INTERNATIONAL MULTI DISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT
eISSN 2394-6334 Impact factor: 7,854 Volume 12, issue 12 (2025)

CLINICAL STRATEGIES IN THE CARE OF PATIENTS WITH ACUTE CORONARY SYNDROMEASSISTANT

Ataxanova S.K.
Andijan State Medical Institute.

Abstract: Acute coronary syndrome (ACS) encompasses a spectrum of clinical conditions characterized by recent changes in symptoms or clinical signs, which may occur with or without electrocardiographic (ECG) alterations and with or without a marked rise in cardiac troponin (cTn) levels. The clinical presentation of ACS is highly heterogeneous, ranging from asymptomatic cases to patients experiencing persistent chest pain or discomfort, as well as those presenting with cardiac arrest, electrical or hemodynamic instability, or cardiogenic shock [2]. Significant advances in the organization of medical care for patients with ST-segment elevation ACS (STE-ACS), along with the widespread implementation of percutaneous coronary interventions (PCI), have led to a reduction in in-hospital mortality in recent years [3]. Nevertheless, overall mortality among patients with ACS—particularly those complicated by cardiogenic shock—remains unacceptably high [4, 5]. Importantly, the majority of fatal outcomes occur during the earliest phase of ACS, predominantly within the first 24 hours after hospital admission [3]. Consequently, in cases of both ST-elevation and non–ST-elevation ACS, clinicians require reliable tools for early prediction of mortality risk to support prompt decision-making and optimize patient management strategies. At present, risk assessment is primarily based on multivariable prognostic scales, the predictive value and validity of which have been confirmed by ROC analysis [4]. Numerous risk stratification systems are currently available, including GRACE, TIMI, PURSUIT, EuroSCORE II, and RECORD; however, these models predominantly rely on traditional, well-established risk factors [8, 9]. Analysis of contemporary research data indicates that the search for universal predictors of in-hospital mortality continues, with an emphasis on combining simplicity of application, consideration of comorbid conditions, and integration of laboratory and instrumental findings [5]. Therefore, identifying a comprehensive set of prognostic factors may improve risk stratification and enable more accurate estimation of mortality risk during the hospital phase of ACS.
Key words: ACS, predictors, lethality, comorbidity.

Materials and methods. A sequential retrospective analysis was carried out that included 212 patients with ACS (n=101 – the main group of patients who died in hospital, n=124 – the control group) hospitalized in the Department of Emergency Cardiology of the Regional Vascular Department for the period from January 2022 to July 2024. The criteria for inclusion of patients in the study were men and women aged 18 years and older with an established diagnosis of ST ACS or ST ACS. Exclusion criteria: acute myocardial infarction, which has become a complication of PCI or coronary artery bypass grafting. An analysis of the clinical and demographic characteristics of patients with ACS was carried out: gender, age, timing of admission to the PCI center, blood pressure (BP), heart rate (HR), etc.; general clinical and biochemical blood analysis; the results of electrocardiography with ST-segment evaluation, inversion of the T wave and the appearance of a pathological Q wave in two or more adjacent leads; data obtained by transthoracic echocardiography and coronary angiography. Statistical processing of the data was performed using Statistica version 10.0 and MedCalc version 20.0. For each sample, the hypothesis about the normality of the distribution of indicators was tested using the Shapiro-Wilk test.

Results. As a result of data processing and comparative analysis, the following statistically significant differences were obtained between the main group of patients who died in the hospital and the control group: patients from the study group were older – the mean age was 73±10.2 years versus (vs 63.2±9.2 years in the control group (they refused coronary angiography (CAG) followed by possible stenting of the infarction-associated artery, which turned out to be an independent fatal predictor for patients with ACS (OR 159.34 (95% CI 21.41–1185.49); p<0.0001). It was also found that CAG was not performed in 20 patients from the study group (20 (20%) patients out of 101) for other reasons, two of whom underwent TLT. Thus, the overall percentage of correctly classified cases is 88.00%, which indicates the high statistical significance of the multivariate prognostic model. This model, evaluated using ROC analysis (Fig. 1), has a high predictive potential: AUC – 0.957 (95% CI 0.921–0.979; p0.3756 increases the risk of in-hospital mortality, and the value of ≤ 0.3756 is associated with a low risk of in-hospital mortality in patients with ACS.

Discussion. Diagnosing ACS is not an easy task. Even the typical symptoms of ACS have low sensitivity and specificity. For example, among patients admitted to the hospital with chest pain characteristic of ACS, only 50% later confirmed the diagnosis of AMI or unstable angina; at the same time, 30–50% of patients with AMI do not have typical chest pain. Despite this, it is possible to assume the fact of the development of ACS in a patient only on the basis of an analysis of complaints (there are no other ways yet), but for this it is necessary to obtain the most complete anamnestic information. Analysis of the sensitivity and specificity of individual symptoms of ACS has shown that it is impossible to diagnose only one symptom. Localization and nature of pain. Typical symptoms of ACS include squeezing, tightening, pressing or burning pain behind the sternum in the depth of the chest. The pain does not have clear boundaries and is protracted - it lasts 10-20 minutes or more. Often, chest pain in ACS has a characteristic radiation to the left arm, left shoulder, throat, lower jaw, epigastric region, as well as to the back, the pain can migrate. In some cases, ACS pain is localized only in the areas of irradiation, and there is no pain in the chest.

Literature

1. Federal State Statistics Service. The Demographic Yearbook of Russia. Statistical Handbook. - M.: Rosstat. 2023. - 256p. [Russian: Federal State Statistics Service. Demographic Yearbook of Russia. Statistical Collection. - Moscow: Rosstat. 2023. - 256 p. Available on: https://rosstat.gov.ru/storage/mediabank/Demogr_ejegod_2023.pdf]
2. Byrne RA, Rossello X, Coughlan JJ, Barbato E, Berry C, Chieffo A et al. 2023 ESC Guidelines for the management of acute coronary syndromes. European Heart Journal. 2023; 44(38):3720–826. DOI: 10.1093/eurheartj/ehad191
3. Korotaeva E.S., Koroleva L.Yu., Kovaleva G.V., Kuzmenko E.A., Nosov V.P. Major predictors of stent thrombosis in patients with acute coronary syndrome following transcutaneous coronary intervention who received different double antiplatelet therapy. Kardiologiia. 2018; 57(S1):12–21. [Russian: Korotaeva E.S., Koroleva L.Yu., Kovaleva G.V., Kuzmenko E.A., Nosov V.P. Main predictors of stent thrombosis in patients with acute coronary syndrome after percutaneous coronary intervention against the background of various double antiplatelet therapy. Cardiology. 2018; 58(S1):12-21]. DOI: 10.18087/cardio.2423
4. Ibanez B, James S, Agewall S, Antunes MJ, Bucciarelli-Ducci C, Bueno H et al. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). European Heart Journal. 2018; 39(2):119– 77. DOI: 10.1093/eurheartj/ehx393

5. Castro-Dominguez Y, Dharmarajan K, McNamara RL. Predicting death after acute myocardial infarction. Trends in Cardiovascular Medicine. 2018; 28(2):102–9. DOI: 10.1016/j.tcm.2017.07.011 6. Collet J-P, Thiele H, Barbato E, Barthélémy O, Bauersachs J, Bhatt DL et al. 2020 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation. European Heart Journal. 2021; 42(14):1289–367. DOI: 10.1093/eurheartj/ehaa575