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Features of Early Diagnosis of Congenital Heart Defects (CHDs) in Children at the Outpatient Stage

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ABSTRACT

This paper examines the urgent problem of early diagnosis of congenital heart defects (CHDs) in children at the outpatient stage. This topic is highly significant because heart defects remain one of the leading causes of infant mortality both globally and in Uzbekistan. The article presents current data on the prevalence of this pathology, which helps to evaluate the real scale of the problem in our republic.

The study analyzes simple and available methods that a pediatrician can use during a routine check-up: careful heart listening (auscultation), checking the pulse on femoral arteries, and measuring oxygen levels with a pulse oximeter. It also describes the primary causes of heart defects and early symptoms that doctors and parents should notice. The goal of the work is to study the features of outpatient CHD diagnosis and to prove its importance in saving the lives of newborns.

Keywords:

Congenital heart defects, early diagnosis, polyclinic, children, Uzbekistan

Introduction

Congenital heart defects (CHDs) represent an intrauterine anomaly in the structure of the heart, its valvular apparatus, or major vessels. Today, this pathology firmly holds the leading position in the structure of childhood morbidity: CHDs account for about 30% of the total number of all detected congenital malformations. According to statistics, defects of the cardiovascular system occur in 6–8 cases per 1,000 births.

The severity of the problem is highlighted by infant mortality rates. It is heart defects that provoke the highest number of deaths among newborns under one year of age. Notably, after overcoming this critical milestone (between the ages of 1 and 15 years), the mortality rate drops sharply to 5%, which proves the importance of

timely diagnostic and treatment measures at the earliest stages of a person's life.

Medical therapy is unable to eliminate the anatomical defect — the problem is resolved exclusively through surgical intervention; however, the success of the operation directly depends on the timing of the anomaly's detection. In this regard, the outpatient clinic stage (primary healthcare) is the key frontline. The district pediatrician of the children's polyclinic carries out the primary contact with the newborn after discharge from the maternity hospital. The life of a child during the first, most dangerous year of life depends on the clinical vigilance of the physician, their ability to recognize the first 'masks' of the disease, and correctly organize patient routing to a cardiothoracic surgeon.

Research Goal and Tasks

Goal of the work: To find out how doctors in children's polyclinics can detect a congenital heart defect in young children on time to save their lives.

Tasks:

- To look at the statistics and understand why children are born with heart defects.
- To study the very first symptoms of the disease that a pediatrician should pay attention to during a routine check-up.
- To find out how simple methods (listening to the heart and measuring oxygen) help detect a hidden defect.
- To understand where and how quickly a child needs to be referred if a heart defect is suspected.

Materials and Methods

The research materials included current statistical data on the prevalence of congenital heart defects (CHDs) globally and in Uzbekistan, as well as clinical materials and publications from the 'Endomedis' medical center.

The working methods include a theoretical analysis of medical literature, a summary of clinical guidelines in pediatric cardiology, and an evaluation of available screening methods used by pediatricians at the outpatient stage.

Results and Discussion

During the study, key clinical data necessary for a district pediatrician to successfully identify CHDs at early stages were systematized:

1. Main causes of CHD development:

- **Genetic factor:** Heredity and history of heart defects in close relatives.
- **External influences in the first trimester:** Maternal viral infections (rubella, influenza), use of certain medications, smoking, or alcohol.
- **Parental risk factors:** Maternal age, severe morning sickness (toxosis), and endocrine diseases of both parents.

2. Symptoms and clinical markers (what a pediatrician should look for):

- **Skin color:** Bluish tint of the lips and ears (especially during crying or feeding) in 'cyanotic' defects, or severe paleness and cold hands/feet in 'acyanotic' (white) defects.
 - **Child's behavior:** Lethargy, fast fatigue, and heavy sweating during breastfeeding.
 - **Objective data:** Detection of murmurs during listening (auscultation) of the chest.
- ### 3. Available screening methods during routine outpatient check-ups:
- **Auscultation:** Careful listening to the heart to detect murmurs and abnormal sounds.
 - **Palpation:** Checking the pulse on femoral arteries to exclude critical defects like coarctation of the aorta.
 - **Pulse Oximetry:** Screening oxygen levels to identify hidden hypoxemia.

Conclusion

In the course of this work, we found out that congenital heart defects are a dangerous pathology that most often claims the lives of children during their first year of life. Since a heart defect cannot be cured with pills, a timely surgery becomes the main salvation.

The work of a doctor in a children's polyclinic is of decisive importance: if a pediatrician carefully listens to the child's heart and uses simple tests (pulse oximetry), they will be able to detect a hidden disease at the very earliest stage and refer the baby to a cardiothoracic surgeon on time.

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