



EDITORIAL COMMENT

Confirming the value of continuous registries of clinical activity[☆]



A confirmação do valor dos registos contínuos de atividade clínica

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With the publication of results from the National Registry of Acute Coronary Syndromes (ProACS) in this issue of the *Journal*, the Portuguese Society of Cardiology has placed Portugal among the few European countries able to monitor changes in treatment and outcomes of a specific clinical condition over a period of several years. The article by Timóteo et al.¹ presents the results from 15 years of this continuous and prospective registry, including 45 141 records. It affords a unique view of clinical practice in Portugal and is highly representative of the country's hospitals and regions.

The purpose of establishing a continuous registry is to use its results to assess developments in different forms of treatment and their effect on mortality. It also enables assessment of how guidelines are being implemented in clinical practice. The ProACS registry shows that compliance with the guidelines on the medical treatment of acute coronary syndromes (ACS) during the in-hospital phase increased from 10.7% in 2002 to 56.3% in 2016.

In 2002, ST-elevation myocardial infarction (STEMI) was diagnosed on admission to hospital in 45.4% of the 7348 episodes of ACS recorded, non-ST elevation myocardial infarction (NSTEMI) in 38.9% and unstable angina in 15.7%.² Up to December 2008, 22 482 patients had been included in the registry. Interestingly, the proportion of patients with STEMI had not changed, while the percentage with NSTEMI was slightly higher (41.4%) and the percentage with unstable angina was slightly lower (13.1%).³

Reperfusion therapy was performed in 60.5% of STEMI cases in 2002, mainly by fibrinolysis. This figure rose to 75% in 2008, with an increase in primary angioplasty, and was 84% in 2016, when only 5.2% of cases were treated by fibrinolysis. The rate of primary percutaneous coronary intervention (PCI) in STEMI reached the excellent figure of 98.4% in 2016, while in NSTEMI an invasive strategy was increasingly used (85% in 2016), of which PCI accounted for 53%.

Antithrombotic therapy initially consisted of heparin and aspirin, but these were progressively replaced by dual antiplatelet therapy (from 23.1% in 2002 to 91.7% in 2016) and P2Y₁₂ inhibitors (from 23.9% to 92.6%), with a parallel reduction in the use of glycoprotein IIb/IIIa inhibitors. Over the years, unfractionated heparin (down from 34.4% in 2002 to 18.9% in 2016) was progressively replaced by low molecular weight heparin (enoxaparin in 55.9% and fondaparinux in 16.3% of cases in 2016).

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The use of other disease-modifying drugs (beta-blockers, statins and renin-angiotensin system blockers) has increased progressively, in accordance with the international guidelines.

The reperfusion rate improved significantly between 2002 (61.7%) and 2016 (84%), with a significant reduction in fibrinolysis (from 75.7% to 5.2%) and a marked increase in primary PCI (from 24.3% to 94.8%).

Improved treatment over the years should lead to reductions in mortality, and that is what is observed. In 2002,² in-hospital mortality in ProACS was 9.8% in STEMI (48.1% of which were anterior), 24% in NSTEMI, and 29% in unstable angina. In late 2008,³ mortality was 5.9% in STEMI (49.4% of which were anterior), and in the most recent figures (from late 2016) in the present study,¹ in-hospital mortality in anterior MI (46.9% of STEMI cases) was 3.4%.

The most important findings in the present study are the growing use of primary PCI in acute-phase STEMI and the significant reduction in in-hospital mortality over the years. Furthermore, other data, such as the use and type of antithrombotics, the timing of coronary angiography in non-Q-wave infarction and the use of disease-modifying drugs, are available to be analyzed. This type of information had never been available on such a large scale in Portugal.

It is important to do what the authors intended by publishing this study now, which is to perform a critical analysis of its data. Most of all, it is crucial to assess whether the results could be improved. Areas to be examined include faster access to appropriate medical care (the pre-hospital coronary fast track system, which only handled 2.7% of patients in 2002, still accounted for only 38.6% in 2016); raising awareness, especially among younger physicians, of the need to implement the latest guidelines, where there is still room for improvement; extending access to primary PCI in all regions of the country; and increasing referral for cardiac rehabilitation programs (only 46.2% of patients were enrolled in 2016), especially after hospital discharge.

Registries are also a potential source of information for clinical research. Numerous studies have already been published based on ProACS data, as the authors mention.¹⁻³ There is scope for many more epidemiological studies using these data, with the potential involvement of all the registry's investigators, who are physicians in a large number of different hospitals.

As pointed out by the authors,¹ such registries, in which all hospitalized patients are consecutively included, should be mandatory at all hospitals; financial incentives could be offered to include data on post-discharge follow-up. Perhaps, in the future, the mandatory implementation of electronic medical record-keeping at all public hospitals could enable this ideal to be realized.

Conflicts of interest

The author has no conflicts of interest to declare.

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