

Background: The ischemic-reperfusion injury represents an important preventable factor, due to its essential impact on prognosis of patients with acute myocardial infarction (AMI). One of the most important modifiers of the extent of the injury is the time to reperfusion. Great efforts to reduce delays in reperfusion have been made during the previous two decades, however, in spite of significant improvement in organization and quality of AMI treatment, especially ST- segment elevations (STEMI), many patients are not being treated within recommended time frames.

Aim: The aim of this work was to acknowledge the importance of time to reperfusion in preventable ischemic and reperfusion injury and patient prognosis at the current era of percutaneous coronary interventions (PCI). Furthermore, we intended to characterize the patient subpopulations in the highest risk of delayed reperfusion and the analysis of its backgrounds. Based on the acquired data, specific recommendations for preventive measures aimed at reducing the time delay to reperfusion would be formulated.

Metodika: In the presented original works, study population consisted of 946 consecutive patients with AMI with STEMI or bundle- branch block AMI, who underwent PCI in Cardiocenter Královské Vinohrady. Patient baseline characteristics and their prognosis were evaluated in relation to time to reperfusion.

Results: In certain subpopulations of patients with STEMI, higher probability of late reperfusion via PCI persists. These subpopulations may be defined based on the gender- especially in connection with particular socioeconomic profile (i.e. working women), or risk factors for reperfusion injury, such as kidney failure or diabetes mellitus. The reasons for late reperfusion in these patients are multifactorial, owing to reasons at the side of the patient as well as health care professionals, lack of evidence, or health-care system organization. Further

improvements in quality of treatment for all the AMI patients require continuous education of broad population, as well as health care professionals. Effective and optimally organized pre-hospital and hospital management is just as necessary. National and international registries for regular assessment of quality performance are recommended.