# FEATURES INFLUENCE OF RISK FACTORS ON TREATMENT OUTCOME IN YOUNG PATIENTS WITH ACUTE CORONARY SYNDROME WITH ST SEGMENT ELEVATION

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## Abstract

The influence of risk factors on the outcome of treatment of patients with acute coronary syndrome with ST elevation (STEMI), the frequency and timing of streptokinase thrombolysis 1.5 million IU was analyzed. A retrospective study of the case histories of patients with STEMI for 2017-2019, who were urgently delivered by ambulance teams to the Samarkand branch of the Republican scientific center for emergency medical care, to the cardio reanimation Department for TLT with streptokinase 1.5 million IU.
Keywords: acute coronary syndrome, thrombolysis, streptokinase, young age.

## Introduction

The prevalence of cardiovascular diseases (CVD) in the world is increasing, and the total number of predicted deaths from this class of diseases will reach 20 million by 2020 [4]. Coronary heart disease (CHD) is the leading cause of death worldwide. Despite the fact that the prevalence of CHD continues to increase, in Europe there is a decrease in the mortality rate associated with CHD over the past decades [8, 10]. Acute coronary syndrome (ACS) is a clinical form of IHD in its critical phase in cases when coronary artery stenosis becomes

hemodynamically significant and is accompanied by the manifestation of anginal pain syndrome [9, 11]. In most cases, the critical phase of IHD is a consequence of morphofunctional instability of the atherosclerotic plaque, which causes occlusive thrombosis and thromboembolism of the coronary artery with the formation of necrosis of the corresponding pool of myocardial vascularization [5].

Stratification of the risk of developing complications in ACS allows you to determine the prognosis for the patient and prescribe the most rational treatment for him. When managing such patients, the doctor must clearly understand the timeliness of diagnostics and accurately determine the degree of risk for applying the correct algorithm of actions. The algorithm of actions should include thrombolysis, angioplasty, or stenting of coronary vessels in the presence of ST segment elevation [10]. Timely solution of this problem allows to reduce the volume of the affected myocardium, and, consequently, leads to improved prognosis and increased survival of patients [6].

The experience of using thrombolytic therapy (TLT) in ACS is almost half a century old. Thrombolytic drugs affect the fibrinolysis system through various mechanisms. Thus, streptokinase forms a complex with plasminogen, which opens its active site. This site promotes the transition of other plasminogen molecules to plasmin. This leads to the appearance of streptokinase-plasmin complexes, which is resistant to the neutralizing effect of $\alpha_2$ -antiplasmin and causes a fibrinolytic effect.

At the same time, the streptokinase-plasminogen complex activates both fibrin-related thrombus and free plasminogen molecules circulating in the blood to approximately the same extent [3]. In the absence of thrombolytic therapy, angioplasty and stenting of the coronary arteries, in the presence of an ACS clinic, treatment should begin with aspirin, clopidogrel, heparin, beta-blockers, and nitrates. The next step is to determine the degree of risk.

At high risk, glycoprotein receptor blockers and coronary ventriculography are prescribed, which results in one or another recanalization intervention. Low risk requires repeated determination of troponin, one of the main markers of necrosis. With a positive result, treatment is carried out in the same way as for patients with myocardial infarction, with a negative result, it is necessary to monitor patients in dynamics. Another relevant aspect of this pathology is the combination of various diseases in one patient. Polymorbidity is typical for patients in older age groups, whose age exceeds 60 years [10].

## Objective

To evaluate the impact of risk factors on the outcome of the disease in young patients with ST-elevation ACS (STEMI) during streptokinase thrombolytic therapy.

## Materials and Methods

a retrospective study of the case histories of patients with STEMI for 2017-2019, who were urgently delivered by ambulance teams to the Samarkand branch of the Republican scientific center for emergency medical care (SF rscemp), to the cardioreanimation Department for TLT with streptokinase 1.5 million IU.

The examination and treatment included patients who developed the disease in the first 2-6 hours after the onset of anginal attacks that did not stop, despite the antianginal therapy. Transient changes were recorded on the ECG: ST segment elevation, an increase in the degree of t wave inversion, various rhythm and conduction disorders.

Thrombolysis was performed according to standard regimens, and then patients were treated with traditional methods: nitroglycerin infusion on the first day of the disease, antiplatelet agents, antiplatelet and anticoagulant therapy, beta-blockers, ACE inhibitors, and statins. Enzymatic diagnostics: troponins I, MV-fractions of creatine phosphokinase (MV-CPK).

The patients were divided into 2 groups: 1-group of 76 patients receiving TLT-streptokinase 1.5 million. ME, 2-group 68 patients who received traditional therapy. The average age of patients was 38±5 years.

## Results and discussion

76 patients were Included in 1-guppu, of which 43 (56.6%) were men and 33 (43.4%) were women. Group 2 included 68 patients, including 38 (55.8%) men and 30 (44.1%) women. Group 2 had an older age than group 1 – 69.8±0.5 and 69.6±0.5, respectively, p=0.1. And this trend is observed in both men and women.

All patients had two or more comorbidities. Arterial hypertension was detected in 68% of patients, diabetes mellitus (DM) – in 22%, hypercholesterolemia – in 75%. 73% of patients had a history of IHD (from 1 year to 15 years), 23% of patients had acute myocardial infarction (AMI), and 4% of patients had previously undergone coronary bypass surgery. On day 1, 17.1 % (13) of patients had signs of acute heart failure (OSN). According to the severity of OSN, patients were distributed as follows: Killip I -7.8%, Killip II-3.9%, Killip III-3.9%, Killip IV-1.3%. Patients in group 1-2 had chronic heart failure (CHF) according to the New York Heart Association (NYHA) II FC 83.4% and 88%, IIIFK-16.6% and 12%, heart defects 12.3% and 16.6%.

Depending on the time of the introduction of thrombolytic patients of 1 group were divided into 3 subgroups: I subgroup of 9 patients (12%), which thrombolytic was administered during the first 2 hours from the beginning of anginal attack; II subgroup of 19 patients (25%) – streptokinase was administered within 2 to 4 hours from the time of the attack; III subgroup 48 (63%) introduction trombolitiki made in the time range of 4-6 hours from the onset of the disease.

Among the deceased patients in both groups, hypertension (GB) and dyscirculatory encephalopathy, which was observed in patients, took the first place in terms of frequency of occurrence.

DM increases the risk of developing ACS by 2-4 times, and in women to a greater extent than in men. When using various fibrinolytic drugs, the mortality from AMI among patients with diabetes mellitus decreases in the same way as among patients without diabetes [2.11]. Clinically verified diagnosis of DM in our study in groups 1 and 2 of 2(2.6%) and 3 (4.4%) cases, hyperglycemia was detected in all deceased patients in group 1-2.

Multiple epidemiological studies have shown that there is a clear correlation between increased plasma levels of total cholesterol (TC) and low-density lipoprotein cholesterol (LDL) and the risk of developing atherosclerosis and CHD, whereas the correlation with high-density lipoprotein cholesterol (HDL) is negative, i.e. their increased level can be considered an anti-risk factor [1,7]. In our study groups 1 and 2 had hypercholesterolemia 4.45±0.19 and 4.88±0.39 respectively.

## Conclusions

Thus, risk factors such as hypercholesterolemia, burdened heredity for CVD are predictors that worsen the prognosis of the disease, regardless of the thrombolytic drug used.

In patients with STEMI in combination with diabetes and hypertension in young people, it becomes heavier regardless of the thrombolytic therapy, which once again indicates a high risk of developing cardiovascular complications in this group.

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