4.4%, p < 0.001), late catch-up phenomenon (5.8% vs. 2.0%, log-rank p = 0.0003). Meanwhile, in a sub-analysis of OCT cross-sections with homogeneous pattern (previously linked to more inflammatory histopathologic appearance) was significantly higher in BVS than EES (60% vs. 38%, p < 0.05). Also, the incidence of calcium around struts trended lower for BVS (13.0% vs. 36.4%, p = 0.11). Plaque tissue characterization (mMAP-IVUS, Boston Scientific) showed lower absolute (0.20±0.17 mm2) and relative (61.3%) lipid component area in BVS vs. EES (0.35±0.24 mm2 and 8.3%, respectively, p < 0.005). One year after implantation in the familial hypercholesterolemic (FH) swine model, the appearance of neointima by endovascular imaging suggests a more stable and mature composition in BVS than in the EES, yet with less calcification. This ongoing study is hoped to provide serial annual insights out to 4 years into the long-term arterial response to BVS and EES in experimental atherosclerotic setting.

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The Mechanism and Pattern of In-Stent Restenosis Among Bare Metal, 1st Generation, and 2nd Generation Drug-Eluting Stents: An Intravascular Ultrasound Study
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Background: The mechanism and patterns of in-stent restenosis (ISR) comparing bare metal stents (BMS) and 1st and 2nd generation drug-eluting stent (DES) as evaluated by intravascular ultrasound (IVUS) have not been well delineated.

Methods: IVUS evaluation of in-stent restenosis (ISR) included core-lab based assessments of morphology including ISR pattern (focal [< 10 mm] vs diffuse [≥10 mm]), and/or any associated mechanical complication.

Results: There were 298 ISR lesions including 52 BMS, 73 sirolimus-eluting stents (SES), 52 paclitaxel-eluting stents (PES), 16 zotarolimus-eluting stents (ZES), and 105 everolimus-eluting stent (EES) (Table). Mean pt age was 66.7±11 yrs, 74% were male, 48.7% had diabetes mellitus, and 48.7% presented with acute coronary syn- drome. BMS restenosis presented later (5.8±5.6 yrs) with more intimal hyperplasia. Although reference lumen areas were similar among BMS and 1st and 2nd generation DES, restenotic DES were longer and more often underexpanded with associated stent fracture that was not seen in restenotic BMS.

Conclusions: The treatment effect on late catch-up phenomenon compared between BES and EES implantations could depend on specific lesion characteristics.