Single Sirolimus- Versus Paclitaxel-Eluting Stent Implantation with Kissing Balloon Technique in the Treatment of Non-Left Main Bifurcation

I2 Poster Contributions
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Background: Bifurcated lesions remain challenging lesions, and restenosis at side branch (SB) ostium continues to be a problem even in drug-eluting stent (DES) era. Single stenting in main vessel (MV) with kissing balloon technique (single-stent-KBT) is an accepted strategy for bifurcation. In this strategy, we compared the efficacy of Sirolimus eluting stent (SES) with that of Paclitaxel eluting stent (PES), and investigated predictors of angiographic restenosis at side branch ostium in 8 months.

Methods: Of 2424 patients treated with DES between May 2004 and Feb 2009, 141 patients (148 non-left main bifurcations) who underwent single-stent-KBT (SES-group) were compared to 104 patients (113 non-left main bifurcations) treated with the same strategy (PES-group).

Results: There was no difference in patient, lesion characteristics and pre-/post-procedure QCA analysis. No difference was also seen in the incidence of stent thrombosis or cardiac death in hospital between two groups. After 8 months, either MLD or percent diameter stenosis (%DS) revealed SES group was superior to PES group in MV (MLD: 2.4±0.6mm vs. 2.0±0.6mm; p<0.01, %DS: 14.9±17.2% vs. 22.9±18.7%; p<0.01) as well as SB (MLD: 1.6±0.6mm vs. 1.3±0.6mm; p<0.05, %DS: 32.8±21.8% vs. 42.9±26.5% ; p<0.01). Regarding binary restenosis, SES group was lower than PES group in both MB (4% vs. 13%; p<0.05) and SB (18% vs. 41%; p<0.01).

Logistic regression analysis revealed the predictor for angiographic restenosis at SB ostium were PES (OR 4.40; 95%CI 1.67-11.6;p<0.01), Diabetes mellitus (OR 2.74; 95%CI 1.06-7.06; p<0.05), and balloon to artery ratio at SB (OR 0.05; 95%CI 0.00-0.70;p<0.05). Either clinically-driven TLR or MACE in SES-group was lower than that in PES-group (clinically-driven TLR: 2.7% vs. 7.7%, MACE : 4.7% vs. 11.5%).

Conclusions: In the setting of single crossover stenting with kissing balloon technique for bifurcated lesion, sirolimus- was more effective than paclitaxel eluting stent in terms of angiographic restenosis. Predictor of SB restenosis was PES, Diabetes mellitus and balloon to artery ratio at SB.