TCT-217
Efficacy And Safety Of Biolimus Eluting Stents With Biodegradable Polymers For The Treatment Of Chronically Occluded Coronary Arteries
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Background: Due to low success rates, periprocedural complications and higher risk for restenosis the recanalization of chronic total occlusions of coronary arteries (CTO) remain a challenging task in interventional cardiology. Furthermore several studies have revealed that restenosis and late stent thrombosis are linked to the polymer layer of drug eluting stents. We therefore tested whether drug eluting stents with completely biodegradable polymers are applicable for the treatment of CTO’s.

Methods: In order to test this hypothesis we retrospectively examined in a monocentric analysis data of 102 CTO patients who were exclusively treated with biolimus eluting stents with fully biodegradable polymers in the past 24 months. CTO was defined as total occlusion of a coronary artery for more than 3 months and TIMI 0 flow in the occluded segment. Primary study endpoint was late loss at the initial occlusion site after 6 months. Secondary clinical endpoints included a composite of cardiac death, myocardial infarction and target vessel revascularization after 6 months (MACE).

Results: 170 CTO procedures were performed in the past 24 months. 138 CTO’s were successfully reopened which corresponded to a success rate of 81%. The mean occlusion length of 24 ± 14 mm was treated with an average stent length of 68 ± 30 mm. J-CTO score was 1,8 ± 0,9. 102 of the successfully recanalized CTO patients received biolimus eluting stents with biodegradable polymers. Meanwhile 78 patients have concluded angiographic and clinical 6 months follow up. Late loss at the initial occlusion site was 0,26 ± 0,56 mm. Binary restenosis with the need for reintervention occurred only in 5 patients (6,4%). Cardiac death was documented in 1 patient. In addition to that, one patient suffered from a stent thrombosis with a consecutive myocardial infarction during follow up. Therefore the MACE rate was calculated with 9%.

Conclusions: First results of our monocentric analysis indicate that biolimus eluting stents with fully biodegradable polymers are associated with little late loss and low MACE rates in complex CTO lesions. Future studies in larger, independent patient cohorts are necessary to confirm our results.

TCT-218
Clinical benefit of Multi-detector computed tomography for percutaneous coronary intervention in Chronic Total Occlusions: TACCTO prospective randomized trial
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Background: Clinical benefit in improving procedural success of a multi-slice computed tomography (MSCT) analysis prior to CTO recanalization is unknown. We performed a prospective randomized trial so as to assess clinical impact of MSCT in improving immediate procedural results.

Methods: 106 eligible patients who were scheduled for percutaneous recanalization of a true CTO (Euro-CTO definition) and without contraindications for MSCT were included in the study (TACCTO). All patients underwent MSCT and were randomized (1:1) to be or not to be aware of the result of the MSCT prior to CTO recanalization. MSCT versus conventional coronary angiography (CCA) group were compared regarding immediate procedural success. By protocol, same 10 CTO CCA and MSCT-angiography characteristics (based on previously published independent predictors of CTO failure) were pre-defined to be independently analysed. In the MSCT group, CT-scanner analysis was open to the operator prior to the procedure. A 256-detector system was used for all studies. Post processing was performed with specific software.

Results: The mean age was 62 ± 10 years old. According to the Japanese-CTO score of complexity 51% of lesions were classified as difficult or very difficult. 52% were chronic total occlusions and 9% the most frequent lesion treated. In most cases (88%) the strategy was anterograde. The total stent length implanted per lesion was of 51.6 ± 20.3mm. In all case last generation DES was implanted. Technical success was achieved in 86.8% of the patients in the MSCT group and 84.9% of those in the CCA group (p=0.75). According to the J-CTO score 2 subgroups of complexity were done: a) easy-intermediate and b) difficult-very difficult. In sub-group a), procedural success was achieved in 100% in both groups (MSCT and CCA). In sub-group b), procedural success was achieved in 80% of the patients in the MSCT group and 75.7% of those in the CCA group (p=0.85).

Conclusions: According to the results of this prospective randomized trial, in our current era, with new CTO material and techniques, it seems that the information provided by MSCT could be useful, but did not provide a significant impact in procedural outcomes

TCT-219
Higher Proportion of Successful PCI in Patients With Chronic Total Occlusion of the Left Anterior Descending Artery (LAD-CTO) Compared to non LAD CTO: A Single Center Study of 1,819 Consecutive Procedures
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Background: This study sought to investigate predictive factors of final PCI procedural success in patients with LAD-CTO compared to patients with nLAD-CTO

Methods: A total of 1,657 patients who underwent 1,819 CTO-PCI at ICPS between January 2004 and December 2013 were included in the study. Clinical, angiographic, technical, procedural characteristics and adverse events occurring within 24 hrs were prospectively collected. Procedural success was defined as a final diameter stenosis < 30% and TIMI flow 3. Predictors of CTO success in LAD-CTO vs nLAD-CTO, were analyzed by univariable and multivariable analysis. Early (≤24 hrs) events were recorded.

Results: The overall procedural success rate was 72.4%. Of 1,819 procedures, 542 (29.7%) were LAD-CTO-PCI. LAD-CTO-PCI had a higher procedural success rate compared to nLAD (78.8% vs 69.7%, p<0.001). By logistic regression analysis, including clinical and angiographic variables, severe CTO calcification (OR 0.46, 95%CI 0.20-0.87; nLAD: 0.35, 95%CI 0.23-0.52), lesion length ≥20 mm (OR 0.55, 95%CI 0.35-0.87; nLAD OR 0.45, 95%CI 0.35-0.58), previous CABG (OR 0.1, 95% CI 0.04-0.27; OR 0.61, 95%CI 0.40-0.93) and previous MI (0.58 95%CI 0.34-0.96; nLAD: OR 0.69, 95%CI 0.50-0.93) were associated with a lower procedural success rate both in LAD-CTO and in nLAD subgroups. Lesion tortuosity was an independent predictor of PCI failure exclusively in the LAD-CTO group (OR 0.41 95%CI 0.18-0.93), while a blunt morphology was independently correlated to lower procedural success in the nLAD-CTO group (OR 0.58, 95%CI 0.44-0.75). No differences in terms of death, myocardial infarction and urgent pericardiocentesis within 24 hours were recorded between the two groups.

Conclusions: Both in the LAD-CTO-PCI and nLAD-CTO-PCI subgroup, severe CTO calcification, lesion length, previous CABG and previous MI were predictors of procedural success. Interestingly, lesion tortuosity and blunt stump were independently correlated to lower procedural success in the LAD-CTO and in the nLAD-CTO subgroup, respectively.

TCT-220
Impact of chronic total occlusion localization on 12-month mortality in patients with non-ST-segment elevation myocardial infarction treated with percutaneous coronary intervention
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Background: The aim of the present study was to evaluate the effect of chronic total occlusion (CTO) localization in non-IRA (CTO-LAD) on 12 months mortality in patients with NSTEMI and multivessel coronary artery disease (MV CAD) treated with PCI

Methods: We analyzed consecutive records of 991 patients with NSTEMI and MV CAD treated with PCI admitted to the Clinic between 2006 and 2011. The inclusion criteria were presence of MV CAD, single CTO in non-IRA and availability of 12-month follow up. Patients with a history or qualified to CABG during current hospitalization were excluded from further analysis. Clinical characteristics, in-hospital and 12-month outcomes of 165 patients were analyzed according to localization of CTO in coronary angiography. Patients were divided into three groups: CTO in left anterior descending artery (CTO LAD n=43), CTO in left circumflex (CTO LCx n=47), CTO in right coronary artery (CTO RCA n=75).

Results: In baseline characteristic we observed significant differences in occurrence of diabetes (respectively: 53.5% vs 31.9% vs 25.3 p=0.007). In-hospital mortality was significantly higher in CTO RCA group (respectively:2.3% vs 0.0% vs 9.3% p=0.044). The rates of myocardial re-infarction, target vessel revascularization, stroke, major bleeding and average GRACE score during the hospitalization were significantly different in all analyzed groups. CTO in RCA was associated with increased 12 months mortality in studied groups (respectively: 13.9% vs 4.3 % vs 22.7% p=0.022), post hoc analysis showed significant difference between CTO RCA and CTO LCx groups (P=0.006). In multivariate analysis CTO localized in RCA remained independent factor influencing 12 month mortality (HR: 3.82; 95%CI: 1.58-9.20; p< 0.003).

Conclusions: In studied population localization of CTO in RCA was associated with worse 12-month outcomes and was an independent predictor of 12 month mortality