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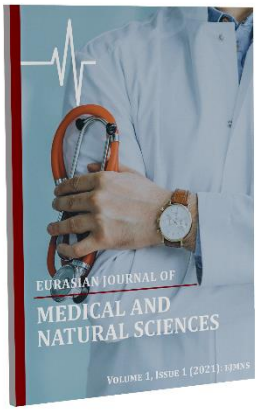

CONGENITAL HEART DISEASE - CAUSES, CLASSIFICATION, DIAGNOSIS, TREATMENT, COMPLICATIONS, CONSEQUENCES

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ABSTRACT
Detailed information on epidemiology, causes of congenital heart disease, pathogenesis, classification, signs and symptoms of congenital heart disease, diagnosis, treatment of congenital heart disease, complications of TYP, consequences. We must first of all follow a healthy lifestyle!

Congenital heart disease - causes, classification, diagnosis, treatment, complications, consequences

Congenital heart disease (CHD) is a defect in the structure of the heart and (or) large blood vessels that occurs in a patient from birth. Most powders disrupt blood flow within the heart or within the large and small blood vessels. Heart defects are the most common birth defects and are the leading cause of death in children due to developmental defects.

Complete information about congenital heart defects

EPIDEMIOLOGY

What is congenital heart disease? The incidence of congenital heart disease among newborns is 1% (one in every 100 babies). The incidence of TYP is second only to congenital malformations of the nervous system.

CAUSES OF DEVELOPMENT OF CONGENITAL HEART DISEASE

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Congenital heart disease can be caused by genetic (hereditary) or environmental (environmental) factors, but is usually a combination of the two.

GENETIC FACTORS

The most studied causes of congenital heart defects are chromosomal mutations in the form of spot genetic changes or deletions or duplications of DNA segments. Major chromosomal abnormalities, such as trisomy 21, 13, and 18, account for approximately 5–8% of TYP cases. Chromosome 21 trisomy is the most common genetic cause. Some genes are associated with certain defects. Mutations in the heart muscle protein, a-myosin heavy chain (MYH6), are associated with interstitial barrier defects.

ECOLOGICAL FACTORS

Genetic mutations are caused by three main mutagens:

Physical mutagens are mainly ionizing radiation.

Chemical mutagens - varnishes, dye phenols, nitrates, benzpyrene in smoking, alcohol consumption, hydantoin, lithium, thalidomide, teratogenic drugs - antibiotics and HTP, NYQP, etc.).

Biological mutagens — mainly the presence of the measles virus in the mother's body, which causes congenital measles in the fetus and the characteristic Gregg triad — lead to congenital heart disease, cataracts, and deafness; the presence of systemic lupus erythematosus, diabetes mellitus, phenylketonuria in the mother may also serve as a biological mutagen.

PATHOGENESIS

Two mechanisms are leading:

1. Disorders of cardiac hemodynamics → tension of the heart sections by volume (valvular insufficiency and septal defect type defects) or resistance (defects by type of stenosis of vessels or holes) → exhaustion of compensatory mechanisms involved (homeostatic Anrep resistance and heterometric Frank-Starling volume) → development of hypertrophy and dilatation of cardiac units → development of heart failure (and, accordingly, disturbance of systemic hemodynamics).

2. Disorders of systemic hemodynamics (complete anemia of small circulatory system, anemia of large circulatory system) development of systemic hypoxia (mainly circulatory in white powders, hemic in blue powders, as well as ventilation and diffuse hypoxia in acute left ventricular failure it can).

CLASSIFICATION

There are many classifications of congenital malformations. Congenital heart disease is conventionally divided into 2 groups:

1. White (arterial and venous blood do not mix, with left and right blood flow). Includes 4 groups:

With the enrichment of the small circulatory system (open arterial tube, interventricular septal defect, interventricular septal defect, AB-communication, etc.);

With weakening of the small circulatory system (isolated pulmonary stenosis, etc.);

With weakening of the scope of major blood circulation (isolated aortic stenosis, coarctation of the aorta, etc.);

Without significant disturbances of systemic hemodynamics (cardiac dispositions - dextro-, synistro-, mesocardial, cardiac dystopia - neck, chest, abdomen).

2. Blue (with right and left blood flow, arterial and venous blood are mixed). Includes 2 groups:

With the enrichment of the small circulatory system (complete transposition of the main vessels, Eisenmenger complex, etc.).

With a weakening of the small rotational circle (Fallo tetrad, Ebstein anomaly, etc.).

In 2000, the International Nomenclature was developed to create a common classification system for congenital malformations.

HYPOPLASIA

Hypoplasia can damage the heart, usually leading to right or left ventricular failure. This means that only one side of the heart can pump blood efficiently to the body and lungs. Cardiac hypoplasia is rare, but it is the most serious form of TYP. These conditions are called left ventricular hypoplasia syndrome and left ventricular hypoplasia syndrome. In both cases, the presence of an open arterial tube (if the hypoplasia affected the right side of the heart, as well as an open oval window) is critical for the child to survive until heart surgery, because without these methods the blood will not flow. cannot circulate in the body (or in the lungs, depending on the side of the heart injury). Hypoplasia of the heart is usually a heart defect.

OBSTRUCTION DEFECTS

Obstructive defects occur when the heart valves, arteries, and veins are stenotic or atresia. The main defects are stenosis of the pulmonary valve, stenosis of the aortic valve, as well as aortic coarctation. Powders such as bicuspid valve stenosis and subaortic stenosis are rare. Any stenosis or atresia can lead to dilation of the heart and hypertension.

OBSTACLE DEFICIENCIES

The barrier is the wall of tissue that separates the left heart from the right. In interventricular or interventricular septal defects, blood begins to flow from the left to the right side of the heart, reducing the efficiency of the heart. Interventricular septal defect is the most common type of TYP.

DEFECTS

- Aortic stenosis;
- Interdepartmental barrier defect;
- Failure of the ventricular septum;
- Bilateral valve stenosis;
- Dextrocardia;

- Double left ventricular outlet;
- Double right ventricular outflow tract;
- Ebstein anomaly;
- Left heart hypoplasia syndrome;
- Right ventricular hypoplasia syndrome;
- Mitral valve stenosis;
- Pulmonary artery atresia;
- Congenital stenosis of the pulmonary artery valve;

Transposition of the main vessels:

1. dextro-transposition
2. senistro-transposition
3. Congenital stenosis of the tricuspid valve;
4. Persistent arterial nucleus;
5. Interventricular septal defect.

Some cases only affect the large arteries that are directly close to the heart, but they are often classified as TYP:

- Coarctation of the aorta;
- Atresia of the aorta;
- Open arterial tube;
- Partial anomaly of pulmonary vein fusion;
- Total anomaly of pulmonary vein fusion.
- In some cases, the defects are usually found together:

- Fallo tetradasi;
- Cantrella pentadasi;

SYMPTOMS AND SYMPTOMS OF CONGENITAL HEART DISEASE

Clinical manifestations depend on the type and severity of the heart defect. Symptoms usually appear in the early stages of life, but some TYPs may go unnoticed for a lifetime. Some children have no symptoms, while others have shortness of breath, cyanosis, fainting, heart palpitations, underdeveloped limbs and muscles, poor appetite or low neck, frequent respiratory infections. 'can be. In congenital heart defects, heart murmurs are caused by a malformation. They can be detected during auscultation, but not all heart murmurs are caused by congenital heart defects.

It is also possible to combine the clinical manifestations of congenital heart disease into 4 syndromes:

Cardiac syndrome - complaints of pain in the heart area, shortness of breath, palpitations, heart failure and others.

During the examination - whitening or cyanosis, swelling and pulsation of the vessels of the neck, deformation of the chest in the form of "curvature" of the heart.

On palpation - changes in blood pressure and peripheral pulse character, changes in the characteristics of the upper pulse in dilatation of the left ventricle, right ventricular hypertrophy / dilation of the heartbeat, systolic / diastolic "cat murmur" in stenosis.

In percussion - the expansion of the boundaries of the heart in accordance with the dilated sections.

In auscultation - changes in rhythm, strength, monolithicity of sounds, the

occurrence of noise specific to each powder, and so on.

Heart failure syndrome - acute or chronic, right or left ventricle, suffocation-cyanotic attacks, etc.

Chronic systemic hypoxia syndrome - growth and developmental delay, symptoms of drumsticks and clock face, etc.

Respiratory disorders syndrome - mainly in small circulatory enlargement TYP).

DIAGNOSIS

The data of laboratory-instrumental research methods vary depending on the type of powder. Among the leading methods are:

- ECG (right or left chart, different types of arrhythmias, etc.).
- Panoramic radiography of the heart (mitral configuration in patients with small circulatory enlargement, and aortic in attenuation) and contrast radiological methods (angiography, ventriculography, etc.).
- Echo-ECG (the main method is to see the morphology of the heart and determine the functional status of the heart).
- Doppler-exo-KG (allows to determine the direction of blood flow - to determine regurgitation and turbulence).
- TREATMENT OF CONGENITAL HEART DISEASE
- Treatment of TYP can be divided into surgical (often only radical) and therapeutic (often adjuvant).

SURGICAL TREATMENT

It depends on the powder phase:

In the first phase - surgery on emergency instructions (in the case of enrichment of the small circulatory system - artificial stenosis of the pulmonary artery by Mueller-Albert, in the case of weakening - an artificial arterial tube). However, the appropriateness of these operations is uncertain and a very individual matter.

In the second phase - the operation in a planned manner (specific to a particular defect). The timing of the procedure is controversial and is regularly reviewed (in the literature, the time interval varies from maternal to puberty, but there is a greater tendency to perform surgery at an early stage).

In the third phase, the operation is not performed.

THERAPEUTIC TREATMENT

Rarely indicated as a radical treatment. A classic example is an open arterial tube, in which the appointment of indomethacin according to the appropriate scheme leads to obliteration of the arterial tube.

- The following are treated symptomatically:
- Acute left ventricular failure (asthma, pulmonary edema).
- Shortness of breath-cyanotic attacks.
- Chronic heart failure.
- Arrhythmia.
- Myocardial ischemia.

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