

Decrease in early mortality in STEMI attributed to changing patient profile and behavior

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Data from four French nationwide registries of STEMI (ST-elevation myocardial infarction) patients initiated five years apart and covering more than 15 years show that mortality rate decreased by 68% over this period, from 13.7% to 4.4%. Around one quarter of this mortality reduction could be attributed to a change in patient characteristics.

Even after adjusting for the use of primary [percutaneous coronary intervention](#) (PCI) and reperfusion therapy, there still remained a substantial decrease in early mortality rate (>60%), underlining the importance of population characteristics, patient behaviour and the general organisation and provision of care. Even in [patients](#) not having reperfusion therapy, STEMI mortality rate decreased by more than 50%.

The results were presented here in Munich by Dr Nicolas Danchin representing the French registries USIK 1995, USIC 2000, FAST-MI 2005 and FAST-MI 2010.

Explaining the purpose of the combined analysis, Dr Danchin said: "Spectacular progress has been made in the treatment of ST-elevation [myocardial infarction](#). Most of this progress is generally attributed to the more frequent administration of reperfusion therapy, particularly by primary PCI. Using data from these four STEMI registries, we sought to determine the extent of improvement in survival, and whether factors other than reperfusion therapy contributed to the decline in early

mortality."

The analysis did indeed show a notable change in population characteristics: a progressive three-year average decrease in age, and a lower proportion of patients with associated conditions or previously known [heart disease](#). This was mainly explained by a substantial increase in the proportion of younger patients (ie, below 60 years of age), especially women; the proportion of women under 60 years of age doubled (from 12% to 25%), and that of women under 50 years tripled (from 3.7% to 11.1%).

A fast growing proportion of [young women](#) were current [smokers](#) (37% in 1995, 73% in 2010) and/or obese (18% to 27%).

The behaviour of patients confronted with acute chest pain also changed, with a more rapid call for medical help (from a median of 120 minutes in 2000 to 74 minutes in 2010). Similarly, more patients called the emergency medical system (SAMU in France) - 23% in 2000 and 49% in 2010.

More patients also received reperfusion therapy to reopen the blocked artery - 75% in 2010, compared with 49% in 1995, with a five-fold increase in use of primary PCI (from 12% to 60%).

Other changes were observed in the early management of STEMI patients, with more receiving antiplatelet agents or low molecular weight heparin to help dissolve the clot, as well as other recommended medications (particularly statins, whose use increased from 10% to 90%).

"Overall," said Dr Danchin, "the major decline in early mortality for STEMI patients should not be attributed only to improved delivery of reperfusion treatment. The improvement also reflects a profound and

preoccupying change in the type of patient having a heart attack, with a particular increase in the number of young women. This increase is concomitant with an increased prevalence of smoking and obesity."

"The successes achieved in older patients and the changes in patient profile suggest that, to reduce the rate of STEMI mortality even further, future efforts should be directed at making healthcare providers and the general public more aware of the growing proportion of younger females among STEMI patients. Future preventive measures might be specifically targeted towards this group."

Provided by European Society of Cardiology

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