



HEART ARRHYTHMIA DISEASE AND ITS TREATMENT METHODS IN MODERN MEDICINE

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ABSTRACT

This article discusses the heart arrhythmia disease and its relevance, as well as treatment methods. Heart arrhythmia is a type of disease that has different symptoms in different age groups, while some types of the disease can be detected only by EKG (Electrocardiogram). This disease is causing great damage to the economy of many countries, including Russia.

Key words

heart arrhythmia, EKG, tachycardia, bradycardia, allapinin, disease, cardiovascular system, myocardium.

Introduction: Cardiovascular diseases are widespread among the population and are one of the main causes of disability and death. According to the World Health Organization, 56% of all deaths are caused by cardiovascular diseases. Around the world, 17.4 million people die annually due to cardiovascular diseases. About 25 percent of this indicator (ie 4.3 million inhabitants) corresponds to European countries. For this reason, these diseases are a problem not only for medical workers, but also at the state level.

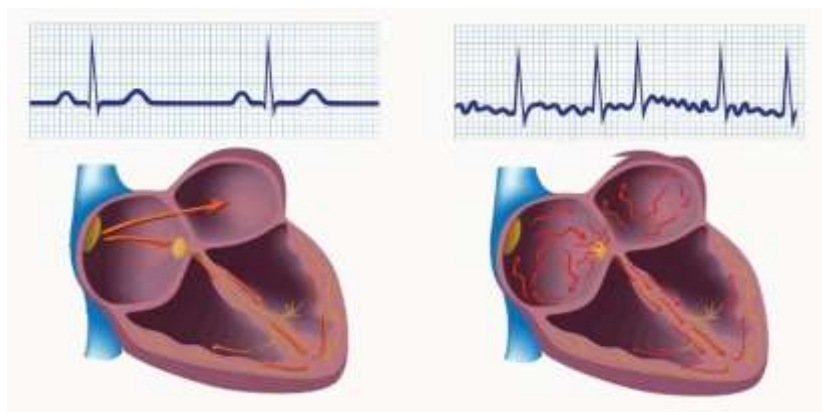
Arrhythmia - (a-denial, Greek "rhythmos" - rhythm, flow) is a cardiac pathology associated with heart permeability, the frequency of heart muscle contractions and rhythm disturbances.

The occurrence of arrhythmias is often associated with various heart diseases - ischemia, inflammation, degenerative changes, toxic injuries. Cardiac arrhythmias are not a separate disease, but complications of other diseases. However, with the help of modern research methods, it has been found that this disease can also be found in patients without heart pathology. It should be noted that in the acute

period of myocardial infarction, arrhythmia was observed in 95-100 percent of patients.

The most common type of heart rhythm disorder is atrial fibrillation. The prevalence of this arrhythmia in the population is 2 percent. After 40 years, this indicator may be 25 percent.

It is this disease that causes great damage to the economy of Russia. According to a study by experts of the Higher School of Economics, the number of patients with atrial fibrillation was estimated at 2.5 million in 2019, and in 2036, these numbers will increase to 3 million. The damage caused to the Russian economy may increase from 962.1 billion rubles to 1566.6 billion rubles. Also, the researchers of the Higher School of Economics noted that the disease especially affects the loss of working years, which is 35.5% of all losses among men, and 18% among women.



Normal heart

Cardiac arrhythmia

Figure 1. Conduction in the healthy and diseased heart.

According to the heart rate:

Tachycardia is a rapid heartbeat, in which the heart beats more than 80-90 times per minute.

Tachycardia types and diagnostic signs

| Types of tachycardia | Diagnostic signs |
|---|---|
| Repetitive ventricular tachycardia | It starts suddenly. An attack can be stopped by a vagus test. |
| Focal tachycardia of compartments | Started slowly. Vagus test helps to lower heart rate. |
| Atrio-ventricular tachycardia | It starts suddenly. A vagus test can stop a seizure. |
| Fluctuating arrhythmia | It starts suddenly. |
| Compartment twitching Wolff-Parkinson-White | It starts suddenly. Arousal waves are different. Vagus test |

| | |
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| syndrome | is not possible. |
| Ventricular tachycardia | It starts suddenly. A vagus test is useless. |

Bradycardia is a slow heartbeat , less than 60 beats per minute.

Causes of arrhythmia :

Non -cardiac causes:

- Disorders of the thyroid gland;
- Kidney or liver failure;
- Harmful habits;
- Changes in the balance of electrolytes (potassium, calcium, magnesium).

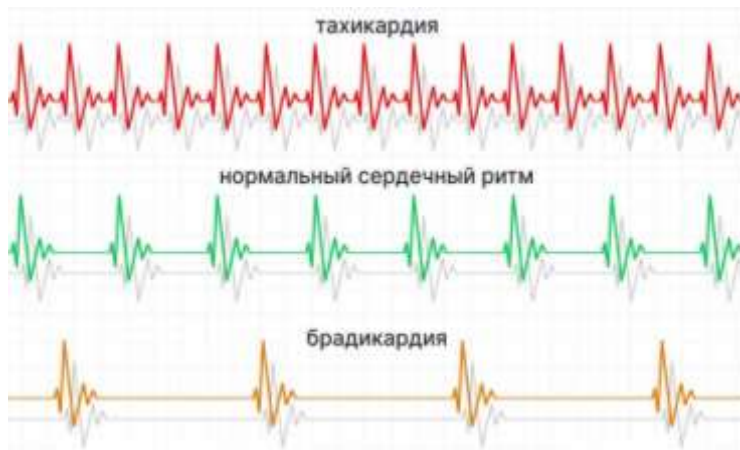


Figure 2. Heartbeat rhythms.

Causes related to heart disease:

- Heart failure;
- Myocardial infarction;
- Inflammation of the heart muscle;
- Cardiosclerosis;
- Consequences of surgery.

Symptoms of cardiac arrhythmia:

Heart arrhythmia can sometimes go without any symptoms. And in some cases, we can feel the disease during the examination.

- chest pain;
- shortness of breath;
- dizziness;
- fast or slow heartbeat;



- weakness.

Heart arrhythmia in children. Cardiac arrhythmias are one of the most common diseases among children and adolescents. As a rule, congenital or acquired diseases of the cardiovascular system cause arrhythmias in children. Children with arrhythmia may not pay attention to the symptoms and discomfort caused by the disease and may not complain. For this reason, it is very difficult to detect arrhythmia in children without instrumental diagnosis.

Arrhythmia can appear in children at different ages, but this disease is more common in 4-5, 7-8 years and teenagers.

Symptoms of arrhythmia in children:

can have different characteristics. And different young people show different symptoms.

newborns and infants may show the following symptoms:

- Refusal to eat
- Slow growth
- Sleep from time to time
- Shortness of breath

in school-aged children and adolescents are asymptomatic, and the disease is detected during a medical examination.

symptoms of arrhythmia in children and adolescents of school age:

- Feeling tired;
- Inability to exercise;
- Decreased appetite;
- There may be apathy or, on the contrary, mild excitability;
- Pain in the area of the heart;
- Dizziness;
- Fainting.

of arrhythmia in children:

Related to the work of the heart:

- Congenital and acquired heart defects;
- Carditis and cardiomyopathies;
- Arterial hypertension;
- Myocardium.

severe infectious diseases such as pneumonia and diphtheria belong to this group.

Non -cardiac causes:

- Central nervous system diseases;
- Brain damage and tumors;

- Hereditary diseases;
- Early birth.

Psychologists have also noted that parents are too demanding of children and cause problems in the family.

Principles of modern treatment of cardiac arrhythmias

| Type of arrhythmia | Treatment |
|---|--|
| Sinus tachycardia heart rate 100-160 per minute | Eliminating the main causes (anemia , fever, thyrotoxicity , hypovolemia). If tachycardia is associated with some pathogenic condition, beta-blockers are recommended. |
| Sinus bradycardia heart rate is less than 55 beats per minute | Atropine- 0.6-10 mg intravenously, isoprenaline 2-20 µg/min, cardiostimulation treatment in intensive care units using an electrostimulator. |
| Extrasystole of compartments | In most cases, no special treatment is required. We can use beta-blockers, verapamil group for subjective signs of arrhythmia. We can use quinidine and verapamil, drugs of the allapinine group in cases of ventricular extrasystole, oscillating arrhythmia or ventricular tachycardia. |
| Compartmental tachycardia | Treatment of the disease caller. Verapamil, cordarone, and allapine have been shown to be effective. |
| Fluctuating arrhythmia | If the patient has an attack of swinging arrhythmia and left ventricular failure, without a drop in blood pressure and without other clinical symptoms, the patient is treated in an outpatient setting, and in case of the opposite symptoms, in an inpatient setting. Digoxin, beta-blockers, propafenone, allapinin, cordarone, novocainamide, sotalol |



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| | | help to stop an attack of fluttering arrhythmia. With their help, sinus rhythm can be restored. If the fluttering arrhythmia lasts more than 7 days, anticoagulant drugs are added. |
| | Ventricular tachycardia | To stop an attack of ventricular tachycardia, lidocaine, allapinin, novocainamide, cordarone are administered intravenously. The effectiveness of drugs does not exceed 50 percent. Treatment with electric current (cardioversion) is very effective. |

The treatment of cardiac arrhythmias is as varied as the causes of the arrhythmia. The choice of therapy and medication is made with the help of EKG.

Summary. Unhealthy lifestyle, disordered eating, harmful habits, physical inactivity are behind every disease. Also in cardiac arrhythmias. One of the main causes of arrhythmias is the imbalance of electrolytes (calcium, potassium, magnesium). For this reason, a proper and regular diet is one of the ways to prevent and get rid of arrhythmias. Do not forget to take the recommended medication at the right time and in the right amount. In most cases, cardiac arrhythmias are a complication of another cardiovascular system disease. However, even healthy people can experience arrhythmia. In order to prevent the disease, it is necessary to undergo frequent examinations and pay attention to the activity of the cardiovascular system.

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