RESULTS Among the 1851 patients, the mean SRI was 85.4% ± 23.4%, ranging from 4% to 100%. Complete revascularization (SRI=100%) was achieved in 64.3% of patients, SRI= 50-99% in 472 patients (25.5%), and SRI <50% in 189 patients (10.2%). The 2-year rates of mortality (0.4%, 1.9%, and 2.7%, p < 0.001) and MACE (6.0%, 11.4%, and 10.1%, p < 0.001) were higher in patients with lower SRI. By ROC analysis, an SRI cut-off of 85% showed the best prognostic accuracy for 2-year mortality. A SRI >85% had similar low all-cause death and cardiac death rates when compared to complete revascularization (Figure). By multivariable analysis, SRI was a strong predictor of 2-year mortality (HR: 4.20, 95% CI: 1.46-12.08, p = 0.008) and 2-year MACE (HR: 1.59, 95% CI: 1.14-2.23, p = 0.007).

CONCLUSIONS In patients with complex CAD undergoing EES-PCI, the SRI was identified as a strong predictor of 2-years mortality and MACE. Given its correlation with mortality, the SRI may be useful in assessing the degree of revascularization after PCI, with SRI >85% as a reasonable goal.

CATEGORIES CORONARY: Complex and Higher Risk Procedures for Indicated Patients (CHIP)

KEYWORDS Complex lesion, Everolimus-eluting stents, Syntax score

TCT-19 Two-Year Clinical Outcome and Chest Pain in 1,811 All-Comer Patients, Treated for Bifurcated Versus Non-Bifurcated Lesions With Highly Deliverable Drug-Eluting Coronary Stents

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Background: In the PROTECT II trial (NCT01331707), in which 1,811 all-comers were treated with zotarolimus-eluting Resolute Integrity (Medtronic) or everolimus-eluting Promus Element (Boston Scientific) stents. Among 465 patients with bifurcated lesions, we also compared the outcome of patients with true bifurcation lesions (i.e., lesions with side-branch involvement) vs. non-bifurcation lesion. The primary endpoint target lesion failure (TLF) is a composite of cardiac death, target vessel myocardial infarction (MI), and target lesion revascularization.

RESULTS Clinical follow-up was available in 1,810 patients (99.9%). TLF was similar in patients with and without bifurcated lesions (8.2% vs. 6.9%, p = 0.37). Target vessel MI was more common in patients with bifurcated lesions, however, after multivariate analysis with the use of a propensity score, this relation turned out to be not statistically significant (HR 1.40, 95% CI 0.71-2.76, p = 0.34). There was no difference in TLF between patients treated for true vs. non-bifurcation lesions (8.9% vs. 7.8%, p = 0.70). At 1 and 2-year follow-up, 88.0% and 88.1% of patients with bifurcated lesions and 87.7% and 87.8% of patients with non-bifurcated lesions were free from clinically relevant chest pain (p = 0.89 and 0.87, respectively). Between patients with true vs. non-bifurcation lesions, no difference in patient-reported chest pain at 1 and 2-year follow-up was observed (86.5% vs. 88.5%, p = 0.54, and 90.2% vs. 86.7%, p = 0.30, respectively).

CONCLUSIONS The rates of chest pain were low and similar in patients with bifurcated versus non-bifurcated target lesions, who showed favorable clinical outcomes at 1 and 2-year follow-up after treatment with contemporary drug-eluting stents.

CATEGORIES CORONARY: Complex and Higher Risk Procedures for Indicated Patients (CHIP)

KEYWORDS Bifurcation lesion, Drug-eluting stent, PCI - Percutaneous Coronary Intervention

TCT-20 Use of a Percutaneous Left Ventricular Assist Device for High Risk Percutaneous Coronary Intervention. Clinical Trial versus Real World Experience

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BACKGROUND High-risk percutaneous coronary intervention (PCI) supported by percutaneous left ventricular assist devices offers a treatment option for patients with severe symptoms, complex and extensive coronary artery disease (CAD), and multiple comorbidities. The extrapolation from clinical trial to real-world practice has inherent uncertainties. We compared the characteristics, procedures, and outcomes of high-risk PCI supported by a microaxial pump (Impella 2.5) in a multicenter registry versus the randomized PROTECT II trial (NCT00562016).

METHODS The USpella registry is an observational multicenter voluntary registry of Impella technology in 47 sites in the United States and 2 sites in Canada. A total of 637 patients undergoing high-risk PCI supported by Impella 2.5 between 6/2007 and 9/2013 were included in this analysis. Of them, 330 patients would have met enrollment criteria for the PROTECT II trial. Baseline variables, procedural characteristics, and in-hospital outcomes of these registry patients were compared with 216 patients treated in the Impella arm of the PROTECT II trial. All events were centrally adjudicated by an independent clinical events committee.

RESULTS Compared to the clinical trial, registry patients were older (70±11.5 vs. 67.5±11.0 years), more likely to have chronic kidney disease (30% vs. 22.7%), prior myocardial infarction (69.3% vs. 56.3%), prior by-pass surgery (39.4% vs. 30.2%), and had similar prevalences of diabetes, peripheral vascular disease, and prior stroke. Registry patients had more extensive CAD (2.2 vs. 1.8 diseased vessels), and had a similar STS predicted risk of mortality (6.0±6.0 vs. 5.8±6.0, p = 0.64). Left ventricular ejection fraction was 23.4±6.3% and 21.6±7.7%, in the registry and clinical trial, respectively (p = 0.004). Use of rotational atherectomy was similar (16.4% vs. 14.8%, p = 0.63), but the number of passes per lesion was significantly higher in the registry.
lower in the registry (2.56±2.20 vs. 3.47±1.89, p=0.002). At hospital discharge, registry patients experienced a 42% reduction in NYHA class III-IV symptoms. In-hospital mortality was numerically lower among registry patients (2.7% vs. 4.6, p=0.27). Need for blood transfusions were similar in registry and clinical trial patients (0.1% vs. 12.5%, p=0.20). There were no differences in the occurrence of other complications such as acute kidney failure, vascular injury or ventricular arrhythmias.

CONCLUSIONS USpella provides a real world and contemporary estimation of the type of procedures and outcomes of high-risk patients undergoing PCI supported by Impella 2.5. Despite the higher risk of registry patients, clinical outcomes appeared to be favorable and consistent compared with the randomized trial.

CATEGORIES CORONARY: Complex and Higher Risk Procedures for Indicated Patients (CHIP)

KEYWORDS High-risk PCI, Impella, Left ventricular assist device

TCT-22 Patent and Occluded Saphenous Vein Grafts as Retrograde Conduits for Percutaneous Revascularization of Coronary Chronic Total Occlusions: The Quebec Experience

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BACKGROUND The prevalence of native coronary CTO following coronary artery bypass grafts (CABG) is high. At 10 years following CABG, half patients will have at least one saphenous vein graft (SVG) occluded and/or many SVGs will be diseased. Long-term outcome post SVG PCI is poor, with high occlusion rate. If symptomatic, these patients may be considered for a native coronary CTO PCI rather than SVG PCI. We examined the feasibility and outcomes of CTO PCI using a patent or occluded SVG as a retrograde conduit to the native CTO vessel.

METHODS Our preferred wire to cross an occluded SVG is Pilot 200 (Abbott Vascular, US) followed by a microcatheter (MC) (usually Corsair, Asahi Intecc, Japan), whereas standard workhorse wire can be used in patent but diseased SVGs or arterial graft. MC tip injection is performed to assess if the wire tracked the vein structure in case of an occluded SVG. Clips and other surgical landmarks are used to track the occluded graft with the wire. Once the MC is at the distal CTO cap, standard techniques to open CTO are employed. We assessed the proportion of patients treated with such technique from SVGs. We specifically reviewed the J-CTO score, the prevalence of occluded vs. patent graft, the type of graft crossed (SVG or arterial graft), technical success and management of the graft after successful PCI of the native CTO.

RESULTS From 03.2009 to 04.2015 431 CTO PCI cases were performed by a single operator (SR) or a team of 2 operators (SR and CMN). Of these, 156 (36.2%) were done in post-CABG patients. In the post-CABG cohort, an antegrade approach was used in 68 (43.6%) and a retrograde in 88 (56.4%) of cases. In the retrograde approach, septal collateral channels (CCs) were used in 26 (29.5%), epicardial in 34 (38.6%) and SVGs in 28 (31.8%) of cases. Technical success of CTO revascularization in post-CABG patients (J-CTO score 2.51±0.1) was 91%. In the sub-group treated from an SVG, mean J-CTO score was 3.04±0.19. The CTO location was in the right coronary artery in 43%, left circumflex in 43%, left anterior descending in 7% and in the left main in 7%. When using an SVG, success was achieved in 27 cases (96.4%). A total of 15 SVGs (53.6%) were occluded before the retrograde attempt, and the oldest occlusion was 4-years old. Most common native coronary CTO recanalization