FINDING THE SOLUTION OF ARITHMETIC ON THE BASIS OF MODERN TECHNOLOGIES

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Relevance of the problem: Arithmology is a relatively young specialty that appeared in the second half of the 20th century. It is a part of cardiology that deals with the diagnosis and treatment of heart rhythm and conduction disorders - bradyarrhythmia and tachyarrhythmia.

The main methods of diagnosing heart rhythm disorders are questioning, anamnesis, various ECGs, and electrophysiological research.

The main methods of treatment are antiarrhythmic therapy and surgery - implantation of antiarrhythmic agents and various types of ablation - elimination of the source of arrhythmia.

Observed results: Some diseases that manifest as rhythm disorders are genetic in nature - due to genetic mutations. Others are acquired in nature and occur mainly in elderly patients.

The most common complaints in patients with cardiac arrhythmias are "cardiac interruptions" - irregular, irregular heartbeat, freezing of the heart, as well as complaints about rapid rhythmic or irregular heartbeat attacks. In rare cases, patients experience rapid heart rate, dizziness, episodes of black eyes, fainting and pre-fainting. Sometimes the rhythm disturbance can be asymptomatic and is detected during preventive examination based on objective examination or instrumental methods, for example, ECG or 24-hour monitoring.

Research materials: The heart consists of 4 chambers: the upper 2 chambers are called the atrium, the lower 2 chambers are called the ventricles. The right atrium and ventricle pump venous blood, the left atrium pumps arterial blood. Mechanical contraction of any chamber is possible only when all muscle cells (cardiomyocytes) in the wall of this chamber contract simultaneously. This coordinated contraction causes the blood to "squeeze" from the chamber to the next part of the cardiovascular system (from the atrium to the ventricle, from the ventricle to the main artery). In order for all cardiomyocytes to start contracting at the same time, the heart has a system that controls them using electrical impulses. First, the muscle cell is excited by an

impulse, and then a complex process of "electro-mechanical coupling" begins, which leads to mechanical contraction. The heart has special cells called the cardiac conduction system to produce and conduct electrical impulses.

Cardiac conduction system

The main pacemaker of the heart is the sinus node. It is located in the wall of the right atrium and produces electrical impulses at a frequency of 60-80 times per minute. During sleep, the frequency of pulse generation can be slightly lower - 50-60 per minute, and during exercise, on the contrary, it is higher - 90-100, sometimes more than 100 per minute. Based on the name of the main source of impulses, the normal rhythm in the heart is called sinus. Sometimes the sinus node produces irregular pulses, and then they talk about sinus arrhythmia. Most often, this is caused by breathing movements, the frequency of breathing increases and the frequency decreases during exhalation. That is, sinus arrhythmia is also a variant of the norm.

Impulses from the sinus node cover the atrial myocardium like waves on water. After electrical stimulation, the atrium mechanically contracts and pumps blood into the ventricles through the atrioventricular (or atrioventricular) valves - mitral and tricuspid.

The atrial myocardium is electrically separated from the ventricular myocardium by fibrous valve rings. Transmission of impulses from the atria to the ventricles is possible only through the atrioventricular junction. It consists of the atrial ventricular node, the atrioventricular bundle (bundle of His) and the branches of the bundle of His - right and left. The left leg is divided into branches, which are usually considered front and back. Branches of the bundle gradually divide into smaller and smaller branches, which spread along the walls of the heart in the form of a network of Purkinje fibers.

If there are indications for implantation of an antiarrhythmic device (pacemaker, cardioverter-defibrillator, cardiac resynchronization device), the patient can choose which device to implant. Arithmolog provides detailed information on the characteristics of devices available on the Russian market, such as MRI compatibility, service life, device dimensions and weight, availability and cost of special algorithms and functions.

For patients with tachyarrhythmias (supraventricular tachycardia, extrasystole, atrial fibrillation), we can offer catheter ablation using modern equipment and the latest techniques - radiofrequency and cold (cryo-) ablation.

Dynamic ambulatory monitoring and treatment under the supervision of a team consisting of a cardiologist and an arrhythmologist is an important component of the treatment of many

rhythm disorders. Thus, the treatment of atrial fibrillation consists of several consecutive steps - prescribing anticoagulant therapy, correcting risk factors (arterial hypertension, excess weight, heart failure, etc.), choosing antiarrhythmic therapy and catheter ablation. After pacemaker implantation, patients should also periodically check the implanted device and expertly evaluate the interaction of the heart and the antiarrhythmic device and adjust conservative therapy or change device settings as necessary. need If necessary, an endocrinologist, geneticist, rheumatologist, ENT doctor, gynecologist, surgeon, as well as many specialists working in our multidisciplinary clinic are involved in patient management.

Conclusion: The possibility of diagnosis and treatment in both outpatient and inpatient settings, an integrated approach to diagnosis, treatment and monitoring make our clinic one of the leaders in the quality of care for patients with cardiac arrhythmia.

A pacemaker is a small electronic device designed to prevent the development of rare heartbeats and pauses in the heart. If the main pacemaker of the heart (sinus node) and / or the main component of the heart conduction system (atrioventricular, atrioventricular or AV node) stops performing its work reliably, the implanted device takes over their functions. In sick sinus syndrome or atrioventricular block, a pacemaker can force the heart into a rhythm using small electrical pulses.

The body of the device is inserted into the subcutaneous tissue through a small skin incision in the subclavian region, usually on the left side. From it, one, two or three electrodes are transferred to the heart through veins, they are installed inside the heart and transmit electrical impulses from the stimulator to the myocardium.

REFERENCES

1. Andryev S. et al. Experience with the use of memantine in the treatment of cognitive disorders //Science and innovation. – 2023. – T. 2. – №. D11. – C. 282-288.
2. Antsiborov S. et al. Association of dopaminergic receptors of peripheral blood lymphocytes with a risk of developing antipsychotic extrapyramidal diseases //Science and innovation. – 2023. – T. 2. – №. D11. – C. 29-35.
3. Asanova R. et al. Features of the treatment of patients with mental disorders and cardiovascular pathology //Science and innovation. – 2023. – T. 2. – №. D12. – C. 545-550.
4. Begbudiyev M. et al. Integration of psychiatric care into primary care //Science and innovation. – 2023. – T. 2. – №. D12. – C. 551-557.

5. Bo'Riyev B. et al. Features of clinical and psychopathological examination of young children //Science and innovation. – 2023. – T. 2. – №. D12. – C. 558-563.
6. Borisova Y. et al. Concomitant mental disorders and social functioning of adults with high-functioning autism/asperger syndrome //Science and innovation. – 2023. – T. 2. – №. D11. – C. 36-41.
7. Ivanovich U. A. et al. Efficacy and tolerance of pharmacotherapy with antidepressants in non-psychotic depressions in combination with chronic brain ischemia //Science and Innovation. – 2023. – T. 2. – №. 12. – C. 409-414.
8. Karshiyev Z. et al. The degree of adaptation to psychogenic effects in social life in patients with psychogenic asthma //Science and innovation. – 2023. – T. 2. – №. D11. – C. 295-302.
9. Konstantinova O. et al. Clinical and psychological characteristics of patients with alcoholism with suicidal behavior //Science and innovation. – 2023. – T. 2. – №. D11. – C. 399-404.
10. Konstantinova O. et al. Experience in the use of thiamine (vitamin B1) megadose in the treatment of korsakov-type alcoholic encephalopathy //Science and innovation. – 2023. – T. 2. – №. D12. – C. 564-570.
11. Farrukh S. ORGANIZATION OF DIGITALIZED MEDICINE AND HEALTH ACADEMY AND ITS SIGNIFICANCE IN MEDICINE //Science and innovation. – 2023. – T. 2. – №. Special Issue 8. – C. 493-499.
12. Kosolapov V. et al. Modern strategies to help children and adolescents with anorexia nervosa syndrome //Science and innovation. – 2023. – T. 2. – №. D12. – C. 571-575.
13. Lomakin S. et al. Biopsychosocial model of internet-dependent behavior. Risk factors for the formation of the internet //Science and innovation. – 2023. – T. 2. – №. D12. – C. 205-211.
14. Lomakin S. et al. Features of electroencephalographic disorders in patients with mental disorders due to brain damage or dysfunction //Science and innovation. – 2023. – T. 2. – №. D12. – C. 367-372.
15. Lomakin S. et al. Socio-demographic, personal and clinical characteristics of relatives of patients with alcoholism //Science and innovation. – 2023. – T. 2. – №. D12. – C. 278-283.