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CLINICAL APPLICATION OF DOMESTIC LONG BIODEGRADABLE POLYMER COATED SIROLIMUS ELUTING STENTS FOR TREATMENT OF LONG CORONARY ARTERY LESIONS

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Objectives To evaluate the efficacy and safety of domestic long biodegradable polymer coated sirolimus eluting stents (Excel stent, Shandong JW) for treatment of long coronary artery lesions.

Methods Our analysis reviewed retrospectively 125 patients with coronary artery disease due to long coronary lesions who received percutaneous coronary artery balloon expansion and stent implantation (PTCA+Stent) from June 2008 to June 2010. All patients were divided into two groups according to clinical information, number of stents and methods of operation: A group: a long stent in the target lesion (≥ 28 mm, long-stent group, 63 cases), group B: 2–3 short stents adjacent together in the target lesion (≤ 24 mm, short-stent group, 62 cases). Procedure time, x-ray exposing time, technical successful rate, contrast quantity, cost of surgery, and complication rate were compared between two groups. All patients were followed up in 1 year to observe clinical efficacy, major adverse cardiac events (MACE) and incidence of stent thrombosis.

Results Basic clinical conditions were no significant difference between two groups. Except the average diameter and length of stent, angiographic characteristics (site of the lesion, length of the lesion, degree of stenosis of the target vessel, incidence of chronic total occlusions) were no significant differences. The technical successful rate was 100% in two groups. The procedure time (0.5 ± 0.2 vs 0.8 ± 0.4 h, $p < 0.05$), x-ray exposing time (5.6 ± 1.2 vs 10.6 ± 1.6 min, $p < 0.05$), and contrast quantity (60 ± 15 vs 100 ± 20 ml, $p < 0.05$) in long-stent group was less than that in short-stent group. The surgery costs in short-stent group increased significantly ($p < 0.01$). One-year after surgery, the angiographic follow-up rates were 31.7% (20/63) in long-stent group and 29.0% (18/62) in short-stent group respectively. At the same time, in-stent restenosis rates were 5.0% (1/20) in long-stent group and 5.6% (1/18) ($p = 0.847$) in short-stent group respectively. The clinical follow-up rates of two groups in 1 year were 100%. No deaths, myocardial infarction, and thromboembolic events occurred; the incidence of MACE was no significant difference between two groups (5.7% vs 6.8%, $p = 0.679$).

Conclusions Retrospective analysis of our data indicates that it is effective, safe and feasible of domestic long biodegradable polymer coated sirolimus eluting stents for treatment of long coronary artery lesions, which are similar to the multiple short stents in the near and medium term.