BACKGROUND At Aalborg University Hospital, Denmark, we established a dedicated coronary chronic total occlusion (CTO) treatment program in January 2010. From January 2013, retrograde techniques were routinely used. Here we present our clinical CTO treatment results from 2010 to 2012; the pre retrograde approach phase (PRA), and from 2013 to 2016; the combined antegrade and retrograde approach phase (CA).

METHODS A total of 524 CTO-patients (638 procedures) were treated during the study period. The PRA included 172 patients (202 procedures) and the CA group 352 patients (436 procedures). We used prospectively collected data from the Western Denmark Heart Registry as well as clinical information from the nationwide hospital records and reviewed all procedural angiographies. Endpoints were procedural success, procedural characteristics and procedure related complications (death, myocardial infarction, stroke, tamponade).

RESULTS In PRA, 17.4% of patients had more than 1 procedure vs. 23.9% in the RA group (p=0.07). Mean procedure time, fluoroscopy time and use of contrast were 47.7±1.7 min vs. 57.4±2.0 min (p=0.002), 19.8±0.9 min vs. 28.8±1.2 min (p<0.0001) and 230±9 ml vs. 235±8 ml (p=ns) in the PRA and CA groups, respectively. In the PRA group, treatment was successful in 55.5% of procedures and in 65.1% of patients vs. 60.8% (p=ns) of procedures and 75.3% (p=0.017) of patients in the CA group. There was 1 procedure related death, but it was unrelated to the CTO treatment. In the PRA group 5.9% had a procedure related complication vs. 3.0% in the CA group (p=0.08).

CONCLUSION During implementation of a dedicated CTO treatment program, routine use of retrograde procedures was associated with increased rate of successful treatment with no increase of procedure related complications.

CATEGORIES CORONARY: Complex and Higher Risk Procedures for Indicated Patients (CHIP)

TCT-291

Predictors of Successful Hybrid-Approach CTO Stenting: An Improved Model with Refined Correlates

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BACKGROUND Chronic total occlusion (CTO)s are common and often result in referral for bypass surgery without attempted PCI. When PCI is attempted, success rates are variable and current predictive models for success have major limitations. We sought to develop a hybrid approach-specific model to predict CTO success, superior in predictive capacity to commonly used models, useful for experienced CTO operators.

METHODS Clinical, procedural and outcomes data were obtained from consecutively attempted patients from 7 clinical sites and 9 operators (mean annual operator CTO volume 61+17 cases). Angiographic analysis of 21 lesion variables was performed centrally. Statistical modeling was performed on a randomly designated training group and tested in a separate validation cohort.

RESULTS 436 patients (456 lesions) met entry criteria. 24.5% of lesions had a prior failed PCI at the CTO site. The RCA was the most common location (56.4%) and occlusion length was 24+20 mm. The initial approach was most often antegrade wire escalation (70%), followed by retrograde (22%). Technical success was achieved in 79.4%. Complications were infrequent but death occured in 0.9% of patients. Failure was most closely correlated with presence of an ambiguous proximal cap (APC), specifically defined collateral score (combination of Werner and Kato scores) and retrograde tortuosity in the presence of an APC; and poor distal target, occlusion length >10 mm, and ostial location with non-APC; and 1 operator variable. Prior failure, Werner and Kato scores alone and circumflex occlusion only weakly correlated with outcome. A 7 item model predicted success with c-statistic = 0.753 in the training cohort and = .738 in the validation cohort, the later superior (p<.05) to that of the J-CTO (0.55) and PROGRESS scores (0.61).

CONCLUSION Success can be reasonably well predicted, but that prediction requires modification and combination of angiographic variables. Differences in operator skill sets may make it challenging to create a powerful, generalizable, predictive tool unless individual operator skill sets can be characterized, quantitated, and incorporated.

CATEGORIES CORONARY: Complex and Higher Risk Procedures for Indicated Patients (CHIP)

TCT-292

Three-year clinical outcome of patients treated with the Nobori biolimus-eluting stent and Xience/Promus cobalt-chromium everolimus-eluting stent for unprotected left main disease

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BACKGROUND The aim of this study was to evaluate 3-year clinical outcome of patients treated with the Nobori biolimus-eluting stent (BES) compared to those with the Xience/Promus cobalt-chromium everolimus-eluting stent (EES) for unprotected left main disease (ULMD).

METHODS Between February 2010 and July 2012, a total of 153 patients undergoing percutaneous coronary intervention for ULMD (63 BES and 90 EES) were analyzed. We assessed the rates of major adverse cardiac events (MACE), defined as a composite of cardiac death, non-fatal myocardial infarction (MI), definite stent thrombosis (ST), and clinically driven target lesion revascularization (TLR) within 3-year.

RESULTS Baseline patients and lesion characteristics were similar between BES and EES groups. No significant differences were observed with regard to lesion location (distal bifurcation lesion; 81.4% vs. 80.9%, p=0.93) and number of stent strategy (single stent strategy; 71.4% vs. 70.8%, p=0.93) between the 2 groups. The 3-year MACE rate was not significantly different between BES and EES groups (21.5% vs. 19.0%, p=0.83). The cumulative incidence of cardiac death, MI, ST, and clinically driven TLR rate were similar between the 2 groups (14.5% vs. 4.7%, p=0.07; 4.6% vs. 2.4%, p=0.45; 1.5% vs. 1.1%, p=0.86; 9.7% vs. 15.8%, p=0.30, respectively).

CONCLUSION Three-year clinical outcome after BES implantation was not different from that after EES implantation for ULMD.

CATEGORIES CORONARY: Complex and Higher Risk Procedures for Indicated Patients (CHIP)

TCT-293

High Syntax score and left main percutaneous coronary intervention in high risk patients. Results at a 10 year follow-up

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BACKGROUND Nowadays, current practice guidelines do not recommend a percutaneous coronary intervention (PCI) treatment for complex anatomical coronary lesions (Syntax score ≥ 32) that involve left main coronary artery (LMCA). Nevertheless, PCI could be of choice in selected surgical high-risk patients. The main objective of this study was to evaluate the efficacy and safety of PCI in LMCA disease with high Syntax score at 10 years follow-up.

METHODS We prospectively included 123 consecutive patients (71 ± 11 years, 70.5% male) with LMCA disease and Syntax score ≥ 32 treated with PCI between June 2006 and April 2015. We evaluated the occurrence of major adverse cardiovascular events (MACE) defined as cardiac death, nonfatal myocardial infarction, target lesion revascularization (TLR) and stent thrombosis after a 10 year clinical follow-up (median 40.8 months).

RESULTS 44.7% of patients had stable coronary disease and 55.3% acute coronary syndrome (35% Non-STEMI and 20.3% STEMI). 45% were diabetic patients and 45.1% presented moderate-severe left ventricular systolic dysfunction. 45% of patients had logistic EuroSCORE ≥ 12% and median Syntax score was 41.5. The most frequent