

Guideline-based treatment of STEMI patients in two European regions: Berlin and Florence

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Background:

Surveys suggest that differences among countries exist in treatment of patients with ST-elevation myocardial infarction (STEMI). The extent of these differences on outcome of hospital care delivered to patients in everyday routine is largely unknown. It was the aim of this study to evaluate differences in characteristics, hospital care, and outcome for patients from 2 regional registries in Berlin and in Florence.

Methods:

The two registries are population-based and data were collected prospectively from unselected populations from 1.3.2000 – 28.2.2001 in the Florence area ($n = 876$) and from 1.1.2000 – 31.12.2001 in Berlin ($n = 1714$). Data disclose a comprehensive picture for treatment, patients' characteristics, and outcome in the areas covered by the registries. Berlin and Florence data sets were merged, and determinants of hospital mortality were evaluated by multivariate logistic regression analysis.

Results:

Essential differences exist among characteristics and hospital care of STEMI patients in the two regions. Florentine patients were on average 7 years older than Berlin patients, smoked less, and suffered less from hypercholesterolaemia and hypertension. The percentage of patients receiving reperfusion therapy ranged from 56% (Florence) to 81% (Berlin). Primary PCI was performed for 35% in Berlin and 51% in Florence; thrombolysis, for 46% in Berlin and in 5% in Florence. Hospital mortality as outcome was very similar in the two regions (10.6% for Florence and 10.2% for Berlin, unadjusted). After adjustment for patient characteristics, age in years (OR = 1.06; 95% CI: 1.04-1.08), severity of disease on admission (Killip class IV compared to Killip class I with OR= 16.0; 95% CI:10.24-25.06; Killip class II/III compared to Killip class I with OR = 2.98; 95% CI:2.1-4.22), ex-smoking compared to never smoking (OR=0.57; 95% CI:0.34-0.95), and reperfusion therapy (OR = 0.69; 95% CI:0.49-0.96), differences in hospital mortality among the two populations were significant ("enclosed in Florence region" showed OR = 0.64; 95% CI:0.46-0.89).

Conclusion:

After adjustment for differences in patients' characteristics, population-based differences remain in short-term outcome between patients in Berlin and in Florence. This difference may result from a different risk factor profile (e.g. different genetic background or dietary habits) that was not covered by the study – and by differences in therapeutic effectiveness of reperfusion therapy. Further studies are required to better understand these phenomena.