

Hospital epidemiology of ST-segment elevation myocardial infarction and feasibility of primary percutaneous coronary intervention in an interhospital network: data from a multicenter, prospective and observational study VENERE (VENeto acute myocardial infarction REgistry)

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BACKGROUND: Primary percutaneous coronary intervention (pPCI) is the most effective reperfusion treatment of acute ST-segment elevation myocardial infarction (STEMI), but logistic- and organization-related problems affect its feasibility. The aim of this study was to investigate a) the requirements of reperfusion therapies, and b) the feasibility of pPCI as suggested by the current guidelines, in the Veneto Region.

METHODS: With the aim to treat with pPCI most of the patients with high-risk STEMI regardless of the type of admitting hospital, a single treatment protocol was developed and shared by the majority of Cardiology Departments in the Veneto Region. Data of all consecutive patients with STEMI were prospectively recorded and subsequently and independently compared with administrative data.

RESULTS: In 28 participating hospitals, 1160 consecutive patients with STEMI were enrolled during a 6-month period: in 999 symptom onset was < 12 hours. Based on the registry data, it is possible to estimate that 697 patients/million of inhabitants/year are admitted in Cardiology Departments with the initial diagnosis of STEMI: 86% are admitted < 12 hours from symptom onset and 58% of them have at least one characteristic of high risk. The strategy of immediate coronary angiography and possible PCI was carried out in 52.3% of eligible patients: in 55.8 and 47.5% of high- and low-risk STEMI and from 17.1 to 75.1% based on the type of admitting hospital. Recanalization with pPCI was obtained < 90 min from the diagnosis in 70 and 32% of patients treated on site and transferred, respectively.

CONCLUSIONS: The absolute number of patients with STEMI eligible for reperfusion therapies is lower than previously reported. The reperfusion strategy based on pPCI was much more related to the type of admitting hospital than to the clinical characteristics of the patients. pPCI performed as suggested by the current guidelines is feasible in patients admitted in hospitals with interventional facilities available 24 hours/day, but in those who need to be transferred it is necessary to modify the existing pathways and/or treatment protocols.