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ORIGINAL ARTICLE

Adopting an early invasive strategy for non-ST-elevation myocardial infarction: Analysis of the Portuguese Registry on Acute Coronary Syndromes☆

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KEYWORDS
Non-ST-elevation myocardial infarction;
Temporal trends;
Early invasive strategy;
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Stent for Life

Abstract
Introduction: In patients with non-ST-elevation myocardial infarction (NSTEMI), the best timing for coronary angiography is not definitely established, although it is recognized that in high-risk patients it should be performed within the first 24 hours. The aim of this work was to describe the evolution over time of the use of an invasive strategy in the treatment of NSTEMI and in-hospital mortality.
Methods: We performed a retrospective analysis of patients admitted with NSTEMI included in the Portuguese Registry on Acute Coronary Syndromes (ProACS) between 2002 and 2015. The annual proportion of patients undergoing coronary angiography and the time from admission to coronary angiography were assessed, as were changes in mortality and length of stay.
Results: A total of 18 639 patients with NSTEMI were included in the ProACS registry between 2002 and 2015. Over this period there were significant increases in the proportion of patients undergoing coronary angiography (from 52.0 to 83.6%) and angioplasty (from 23.3 to 53.0%), as well as in the proportion of patients who underwent coronary angiography within 24 hours of admission (from 21.0 to 48.1%). In-hospital mortality decreased in those aged over 74 years (from 9.5 to 3.7%) and in males.

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Conclusions: The progressive adoption of an invasive strategy, particularly an early one (within 24 hours), was accompanied by a reduction in in-hospital mortality. Since coronary angiography is performed late (>24 hours) in half of NSTEMI patients, these patients could benefit from initiatives similar to Stent for Life.

PALAVRAS-CHAVE
Enfarte agudo do miocárdio sem supra de ST;
Evolução temporal no tratamento;
Estratégia invasiva precoce;
Mortalidade intra-hospitalar;
Stent for Life

Adoção da estratégia invasiva precoce no enfarte agudo do miocárdio sem supra desnivelamento de ST: análise dos resultados do Registo Nacional de Síndromas Coronárias Agudas

Resumo
Introdução: Nos doentes internados com enfarte agudo do miocárdio sem supradesnivelamento de ST (EAM-NST), o momento mais apropriado para a realização de coronariografia não está completamente definido, embora esteja estabelecido que, nos doentes de alto risco, se deverá realizar nas primeiras 24 horas. O objetivo deste trabalho é descrever a evolução temporal da utilização de uma estratégia invasiva. Adicionalmente, pretende-se discutir se haverá benefício em estabelecer sistema organizacional similar àquele que já existe para o enfarte com supra de ST.
Métodos: Análise retrospetiva dos doentes admitidos com EAM-NST, incluídos no Registo Nacional de Síndromas Coronárias Agudas, entre 2002-2015. Avaliou-se a percentagem de doentes submetidos a coronariografia e o tempo desde a admissão até à coronariografia, de acordo com o ano da admissão, género e idade, assim como a evolução da mortalidade e do tempo de internamento.
Resultados: A análise incluiu 18 639 doentes. Entre 2002-2015, observou-se um significativo aumento percentual das coronariografias (52,0 *versus* 83,6%) e angioplastias (23,3 *versus* 53,0%), assim como nas coronariografias realizadas nas primeiras 24 horas (21,0 *versus* 48,1%). A mortalidade intra-hospitalar diminuiu ao longo do período de análise, particularmente nos doentes com mais de 74 anos (9,5 para 3,7%) e no género masculino.
Conclusões: A adoção progressiva da estratégia invasiva, em particular da estratégia invasiva precoce, foi acompanhada temporalmente por uma diminuição da mortalidade. Como metade dos doentes de alto risco continua a realizar a coronariografia tardiamente, considera-se que o EAM-NST poderia beneficiar com um sistema organizacional como a iniciativa *Stent for Life*.

Introduction

Myocardial infarction (MI) is a clinical condition that has a considerable impact on public health. It is defined using clinical, laboratory and electrocardiographic criteria,[1] the latter of which distinguish ST-elevation myocardial infarction (STEMI) from non-ST-elevation myocardial infarction (NSTEMI). For STEMI, the international guidelines state that the benefit of treatment is greater the shorter the time between symptom onset and reperfusion therapy.[2] It has also been established that when performed promptly and by experienced teams, the best therapeutic option is primary percutaneous coronary intervention (PCI).[3] On the basis of these findings, national and international programs have been established aimed at reducing delays between symptom onset and reperfusion.[4] One international initiative promoting early revascularization with primary PCI is Stent for Life.[5] Portugal joined this initiative in 2011,[6] which coincided with a substantial rise in the number of primary PCIs performed annually, from 106 per million population in 2002 to 338 per million in 2013.[7]

NSTEMI is associated with high short- and medium-term risk of cardiovascular morbidity and mortality.[8] Although most patients will benefit from an invasive approach with coronary angiography,[9] the decision on which approach to adopt is more complex than in STEMI. One factor that influences prognosis is the timing of catheterization.[10]

The main aim of this work was to describe the evolution over time of the incidence, use of an invasive strategy, and in-hospital mortality in NSTEMI in Portugal, based on data from the Registry on Acute Coronary Syndromes (ProACS) of the Portuguese Society of Cardiology.

At the same time, it is hoped that the results will shed light on the desirability, especially in high-risk groups, of adopting a similar organizational strategy to that developed for STEMI through the Stent for Life initiative.[5,6]