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### Safety and effectiveness of thin-strut DES for bifurcated coronary lesions not involving left main: a RAIN (veRy thin stents for patients with left mAIn or bifurcationN in real life) sub-analysis

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**Background:** Thinner stent struts of new DES (drug eluting stent) are associated with shorter time of reendothelialization, a reduction of shear stress and inflammation of coronary walls. Despite this great innovations their clinical safety and efficacy in challenging scenarios as non left main bifurcation coronary lesions has not been tested.

**Methods:** RAIN is a multicenter registry enrolling patients treated on bifurcated coronary lesions and left main with thin-strut DES. Baseline characteristics and procedural data were recorded. Target lesion revascularization (TLR) was the primary endpoint, whereas major adverse clinical events (MACE; composite of all-cause death, myocardial infarction (MI), target vessel revascularization (TVR), TLR and stent thrombosis (ST)) along with its single components were the secondary endpoints. A multivariate analysis to identify predictors of TLR and sub-analysis according to stenting strategy (provisional vs 2-stent technique), use of final kissing balloon (FKB) and IVUS/OCT optimization were performed.

**Results:** Data from 1803 patients (59% ACS, 61% stable CAD) treated

on bifurcations were retrospectively evaluated. Follow up was available for 1685 (94%) patients for a median of 12 months (IQR 7–18). TLR occurred globally in 2.5% of cases (2.2% in provisional stenting, 3.5% in 2-stent technique). The rate of MACE was 9.4%, whereas all-cause death and MI, occurred in 4.1% and 3.2% of cases respectively. TVR and definite ST incidence were 3.7% and 1.1%. At multivariate analysis, chronic kidney disease (CKD) negatively influenced the main endpoint (HR 1.95, 95% CI 1.06–3.6,  $p=0.03$ ), whereas post-dilatation (HR 0.56, 95% CI 0.3–0.93,  $p=0.04$ ) and provisional stenting resulted being protective factors. FKB reduced TLR occurrence at FU only in 2-stent technique ( $p=0.03$ ), whereas intracoronary imaging (performed in 29% of patients) were uninfluential.

**Conclusion:** Very thin-strut DES represents a highly effective solution in bifurcation lesions. The risk of TLR is reduced by post-dilatation and provisional stenting. FKB is recommended in 2-stent technique, whereas further studies are required to address the impact of intracoronary imaging in this setting.