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ORIGINAL ARTICLE

Use of drug-eluting versus bare-metal stents after an acute coronary syndrome in Portugal: The EURHOBOP study☆

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KEYWORDS
Acute coronary syndrome;
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Abstract
Introduction and Objectives: The interventional cardiologist chooses a specific stent type based on the risk-benefit profile for each case. In general, drug-eluting stents should be considered in all clinical conditions, except if there are concerns or contraindications for prolonged dual antiplatelet therapy. The aim of this work was to describe the use of bare-metal vs. drug-eluting stents in patients undergoing percutaneous coronary intervention (PCI) after an acute coronary syndrome in Portuguese hospitals, according to patients' demographic and clinical characteristics and institutional characteristics.
Methods: Within the EURopean Hospital Benchmarking Processes (EURHOBOP) study, we retrospectively assessed 3009 consecutive patients in 10 Portuguese hospitals in 2009. Only patients with stents implanted during PCI (n=1194) were analyzed.
Results: A total of 425 patients (36%) received a bare-metal stent and 769 patients (64%) received a drug-eluting stent. A history of previous PCI, current non-ST-elevation myocardial infarction, anterior descending artery as the infarct-related artery and being initially admitted to a hospital with a catheterization laboratory were associated with drug-eluting stent implantation. Age under 45 or over 80, anemia and previous anticoagulation and/or atrial fibrillation were associated with bare-metal stent use.
Conclusions: Approximately two-thirds of patients received drug-eluting stents, which were less frequently implanted in patients with ST-elevation myocardial infarction, aged over 80 years, female, with a previous history of stroke, anticoagulation and/or atrial fibrillation and anemia. Patients who had previously undergone PCI and those with the anterior descending artery as the infarct-related artery were more likely to receive a drug-eluting stent.

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PALAVRAS-CHAVE
Síndrome coronária aguda;
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Enfarte do miocárdio;
Stent;
Angina instável

Utilização de *stents* revestidos *versus* metálicos após síndrome coronária aguda em Portugal: estudo EURHOBOP

Resumo
Introdução e objetivos: O tipo de *stent* é selecionado com base numa análise de risco-benefício individual. Em geral, os *stents* revestidos devem ser considerados, exceto se existirem preocupações ou contraindicações para a terapêutica antiplaquetária dupla. O objetivo deste estudo foi descrever a utilização de *stents* metálicos *versus* revestidos em doentes submetidos a angioplastia após síndrome coronária aguda em hospitais Portugueses, de acordo com características demográficas e clínicas dos doentes, e institucionais.
Métodos: No estudo EURHOBOP, em 3009 doentes internados consecutivamente em 10 hospitais portugueses por síndrome coronária aguda, 1194 foram submetidos a implantação de *stent* durante intervenção coronária percutânea.
Resultados: Um total de 425 doentes (36%) receberam um *stent* metálico e 769 (64%) receberam um *stent* revestido. Verificamos que doentes com uma história prévia de intervenção coronária percutânea, com síndrome coronária aguda sem elevação do segmento-ST, intervencionados na artéria descendente anterior e admitidos num hospital com laboratório de hemodinâmica mais frequentemente receberam *stent* revestido. Contudo, um *stent* metálico foi mais frequentemente usado quer em doentes jovens (<45 anos) quer muito idosos (mais de 80 anos), anémicos e com uma história prévia de anticoagulação e/ou fibrilhação auricular.
Conclusões: Aproximadamente dois terços dos doentes receberam um *stent* revestido, menos frequentemente em enfarte com elevação do segmento ST, idade superior a 80 anos, mulheres ou história prévia de acidente vascular cerebral, anticoagulação e/ou fibrilhação auricular ou anemia. Doentes com história prévia de intervenção coronária percutânea e com enfarte no território da artéria descendente anterior tinham mais probabilidade de receber um *stent* revestido.

Introduction

Treatments for acute coronary syndrome (ACS) have improved considerably in the last 30 years and there are currently several approaches available for revascularization, including fibrinolysis, percutaneous coronary intervention (PCI), coronary artery bypass surgery and pharmacologic therapy.[1] Factors like previous medical history and disease presentation (as unstable angina, non-ST-elevation myocardial infarction or ST-elevation myocardial infarction [STEMI]), angiographic findings and issues concerning both co-adjuvant and secondary prevention therapy (particularly compliance with and safety of dual antiplatelet therapy) may influence the choice of strategy for reperfusion and definitive revascularization.[2]

The increasing use of PCI over the last decade is based on studies that support the effectiveness of this approach in securing and maintaining coronary artery patency, in particular avoiding some of the bleeding risks of fibrinolysis.[3–6] The reduction of restenosis in the target lesion by 60%–70% when drug-eluting stents (DES) are used instead of bare-metal stents (BMS) has also contributed to the exponential growth of PCI for revascularization of patients with coronary disease.[7–10] Many randomized controlled trials have documented that primary PCI is superior to intravenous thrombolysis for the treatment of STEMI, thus contributing to a growing trend for the use of PCI in STEMI patients.[11] In patients with non-ST-elevation ACS (NSTE-ACS), risk stratification should be performed as early as possible to identify high-risk individuals. Only high-risk patients with NSTE-ACS benefit from an early invasive approach such as PCI.[12] In Portugal, according to the Portuguese Registry of ACS, use of PCI rose from 14.8% and 24.9% in 2002 to 50.2% and 38.3% in 2008 for patients presenting with STEMI and NSTE-ACS, respectively.[13]

Currently, the interventional cardiologist chooses a specific stent type based on the risk-benefit profile for each case. In general, DES should be considered in all clinical conditions and lesion subsets, except if there are concerns or contraindications for prolonged dual antiplatelet therapy.[14] There are particular situations in which the use of DES is strongly recommended, including in the presence of left main artery disease, diabetes, saphenous vein grafts, small vessels (<2.5 mm diameter), long lesions, bifurcations, multiple lesions and in-stent restenosis.[2] Besides clinical considerations, it is important to note that DES were two or three times more expensive than BMS in the recent past and this factor may influence the choice of stent used in clinical practice.

Therefore, the aim of this work was to describe the use of BMS vs. DES in patients with ACS undergoing PCI in routine practice in Portuguese hospitals, according to patients' demographic and clinical characteristics and institutional characteristics.