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 indicated for transradial PCI were randomized into two groups: MAC group (75 cases) consisted of patients who underwent coronary angiography and primary PCI by using a single guiding catheter (MAC 3.5). Control group (75 cases) included patients who first underwent 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 procedure 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±4.49 min vs 18.64±4.20 min, P=0.001; 79.81±6.06 min vs 35.77±12.01 min, P=0.001; 8.40±2.71 min vs 10.05±4.90 min, P=0.005, 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 rate in two group (85.7% vs 88%, hazard ratio 0.65, 95% CI 0.28-1.53, P=0.327, respectively).

Conclusions: A single transradial MAC3.5 guiding catheter for coronary angiography and intervention seems to be a better option for patients with STEMI for whom primary PCI is planned. It can shorten C2B time, procedure time and fluoroscopy time. Further study is required to determine whether this strategy can favorably affect clinical outcomes.

Methods: We searched the bibliographic databases and the references of relevant articles, and recruited all randomized controlled trials (RCTs) investigating the efficacy of TAT vs conventional anti-platelet treatment (CAT) in PCI patients with HOPR. Recruited trials were assessed for risk of bias. Clinical events including cardiovascular death, non-fatal myocardial infarction (non-fatal MI), stent thrombosis (ST) and bleeding were analyzed. Trial sequential analysis was performed to estimate the strength of evidence.

Results: Eleven RCTs involving 4787 patients with HOPR were recruited, where 2529 patients were randomized into CAT arm, and the other 2258 patients were randomized into CAT arm. During a follow-up period of 1 to 12 months, the incidence of CV death, non-fatal MI, and ST were all significantly lower in the CAT arm compared with that in the CAT arm (0.7% vs. 1.7%, risk ratio [RR]: 0.37, 95% confidence interval [CI]: 0.19 to 0.72, P=0.02; 1.5% vs. 3.1%, RR:0.57, 95% CI: 0.39 to 0.83, P<0.004); and (1.2% vs. 2.7%, RR:0.44; 95% CI: 0.27 to 0.73, P<0.001), respectively. The combined incidence of CV death, non-fatal MI, and ST were much lower in CAT arm compared to CAT arm (2.9% vs. 7.9%, RR: 0.49; 95% CI: 0.37 to 0.65, P<0.00001). While the incidence of bleeding was similar between the two arms (5.3% vs. 4.3%, RR: 1.05; 95% CI: 0.86 to 1.27, P=0.65). Trial sequential analyses demonstrated significant evidence supporting that TAT reduced the risk of combined incidence of CV death, non-fatal MI and ST.

Conclusions: TAT guided by the platelet function assays reduces the risk of CV death, non-fatal MI and ST, without additional risk of bleeding.

Methods: We searched the literature to identify all randomized clinical trials and mixing efficacy and safety of TAPT versus DAPT in patients undergoing coronary stent implantation. Major efficacy outcomes were death, non-fatal myocardial infarction (MI), ischemic stroke and stent thrombosis (ST) and the safety outcome was bleeding. Data were analyzed using the Review Manager 5.0.0.0.

Results: A total of 19 trials involving 7464 patients were included. TAPT and DAPT were associated with similar rates of death, non-fatal MI, ischemic stroke and ST, but compared with DAPT, TAPT had lower rates of target lesion revascularization (TLR) (RR 0.67, 95% CI [0.56, 0.82], P<0.00001) and target vessel revascularization (TVR) (RR 0.65, 95% CI [0.55, 0.77], P<0.00000), as well as less late loss of minimal lumen diameter (Mean difference -0.14, 95% CI [-0.17, -0.11], 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 TLR and TVR but does not reduce major cardiovascular events and is associated with an increase in minor adverse events.

Methods: 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 (2.0/20mm) in the SB before MV stenting while the proximal makers of the balloon and the MV stent are being aligned. During deployment of the MV stent (14-16 atm), the uninfilted jailed balloon under the stent struts serves to 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 98% 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.

Methods: 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 coated with a permanent polymer which will induce chronic inflammation of 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 34 stents (n=24) were randomized and implanted in left anterior descending (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 fixating with 1% glutaraldehyde) were performed 90 days after the stents implantation.