EXOKG examination, anthropometric indicators.

Relevance of the topic. For every 1,000 live births in Uzbekistan, there are between 5.5 and 15.7 children with congenital heart defects. In 50% of cases, congenital heart defects cause disability among all congenital defects, and thus are among the problems of social significance [1,7].

The aim of our research is to compare anthropometric parameters and echocardiographic examinations in children with congenital heart disease. According to the European International Register of Birth Defects, congenital heart defects (CHDs) are the most common group of developmental anomalies in children and remain the leading cause of death in newborns [2,3,4]. Currently, there is a tendency to increase the number and weight of CHD [5,6]. Currently, there is a growing trend in the number and severity of registered CHD [6,10].

This concept has several drawbacks. First, it does not take into account the time of onset of the defect, and second, a number of anomalies of the intrathoracic vessels do not belong to CHD (e.g., permanent superior vena cava), which is important during surgery [1,8]. Third, diseases such as cardiomyopathies and abnormalities of the cardiac conduction system ("Wolf-Parkinson-White phenomenon, long QT interval syndrome"), which lead to "structural abnormalities" and "functional disorders" [1,9], do not apply to CHD . Furthermore, the term CHD refers only to congenital defects of the thoracic regions of the great vessels (e.g., coarctation of the abdominal aorta). Although the concept of CHD is currently defined, it refers to anatomical deformity of the heart or large vessels developing in the uterus. 'can be rifled [2].

At present, CHD is the leading cause of death compared to other malformations in children and remains the leading cause of death [3]. In addition, a further increase in the prevalence of CHDs is expected. The main reason may be related to the improvement of diagnostic techniques associated with the improvement of the skills of ultrasound diagnostics specialists and the improvement of modern imaging techniques [6]. The most intensive development of a child is observed in the first year of his life. During this period, a significant

increase in body weight and height is observed, and the functional activity of the central nervous system improves. Proper growth and weight gain are closely related to the development of functional abilities of organs and systems. Due to hemodynamic disturbances, CHD has a direct negative impact on the development of the child. Some types of CHD are associated with a sharp decline in quality of life, an increase in the number of chronic diseases [5], and the formation of delayed neuropsychic development (CPD) The authors also consider congenital defects of the heart to be a cessation of development at a certain stage of ontogeny, which corresponds to a particular stage of phylogeny. Within these theories, only atavistic heart defects (female and neutral) are compatible, and the whole group of male defects cannot be explained because none of the male components of congenital heart defects are compatible with normal embryonic or similar formation [6].

At present, CHD is the leading cause of death compared to other malformations in children and remains the leading cause of death [3]. The main reason may be related to the improvement of diagnostic techniques associated with the improvement of the skills of ultrasound diagnostics specialists and the improvement of modern imaging techniques [6]. Congenital defects are explained by the cessation of cardiac development at different stages of ontogeny; he interprets them as a return to one of the stages of phylogeny. The authors synthesize the previous two views, considering congenital heart defects as cessation of development at a certain stage of ontogeny, which corresponds to this or that stage of phylogeny. Dividing congenital heart defects and large vessels into males, females, and neutrals allows the patient's gender to be used as a diagnostic symptom. However, the male and female types of defects have a very large value of the coefficient of diagnostic value. For example, given the patient field data, the probability of diagnosis in a patent ductus arteriosus is 1.32 times higher. [6]

The study of the effects of external factors on the cardiovascular system is a current problem of applied medicine, which is confirmed by many modern studies aimed at studying the mechanisms of development of congenital heart defects, but the specificity of the types of response to external factors does not provide extensive confirmation of the findings obtained in clinical studies. As a result of our research, we divided patients into age groups and performed anthropometric changes and echocardiographic comparisons in children with congenital heart defects. Congenital heart defect - a permanent defect, deficiency and change in the anatomical structure of the heart; interferes with normal blood flow. Congenital and acquired heartworm are different. Congenital heart disease occurs as a result of malformation of the fetal heart and large heart vessels during embryonic development. Poisoning of the mother's body in the early stages of pregnancy, suffering from certain diseases, biological effects of ionizing radiation, hereditary diseases, etc. k. causes. In infancy (up to 1 year of age), incomplete development of the cardiovascular system (e.g., incomplete opening of arterial pathways or oval foramen) is also considered a heart defect. The most common types of congenital heart defect are: abnormal pathways in various combinations between large and small circulatory circles, as well as the presence of narrowed or clogged areas in the major arteries of the heart (e.g., pulmonary artery and aorta) or misalignment of these vessels; mixed powders; defects in the number and structure of the heart chambers. Depending on the degree to which the arterial and venous blood is mixed, some congenital heart defects pass with cyanosis (blue powders), some without cyanosis (white powders). It depends on which direction the blood flows (in the direction of the shunt), the degree of pressure rise in the pulmonary artery, and the condition of the heart muscle through the improper holes that connect the large and small circulatory circuits. Symptoms of congenital heart disease include physical abnormalities, paleness or bruising, shortness of breath, changes in heart size and condition, heart murmurs, and more The aim of the study: To study the

anthropometric parameters and comparative features of echocardiographic changes in the heart in children born with congenital heart disease (0-3 years).

Research material: The study was conducted at the Bukhara Regional Multidisciplinary Children's Hospital. It was conducted on the basis of bilateral agreements of Bukhara State Medical Institute. Children were divided into 3 groups: group of children aged 0-1 years (n = 10); The results of the examination of the group of children aged 1-2 years (n = 7) and the group of children aged 2-3 years (n = 4) were studied.The methodology of anthropometric study of children was used to conduct anthropometric measurements (Methodological recommendations on the morphometric features of the assessment of physical development of children and adolescents //N.H. Shomirzaev, S.A. Ten and I. Tukhtanazarova, 1998). Anthropometric research included height, body weight, body length, and chest circumference measurements. Echocardiographic examinations obtained the results of ultrasound anatomy of the heart. The study was conducted on a SONOACE R3-RUS device with linear (7.5 MHz) and convex (3.5 MHz) transducers. In this study, the linear dimensions of each part of the heart, the thickness and volume of the heart were studied using the formula of J. Brunn and co-authors (1981): V = K • [(L1 • W1 • T1) + (L2 • W2 • T2)], where V - gland volume index (cm3), K - coefficient equal to 0.479; L, W, T - length, width and thickness of each piece of cloth. Mathematical processing was performed directly from the Excel 7.0 general data matrix using the capabilities of STTGRAPH 5.1, standard deviation indicators and representation error were detected.

Research results and discussion. Studies have shown that in children from birth to 1 year of age, height ranges from 48.1 sm to 57.5 sm, with an average of 57.1 ± 0.9 sm, and in children from 1 to 2 years of age from 58.4 sm to 63.3 sm, on average 66.2 ± 0.4 sm, children aged 2 to 3 years were found to have an average height of 70.1 ± 0.2 sm from 64.0 sm to 72.4 sm.

In newborns to 1 year of age, body weight ranged from 1.4 kg to 3.2 kg, with an average of 2.7 ± 0.9 kg, and in children from 1 to 2 years of age ranged from 3.5 kg to 4.2 kg, with an average of 3.8 ± 0.6 kg, 2 to 3 years of age averaged 4.9 ± 0.4 to 4.0 kg to 5.1 kg.

Table № 1. Indicators of physical development of children from birth to 3 years in the study

№	Indicators	Children 0-3 years (n = 30)		
		Children 0-1 years old (n = 10)	1-2 year old children (n = 7)	2-3 year olds (n = 4)
1	Height, sm	57,1 ± 0,9	66,2 ± 0,4	70,1±0,2
2	Body weight, kg	2,7 ± 0,9 кг	3,8 ± 0,6	4,9±0,4
3	Chest circumference, sm	35,2± 0,6	38,4 ± 0,5	41,2± 0,8
4	Abdominal circumference, sm	35,0 ± 0,4	38,3 ± 0,5	40,4 ± 0,6

Note: * - reliability level p ≤ 0.05 compared to the previous group

Echocardiographic parameters of the heart in children from birth to 3 years Aorta from 8,1 mm to 11.8 mm in children from birth to 1 year, average - 11.1 ± 0.1 mm, pulmonary artery width in children of the same age from 5.2 mm to 7.0 mm, average 6.1 ± 0.1.1 to 2 years of age to aorta 9.5 mm 10.4 mm on average 10.2 mm, pulmonary artery width 5.2 mm to 6.3 mm in children of the same age 5.6 ± 0.1 mm. In children aged 2

to 3 years, the aorta 8.1 from 9.2 mm to , average 8.2± 0,3 mm, and the pulmonary artery width averaged 5.1 ± 0.3 to 4.1 mm to 5.5 mm. Reaches

Comparative features of echocardiographic parameters in children from birth to 3 years

Table №2.

№	Indicators	Children 0-3 years (n = 75)		
		Children 0-1 years old (n = 10)	Children 1-2 years old (n = 6)	Children 2-3 years old (n = 7)
1	Aorta , mm	11,1± 0,1	10,2±0,1	8,2± 0,3
2	Pulmonary artery width, mm	6,1 ± 0,1	5,6± 0,3	5,1± 0,3

Note: * - reliability level $p \leq 0.05$ compared to the previous group

as can be seen from the above table, children born with have 2 times less tetrad of Fallot physical development parameters compared to healthy children or those suffering from other types of congenital heart defects.

Conclusions: The above examinations showed that the anthropometric (body) and echocardiographic (aorta) parameters of children aged 0-1 years, 1-2 years and 2-3 years with type of congenital heart defect are normal we found that it is almost 2 times less.

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