

Abstract

Background: The long-term cardiovascular outcome in patients, longer than 5 years, after primary percutaneous coronary intervention (pPCI) for ST-segment elevation myocardial infarction (STEMI) has not been extensively described yet. The predictive model for risk stratification of long-term cardiovascular mortality (CM) in this group of patients is not routinely available.

Endpoints: To assess long-term overall mortality and CM in a group of patients after pPCI for STEMI. To identify risk factors for long-term CM. To build a predictive model to stratify the risk of long-term CM.

Methods: An academic, retrospective, two-center study was conducted including patients who underwent pPCI for acute STEMI at the Cardiocenter of Hospital Ceske Budejovice and the Cardiocenter of the University Hospital of Kralovske Vinohrady and the Third Faculty of Medicine of the Charles University between March 2008 and December 2019. Population data were obtained from prospective local registers created during the initial hospitalization. Mortality data were extracted from the Institute for Health Information and Statistics of the Czech Republic.

Results: The study included 5263 patients who were treated with pPCI for STEMI. CM was found to be responsible for a total of 65% of deaths. The median of the follow-up was 5.1 years. Based on multivariate analysis, independent predictors for long-term CM were identified as – age, history of diabetes mellitus, history of heart failure, history of renal insufficiency, Killip class before pPCI and pPCI success. Based on the obtained data, a predictive model for long-term CM with a good discriminative value (C-statistic = 0.836) was built.

Conclusion: Cardiovascular diseases are the most common cause of long-term mortality in patients after pPCI for acute STEMI in the Czech Republic. A predictive model was built to stratify the risk of long-term CM. Risk stratification of long-term CM may lead to optimization of secondary preventive therapy with consequent improvement in morbidity, mortality, and reduction of socioeconomic consequences in patients after pPCI for STEMI.