Conclusions: Complete revascularization after PCI was achieved in less than 50% of pts with ACS, and was less frequent in DM compared to non-DM pts. Patients with DM had higher rates of adverse outcomes compared to non-diabetics even when CR was achieved, and the extent of IR was less of a prognostic factor in DM compared to non-DM pts. Further strategies are required to improve the prognosis in high-risk DM pts.

TCT-323
Higher Adverse Clinical Event Rates in Young African American Women Undergoing Percutaneous Coronary Intervention: Results from the NHLBI Dynamic Registry

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Background: Prior studies suggest that younger women are at higher risk for major adverse events following PCI; however, little is known about the association between race and adverse outcomes in this population.

Methods: We evaluated 3797 women undergoing PCI in the NHLBI Dynamic Registry and compared 1 year outcomes in African American (AA) women <50 years (n=101), AA women ≥ 50 years (n=537), non-AA women < 50 years (n=293), and non-AA women ≥ 50 years (n=2866) old.

Results: AA women were more likely to have hypertension, renal disease, and concomitant severe non-cardiac disease compared to non-AA women. Irrespective of race, younger women had less severe CAD angiographically. In-hospital adverse events (death, MI, CABG, stroke) were comparable by race and age; however, young AA women had the highest rate of MACE (young AA women: 28.6%, older AA women: 18.4%, young non-AA women 27.6%, older non-AA women: 23.3%, p=0.02) at 1 year. While the rate of MI was lower (young AA women: 3.6%, older AA women: 5.8%, young non-AA women 7.2%, older non-AA women: 5.4%, p=0.50), young AA women had a higher incidence of mortality than non-AA women of similar age (young AA women: 5.8%, older AA women: 5.0%, young non-AA women: 1.1%, older non-AA women: 5.8%, p=0.009) at 1 year. Young women also had higher rates of repeat revascularizations compared to older women, with young AA women having the highest rate of CABG and young non-AA women having the highest rate of repeat PCI at 1 year.

Conclusions: Young AA women experienced higher rates of major adverse events within 1 year of PCI, including a mortality rate four times higher than non-AA women of similar age. It is plausible that our findings are due to a higher prevalence of non-cardiac comorbidities; however, secondary prevention measures and practice patterns post-PCI need to be explored to ensure this population is receiving optimal cardiovascular care following PCI.

TCT-324
Survival after percutaneous coronary intervention (PCI): Comparison of patients with or without Left Anterior Descending stenosis in elective percutaneous coronary intervention for left main disease and triple vessel disease

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Background: Patients with significant left anterior descending artery (LAD) disease, particularly when the proximal segment is involved, considered to have an adverse cardiac prognosis. It is reported that proximal LAD stenosis (P-LAD) have higher rates of restenosis than that in other coronary segments after angioplasty, as well as after stenting. However, the long term results of patients with P-LAD in complex coronary artery disease (CAD) have not yet been adequately studied. Our study aimed to find out if the long term mortality of patients with P-LAD among the cohort with three vessel diseases (TVD) and/or left main stenosis (LMS) higher than that without P-LAD.

Methods: Patients undergoing elective PCI with drug eluting stents (DES) for TVD and/or LMS have been included in this study. Important exclusion criteria were previous coronary artery bypass surgery, high-risk acute coronary syndrome including myocardial infarction. All-cause death was the primary endpoint of this analysis. Survival of the patients was assessed by systematic patient contacts at one, two and three years. In all patients we calculated SYNTAX score (SSc) to define the anatomical complexity of coronary artery disease and logistic EuroScore (LES) to determine the clinical risk. We used the Kaplan-Meier method to estimate the mortality. In addition, we calculated adjusted and unadjusted hazard ratios by Cox models.

Results: 1,262 patients (mean age 67.7±10.33 years, 24% female, median SSc 21.3±8.47) met the entry criteria. Median follow-up was 1197±665.05 days. P-LAD was present in 364 patients (28.84%). SSc in group with P-LAD was higher (24.69±8.24 vs. 20.8±8.36, p<0.01). There was no significant difference of one, two and three-year mortality between the group with and without P-LAD (3.0±0.9% vs. 2.9±0.6%; 5.0±1.2% vs. 5.2±0.7%; 8.0±1.5% vs. 8.2±1.0%, p=0.67; 0.64; 0.69). Hazard ratio for mortality in the presence of P-LAD was 1.08 (95% CI 0.76 – 1.54, p=0.67). Even after adjustment for SSc and LES in multivariable analysis, P-LAD was not predictive for mortality (adjusted HR 1.34 (0.94 – 1.94), p=0.11).

Conclusions: P-LAD as single criterion has no significant prognostic relevance in patients with complex CAD.

TCT-325
Revascularization Heart Team Favors Percutaneous Coronary Intervention in Patients with Intermediate and High SYNTAX when Demographic and Clinical Predictors are Included.

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Background: Randomized controlled trials in patients with complex ischemic heart disease (CHID) suggest that patients with an intermediate/high SYNTAX score benefit from surgical revascularization. However its impact in decision making in routine clinical practice is unknown. Using a multidisciplinary Heart Team (MHT) we set out to evaluate therapeutic decision making in patients with complex IHD using SYNTAX scores combined with Society of Thoracic Surgeons (STS)-derived clinical variables.

Methods: MHT meetings consisting of interventional cardiologists and cardiac surgeons were convened to discuss management of patients with CHID. Angiographic SYNTAX and STS risk were calculated and grouped according to risk scores Figure 1. Final recommendations on revascularization were based on consensus that factored angiographic and clinical characteristics.

Results: 201 consecutive patients underwent MHT review. Mean(SD) STS risk was calculated and grouped according to risk scores Figure 1. Final recommendations on revascularization were based on consensus that factored angiographic and clinical characteristics.

Conclusions: Young AA women experienced higher rates of major adverse events within 1 year of PCI, including a mortality rate four times higher than non-AA women of similar age. It is plausible that our findings are due to a higher prevalence of non-cardiac comorbidities; however, secondary prevention measures and practice patterns post-PCI need to be explored to ensure this population is receiving optimal cardiovascular care following PCI.
Conclusions: Combination of SYNTAX with STS-risk score influences therapeutic decision-making in routine practice. A MHT approach resulted in recommendation for surgical revascularization in patients with low-STS risk regardless of SYNTAX score. Conversely, PCI was recommended more frequently in patients with high STS-risk regardless of SYNTAX. Further studies should focus on the clinical outcomes of these revascularization strategies.

TCT-326
In-Hospital and Long-Term Prognosis of Anemia on Admission in Patients Undergoing Percutaneous Coronary Intervention
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Background: Anemia is common before percutaneous coronary intervention (PCI). Numerous studies have shown the prognostic value of anemia in patients with acute coronary syndrome (ACS). Nevertheless, few studies have investigated the long-term impact and in-hospital prognosis of anemia on admission in patients undergoing PCI and constitutes the aim of this study.

Methods: We performed a single-center observational study with prospective follow-up of 759 consecutive patients undergoing PCI between 2007 and 2011. Anemia was defined according to OMS’s criteria (hemoglobin <13 g/dL in men and <12 g/dL in women). We evaluated the relationship between anemia on admission with cardio-vascular events and long-term mortality (mean follow-up 26.5±14.4 months).

Results: Anemia on admission was observed in 226 (23.5%) patients. Patients with anemia on admission were older (72 ± 10 vs. 64 ± 11 years, p < 0.001), female (23.5 vs. 15.2%, p = 0.006) diabetic (47.3 vs. 31.5%, p < 0.001) and hypertensive (56.4 vs. 63.4%, p = 0.001). Most often patients were previously treated with anti-coagulants (14.2 vs. 7.3%, p = 0.003) antiplatelets (58.4 vs. 44.1%, p < 0.001) had increased prevalence of acute myocardial infarction (AMI) on admission (59.7% vs. 49.2%, p = 0.008), lower creatinine clearance (66.5 ± 29 vs. 78.9 ± 23 mL/min/1.73m2, p < 0.001) and higher levels of C reactive protein (35.5 ± 54.5 from 13.2 ± 25 mg/L, p < 0.001). While being hospitalized patients had a higher incidence of contrast-induced acute kidney injury (15 vs. 6%, p < 0.001), bleeding complications (19.5 vs. 8.6%, p < 0.001), need for transfusion (6.6 vs. 6%, p < 0.001) and mortality (5.3 ± 1.5%, p = 0.003). During long-term follow-up they had more readmissions (59.7 ± 47.7%, p = 0.002), AMI with ST segment elevation (4.5 vs. 1.7%, p = 0.027), stroke (5.8 vs. 2.1%, p = 0.008) cardiac mortality (8 vs. 2.8%, p < 0.001) and all-cause mortality (20.4 vs. 4.9%, p < 0.001). Cox regression analysis showed that anemia was an independent predictor of all-cause mortality (adjusted hazard ratio = 2.1, CI 95% 1.1-4.1, P = 0.028).

Conclusions: Patients with anemia on admission are numerous and have both poorer in hospital and long term prognosis and increased long-term mortality.

TCT-327
Late lumen enlargement - a potential new paradigm in vascular therapy
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Background: Local paclitaxel delivery to coronary arteries by application of a drug-coated balloon (DCB) has been shown to reduce in-stent restenosis (ISR) and late lumen loss in the novo lesions of small coronary arteries in comparison to other forms of PCI. While inherent healing processes after plane PTCA have led to a high rate of restenosis due to recoil and intimal proliferation, we observed an unanticipated decrease in residual stenosis while following patients after application of DCBs. It was the aim of this study to systematically study and quantify this phenomenon.

Methods: We evaluated 58 native coronary artery lesions mainly of small vessels (12 RCA, 21 LAD and 25 CX) in 56 consecutive patients directly after DCB intervention and 4±2 months thereafter by quantitative coronary angiography. Treatment of ISR and left main lesions was excluded from this analysis. Mean vessel reference diameter was 2.59±0.45 mm and initial stenosis grade was 69.1±14.0%. To exclude a vasospasm we evaluated a non-target vessel was evaluated as to the diameter change within the observation period and from identical cine frames (n=43). All PCIs were technically performed according to the recommendations of the German Consensus Criteria.

Results: Minimal and mean lumen of the lesion and the treated segment increased highly significantly. The late lumen increase of the target lesion within the observation period was 0.16 mm (1.75±0.58 vs 1.91±0.55 mm, p<0.05) and the diameter stenosis was further reduced from 33.8±12.2 at end of index procedure to 26.9±13.8 % (p<0.05) at follow up angiography, while there were no changes in the vessel diameter of the non target reference vessel (2.33±±0.60 vs 2.34±±0.61 mm, p = n.s.). No reintervention occurred in any of these patients, and MACE rate was 1.8%. There was only 1 binary restenosis.

Conclusions: Local application of paclitaxel by drug-coated balloons to native coronary arteries leads to late lumen enlargement in contrary to all other forms of PCI which all lead to LLL.

TCT-328
Clinical Outcomes Based Upon Classification Using Appropriateness Use Criteria

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Background: The classification of patients using the appropriate use criteria (AUC) for percutaneous coronary intervention (PCI) is growing, however the AUC are criticized due to systematic and methodological issues. It is unclear to what extent clinical outcomes may change based upon procedures classified as appropriate, uncertain, or inappropriate.

Methods: Consecutive patients without acute coronary syndrome undergoing PCI at multiple hospitals across the University of Pittsburgh Health System were enrolled in a registry and followed prospectively since October 2011. Patient characteristics, in-hospital events, and 6 month follow up were recorded. Using national guidelines, cases were classified by the AUC criteria.

Results: A total of 442 cases were evaluated, among which 56.3% were Appropriate, 25.8% Uncertain, and 17.9% Inappropriate. There were no significant differences with regard to cardiovascular risk factors, except that patients classified as Appropriate were more likely to have a prior history of myocardial infarction or bypass surgery. Patients classified as Inappropriate were significantly more likely to not have prior stress testing (20.5% Appropriate vs. 53.2% Inappropriate, p<0.0001) and were more likely to be asymptomatic. Cases classified as Inappropriate were significantly more likely to be pre-operative cases prior to non-cardiac surgery (9.6% Appropriate vs. 29.1% Inappropriate, p<0.0001). There were no differences in lesion and procedural characteristics or significant differences in the 6-month outcomes of death, myocardial infarction, revascularization, bleeding, in-stent restenosis, de-novo restenosis, and contrast use, although there was a notable difference in cost.

Conclusions: There are important characteristics of “Inappropriate” procedures that may drive interventional cardiologists to perform these procedures; however, the AUC do not allow for some factors to be considered in determining appropriateness. There were no significant differences in outcomes based upon AUC classification. The AUC criteria can be valuable but are limited and need to be refined to incorporate important factors that are often considered in routine clinical practice in the care of patients with coronary artery disease.

TCT-329
Cardiovascular Imaging Radiation in Coronary Artery Disease: Is It a Real Concern?
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Background: The number of cardiac diagnostic and therapeutic procedures involving ionizing radiation has increased rapidly in recent years, raising concerns about patients (pts) radiation exposure. The annual pts effective radiation dose (ED) should not exceed 1mSv, which is equivalent to 50 chest X-rays. We intend to estimate ED due to cardiovascular and therapeutic exams in pts with chronic coronary artery disease (CAD) during follow-up.

Methods: CAD outpatients of a tertiary hospital who had at least one cardiovascular image exam were selected from 1999 to 2011. Patient evaluation of ED was accomplished through literature standard values and multiplied by the number of tests performed.