Conclusions: This prospective multicenter study confirms the safety and performance of the Axcess stent in bifurcation lesions. The low rate of events shows that the Axcess stent is a good option in treating bifurcation lesions.

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Predictors and Outcomes of Side Branch Occlusion after Main Vessel Stenting in Coronary Bifurcation Lesions: Results from the COBIS (Coronary Bifurcation Stenting) II Registry


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Background: Side branch (SB) occlusion is a serious complication during percutaneous coronary intervention (PCI) for bifurcation lesions. This study sought to investigate the predictors and outcomes of SB occlusion after main vessel (MV) stenting in coronary bifurcation lesions.

Methods: Consecutive patients undergoing PCI using drug-eluting stents for bifurcation lesions with SB ≥2.3 mm were enrolled. We selected patients treated with 1-stent technique or MV stenting first strategy, SB occlusion after MV stenting was defined as Thrombolysis in Myocardial Infarction flow grade < 3.

Results: SB occlusion occurred in 187 (8.4%) of 2227 bifurcation lesions. In multivariate analysis, independent predictors of SB occlusion were preprocedure percent diameter stenosis of the SB ≥50% (odds ratio [OR] 2.34; 95% confidence interval [CI] 1.39–3.93; p = 0.001) and the proximal MV >50% (OR 2.34; 95% CI 1.57–3.50; p < 0.001), SB lesion length (OR 1.03; 95% CI 1.003–1.06; p = 0.03), and acute coronary syndrome (OR 1.53; 95% CI 1.06–2.19; p = 0.02). Of 187 occluded SBs, flow was restored spontaneously in 26 (13.9%) and by SB intervention in 103 (55.1%), but not in 58 (31.0%).Failed wire in the SB was associated with flow recovery (74.8% versus 57.8%; p = 0.02). Cardiac death or myocardial infarction occurred more frequently in patients with SB occlusion than those without SB occlusion (adjusted hazard ratio 2.34; 95% CI 1.15–4.77; p = 0.02).

Conclusions: Angiographic findings of the SB, proximal MV stenosis, and clinical presentation are predictive of SB occlusion after MV stenting. Occlusion of sizable SB is associated with adverse clinical outcomes.

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Drug-coated balloon angioplasty for de-novo lesions in coronary bifurcations

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Background: Treatment of coronary bifurcation lesions represents a challenging area in interventional cardiology. When compared with nonbifurcation interventions, bifurcation interventions have a lower rate of procedural success, higher procedural costs, longer hospitalization, and a higher rate of clinical and angiographic restenosis. A few small scale studies have reported promising immediate and mid-term results of drug-coated balloon (DCB) compared to non-coated balloon or a mixed strategy of DCB and bare metal stent in bifurcation lesions. We analyzed and compared the safety, focused on the rates of late coronary thrombosis (LT), and the clinical follow-up after DCB in bifurcation lesions without additional stenting - the so called “Drug-eluting balloon (DEB) only strategy” in a clinical setting.

Methods: A retrospective review was done of 85 consecutive patients who underwent percutaneous coronary intervention procedure in de-novo lesions with the paclitaxel eluting balloon SESQuent™ Please at a high-volume Heart Center in Potsdam. DCB was used for the treatment of bifurcation lesions in 38 patients in 38 interventions. Dual antiplatelet therapy with aspirin and clopidogrel/prasugrel (DAPT) was recommended after DCB angioplasty.

Results: Most represented Medina type was 0/0/1 (36.8%). The procedure was successful in all patients. Additional stenting of the main branch was needed in 3 (8.1%) interventions. No MACE (cardiac death, myocardial infarction, target lesion revascularization) occurred up to 30 days. Within 12 months after intervention none of the patients (0%) patients needed a target lesion revascularization or had suffered from coronary thrombosis. Duration of DAPT was 4.2 ± 3.8 months.

Conclusions: The DEB only strategy is a treatment option for patients with bifurcation lesions and offers favorable results regarding procedural success, a low risk of coronary late thrombosis and a low rate of target lesion revascularization.

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Different Efficacy Between Everolimus- versus Sirolimus-Eluting Stents in Complex Bifurcation Intervention like Left Main Lesions or Two Stent Technique (Korean Multi-center Registry for Coronary Bifurcation Stenting)


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Background: Although drug-eluting stents (DES) have markedly broadened indications for percutaneous coronary intervention (PCI), bifurcation lesion still remains a challenge. We sought to evaluate the efficacy and safety of everolimus-eluting stent (EES) for the treatment of bifurcation coronary lesions in comparison to SES (sirolimus-eluting stent).

Methods: We analyzed the large-scale Korean multi-center registry for bifurcated coronary lesions, COBIS (Coronary Bifurcation Stenting) II registry. In this registry, 1,762 patients treated with EES (n = 348) or SES (n = 1,414) were enrolled. Primary outcome was major adverse cardiac events (MACE), defined as a composite of cardiac death, nonfatal myocardial infarction, and target vessel revascularization (TVR).

Results: In all bifurcation lesions, EES was comparable to SES regarding MACE, cardiac death, and TVR rates in the overall population as well as in the 1:3 propensity score-matched one within 2-year follow-up. However, in specific subpopulation such as patients with left main (LM) bifurcation lesions or those treated with 2-stent technique (table), EES was superior to SES in terms of TVR and MACE rate in the matched population. The interaction between the type of drug eluting stents and the intervention strategy was significant for both MACE (P = 0.011) and TVR (P = 0.030). There was no difference in clinical outcomes between the 2 DESs in non-LM bifurcation lesions or in patients treated with 1-stent technique.

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The Comparison Of Long Term Clinical Outcomes In Patients With Or Without Jailed Side Branch After Coronary Bifurcation Stenting

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Background: It has been unknown whether intentional effort to minimize residual stenosis of side branch (SB) during percutaneous coronary intervention (PCI) for coronary bifurcation lesion will improve long-term clinical outcomes or not.