Clinical outcomes following use of sirolimus coated balloon in side-branches during provisional stent technique in true bifurcations

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Introduction: Provisional stenting is the preferred strategy even in true bifurcations, however, to minimise the need for repeat revascularization of side-branches, the use of drug coated balloons has been suggested. Most of the data available in the literature are on Paclitaxel coated balloons, a drug which is almost obsolete in stents due to its cytotoxic properties. There is limited data on Limus coated balloons (SCB), a drug which is the default for all the currently available drug eluting stents. In this study, we explore the clinical outcomes following use of SCB in side-branches during provisional stent technique in true bifurcations.

Methods and results: We evaluated all de novo lesions treated with DCB for true bifurcations between March 2018 and October 2020 at our centre. The results are reported as cardiac death, target vessel myocardial infarction (TVMI), target lesion revascularisation (TLR) and MACE (combination of cardiac death, target vessel MI and TLR).

During the study period 110 patients with de novo lesions were treated with SCB for bifurcation lesions. Of them; 66 were in true bifurcations. The mean age of patients were 66.3±10.7 years, 75% (n=50) were male, 40 (61%) were in the setting of acute coronary syndrome, 52% (n=34) had diabetes and 32% (n=21) had CKD. Pre-dilatation was performed in all cases and none of them needed bailout stenting. Small vessels (<3.0 mm) accounted for 72% (n=48) of cases. Non-compliant balloons and scoring balloons to prepare the lesion was used in 51% (n=34) and 13% (n=9) of cases respectively. The mean diameter and length of SCBs were 2.6±0.4 mm and 23.2±7.3 mm respectively.

During a median follow-up of 729 days (2-years); there were no cardiac deaths, TVMI occurred in one case (2%), TLR in 3% (n=2) and the overall MACE rate was 3% (n=2). There were no documented cases of acute vessel closure

Conclusion: The results from long term follow-up with this relatively new technology of DCB in treatment of side-branch in true bifurcation is encouraging. We have demonstrated low rates of hard endpoints, TLR and MACE rates despite complex group of patients (61% ACS, 52% diabetics and 32% CKD). These results are encouraging, but going forward, we need more data from larger patient trials. In the meanwhile our data should instil confidence to adopt this technology in clinical practice.