more, the occurrence of slow-flow, no-reflow, vessel dissection and branch vessel jail are included.

Results: Baseline demographics and clinical characteristics, including age, sex, smoking, ect, were similar between the two groups. There were not significantly different in baseline lesion characteristics. The maximum calcium arc and calcium length ratio were (215.9±21.8) and (0.72±0.06) in RA group matched with (213.9±22.3) and (0.73±0.05) in RC group, respectively. Before stent implantation, the minimum lumen CSA was (2.5±2.07) mm² in RA group and (2.46±0.99) mm² in RC group, without difference. The size of RA bur was (1.44±0.02) mm and (1.46±0.01) mm in two groups, P>0.05. The cutting balloon diameter used in RC group was (2.56±0.04) mm. The stent size was 2.93±0.08 mm in RA group and (3.09±0.08) mm in RC group, P>0.05. After RA and RC combined cutting balloon, there were 12 (35.3%) cases in RA group and 26 (56.5%) cases in RC group could see the gaps, P=0.189. Although there was no statistical difference between the two groups, there was a trend in RC group that more cases appear gaps after the adequate plaque modification. After stent implantation, the minimum stent area after stent implantation and acute lumen gain of RC group were significantly greater than that of the RA group (6.12±0.37) mm² vs (5.4±0.24) mm², P=0.012; (3.66±0.34) mm² vs (2.9±0.24) mm², P=0.016. There were no statistical differences in the occurrence of slow flow, no-reflow, branch vessel jail and vessel dissection between the two groups.

Conclusions: Rotational atherectomy combined with cutting balloon for treatment of severely calcified coronary lesions could significantly increase the stent area, acute lumen gain compared with rotational atherectomy alone, without increasing the PCI-related complications.

GW25-e1188
The Influence of Calcium Parameters for Immediate PCI Results: An Intravascular Ultrasound Analysis
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Objectives: This IVUS study was designed to evaluate how calcified parameters (including calcium arc, calcium length ratio and calcium index) influence the results of PCI.

Methods: From January 2012 to October 2012, 105 consecutive coronary artery disease patients who underwent primary angioplasty with IVUS were analyzed in our center. There were 34 no-calcified lesions (no calcium of all lesion segments), 32 light-calcified lesions (calcium length ratio<0.5 or calcium arc<180), and 40 severe-calcified lesions (calcium length ratio≥0.5 and calcium arc≥180). IVUS was performed before percutaneous coronary intervention (PCI) to measured lumen cross-sectional area (CSA), external elastic membrane (EEM), Plaque and media CSA = EEM-CSA-lumen CSA. Lumen CSA of every 1 mm of culprit lesion segment was measured and average lumen CSA was calculated. For calcium, we measured maximum calcium arc, calcium length, and calcium ratio (calcium length/length lesion). After stent implantation, IVUS was rechecked to measure minimum stent CSA, minimum and maximum stent diameter, and the reference lumen CSA. Stent symmetry = minimum stent diameter/maximum stent diameter. Stent expansion = minimum stent CSA/ reference lumen CSA. Stent malapposition was defined as insufficiently close contacts between some struts and the underlying wall. Stent asymmetry was defined as stent symmetry of at least one section<0.7. Stent underexpansion was defined as stent expansion rate <0.8.

Results: Severely calcified lesions had smaller minimum lumen CSA, mean lumen area, and minimum stent lumen CSA after PCI. And in severely calcified lesions, there was a higher occurrence of vessel dissection, vessel jail, stent malapposition, stent asymmetry, and stent under-expansion. In all calcified lesions, calcium arc has a stronger influence for minimum lumen CSA (R²=0.174, P=0.000), minimum stent area (R²=0.256, P=0.000), acute lumen gain (R²=0.168, P=0.000), and stent expansion (R²=0.103, P=0.003) than calcium length ratio (min lumen CSA: R²=0.005, P=0.445; min stent area: R²=0.085, P=0.007; acute lumen gain: R²=0.074, P=0.012; stent expansion: R²=0.007, P=0.222) and calcium index (min lumen CSA: R²=0.032, P=0.000; min stent area: R²=0.237, P=0.000; acute lumen gain: R²=0.167, P=0.000; stent expansion: R²=0.086, P=0.007). Calcium length ratio has a stronger influence for vessel dissection (OR=7.528, 95%CI 1.395-40.643, P=0.019) than calcium arc (OR=1.005, 95%CI 1.001-1.010, P=0.026) and calcium index (OR=5.673, 95%CI 1.195-26.678, P=0.029). Calcium index (R²=0.261, P=0.000) has stronger influence for mean lumen area and incomplete stent apposition (OR=19.658, 95%CI 3.233-119.509, P=0.001) than calcium arc (mean lumen area: R²=0.158, P=0.000; incomplete stent apposition OR=1.011, 95%CI 1.000-1.014, P=0.04) and calcium length ratio (mean lumen area: R²=0.236, P=0.000; incomplete stent apposition OR=12.945, 95%CI 1.766-94.913, P=0.012). Vessel loss seemed to have no liner relationship with calcium parameters.

Conclusions: For calcified lesions, we should consider both calcium arc and length. The mean minimum lumen area; minimum stent area, acute lumen gain, and stent expansion are mainly affected by calcium arc. Stent symmetry and the occurrence of vessel dissection are mainly affected by calcium length ratio. Mean lumen area and stent malapposition are mainly affected by calcium index.
and culprit vessel angiography and intervention during transradial primary PCI is feasible. The aim of this study is to investigate the feasibility of using a single guiding catheter (MAC 3.5) for left and right coronary angiography and intervention in patients with STEMI.

Methods: This was a single-center, prospective, randomized study conducted from August 2011 to April 2012, 150 patients with STEMI included. The patients were randomized into two groups: MAC group (75 cases) that underwent coronary angiography and primary PCI by using a single guiding catheter (MAC3.5). Control group (75 cases) included patients with non-STEMI coronary angiography with Tiger diagnostic catheter followed by guiding catheter selection at the operator’s discretion for intervention. The primary outcomes were cathlab door to balloon time (C2B) and fluoroscopy time. The secondary outcomes were composite of all-cause death, myocardial infarction or non-coronary artery bypass graft (non-CABG) related major bleeding at 30 days and 2 years.

Results: Baseline patient characteristics were similar between the MAC group and control group, the sheath placement time (1.84 ± 1.41 min vs 1.62 ± 0.88 min), the PCI procedural success rate (88.9% vs 85.9%) and contrast consumption (126 ± 29 ml vs 128 ± 33 ml) in the two groups were not statistically significant (P = 0.05). Compared with the Control group, C2B time, total procedure time and the overall fluoroscopy time were significantly lower in Mac group (16:10:44 min vs 18:64: 4:20 min, P = 0.001; 70.8 ± 8.06 min vs 35.77 ± 12.01 min, P = 0.001; 8.40 ± 2.71 min vs 10.05 ± 4.90 min, P = 0.05, respectively). The secondary endpoints at 30 days was 5 (6.6%) of 75 patients in the MAC group compared with 4 (5.3%) of 75 in the Control group (HR 0.98, 95% CI 0.25-3.94; P = 0.98). There is no difference of two-year event-free survival in the two groups (86.7% vs 88%, hazard ratio 0.65, 95% CI 0.28-1.53, HR 0 = 0.65, P = 0.00001), and less binary angiographic restenosis (RR 0.54, 95% CI [0.45, 0.65], P < 0.00001). TAPT and DAPT had similar rates of bleeding, but TAPT had significantly higher rates of headache, palpitation, rash and gastrointestinal side-effects.

Conclusions: Cilostazol-based TAPT compared with DAPT is associated with improved angiographic outcomes and decreased risk of TLK and TVR but does not reduce major cardiovascular events and is associated with an increase in minor adverse events.

GW25-e5176
Use of Novel Protective Ballooning Technique with Provisional Stenting for Treatment of Non-Left Main Coronary Bifurcation Lesions: A Feasibility Pilot Study
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Objectives: Percutaneous coronary intervention (PCI) of bifurcation lesions is associated with a higher risk of adverse events. Recent studies support the use of provisional side branch (SB) stenting, but the risk of SB closure after main vessel (MV) stenting remains an important concern. We sought to establish and demonstrate the feasibility and preliminary efficacy of a novel protective ballooning technique (PBT) for SB protection and treatment during MV stenting.

Methods: The rationale of PBT for SB protection is to preposition a small balloon (2.0/20 mm) in the SB before MV stenting while the proximal markers of the balloon and the MV stent are being aligned. During deployment of the MV stent (14-16 atm), the un inflated jailed balloon under the stent struts serves to reduce both carina and plaque shifts due to its spatial occupation in the SB ostium. Therefore, the jailed balloon is inflated at 8-14 atm to dilate the ostium. After removing the jailed balloon MV stent’s balloon is inflated again at 14-16 atm to correct stent deformation or malapposition. If SB flow is preserved after MV stenting, the jailed wire will be removed from SB; otherwise it could be used as a marker to facilitate rewiring SB, and further kissing balloon inflation or provisional SB stenting will be performed to restore SB flow. Final intravascular ultrasound (IVUS) examinations were selectively performed in some patients to check the MV stent. Procedural and immediate clinical outcomes were recorded.

Results: This novel technique was successfully adopted in 92 patients with 99 bifurcation lesions. The majority of patients had Medina class 1, 1 bifurcation lesions (81%). Final TIMI 3 flow was achieved in 100% of MV and 88% of SB. IVUS revealed optimal deployment of MV stent after final inflation in all checked cases (n = 13). Only one patient (1%) had lesions that required rewiring and provisional stenting of the SB. TIMI 2 flow occurred in one patient (1%). SB loss occurred in one patient (1%), who suffered a periprocedural myocardial infarction (MI). No jailed balloon or wire was entrapped during any PCI.

Conclusions: Provisional stenting of complex coronary bifurcation lesions using a PBT is associated with a high procedural success rate, improved SB patency, and a low rate of immediate cardiac events in this feasibility study; however, randomized trial is needed to further confirm its clinical benefits.

GW25-e5296
Safety and efficacy of a new type of Ni-Ti sirolimus-eluting stent with bioabsorbable polymer in neointimal hyperplasia inhibition
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Objectives: The first generation drug-eluting stent (DES) was based on 316L stainless steel covered with a permanent polymer (eluting polymer which will induce chronic inflammation and late in-stent thrombosis. New type of Ni-Ti sirolimus-eluting stent with bioabsorbable polymer will be the answer to these questions. Methods: Ni-Ti sirolimus-eluting stents with bioabsorbable polymer (n = 24) and EXCEL 18 stents (n = 24) were randomized and implanted in left anterior descending artery (n = 24) and right coronary (n = 24) of 24 pigs. Coronary angiography, IVUS and histomorphologic analysis (neointimalarea and lumen area stenosis measurement after hematoxylin-eosin staining; electron-microscopy scan after fixing with 1% glutaraldehyde) were performed 90 days after the stents implantation.