

A MODERN INTERPRETATION OF THE TREATMENT AND MECHANISM OF ORIGIN OF HEART ATTACK

¹Pulatova Kristina, ²Kholmonova Saygul, ³Kadirov Farhod, ⁴Azimov Amirjon, ⁵Azimova Sarvinoz

¹Department of Internal Medicine No. 2 of Samarkand State Medical University
^{2,3,4,5}Samarkand State Medical University Faculty of Medicine 608 group Students

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Abstract. *Cardiac asthma is a clinical syndrome characterized by inspiratory wheezing and respiratory failure. Cardiac asthma is considered a complication of left ventricular failure in cardiology. In cardiac asthma, myocardium contractility suddenly decreases and there is damping in the small blood circulation, which causes shortness of breath and deficiencies in blood circulation. This condition causes pulmonary edema and is often fatal.*

Keywords: *cardiac asthma, cardiac asthma, ultrasound of the heart and blood vessels, MSCT of the heart.*

Cardiac asthma is a pathological condition manifested by acute left ventricular failure, small blood circulation and swelling of lung tissue. Symptoms of cardiac asthma include shortness of breath, orthopnea, dry cough, cyanosis on the face, tachycardia, increased diastolic arterial pressure, agitation, and fear of death. The diagnosis of cardiac asthma is made using clinical signs, general examination, anamnesis, chest x-ray, ECG. Cardiac asthma attacks are eliminated with nitroglycerin, narcotic analgesics, hypotensive and diuretic agents, leg and arm splints, and oxygen therapy.

- Cardiac asthma, cardiac asthma
- Doctor consultation
- Cardiologist consultation
- Diagnostics
- Ultrasound of the heart and blood vessels
- MSKT of the heart

General information

Cardiac asthma is a clinical syndrome characterized by inspiratory wheezing and respiratory failure.

Cardiac asthma is considered a complication of left ventricular failure in cardiology. In cardiac asthma, myocardium contractility suddenly decreases and there is damping in the small blood circulation, which causes shortness of breath and deficiencies in blood circulation. This condition causes pulmonary edema and is often fatal.

Causes of cardiac asthma

Cardiac asthma can develop with heart failure or as a result of non-cardiac diseases. Cardiac asthma can be primary acute or chronic (a complication of left ventricular failure). The syndrome is caused by CHD (ischemic heart disease), acute infarction, unstable angina, atherosclerotic cardiosclerosis, acute myocarditis, postpartum cardiomyopathies, cardiac aneurysm.

In addition, mitral and aortic valve defects (stenosis and insufficiency) also cause cardiac asthma. Infectious diseases such as pneumonia, acute glomerulonephritis, acute circulatory disorders of the brain can also be complicated by cardiac asthma. Risk factors include physical exertion, strong emotional stress, infusion-induced hypervolemia, and excessive fluid intake.

Pathogenesis

The mechanism of the development of cardiac asthma is explained by the disturbance of cardiac hemodynamics, especially the increase in blood volume in the left heart chambers, the increase in blood pressure in the pulmonary veins, and damping in the small blood circulation.

Due to the increased permeability of the blood vessels in the lungs, the liquid part of the blood accumulates between the lung tissues and pulmonary edema develops. This leads to a violation of gas exchange between alveoli and blood vessels.

The clinical symptoms that appear during an attack of cardiac asthma are explained by the neuroreflective stage of breathing control and blood circulation in the brain. Vegetative symptoms appear due to the stimulation of the respiratory centers.

Symptoms of cardiac asthma

The "harbinger" symptoms of cardiac asthma syndrome include shortness of breath lasting 2-3 days, coughing during physical activity, and a feeling of tightness in the chest. Symptoms of cardiac asthma often appear at night, because at this time the adrenergic control of blood circulation is weak, that is, the volume of blood flow in the heart increases.

An attack of cardiac asthma in the early part of the day is associated with physical or psychoemotional stress. An attack of cardiac asthma begins suddenly, the patient wakes up at night due to shortness of breath and suffers from shortness of breath, a dry cough is observed (later, transparent sputum also begins to be released). The patient cannot lie in a horizontal position, he occupies a forced position. He lowers his legs and sits in a slightly forward position. He usually breathes through his mouth and has difficulty speaking.

The patient is agitated, anxious, and afraid of dying. Visually, there is cyanosis, tachycardia, and diastolic blood pressure in the mouth-lip triangle and nails. On auscultation, a moist crackle with small bubbles is clearly heard, especially in the lower part of the lungs. Cardiac asthma can last from a few minutes to several hours. The duration depends on the underlying disease causing the asthma. Asthma attacks caused by mitral stenosis are rarely observed, as it is caused by narrowing of the pulmonary arteries within a small blood circulation (reflex Kitayev).

An asthma attack may not develop in right ventricular failure. Sometimes during an attack, reflex bronchospasm may occur and symptoms such as bronchial asthma attack may develop, as well as cause difficulties in making a diagnosis. As a result of a long-lasting cardiac asthma attack, cyanosis, cold sweat, dilation of neck veins, thready pulse, decrease in blood pressure and worsening of the patient's general condition are observed. In pulmonary edema, frothy sputum secretion is increased, small to moderate blebs of moist rales are heard in all areas of the lungs.

Diagnosis of cardiac asthma

For the correct treatment of cardiac asthma, it is necessary to distinguish it from other diseases, for example, bronchial asthma, pharyngeal stenosis, wheezing during uremia, mediastinal syndromes, hysterical conditions. To diagnose cardiac asthma, it is necessary to conduct clinical symptoms of the syndrome, anamnesis collection, radiography and ECG examinations.

Auscultation during an asthmatic attack is somewhat difficult, as wheezing in the case of shortness of breath makes it somewhat difficult to distinguish tones. However, even so, a qualified doctor can find out about muffled heart sounds, accent of the II tone in the pulmonary artery, and the main sign of the disease - a change in the heart rhythm, defects in the aorta or heart valves. There is a decrease in pulse rate, a decrease in arterial blood pressure. Auscultation of the lungs reveals moist crackles. In case of cardiac asthma, venous dimming within a small blood circulation and dimming of the pulmonary flow, lack of clear visibility of the pulmonary roots on the x-ray indicate pulmonary edema.

During an attack, the ECG shows a decrease in the ST wave interval, a decrease in wave amplitude, signs of arrhythmia, signs of coronary insufficiency. In order to rule out a bronchial asthma attack with reflex bronchospasm, wheezing and increased mucus secretion, it is necessary to collect information about the patient's age (cardiac asthma is often observed in elderly people), allergic anamnesis, chronic lung diseases, pathologies of the cardiovascular system.

Treatment of cardiac asthma

Although cardiac asthma is a self-limiting condition, it is dangerous because of the high probability of death in the patient as a result of pulmonary edema. That is why it is necessary to provide emergency medical care in case of cardiac asthma attack. Remedial measures consist mainly of prevention of neuroreflective excitation of the respiratory center, elimination of emotional stress and correction of dampness in the small blood circulation.

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In order to improve the patient's condition during an attack, it is necessary to ensure maximum rest, a comfortable (sitting) position for the patient, and a warm foot bath. Nitroglycerin is injected under the tongue every 5-10 minutes, and arterial blood pressure is checked. In cardiac asthma attacks, narcotic analgesics are used to relieve pain, which also reduces wheezing.

Hypothermia and arterial hypertension and venous hypothermia can be eliminated by bloodletting (300 ml of blood). In addition, it is possible to put on the peripheral parts of the body (should not exceed 30 minutes).

In the hospital setting, oxygen (passed through ethyl alcohol) is delivered to the patient by inhalation, which also reduces pulmonary edema. Large doses of diuretics (furosemide) are prescribed. In almost all attacks of cardiac asthma, intravenous cardiac glycosides - strophanthine or digoxin are used. Eufillin - helps well when bronchial and heart asthma come together. After the attack is resolved, the underlying disease is treated.

Consequences and prevention of the disease

The outcome of an attack depends on the severity of the underlying disease. Most often, the consequences of an attack end negatively. However, the right treatment can save the patient's life.

Prevention of cardiac asthma consists of measures such as treatment of chronic cardiovascular diseases, prevention of infectious diseases, ischemic heart disease, elimination of arterial hypertension.

In conclusion, what has been discussed above it is inferred that Cardiac asthma is a clinical syndrome characterized by inspiratory wheezing and respiratory failure. Cardiac asthma is considered a complication of left ventricular failure in cardiology.

In cardiac asthma, myocardium contractility suddenly decreases and there is damping in the small blood circulation, which causes shortness of breath and deficiencies in blood circulation. This condition causes pulmonary edema and is often fatal.

REFERENCES

1. Dilshodovna A. M., Odylovna K. F., Samveilovna P. K. Peculiarities of Psychological Disorders in Patients with Acute Coronary Syndrome //International Journal of Health Systems and Medical Sciences. – 2022. – Т. 1. – №. 6. – С. 203-207.
2. Агабабян Ирина Рубеновна, Джаббаровва Нафиса Мамасолиевна, Рофеев Мумин Шамсиевич, Назарова Зухра Шариповна, Пулатова Кристина Самвеловна Метаболический синдром как один из основных факторов развития артериальной гипертензии // Достижения науки и образования. 2019. №10 (51). URL: <https://cyberleninka.ru/article/n/metabolicheskiy-sindrom-kak-odin-iz-osnovnyh-faktorov-razvitiya-arterialnoy-gipertonii> (дата обращения: 17.10.2023).
3. Kristina Samvelovna Pulatova, Shokhruh Shavkatovich Inoyatov, Davlatshoh Usmonovich Numonov REDUCED SEXUAL DYSFUNCTION IN YOUNG ADULTS WITH OVERWEIGHT AND ARTERIAL HYPERTENSION // CARJIS. 2022. №1. URL: <https://cyberleninka.ru/article/n/reduced-sexual-dysfunction-in-young-adults-with-overweight-and-arterial-hypertension> (дата обращения: 17.10.2023).
4. Kristina Samvelovna Pulatova, Timur Mukhitdinovich Pulatov, Mukhammad Olimovich Esankulov THE SPECIFIC FEATURES OF ARTERIAL HYPERTENSION IN OVERWEIGHT PATIENTS WITH PSORIASIS // Academic research in educational sciences. 2021. №2. URL: <https://cyberleninka.ru/article/n/the-specific-features-of-arterial-hypertension-in-overweight-patients-with-psoriasis> (дата обращения: 17.10.2023).
5. Agababyan Irina Rubenovna, Pulatova Kristina Samvelovna, Jabbarova Nafisa Mamasolievna, Davurov Shodiyor Shokiro'g'li. (2021). Features of Anti-Hipertension Therapy in Overweight Pations. Annals of the Romanian Society for Cell Biology, 278–283. Retrieved from <https://annalsofrscb.ro/index.php/journal/article/view/107>
6. Tashkenbaeva, E. N., Pulatova, K. S., & Yorbulov, L. S. (2022). Evaluation of Echocardiography in Patients With Coronary Heart Disease Combined With Metabolic Syndrome. Central Asian Journal of Medical and Natural Science, 3(6), 194-197. Retrieved from <https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/1193>
7. Abdulloeva , M. ., Pulatova , K. ., & Mirzaev , R. . (2023). ORTIQCHA VAZN VA ARTERIAL GIPERTONIYA BILAN OG'RIGAN YOSHLARDA YUZAGA KELADIGAN JINSIY ZAIFLIK. Евразийский журнал медицинских и естественных наук, 3(4 Part 2), 91–94. извлечено от <https://in-academy.uz/index.php/EJMNS/article/view/13515>
8. Farida Odylovna Khasanjanova, Pulatova Kristina Samveilovna., & Yusupova Idrisahon Bakhtiyorovna. (2023). EVALUATION OF THE CLINICAL EFFECT OF SIMVASTATIN IN PATIENTS WITH UNSTABLE ANGINA AT A YOUNG AGE. European Scholar Journal, 4(4), 116-118. Retrieved from <https://scholarzest.com/index.php/esj/article/view/3462>
9. Farrukh, S. (2022). Treatment of myocardial infarction and first aid." science and Innovation" International Scientific Journal. ISSN: 2181-3337, 1 (3), 317–320.–2022. 13.

- Farrux S. Eurasian Scientific Herald penaccess. peerreviewedjournal <https://geniusjournals.org/index.php/esh>, 8.
10. J. Tohirova, F. Shernazarov **ATHEROSCLEROSIS: CAUSES, SYMPTOMS, DIAGNOSIS, TREATMENT AND PREVENTION // SAI. 2022. №D5. URL: <https://cyberleninka.ru/article/n/atherosclerosis-causes-symptoms-diagnosis-treatment-and-prevention> (дата обращения: 16.10.2023).**
 11. Farrukh, S. (2022). Treatment of myocardial infarction and first aid." science and Innovation. International Scientific Journal. ISSN, 2181-3337.
 12. Shernazarov Farrukh. (2022). TREATMENT OF MYOCARDIAL INFARCTION AND FIRST AID. "science and Innovation" International Scientific Journal. ISSN: 2181-3337, 1(3), 317–320. <https://doi.org/10.5281/zenodo.6803550>
 13. Shernazarov Farrux. Eurasian Scientific Herald **O P E N A C C E S S , P E E R R E V I E W E D J O U R N A L [HTTPS://GENIUSJOURNALS.ORG/INDEX.PHP/ESH](https://geniusjournals.org/index.php/esh) V O L U M E 8 | M A Y 2 0 2 2 I S S N (E) : 2 7 9 5 - 7 3 6 5** The Structure of the Heart and its Physiology in Regular Athletes 102-105