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BACKGROUND The primary objective of the FANTOM II Long Lesion study was to evaluate the safety and performance of native coronary artery stenting of lesions ≥20 mm in length using 1 or more Fantom sirolimus-eluting bioresorbable coronary scaffolds. Fantom is a fully resorbable scaffold, manufactured from TyroCore, which is composed mainly of an iodinated, polycarbonate copolymer of tyrosine analogs. Fantom is completely radiopaque, enabling multiple scaffolds to be placed in a precise edge-to-edge configuration, allowing complete coverage of longer target lesions.

METHODS The FANTOM II Long Lesion study is a prospective, multicenter trial that enrolled 33 patients with de novo coronary stenosis with reference vessel diameters between 2.5 and 3.5 mm and lesion lengths ≥ 20 mm. In this study, all lesions were predilated using a 1:1 noncompliant balloon and then subsequently assessed to determine vessel diameter and lesion length. Once sizing was complete, between 1 and 3 scaffolds were selected to enable complete target lesion coverage.

RESULTS In this study, acute technical success, acute procedural success, and clinical procedural success rates as defined in the clinical protocol were 100% (33 of 33) in all cases. Angiographic imaging results from all patients through 6 months of follow-up as well as major adverse cardiac events, target lesion failure, and scaffold thrombosis through 24 months of follow-up will be available in August and reported for the first time at the TCT conference.

CONCLUSION As in the Fantom II trial, which was used as a basis for obtaining Conformité Européenne Mark approval, the Fantom sirolimus-eluting bioresorbable coronary scaffold demonstrated favorable initial acute safety in this first cohort of patients with more complex lesions. Longer term follow-up through 5 years is ongoing to examine late outcomes with this novel device.

CATEGORIES CORONARY: Stents: Bioresorbable Vascular Scaffolds

TCT-475
Natural History of Mitral Disease Associated With Mitral Annular Calcification
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BACKGROUND The prevalence of mitral disease associated with mitral annular calcification (MAC) and its natural history remain uncertain. We aimed to evaluate the prevalence of mitral disease associated with MAC and the impact of intervention on the clinical outcomes in these patients.

METHODS All patients who underwent transthoracic echocardiography between 2014 and 2015 in our care system were reviewed and identified for the presence of MAC with moderate or severe mitral disease, either mitral regurgitation or mitral stenosis.

RESULTS Of 41,136 patients who underwent echocardiography, MAC was identified in 2,855 (6.9%), including 434 patients (1.1% of the total) who had significant mitral regurgitation and/or mitral stenosis (median age 80 years; [interquartile range: 73-87 years]; 63% women). MAC predominately involved the posterior anulus (95%), with the majority having calcification of both trigones (55%), the leaflets (71%), and circumferential involvement (67%). For all-cause mortality, the number of events per 100-person-year follow-up overall was 15.4 (13.3-18.7). During 3-year follow-up, 59 patients (14%) underwent surgical or transcatheter mitral valve intervention. Patients who did not undergo mitral intervention had higher all-cause mortality (hazard ratio: 2.80; 95% confidence interval: 1.60-4.92; P < 0.001) and a greater risk for the composite outcome of death or heart failure hospitalization (hazard ratio: 1.43; 95% confidence interval: 1.00-2.04; P = 0.05) than in those treated (Figure 1). This survival benefit remained after multivariate adjustment for demographics, comorbidities, and echocardiographic characteristics.

CONCLUSION MAC affects about 7% of patients undergoing echocardiography. Those with significant mitral disease associated with MAC have poor survival, which may be ameliorated with transcatheter or surgical intervention in selected patients.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

TCT-476
Same-Day Discharge After Minimalist, Self-Expanding Transcatheter Aortic Valve Replacement in a Community Hospital During the COVID-19 Pandemic
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BACKGROUND Next-day discharge after transcatheter aortic valve replacement (TAVR) is the preferred standard at many institutions in the United States. Studies show that outcomes are better in patients discharged early rather than late. The coronavirus disease 2019 (COVID-19) pandemic led to the cancellation of elective and nonurgent procedures throughout the United States. To mitigate the clinical, social, and economic impact of procedure cancellations on patients and the health care institution, our structural heart team decided to implement a strategy of same-day discharge (SDD) after TAVR if safety criteria (Figure 1) were met.

METHODS This was a single-center case series of consecutive patients who underwent SDD after self-expanding valve TAVR at our institution. If patients met preset safety criteria (Figure 1), they were discharged on the day of the procedure with next-day follow-up at the clinic.

RESULTS A total of 36 TAVRs were performed at our institution over a 1-year period during the COVID-19 pandemic. Nine patients (25%) were discharged on the same day, as they met the SDD safety criteria. Seven of 9 of these patients underwent self-expanding valve, minimalist TAVR. There were no hospital readmissions, need for new permanent pacemaker, or deaths at 30-day follow-up. No delayed complications occurred in the patients who underwent SDD after minimalist, self-expanding valve TAVR.
CONCLUSION In selected patients, SDD following uncomplicated, minimalist TAVR using a self-expanding valve is safe and feasible.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

TCT-477
Efficacy and Safety of Excimer Laser Catheter in Patients With Complex or High Thrombotic Coronary Artery Stenosis
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BACKGROUND Indications for excimer laser use in percutaneous coronary intervention (PCI) are uncrossable devices after coronary guidewire passing and thrombus modification in acute coronary syndrome lesions. Excimer lasers have been used for more than 20 years. However, there are inconsistent data on the efficacy and safety of excimer laser use in the drug-eluting stent era. We gathered data from patients who underwent PCI using excimer lasers with contemporary PCI strategy. The primary outcome was the efficacy of the excimer laser, defined as technical successful excimer laser use.

METHODS In this single-center, retrospective analysis of 115 lesions from 112 patients over 8 years, 1.1% of all PCIs were excimer laser assisted. Patient data were extracted from hospital-based inpatient and outpatient medical records. Technical success with the excimer laser was defined as the laser catheter’s crossing the entire length of the stenotic lesion, determined by angiographic evidence of tip catheter beyond the lesion or mention in the procedural record.

RESULTS The mean age was 67.1 years, 65.2% of patients were men, and 45.2% had diabetes. The average left ventricular ejection fraction was 51.0%. The rate of chronic total occlusion was 39.1%, followed by 33.9% for thrombotic lesions. Intravascular imaging was used in 64.4% of patients. Overall technical success with the excimer laser was 74.8%, with a significantly higher success rate in thrombotic groups (94.9% vs 64.5%; P < 0.001). Overall procedural PCI success was 87.8%, and no difference was observed between groups (94.9% vs 84.2%; P = 0.135). The slow-flow phenomenon was significantly more common in the thrombotic group (17.9% vs 2.6%; P = 0.007), whereas coronary perforation, major dissection, and death were not different. We found that older age (>80 years) and nonthrombotic lesions were significantly associated with technical failure of excimer laser use.

CONCLUSION Excimer laser use had a high success rate for thrombotic lesions and a fair success rate for nonthrombotic lesions. PCI procedural success was high in both groups.

CATEGORIES CORONARY: Coronary Atherectomy, Plaque Modification, and Thrombectomy

TCT-478
Thermodilution-Derived Coronary Absolute Flow and Resistance in Patients With and Without Epicardial Stenosis
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BACKGROUND Coronary absolute flow (AbsF) can be measured using a thermodilution-derived technique and has been recently shown to be safe and feasible. AbsF and derived absolute resistance (AbsR) can provide precious information about the microcirculation in patients with and without obstructive coronary artery disease.

METHODS One hundred nine patients (mean age 59.7 ± 10 years, 72% women) underwent functional assessment of the left anterior descending coronary artery (LAD), including fractional flow reserve (FFR) and index of microvascular resistance (IMR), together with thermodilution-derived measurement of AbsF and AbsR through continuous infusion of saline using a dedicated microcatheter and a pressure-temperature guidewire.

RESULTS Among the 109 patients, 12 (11%) had FFR ≤ 0.80 in the LAD. IMR ≥ 25 was found in 44 of 109 patients (40%). Mean AbsF measured at the distal LAD was 0.178 ± 0.07 mL/min. Mean AbsR was 581.9 ± 215.9 Wood units (WU). AbsF did not significantly differ in patients with and without positive FFR (0.182 ± 0.06 mL/min vs 0.178 ± 0.07 mL/min; P = 0.85). Similarly, AbsR did not significantly differ in patients with and without positive FFR (582.9 ± 205.9 WU vs 574.1 ± 295.6 WU; P = 0.89). A trend toward higher values of AbsR was found in the group with IMR ≥ 25 compared with the group with IMR < 25 (596.4 ± 249.9 WU vs 571.7 ± 189.7 WU; P = 0.08) The highest AbsR