Acute Cardiac Care. 2010 Jun; 12(2): 42-50.

Lower long-term mortality within a regional system of care for ST-elevation myocardial infarction.

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Abstract

INTRODUCTION: Organization of regional systems of care (RSC) with an emphasis on pre-hospital triage and primary percutaneous coronary intervention (PCI) has been recommended to implement guidelines and improve clinical outcome in ST-segment elevation myocardial infarction (STEMI).

PATIENTS AND METHODS: All STEMI patients (n = 1,823) admitted to any of the 13 hospitals of the province of Bologna, Italy, before (pre-RSC, n = 858) and after (RSC, n = 965) the implementation of a RSC were enrolled in the study. Primary evaluation was mortality. Secondary outcomes included death, myocardial infarction, stroke, and coronary revascularization procedures up to three-year follow-up.

RESULTS: Among patients admitted <12 h from symptom onset, reperfusion was performed in 68.7% pre-RSC versus 89.8% RSC, P <0.001. Within the RSC, primary PCI became the main reperfusion treatment (34.5% pre-RSC versus 85.9% RSC; P <0.001 for both), and one-year mortality was lower (23.9% pre-RSC versus 18.8% RSC; P = 0.0015). At three-year, this advantage was maintained and actually increased (31.7% pre-RSC versus 24.8% RSC; P = 0.0031). Independent predictors of mortality at three-years were RSC, age, heart failure, cerebrovascular disease, renal disease, shock, peripheral vascular disease, and malignancies.

CONCLUSIONS: In this study, RSC for the treatment of STEMI was associated with increased rates of reperfusion and reduction of long-term mortality.