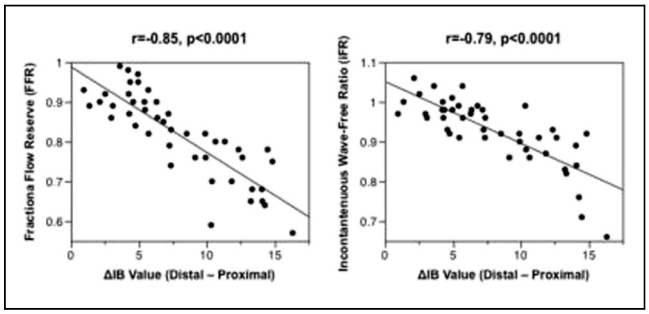

CONCLUSIONS This study supports the feasibility of RF-IVUS to estimate coronary physiology across intermediate stenosis, demonstrating significant association of blood ΔIB with FFR and iFR even in relatively small MLA lesions. Further investigation is warranted to confirm the potential utility of RF-IVUS for hybrid (both anatomic and functional) assessment of coronary artery disease, which may be helpful for time and cost-effective resource utilization.

CATEGORIES IMAGING: Intravascular

KEYWORDS Fractional flow reserve, IB-IVUS, Imaging technology

TCT-164

Causes of Death after Percutaneous Coronary Intervention versus Coronary Artery Bypass Grafting in Complex Coronary Artery Disease: 5-Year follow-up of the SYNTAX trial

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BACKGROUND To determine the specific cause of death and their potential influencing factors in patients with complex coronary artery disease who underwent percutaneous coronary intervention (PCI) or coronary artery bypass grafting (CABG) in the SYNTAX randomized trial and nested registries.

METHODS An independent Clinical Events Committee consisting of expert physicians blinded to the study treatment, sub-classified causes of death in cardiovascular (cardiac and vascular), non-cardiovascular and undetermined according to the trial protocol. Cardiac deaths were classified as sudden cardiac, myocardial infarction (MI)-related and other cardiac deaths. Multivariate models were constructed to identify independent predictors of all-cause and cardiac death after PCI and CABG.

RESULTS In the randomized cohort, during 5-year follow-up, there were 123 deaths after PCI and 97 deaths after CABG. After PCI, the majority of deaths were cardiovascular (67.5%) and as a result of MI (29.3%), whereas after CABG 49.4% of deaths were cardiovascular with the largest cause being heart failure, arrhythmia or other causes (24.6%). The cumulative incidence rates of all-cause death were not significantly different between CABG and PCI (11.4 vs. 13.9%, respectively; P=0.10), while there were significant differences in terms of cardiovascular (5.8 vs. 9.6%, respectively; P=0.008) and cardiac (5.3 vs. 9.0%, respectively; P=0.003) death, caused primarily by a reduction in MI-related death with CABG as compared with PCI (0.4 vs. 4.1%, respectively; P<0.0001). The difference in MI-related death was seen largely in patients with diabetes, three-vessel disease, or high SYNTAX scores. Independent predictors of all-cause and cardiac death consisted of baseline, procedural and post-procedural variables, with important predictors being discharge medication use and adverse events during follow-up. Results for the nested registries were similar, although the death rate in the PCI registry was higher and more often the result of non-cardiovascular causes.

CONCLUSIONS The rate of all-cause death at 5 years was not significantly different between PCI and CABG. However, CABG in comparison with PCI was associated with a significantly reduced rate of MI-related death, which was the leading cause of death after PCI, particularly in patients with complex disease and in the presence of diabetes.

CATEGORIES CORONARY: Cardiac Surgery

KEYWORDS Coronary artery bypass grafting, DES, Survival

TCT-165

Trends in Patient Characteristics and Outcomes of Percutaneous Coronary Intervention in the Elderly: Analysis of Medicare Beneficiaries from 2000-2012

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BACKGROUND In the past two decades, significant advances have occurred in the management of coronary artery disease. It is unclear whether increased options for treatment, improved technology and expanded available evidence have translated into nationwide changes in comorbidity profiles and outcomes of patients presenting for PCI.

METHODS 3,387,976 Medicare beneficiaries >= 65 yrs of age who underwent PCI from 1/2000 -11/2012 were included. Comorbidities were determined using ICD-9-CM diagnostic codes from any hospitalization within 1 yr prior to index admission. Trends in patient characteristics and hospital outcomes were assessed with Cochran-Armitage trend tests. Long-term survival was examined with Kaplan-Meier survival curves.

RESULTS From 2000 through 2006, the number of patients undergoing PCI increased from 246,528 to 318, 622, and then decreased to 161,667 in 2012 (11 months of data). There was a significant increase over time in the incidence of all comorbidities examined, including HTN, diabetes, PVD, history of stroke or TIA, heart failure, COPD, renal failure and atrial fibrillation. The number of patients presenting with acute MI increased from 26.9% in 2000 to 45.8% in 2012. Overall, 43.1% of the PCI admissions were elective, 38.3% were urgent and 18.6% were emergent. Angioplasty was performed in 9.6%, and PCI with stent placement in 90.4%. The use of bare metal stents declined from 85.7% in 2000 to 23.5% in 2012, with a corresponding increase in the use of drug-eluting stents (DES) (70.3% in 2012). The use of DES peaked in 2005 at 84.1%. Hospital mortality increased from 2.1% in 2000 to 3.1% in 2012, despite reaching a nadir of 1.8% from 2004-2006. Hospital mortality was 1% for elective, 2.1% for urgent and 4.5% for emergent admissions. The biggest increase in mortality over time was seen for elective admissions from 0.8% in 2000 to 3.4% in 2012. Compared to year 2000, adjusted hospital mortality odds ratio was 1.42 in 2012 (95% CI 1.36 - 1.48), signifying 42% increase likelihood of death with PCI during the study period after accounting for differences in baseline characteristics. Overall survival was 93% at 6 months, 90% at 1 year, 80% at 3 years and 69% at 5 years. From 2000 through 2006, 5- year survival remained at 70%, and subsequently modestly declined to 66% for 2009.