Impact of Time of Admission on Treatment and Outcome of Patients with ST-Elevation Myocardial Infarction

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Abstract

Background: Previous analyses have suggested that patients with AMI admitted to hospital on weekends have higher mortality rates than those admitted on weekdays. We investigated the effect of time of admission in an urban setting, with comprehensive 24-hour emergency service availability.

Methods: This study analyzes the data from 3,459 patients with STEMI from the Berlin Myocardial Infarction Registry. Data from 1999/2000 (n = 1,993) and 2004/2005 (n = 1,466) are compared, with differentiation of patients admitted during in- and off-normal working hours.

Results: PCI as reperfusion therapy was performed in 30.0% of all patients admitted in-hours and in 26.0% off-hours during 1999 – 2000, and 78.9% in-hours and 73.4% off-hours during 2004 – 2005. There were no appreciable differences in the baseline characteristics between both groups. Although there was no significant difference in hospital mortality during 1999 – 2000 (11.1% in-hours, 12.4% off-hours), significance was observed during 2004 – 2005 (6.6% and 9.9%, p = 0.032). Similar results were obtained for the subgroup of patients treated under optimal logistic conditions in 2004 – 2005 (hospital mortality: 6.7% in-hours; 12.2% off-hours; p = 0.029), as well as after adjustment for age, gender, and concomitant diseases. However after additional adjustment for PCI, admission off-hours was no longer a significant factor of influence on hospital mortality (OR = 1.61; 95% CI: 0.95-2.73).

Conclusions: In 2004 – 2005 patients admitted during off-hours showed lower use of PCI and higher hospital mortality than those admitted in-hours. More frequent performance of PCI during in-hours partially explains these findings. Further research is needed to clarify the role of other aspects of quality of care.

Lit.:

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