CLINICAL STUDY OF BIODEGRADABLE POLYMER STENT VERSUS DURABLE POLYMER STENT IN TREATING LONG CORONARY LESIONS

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10.1136/heartjnl-2011-300867.440

Objective This study compared the clinical efficacy and safety of homemade biodegradable polymer rapamycin-eluting stent (EXCEL TM) and durable polymer rapamycin-eluting stent (FIREBIRD TM) in treating long coronary lesions.

Methods Between June 2008 and August 2009, total 99 patients of coronary heart disease with 153 de novo long coronary lesions were enrolled in this study. Long coronary lesion was defined as length of lesion ≥24 mm, which were treated with long (≥28 mm) EXCEL TM stent (84 lesions) or FIREBIRD TM stent (69 lesions). Exclusion criteria: 1) acute myocardial infarction 2) cardiac dysfunction (≥NYHA class III 3) left main disease. All patients were performed 12-month clinical follow-up, the major adverse cardiovascular events (MACE) including recurrent angina, cardiac death, myocardial infarction, coronary artery bypass graft, target lesion revascularisation.

Results The main baseline clinical data including smoking, age, gender, diabetes, hypertension, hyperlipidemia, left ventricular ejection fraction were similar between two groups. There were no statistic difference of angiographic characteristics of lesion between two groups, including: (1) location of lesion (2) mean stenosis degree and minimal lumen diameter of the criminal vessels before PCI (3) mean length of the target lesions (4) residual stenosis and minimal lumen diameter of the criminal vessels after PCI (5) mean length of stent and number of stent implanted (6) early gain. Compared to multi-stent overlap, but patients who received EXCEL TM stent treatment had presented less total MACE trend than that of FIREBIRD TM stent treatment (6.25% vs 3.92%, p>0.05).

Conclusions Both biodegradable polymer rapamycin-eluting stent and durable polymer rapamycin-eluting stent were safe and reliable in treating long coronary lesions. Compared to durable rapamycin-eluting stents, we found that bio absorbable rapamycin-eluting stents were associated with slightly less MACE during 12-month clinical follow-up.