

## LETTER TO THE EDITOR

### Letter by Rodriguez-Granillo et al Regarding Article, "Acute Myocardial Infarction: Changes in Patient Characteristics, Management, and 6-Month Outcomes Over a Period of 20 Years in the FAST-MI Program (French Registry of Acute ST-Elevation or Non-ST-Elevation Myocardial Infarction) 1995 to 2015"

#### To the Editor:

We have read with interest the study by Puymirat et al<sup>1</sup> updating the management and mortality data of patients with ST-segment–elevation myocardial infarction by using nationwide French registries 5 years apart from 1995 to 2015. The authors reported stable improvements in several variables, including time from symptom onset to hospital admission, use of mobile intensive care units, rates of reperfusion therapy, and more frequent use of primary percutaneous coronary intervention, and of antiplatelet and anticoagulant agents, as well. Overall, this has led to a consistent decrease of in-hospital and 6-month mortality rates over time. However, the burden of reduction in the rates of death progressively declined in the past decade, and were marginal (particularly among patients with non–ST-segment–elevation myocardial infarction) between 2010 and 2015. We have had the opportunity to explore the management and necrosis patterns of patients with ST-segment–elevation myocardial infarction in the prethrombolysis era (treated only with sublingual trinitrine, morphine, and isoproterenol for arrhythmias) using a consecutive series of autopsies performed in 30 patients dying of first ST-segment–elevation myocardial infarction admitted between the years 1975 and 1977. The cause of death was ventricular tachycardia/ventricular fibrillation (55%), ventricular rupture (35%), and conduction abnormalities (10%). Left ventricular thrombus was present in 8 (40%) patients. Of note, all patients showed evidence of coagulative necrosis (measured infarcted mass of 27%), whereas contemporary state-of-the-art imaging assessment has demonstrated significantly lower rates of myocardial necrosis and the impact of stunning and myocardial salvage, as well.<sup>2,3</sup> In keeping with this, Puymirat et al reported a steady decline in peak creatine kinase levels, reflecting the smaller infarct size at the present time. It is interesting to note, and possibly in line with such decreasing infarct size, that they documented a significant increment in the percentage of patients with non–ST-segment–elevation myocardial infarction, from 29% in 1995 to 51% in 2015.

Overall, it is noteworthy that, despite the vast generational differences and changes in diagnosis and management, the significant improvement in clinical outcomes observed in the past 40 years might be mostly attributed to the reduction in myocardial infarct size. Future studies should explore whether the incipient plateau in the decline of the mortality benefit might be related to reperfusion-associated pathologies, especially in the current era of aggressive antithrombotic strategies.

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#### ARTICLE INFORMATION

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**Disclosures**

None.

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