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ORIGINAL ARTICLE

Drug-eluting stent thrombosis in the treatment of chronic total coronary occlusions: Incidence, presentation and related factors. Data from the CIBELES trial

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KEYWORDS
Stent;
Thrombosis;
Everolimus;

Abstract
Introduction and Objectives: The aim of this study was to analyze the incidence of drug-eluting stent thrombosis (sirolimus or everolimus) in patients with chronic total coronary occlusions (CTO) and to determine its clinical implications and related factors.

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Sirolimus;
Chronic total coronary occlusion

Methods: Data from the 12-month follow-up of the 207 patients included in the CIBELES trial with CTO were analyzed.
Results: Stent thrombosis occurred in three patients, two definite and one probable (overall thrombosis rate: 1.4%). However, there were no cases of death or Q-wave myocardial infarction. In univariate analysis, patients with a higher incidence of stent thrombosis were those in whom the target vessel was the left anterior descending, who had single-vessel disease, were assigned to treatment with sirolimus-eluting stents, and those with smaller minimum luminal diameter immediately after the procedure. In multivariate analysis, the only independent predictor of stent thrombosis was minimal luminal diameter immediately after the procedure.
Conclusions: The rate of drug-eluting stent thrombosis in patients with CTO is relatively low (1.4%). The only independent predictor of stent thrombosis in this context was minimal luminal diameter after the procedure and the clinical presentation was in all cases relatively benign.
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PALAVRAS-CHAVE
Stent;
Trombose;
Everolimus;
Sirolimus;
Oclusão coronária crónica total

Trombose do *stent* fármaco ativo no tratamento da oclusões totais coronárias: incidência, apresentação e fatores relacionados. Os dados do ensaio Cibeles

Resumo
Introdução e objetivos: o objetivo do nosso estudo foi analisar a incidência de trombose de *stent* com eluição de fármaco (*sirolimus* ou *everolimus*) em pacientes com oclusões coronárias crónicas e identificar as suas implicações clínicas e fatores relacionados.
Métodos: 12 meses de acompanhamento dos 207 pacientes incluídos no ensaio Cibeles com oclusão total coronária crónica.
Resultados: a trombose de *stent* ocorreu em três doentes: duas definitivas e uma provável (taxa global de trombose 1,4%). No entanto, não surgiu nenhum caso de morte ou enfarte do miocárdio com onda Q. Na análise univariada, os doentes com maior incidência de trombose de *stent* foram aqueles em que o vaso-alvo foi a descendente anterior, os que tinham a doença de um vaso, os que foram considerados para tratamento com *stent* com *sirolimus*, e aqueles com diâmetro luminal mínimo menor imediatamente após o procedimento. Na análise multivariada, o único preditor independente de trombose do *stent* foi o diâmetro luminal mínimo imediatamente após o procedimento.
Conclusões: a taxa de trombose de *stent* farmacológico em pacientes com oclusão coronária crónica foi relativamente baixa (1,4%).
O único preditor independente de trombose de *stent* neste contexto foi o diâmetro luminal mínimo após o procedimento, tendo a apresentação clínica em todos os casos sido relativamente benigna.
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List of abbreviations

CTO	chronic total occlusion
ST	stent thrombosis
EES	everolimus-eluting stent
SES	sirolimus-eluting stent
DES	drug-eluting stent
BMS	bare-metal stent

Introduction

Chronic total coronary occlusions (CTO) constitute one of the most complex and challenging therapeutic scenarios for an interventional cardiologist, due not only to the technical complexity of the lesion and the need for specific operator skills, but also to the many complications that can occur during and after the procedure.[1–4] Stent thrombosis (ST) represents the most important clinical complication due to the high rate of death and/or myocardial infarction.[5] Its pathophysiology includes various factors related to the device itself, the procedure and the patient.[6]

It has been traditionally considered that one the factors associated with increased risk of ST is, as suggested by some studies,[7,8] the implantation of a drug-eluting stent (DES) in the context of a CTO. The aim of this study is to assess the incidence, clinical significance and timing of DES thrombosis in the treatment of CTO, given the lack of clear knowledge concerning the safety of these devices in this context.

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