

Primary coronary angioplasty compared to early thrombolysis in patients with acute myocardial infarction: Results of the Berlin Myocardial Infarction Registry 1999-2000

B. Maier, R. Matteucci Gothe, A. Mohadjer, S. Rux

for the Berlin Myocardial Infarction Registry (Berliner Herzinfarktregister e.V.)

Introduction:

There is evidence that primary percutaneous coronary intervention (PCI) after acute myocardial infarction (AMI) is an alternative to early thrombolysis if performed in a timely fashion by experienced interventional cardiologists in high volume centers. Since Berlin has many high volume centers with experienced personnel, the study compared in-hospital mortality of patients with AMI treated with primary systemic thrombolysis and primary PCI.

Methods and results:

Using data from the Berlin Myocardial Infarction Registry on 2945 patients with acute myocardial infarction in 1999/2000, in-hospital mortality of patients treated with primary PCI compared to those treated with thrombolysis was examined. 59% of all patients received reperfusion therapy. Patients who received reperfusion therapy had a much lower unadjusted in-hospital mortality rate than patients who did not receive reperfusion therapy (8.6% versus 19.3%, $p < 0.05$). Of those patients who did receive reperfusion therapy, 57% received intravenous thrombolytic therapy, 43% received primary PCI. Patient characteristics were similar in both groups (age, sex, diabetes mellitus, congestive heart failure etc.). Statistically significant differences between both groups were observed only for: diagnostic first ECG, time since onset of symptoms to hospital < 3 hours, on site facility for invasive cardiovascular procedures in the admitting hospital ($p < 0.05$).

After adjusting for significant differences in baseline and clinical characteristics (age, sex, diabetes mellitus, hypercholesterinaemia, congestive heart failure/previous MI at admission, cardiogenic shock/heart failure at admission, pulmonary oedema, anterior MI), the difference in in-hospital mortality between the patients treated with PCI and those treated with thrombolysis was not significant anymore (OR=0.67, 95% CI:0.41-1.1). A different methodological approach (case control study with individual matching) revealed the same results.

Summary:

The data of the Berlin Myocardial Infarction Registry from 1999 and 2000 show that after adjustment for confounding parameters the difference in in-hospital mortality between the patients treated with primary PCI and those treated with thrombolysis was not statistically significant.