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DEVELOPMENT OF  
MODERN SCIENTIFIC  
THOUGHT**

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# **TRENDS IN THE DEVELOPMENT OF MODERN SCIENTIFIC THOUGHT**

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# NEW POSSIBILITIES OF CARDIOCYTOPROTECTION IN ISCHEMIC HEART DISEASE

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Non-communicable diseases (NCDs), such as cardiovascular diseases (CVDs), diabetes and cancers are the leading causes of death and disability worldwide, accounting for more than half of the global disease burden. Almost 75% of NCD-related deaths occur in low - and middle-income countries, often among working-age adults as young as 40 years. Although disease patterns vary across world regions, CVDs remain the leading causes of death throughout [1]. Among patients with acute coronary syndrome the proportion with ST-segment elevation myocardial infarction (STEMI) ranges from 29% to 47%. Moreover, STEMI is the most severe of myocardial infarction. Although STEMI frequency is generally decreasing, risk of death and complications following a STEMI is high despite diagnostic and treatment advances. In-hospital fatality varies from 4% to 12% for European Union countries, where 1-year mortality among STEMI patients is 10% [2].

**Materials and methods of research.** 124 patients with acute Q-MI and SAP admitted to regional clinical cardiology center of Chernivtsi during the period 2017-18 were examined. According to the results of the preliminary examination, the patients were divided into 2 groups: 1gr. - 78 patients with Q-MI; 2gr. - 46 patients with a diagnosis of SAP, who received basic treatment in accordance with the unified records, as well as additionally recommended drugs with cardiocytoprotective properties (Tivortin, Tivorel, Korvityn and Tiotryzolin in comparison with Amiodarone and Bisoprolol). [3,4,5,6,7]. All patients underwent examination, which included an ECG

assessment with a study of HRV, QT interval variance, an assessment of the phenomena of the repolarization phase, [8] photoplethysmography (PPG) using a smartphone [9] with a study of pulse rate variability (PRV).

**Results and their discussion.** When evaluating effectiveness of cardiocytoprotection therapy in the group of patients with Q-MI, in contrast to SAP, it was found that Tivortin mainly decreased HRV parameters (SDNN, CV, RMSSD, MxDMn, Mo) and activates the sympathetic contour, but the positive is the reduction of the duration and dispersion of QT interval in these patients. It was found that for HRV, depending on the assessment method, when registering PRV (PPG with a smartphone) and HRV (ECG), there is no discrepancy in the correspondence between SDNN and rMSSD indicators, and therefore the prognosis of the disease. The drugs Korvityn and Tivortin reduce the variance of ST segment when Q-MI, and therefore reduce the risk of ischemia and does not indicate the increase of the risk of arrhythmic death. The possibility of effective quantitative evaluation of the ECG during its digital processing (digitalization) by its own security software «Smart-EKG» (certificate of registration of copyright N73687 from 05/09/2017), [5,7] in these groups of patients.

**Conclusions.** Thus, the use of pharmacological cardiocytoprotection in Q-IM and CST allows objectifying the optimization of therapy and preventing the progression of the main pathological process and the development of complications.

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