



## EDITORIAL COMMENT

# Toward a better knowledge of how to improve patient care in ST-elevation myocardial infarction



## Rumo a um melhor conhecimento sobre como melhorar os cuidados ao doente com enfarte do miocárdio com elevação do segment-ST

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The paper by Pereira et al. in this issue of the *Journal*<sup>1</sup> represents an excellent and unique analysis of the treatment of ST-elevation myocardial infarction (STEMI) in Portugal that may also be useful to other European countries.

The authors analyze changes in the treatment of STEMI patients since Portugal joined the ‘Stent for Life’ initiative developed by the European Association of Percutaneous Cardiovascular Interventions and the European Society of Cardiology, which aimed to improve treatment of STEMI, reduce related mortality and increase the number of patients treated.<sup>2</sup>

The study included 838 patients admitted to 18 hospitals, corresponding to all patients with STEMI who underwent coronary angiography at the participating centers for a one-month period every year from 2011 to 2015. Patient data were collected from the National Registry of Interventional Cardiology (RNCI) and the Portuguese Registry of Acute Coronary Syndromes (ProACS).<sup>3,4</sup> It is somewhat regrettable that only the data for a single month per year were used when the information for the whole year was also available in these

continuous registries. This was in fact considered a limitation of the study by the authors. In the last year of the study period, patients were older and had a higher prevalence of diabetes, and more patients were admitted to a hospital with percutaneous coronary intervention (PCI) facilities through the emergency medical services (EMS), compared to previous years.

The aim of the study was to analyze system delay, defined as the time between first medical contact and reperfusion therapy, as an indicator of the quality of primary PCI in STEMI. Despite all the campaigns in the medical media, in meetings and in congresses based on the Stent for Life initiative, no significant changes were observed in system delay during the study period. After a thorough analysis of all possible predictive factors, only three predicted longer system delay on multivariate analysis: age  $\geq 75$  years, admission to a hospital without PCI, and residence in the Central region of Portugal. The only positive predictive factor for shorter system delay was calling the national medical emergency number (112).

Several important conclusions can be drawn from these findings. First, the Stent for Life initiative did not fully reach the patients who should be the main beneficiaries of better health system organization. This is a well-known problem in many countries. Patients do not know the symp-

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toms of myocardial infarction (MI) or do not recognize them early enough. This is particularly true in elderly patients. It requires the government, specifically the Ministry of Health, to promote comprehensive public education campaigns to improve awareness of alarm symptoms. Age should not be a contraindication.

In parallel with such campaigns, the government should educate the population that in the event of suspected MI, the correct response is to call 112. This has been improving in Portugal but the system does not cover all areas of the country equally. For example, the Central region is a largely rural area in which long distances have to be traveled to a well-equipped hospital with PCI facilities. It is interesting that in the current study, using univariate analysis, arrival of patients at a PCI center by their own means of transport was associated with shorter system delay.

But the study's conclusions are strong enough to compel the government to take responsibility for reducing mortality in patients with MI. The population should be informed and educated to improve their awareness of the symptoms of MI and the best way to reach a suitable hospital through the EMS. 112 should be the emergency number to use throughout the country. The Central region of Portugal should be better

equipped with facilities for primary PCI as part of national coverage for better treatment of MI.

### Conflicts of interest

The author has no conflicts of interest to declare.

### References

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