Association of reperfusion therapy with low in-hospital mortality of patients admitted with Acute Coronary Syndrome in Switzerland between 1997 and 2004


Background: Treatment of ACS patients has become more active over the past years. Reperfusion therapy (thrombolysis and PCI) is of benefit to patients with ST-elevation, but for patients with unstable angina and non-STEMI it is less defined.

Aim: To assess in-hospital mortality of an unselected population of ACS patients who underwent reperfusion therapy.

Methods: All patients documented in the AMIS Plus registry between 1997 through 2004 were included. Odds ratios (OR) of in-hospital mortality were calculated using logistic regression. The TIMI score adapted for AMIS Plus data [area under the ROC curve (AUC) 0.82] included age, diabetes and hypertension, systolic blood pressure, heart rate, Killip class, weight, ST-elevation and LBBB on the initial ECG and delay time. We also performed a propensity score analysis to adjust for covariables that affected the likelihood of performing reperfusion.

Results: From 16 151 ACS patients, 46.7% who underwent reperfusion therapy had a relative risk of 0.38 (CI 95% 0.34-0.43; p<0.001) for in-hospital mortality compared to patients without reperfusion therapy. This was true even after adjusting for the TIMI score (0.62; 0.54-0.72; p<0.001). Propensity score for referral to invasive therapy reached an AUC of 79%. The OR adjusted for this propensity score was similar (OR 0.61; 0.51-0.73; p<0.001). After adjusting for the TIMI score, reperfusion therapy significantly decreased hospital mortality in male (OR 0.60, 0.49-0.72; p<0.001) and female patients (OR 0.68, 0.54-0.87; p=0.002). ACS patients <=65 years who underwent reperfusion therapy had a relative risk for mortality of 0.57 (0.41-0.81; p=0.002), in the 65-74 year olds of 0.64 (0.47-0.83; p=0.001) and in the patients >74 years of 0.67 (0.54-0.83; p<0.001). In-hospital mortality of low-risk patients (TIMI score <=7) was 2.2% and in the high-risk group (TIMI score >7) 19.1%. Reperfusion therapy decreased hospital mortality in the low-risk group (OR 0.51, 0.41-0.62; p<0.001) as well as in the high-risk group (OR 0.81, 0.65-0.99; p=0.05).

Conclusion: Our analysis showed that in unselected patients admitted for ACS in Swiss hospitals between 1997 and 2004, thrombolysis and primary PCI were associated with a favourable in-hospital survival. Lower in-hospital mortality associated with reperfusion therapy was found in both sexes, all age groups and low-as well as high-risk groups. Further analyses of the diagnostic subgroups need to be performed.