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A CLINICAL CASE OF ACUTE CORONARY SYNDROME WITH ECG-ST-LIFTING COMPLICATED WITH CARDIOGENIC SHOCK

DOI 10.25789/YMJ.2021.76.32

УДК 616.127-005.8

Acute coronary syndrome is the most common cause of cardiogenic shock and urgent reperfusion therapy is essential. The article presents a clinical case of acute coronary syndrome with an electrocardiogram ST segment elevation complicated by cardiogenic shock. Timely reperfusion therapy - percutaneous intervention on the infarction-associated antero-descending coronary artery, made it possible to improve the prognosis and outcome of acute myocardial infarction with acute heart failure Killip class IV.

Keywords: acute coronary syndrome, myocardial infarction, cardiogenic shock, percutaneous intervention.

Introduction. Acute myocardial infarction (AMI) is considered the most common cause of cardiogenic shock (CS) and more often observed in patients with acute myocardial infarction with ST segment elevation (STEMI) compared with patients with acute myocardial infarction without ST segment elevation (NSTEMI) electrocardiogram. According to statistics, cardiogenic shock (CS) occurs in 5-7% of patients, and is accompanied by unfavorable outcomes in 40-60% of cases. Nosocomial mortality in this category of patients has decreased from 70-80% in 1970 to 40-60% at present, however, CS remains the main cause of death among patients hospitalized with AMI. Cardiogenic shock, being a terminal condition, in 75% of patients is caused by left ventricular failure, in 10% - by mechanical damage to the heart and in 3% - by right ventricular failure, leads to generalized tissue hypoperfusion, irreversible cellular damage and, if adequate care is not provided, to death [1-3].

One of the main factors responsible for the high mortality in CS, which developed against the background of AMI, is the long duration of the period during which the patient was in a state of shock, since in such cases the syndrome of multiple organ dysfunction develops. Consequently, it became obvious that CS caused by AMI is a complication of heart disease, in which many organs are affected, which largely determines the need for intensive therapy. Current recommendations postulate urgent percutaneous intervention (PCI) for patients with ST-segment elevation myocardial infarction and CS [4].

Thus, taking into account the urgency of the problems associated with the development of acute coronary syndrome complicated by cardiogenic shock and the importance of timely reperfusion therapy, we present as a clinical example the case history of a patient treated at the Regional Vascular Center in Yakutsk.

Patient G., 58 years old, was delivered at 00:02 on April 1, 2021 to the admission ward of the department of anesthesiology, resuscitation and intensive care (DARIC) №2 of the Regional Vascular Center of the Republican Hospital № 2-Center for Emergency Medical Aid by the team of the ambulance station (SSMP).

It is impossible to collect complaints and anamnesis from the patient's words during hospitalization due to the severity of the patient's condition. According to his wife, patient G. on March 31, 2021, before going to bed, did not show any complaints, at 11:10 p.m. she found him unconscious in bed, the patient did not react to external stimuli, called the SSMP team at 11:15 p.m. Upon arrival, the patient experienced clinical death, exposure 12 minutes, ECG elevation of the ST segment along the anterior wall, body temperature 36.5 ° C, BP 60 / 40 mm Hg, heart rate 93 beats per minute. SpO2 97%. Cardiopulmonary resuscitation was performed. Closed heart massage 30:2. Relanium 2.0 ml, Fentanyl 2.0 ml, Heparin 4000, S. Dopamine 5.0 ml.

Later, when the patient's condition stabilized, a medical history was collected: previously, IHD, PICS, CVA, he denies syncope. BP does not control, rarely rises to 160/100 mm Hg, adapted to BP 120/80 mm Hg. Previously, pain in the region of the heart was rarely disturbed, without a clear connection with physical activity, he did not go to doctors about this, he is not registered with D. He does not take medications all the time.

When examined in the admission ward, the patient's general condition was regarded as extremely serious, due to the underlying disease. Coma Consciousness + Medsedation. The skin and visible mucous membranes are clean, pale, no peripheral edema. Breathing - mechanical ventilation through the Ambu bag, auscultation in the accessible sections is hard, wheezing is wired, moist, weakened in the lower sections on both sides. When examining the cardiovascular system, heart sounds are rhythmic, muffled. No noise. HR-104 per minute, AP-80/50 mm Hg. Saturation-97%. From the gastrointestinal tract: the abdomen is enlarged due to the subcutaneous fat, participates in the act of breathing, palpable soft. The liver and spleen are not enlarged. Stool, urine output is unknown.

Based on complaints and anamnesis of the disease, physical examination, ECG result, a preliminary diagnosis was made: Main: ACS with ST segment elevation along the anterior wall from 31.03.2021, Condition after clinical death, exposure 12 min. Background disease: Hypertension 3, risk of CVC 4. Complication of the main diagnosis: AHF 4 FC according to Killip. Cardiogenic shock. Concomitant diagnosis: Aortic atherosclerosis, AK, MK. GFR (CKD-EPI): 57 ml / min

The patient underwent an urgent assessment of laboratory data, coronary angiography (CAG), electrocardiography

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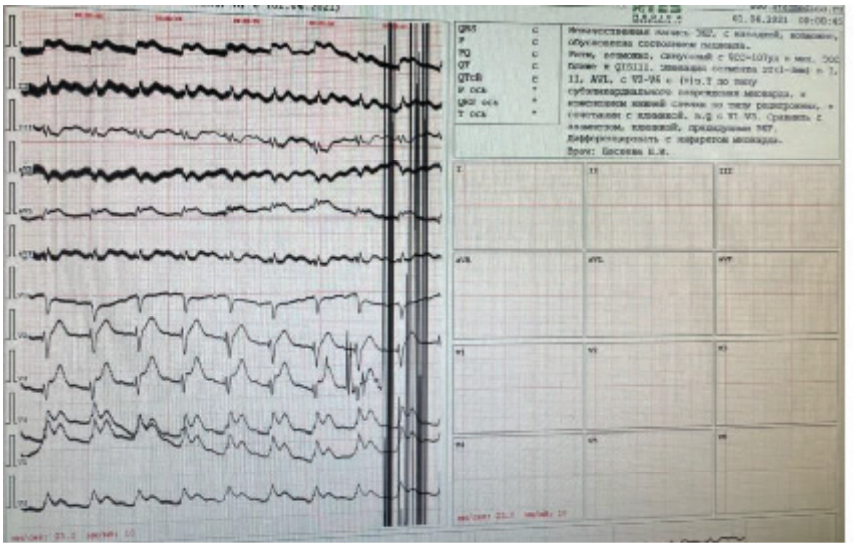
(ECG), ECHO-cardiography (ECHO-CG), followed by transfer to DARIC №2 RVC.

According to the general blood analysis upon admission, leukocytosis up to 19x10e9 /l, relative s /n neutrophilia up to 83.6%, relative lymphocytosis up to 43.7%, an increase in ESR up to 44 mm / h. Increase in cardiospecific enzymes - highly sensitive troponin I: the first - 0.669 ng / ml, the second - 13.2 ng / ml. According to biochemical blood analysis, a moderate decrease in proteins to 57 g / l, hyperbilirubinemia to 29.7 μmol / l, an increase in direct bilirubin to 7.5 μmol / l, hyperglycemia to 15.7 mmol / l, an increase in urea to 11.7 mmol / l, creatinine levels to 142.1 mmol / l, transaminase: ALT up to 207 U / l, AST up to 269 U / l. The coagulogram showed an increase in the level of fibrinogen up to 5.94 g / l.

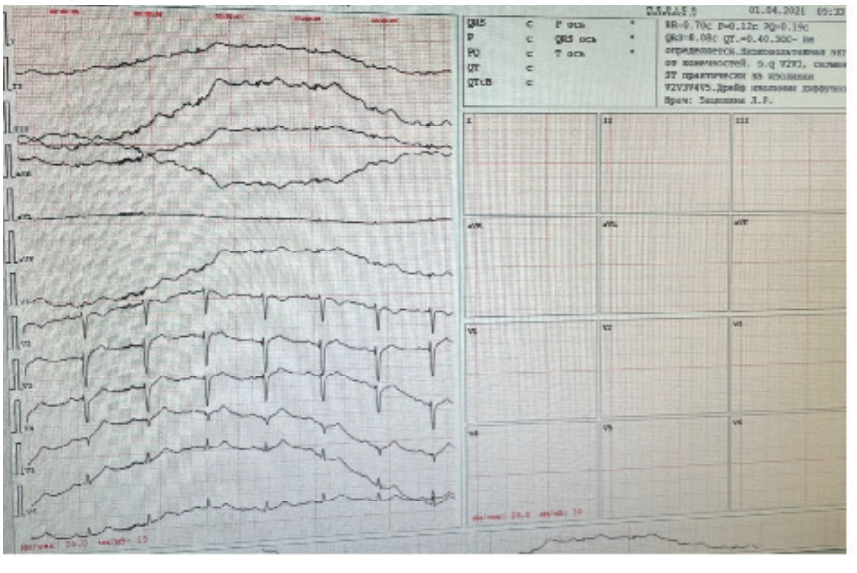
ECG: sinus rhythm with heart rate = 107 beats per minute. EOS is closer to QISIII. Changes along the anterior wall with seizure of the lateral wall - ST segment elevation (1-3 mm) in I, II, AVL, c V2-V6 with (+) h.T according to the type of subepicardial myocardial injury, and changes in the lower wall according to the reciprocal type, h.Q c V1-V3 (ECG № 1)

Patient G. at 00:20 was urgently submitted to the SKAG, according to which the conclusion was obtained: Right type. Stenosis of PNA in p/s 90%, m/s 40%, and it was decided to perform stenting of ADA under the cover of NFH. The operation was performed - transluminal balloon angioplasty and stenting of ADA DES - with Resolute Integrity 3.5x22mm stent (10 atm). Control angiography - a good angiographic result, the stent is fully deployed, there are no signs of dissection or thrombosis, TIMI III blood flow.

a



b



ECG result: a - on admission; b - after surgery

At 01.00 the patient on a gurney, accompanied by the anesthesia team, was transported from the X-ray operating room, transferred to the supervision of the resuscitator on duty. For the purpose of sedation and synchronization with the ventilator, the following was prescribed and administered: sol.Propofoli 1% 1000 mg (5 ampoules) through a perfuser with an initial rate of 8 ml / hour. The condition is extremely serious, due to systemic dysfunction with a predominance of cardiovascular failure (cardiogenic shock, myocardial ischemia), early postresuscitation period: cerebral failure as a result of acute hypoxia, ischemic damage to the kidneys, liver, gross violations of the acid-base composition of the blood and electrolyte disturbances, early postoperative period. Consciousness coma 1 (GCS 8 points) + medsedation. The skin is clean, pale, no peripheral edema. Breathing through the Ambu IT bag with subsequent transfer to the "Puritan Bennet" ventilator in forced A / C - RS mode with parameters up to 700 ml MOD 8.4 l / min PEEP 5 cm water column CO2 50%. On auscultation, breathing is hard, weakened in the lower sections, moist rales in the lower and middle sections are single, on both sides. According to TBT, scanty serous sputum. Heart sounds are rhythmic, muffled. Heart sounds are rhythmic, muffled. Hemodynamics are unstable, on vasopressor support of Dopamine at a dose of 7-10 mg / kg / min. AD-106/63 mm Hg Heart rate 122 per minute, Saturation - 97-99%. Diuresis through a catheter. Treatment was prescribed: with antiarrhythmic purpose, p. Cordaron 300 mg intravenously drip, taking into account metabolic acidosis of sodium hydrogencarbonate 200 ml, taking into account hyperglycemia: Insulin 9 units SC under glycemic control, in order to correct electrolyte disturbances NaCl 0.9% ml + KCl 4% 50 ml IV drip. Heparin infusion through the perfuser continues. Echocardiography (01.04.2021) revealed a slight induration of the aorta. Small asymmetric left ventricular hypertrophy. The maximally hypertrophied area of the left ventricular myocardium is the interventricular septum. LV diastolic function is impaired according to type 1 Mitral regurgitation of the minimum degree. Slight expansion of the left atrium. At the time of the study, there was a violation of local contractility in the form of hypokinesis of the basal anterior segment, the middle antero-septal, and the middle anterior segment. Glob-

al LV systolic function, normal, EF 55% (Simpson).

Based on the history, physical examination, laboratory and instrumental data, the result of SCAG: PNA - stenosis s/c 90% with the presence of a thrombus, positive cardioenzymes (troponin I 13.2 ng / ml), a clinical diagnosis was made:

Main: ischemic heart disease. Myocardial infarction in the antero-widespread area with the formation of the Q wave from 03/31/21. Condition after clinical death, exposure 12 min.

Operations:

1) SKAG from 01.04.21: Right type. ADA stenosis in p/s 90%, m/s 40%. Stenting of ADA for stenosis. DES Resolute Integrity 3.5x22mm.

2) Catheterization of the central vein.

3) ALV 01-02.04.2021

Background disease: Hypertensive disease, stage III. Controlled AG. Risk of CVC 4 (male sex, atherosclerosis, dyslipidemia, left ventricular hypertrophy).

Complication of the main diagnosis: AHF IV FC by Killip upon admission. Cardiogenic shock. CHF with intact EF (S55%) II A stage. FC III by NYHA/

Moderate posthypoxic encephalopathy. Ischemic damage to the kidneys, liver in the stage of regression. Chest contusion. Community-acquired bilateral hypostatic pneumonia, moderate severity in the stage of resorption.

Concomitant diagnosis: Atherosclerosis of the aorta, aortic valve, mitral valve. CKD 2st. GFR 88 ml / min.

On the ECG from 01.04.2021 09.33 ST segment is almost on the isoline (ECG №2).

To assess the level of consciousness on 02.04.2021, sedation was turned off. The patient is conscious. 04/02/2021 tracheal extubation was performed. Breathing is efficient. The general condition as of 02.04.2021at 16:00 is extremely difficult, with positive dynamics. Consciousness is clear, the pupils are equal, there are no paresis. Pale pink skin, hematomas at the injection sites. Visible mucous membranes of normal color, clean. Body temperature 36.7 ° C. Breathing is independent, even with a respiratory rate of 20 per minute, SpO2 97% against the background of insufflation of humidified O2 through binasal cannulas, auscultatory hard, weakened in the lower parts, with moist rales. Heart sounds are rhythmic, muffled. Hemodynamics against the background of Dopamine infusion at a dose of 10 mg / kg / min. BP 112/82 mm Hg, Heart rate 94 / min. CVP 70 mm water st. Urination by catheter, yellow, 500.0. No peripheral edema.

The postoperative period was uneventful.

02.04.2021 with dynamic observation, the general condition is consistently severe. Consciousness is clear, the pupils are equal, there are no paresis. Breathing is independent, even, with a respiratory rate of 20 per min., SpO2 97% against the background of insufflation of humidified O2 through binasal cannulas, auscultatory hard, weakened in the lower parts, with moist rales. Heart sounds are rhythmic, muffled. Hemodynamics against the background of Dopamine infusion at a dose of 10 mg / kg / min. BP 98/70 mm Hg, Heart rate 84 / min. CVP 100 mm water st.

03.04.2021 Dopamine infusion is disabled, hemodynamics is stable. Taking into account the stabilization of the patient, he was transferred to the general ward of the emergency cardiology department of the RVC.

On April 6, 2021, daily ECG monitoring was carried out for 10:29 hours at 3 holes. The main sinus rhythm with an average daily heart rate of 71 beats per minute. Max heart rate = 100 beats per minute (16:54), min heart rate = 62 beats per minute (23:29). Against the background of this rhythm, there were registered: single polyfocal, monomorphic supraventricular extrasystoles in total - 57. P-Q = 0.20 sec, Q-Tc = 0.42 sec. In otv. Y, the inversion of the T wave is recorded. Heart rate less than 35 beats per minute. pauses R-R more than 2500 msec. not registered. Sinus rhythm was recorded according to CMECG data. Signs of ischemic heart disease. Supraventricular extrasystole.

According to echocardiography from 04/09/2021 in dynamics: EF 55%, impaired local contractility in the form of a slight hypokinesis of the middle anterior segment. ECG dynamics of Q (+) myocardial infarction.

The following drug treatment was carried out: p. Heparin 5000 Un 4 times a day with an anticoagulant purpose, Clopidogrel 75 mg orally 1 t/d with an antiplatelet purpose, Aspirin 125 mg. orally 1 t/d with antiplatelet purpose, t. Metoprolol tartrate 25 mg orally 2 t/d with antiarrhythmic purpose, Atorvastatin 20 mg, further, to stabilize transaminase indicators (13.04.21, ALT 24 U / L, AST 15 U / L), it is recommended to increase the dose to 80 mg orally 1 t/d with hypolipidemic, pleiotropic purpose, Pantoprazole 20 mg orally 1 t/d with gastroprotective purpose, methionine 500 mg. inside 3 t/d with a hepatoprotective purpose, to stabilize blood pressure, ACE ingestion is recommended.

As a result of the treatment, the patient's condition stabilized. The patient spent 3 days at the DARIC №2, 12 days at the Department of Emergency Cardiology.

Considering the emergency myocardial revascularization during the first 2 hours after the development of ACS with ST segment elevation of the electrocardiogram, positive dynamics, disappearance of anginal pain, initial physical rehabilitation, improvement of exercise tolerance, stabilization of hemodynamics, it was decided to write out patient G. for further rehabilitation treatment in treatment and rehabilitation center of the Republican Clinical Hospital №3.

Conclusion. Acute coronary syndrome is the most common cause of cardiogenic shock and urgent reperfusion therapy is essential. The presented clinical case describes an example of the treatment of AMI complicated by cardiogenic shock, where timely reperfusion therapy - percutaneous coronary intervention on the infarction-associated anterior descending artery - improved the prognosis and outcome of acute myocardial infarction with acute heart failure FC IV according to KILLIP. With CS, there is a marked decrease in cardiac output and insufficient perfusion of vital organs. In this connection, patients in a state of CABG need careful monitoring and the use of active hemodynamic support through the administration of vasoconstrictors, drugs with a positive inotropic effect and / or using mechanical devices to support hemodynamics.

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