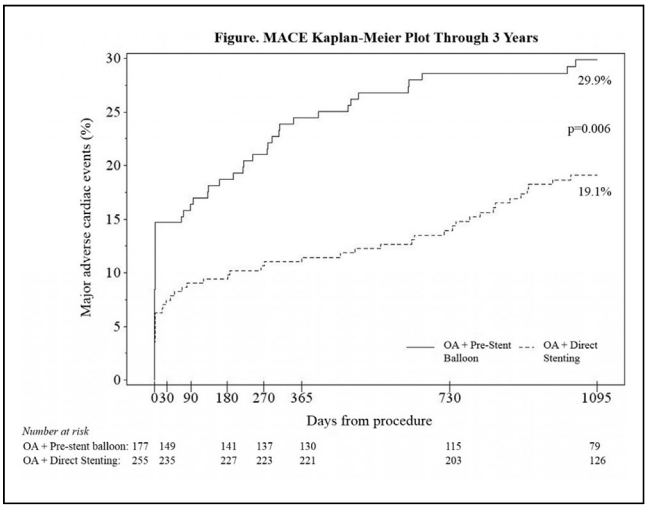

CONCLUSION The use of OA facilitates DS and is associated with a high procedural success rate with low procedural complications. The favorable outcome of DS after OA is sustainable at 3-year follow-up. Comparative randomized studies are needed to assess the optimal strategy after OA.

CATEGORIES CORONARY: Atherectomy (excluding thrombectomy)

TCT-611

Impact of Mechanical Support on Patients Undergoing Rotational Atherectomy

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BACKGROUND Rotational atherectomy (RA) is often used for lesion preparation in patients with moderate-severe coronary artery calcification (CAC). To reduce adverse effects, protected PCI with mechanical circulatory support with a percutaneous left ventricular assist device (pLVAD) (Impella, Abiomed, Danvers, MA) can be used during revascularization of complex high risk indicated patients (CHIP). Clinical trial data showed an association with increased adverse effects in patients being treated with RA who had an Impella pLVAD. We sought to examine the safety and efficacy of RA in real-world patients with CAC undergoing PCI with pLVAD support.

METHODS This observational, multicenter study assessed RA in patients with CAC with pLVAD or intra-aortic balloon pump (IABP) at the time of PCI. 38910 patients from 5 tertiary care hospitals who had PCI between January 2011 and January 2017 were identified. After performing propensity score matched analysis, all patients with pLVAD or IABP, who had RA prior to PCI were included in our analysis (n=46).

RESULTS There were 25 patients in the IABP cohort and 21 patients in the pLVAD group. There was no significant difference in the primary endpoint, death on discharge (9.5% vs. 0%, p=0.15) with multivariate adjusted analysis. There were no significant differences in angiographic complications or secondary in-hospital endpoints including myocardial infarction or bleeding [Table 1].

Variable Name	IABP(N=21)	pLVAD (N=21)	OR (95% CI)	p-value
Fluoroscopy Time (min)	29.2 +/- 14.5	31.9 +/- 22.1	n/a	0.65
Contrast Volume (ml)	160.6 +/- 56.0	134.2 +/- 41.4	n/a	0.09
Significant Dissection	1 (4.8%)	0 (0%)	0.95 (0.86-1.05)	0.33
Perforation	1 (4.8%)	0 (0%)	0.95 (0.86-1.05)	0.33
In-Hospital Mortality	2 (9.5%)	0 (0%)	0.90 (0.79-1.04)	0.15
Myocardial Infarction	2 (9.5%)	6 (31.6%)	4.38 (0.76-25.2)	0.08
Congestive Heart Failure	5 (23.8%)	0 (0%)	0.76 (0.59-0.97)	**0.02**
Blood Transfusion	7 (33.3%)	7 (33.3%)	1.16 (0.32-4.28)	0.82
Length of Stay (Days)	6.9 +/- 9.8	4.8 +/- 6.0	N/A	**0.04**

CONCLUSION In this real-world, multi-center analysis of CHIP patients with CAC undergoing RA with mechanical circulatory support, patients treated with pLVAD demonstrated non-inferiority compared to IABP, with an association of reduced length of stay and a trend towards improved survival to discharge. Mechanical support with pLVAD during RA in this high risk patient population, may allow for more complete revascularization with improved hemodynamic support.

CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

TCT-612

Comparison of Scoring Balloons Regarding the Effects on Post-Interventional Minimum Stent Area: A Single Center Randomized Trial

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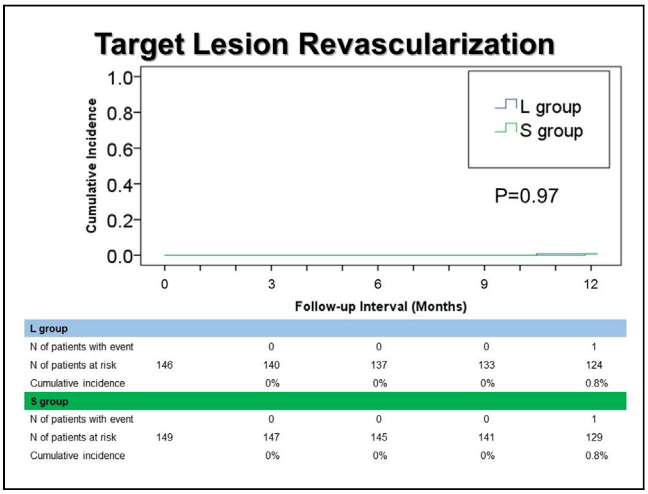
BACKGROUND Although scoring balloons are commonly used for coronary lesions with calcification, choice of balloons depends on the experience.

METHODS We enrolled 304 lesions from 300 patients (mean age 72±9 years, male 79%) who were scheduled to receive coronary intervention and randomly allocated them into 2 groups regarding the predilatation balloon: Lacrosse NSE group (L group: 152 lesions from 150 patients) and Scoreflex group (S group: 152 lesions from 150 patients). Either intravascular ultrasound (IVUS) or optical coherence tomography (OCT) was used by the operator's discretion. Primary outcome measure was post-interventional minimum stent area (MSA) and secondary outcome measures were the success rate of scoring balloon passage, the number of cracks after scoring balloon dilatation and target lesion revascularization (TLR) at 1 year after the procedure.

RESULTS We excluded 6 lesions in L group (no stent implantation in 3 lesions and no MSA data in 3 lesions) and 3 lesions in S group (no stent implantation in 2 lesions and no MSA data in 1 lesion). IVUS was used for 92 lesions in L group and 105 lesions in S group; OCT was used for 54 lesions in L group and 44 lesions in S group. MSA was similar between L and S groups (IVUS: 6.2±2.2 versus 5.9±2.1 mm2, P=0.34; OCT: 5.8±2.0 versus 5.5±1.9 mm2, P=0.37). The number of cracks was larger in L group (2.4±0.7 versus 1.7±0.5, P<0.001). Passage success rate was higher in S group (80% versus 99%, P<0.001). Cumulative incidences of TLR at 1 year were similar between L and S groups (0.8% versus 0.8%, P=0.97, see Figure).



CONCLUSION Although the scoring balloons resulted in similar post-interventional MSA and 1-year TLR incidence, Scoreflex showed fewer cracks and better passing performance than Lacrosse NSE.

CATEGORIES CORONARY: Cutting and Scoring Balloons