Proximal Coronary Artery Stenting: DES Versus BMS and LAD Versus the Rest

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Introduction
Proximal coronary artery disease is associated with a poorer prognosis compared to disease in the distal coronary arteries. PCI of a culprit lesion in the left anterior descending artery (LAD) may have a worse prognosis than PCI of the proximal left circumflex (LCX) or right coronary arteries (RCA). The possible disparity in risk may be attenuated by stenting strategy.

The aim of the present study was to evaluate outcome after PCI, with or without DES, of solitary proximal stenoses of the LAD as compared to the LCX and the RCA.

Methods
We used data from the Swedish angiography and angioplasty registry (SCAAR), a national registry including all patients undergoing percutaneous coronary intervention (PCI) in Sweden. From May 1 to 30, 2005, all PCI procedures performed in Sweden were included.

The patients were stratified according to culprit vessel and to stent type (bare metal stent (BMS) or drug-eluting stent (DES)).

The results were adjusted for background, and procedural factors (Table 1 and 2). The primary outcome variables were mortality, restenosis and definite stent thrombosis (ST).

Results
In total, 7840 patients treated for a single proximal stenosis were identified. DES was used in 35.5% of patients.

The use of DES as compared to BMS in the proximal LAD was associated with a lower restenosis rate (Figure 1A, HR 0.39 CI 0.27-0.55), a lower mortality (Figure 1B, HR 0.58 CI 0.41-0.82) and a non-significant reduction in ST (HR 0.48 CI 0.12-1.91).

However, in the proximal RCA and LCX, DES use was not associated with a lower restenosis rate (Figure 1C and 1D, HR 0.80 CI 0.58-1.09), a lower mortality (Figure 1E and 1F, HR 0.80 CI 0.59-1.09), and a non-significant reduction in ST (HR 0.80 CI 0.59-1.09, respectively).

There was no difference in ST rate in the RCA (HR 1.24 CI 0.65-2.39).

In the LCX there were too few events to allow meaningful evaluation.

Conclusions
In this study of 6 years of stent implantations indexed in a national PCI registry with complete coverage and follow-up, DES compared to BMS in the proximal LAD was associated with a lower incidence of restenosis and mortality without an added risk of stent thrombosis.

In contrast DES in proximal LCX and RCA lesions was not associated with lower event rates. Our retrospective data support a particular indication for DES in the proximal LAD.

Table 1

Table 2

Figure 1

Figure 1A

Figure 1B

Figure 1C

Figure 1D

Figure 1E

Figure 1F

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