Optimization of Therapeutic Strategies for ST-Elevation Acute Myocardial Infarction: the Impact of a Territorial Network on Reperfusion Therapy and Mortality

Francesco Saia 1*, Cinzia Marrozzini 1, Paolo Ortolani 1, Tullio Palmerini 1, Paolo Guastaroba 2, Pietro Cortesi 1, Pier Camillo Pavesi 3, Giovanni Gordini 4, Leonardo G Pancaldi 5, Nevio Taglieri 1, Giuseppe Di Pasquale 3, Angelo Branzi 1 and Antonio Marzocchi 1

1 Institute of Cardiology, Policlinico S.Orsola-Malpighi, University of Bologna, Italy
2 Regional Health Care Agency of Emilia-Romagna, Italy
3 Unità Operativa di Cardiologia, Ospedale Maggiore, Bologna, Italy
4 Servizio Emergenza territoriale 118 di Bologna, Ospedale Maggiore, Italy
5 Unità Operativa di Cardiologia, Ospedale di Bentivoglio, Bologna, Italy

Abstract

Objective: To assess the clinical impact of a regional network for the treatment of ST-segment elevation myocardial infarction (STEMI).

Methods: All patients with STEMI (n=1,823) admitted to any of the hospitals of a 1-million inhabitants area during the year 2002 (n=858), i.e. before the network was implemented, and in 2004 (n=965), year of full implementation of the network, were enrolled in this study. The primary evaluation was in-hospital mortality. Secondary outcomes included the incidence of major adverse cardiac and cerebrovascular events (MACCE), defined as death, myocardial infarction, stroke, and coronary revascularisation procedures over 1-year follow-up.

Results: Between 2002 and 2004, there was a major change in reperfusion strategy: primary angioplasty increased from 20.2% to 65.6% (p<.001), fibrinolytic therapy decreased from 38.2% to 10.7% (p<.001), and the rate of patients not undergoing reperfusion was reduced from 41.6% to 23.7% (p<.001). In-hospital mortality decreased from 17.0% to 12.3% (p=.008), and this reduction was sustained at 1-year follow-up (23.9% in 2002 and 18.8% in 2004, p=.009). Similarly, the 1-year incidence of all MACCE was reduced from 39.5% in 2002 to 34.3% in 2004 (p=.01).

Conclusions: Organization of a territorial network for STEMI is associated with increased rates of reperfusion therapy and reduction of in-hospital and 1-year mortality.