Late loss in BP-EES was significantly greater than EES and PtCr-EES (0.55±0.64 vs. 0.25±0.70 vs. 0.20±0.61mm, p=0.03).

CONCLUSION BP-EES might tend to cause in-stent restenosis due to greater late loss in patients with the end-stage of CKD including HD compared with EES and PtCr-EES.

CATEGORIES CORONARY: PCI Outcomes

TCT-483

Comparison of The Pharmacodynamics And Pharmacokinetics of Ticagrelor Versus Clopidogrel In Patients With Chronic Kidney Disease And Non–ST-Elevation Acute Coronary Syndromes (OPT-CKD trial)

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BACKGROUND Pivotal clinical trials found ticagrelor reduced ischemic complications to a greater extent than clopidogrel and what is more, the benefit gradually increased with the reduction on creatinine clearance. However, the underlying mechanisms remains poorly explored. The current study aimed to compare the pharmacodynamic(PD)/ pharmacokinetic(PK) characters of ticagrelor and clopidogrel in patients with Non-ST-Elevation Acute Coronary Syndromes (NSTE-ACS) and moderate to severe chronic kidney disease(CKD).

METHODS This is a single-center, prospective, randomized clinical trial designed to involve 60 P2Y12 inhibitor naïve patients with CKD (eGFR<60ml/min/1.73m2) and NSTE-ACS in General hospital of Shenyang Military Region between October 2015 and December 2016. Eligible patients were randomly assigned in a 1:1 ratio to receive ticagrelor(180 mg loading dose, then 90 mg twice daily followed) or clopidogrel (600 mg loading dose, then 75 mg qd followed) on top of chronic aspirin treatment. The primary endpoint was the P2Y12 reactive unit (PRU) by VerifyNow at 30 days after randomization. Plasma concentration of ticagrelor and clopidogrel and its active metabolite was measured in first 10 patients in each group at pre-setted time frame of baseline, and 1h,2h,4h,8h,12h and 24h after drug administration.

RESULTS Baseline characteristics were well matched between the two groups. Our results indicated a markedly lower PRU and higher inhibition of platelet aggregation(IPA) in patients treated with ticagrelor vs. clopidogrel at 30 days (P<0.001), as well as any other time point of 2, 8, 24h after loading does(P<0.001). HPR was found in 58.6% patients with clopidogrel while none with ticagrelor at 30 days(P<0.001). No significant correlation was found between eGFR or CYP2C19 and 30-day IPA in either ticagrelor or clopidogrel group(P>0.05). Ticagrelor and its active metabolite AR-C124910XX showed similar Tmax(h) of 8h, with Cmax(ng/ml) of 355(242.50-522.00) and 63.20(50.80-85.15), respectively. Clopidogrel and CAMD both approached maximal plasma concentration at 2 hours,with close Cmax(ng/ml) of 8.67(6.64-27.75) vs 8.53(6.94-15.93).

CONCLUSION Ticagrelor showed much more potent platelet inhibition in comparison of clopidogrel in patients with moderate to severe CKD and NSTE-ACS. Among such population, activation of ticagrelor was uninfluenced while biotransformation of clopidogrel might be inhibited.

CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

TCT-484

Coronary Calcifications in Patients with Mild Renal Dysfunction: Insights from the Emory Optical Coherence Tomography Registry

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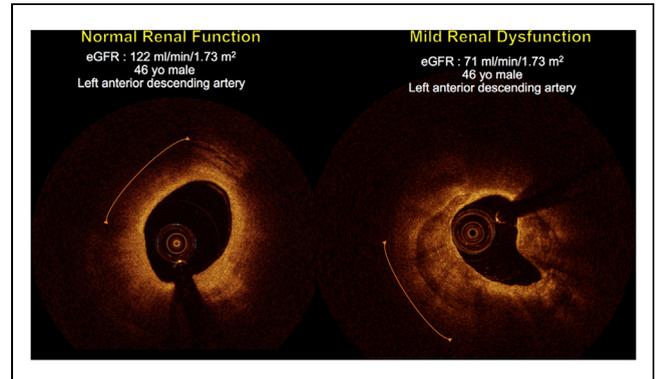[1]Emory University School of Medicine, Atlanta, Georgia, United States; [2]Emory University, Atlanta, Georgia, United States

BACKGROUND Although advanced and end-stage renal disease have been associated with increased arterial calcifications and adverse cardiovascular events, there is a paucity of data regarding the association of early stages of renal insufficiency and coronary calcifications. We hypothesized that patients with mild renal insufficiency have greater coronary calcification than those with normal renal function.

METHODS One hundred and fifty patients underwent optical coherence tomography (OCT) during coronary angiography for evaluation of acute coronary syndrome or stable angina. Estimated glomerular filtration rate (eGFR) was calculated based on the CKD-EPI Creatinine (2009) equation, including age, race, sex, and serum creatinine levels.

Renal function was stratified according to the eGFR as normal (≥90 ml/min/1.73m2) [eGFR-Norm] or mildly reduced (60-89 ml/min/1.73m2) [eGFR-Reduced]. Calcification on OCT was defined as a plaque with sharp borders and no attenuation comprising at least a 90-degree arc of the circumference. Percentage (%) of frames with calcification were calculated for each vessel.

RESULTS Compared to patients with eGFR-Norm, those with eGFR-Reduced had significantly higher % calcification: 26.6 ± 25.0% vs. 9.03 ± 15.4%, (p<0.0001). In order to evaluate the impact of renal function on calcification independent of age, calcification was evaluated in patients ≤ 55 years old (n=59). In this subgroup, compared to patients with eGFR-Norm, those with eGFR-Reduced had significantly higher % calcification: 16.2 ± 16% vs 6.01 ± 14.7%, (p< 0.02) despite having similar age: 47.5 ± 5.6 vs 44.9 ± 7.3 years, (p= 0.19). (Figure)

Normal Renal Function — eGFR = 122 ml/min/1.73 m² — 46 yo male — Left anterior descending artery. Mild Renal Dysfunction — eGFR = 71 ml/min/1.73 m² — 46 yo male — Left anterior descending artery.

CONCLUSION Even patients with mild renal insufficiency and coronary artery disease have greater coronary calcification than those with normal renal function. This observation may have implications for appropriate lesion preparation prior to percutaneous coronary interventions.

CATEGORIES IMAGING: Imaging: Intravascular

TCT-485

Impact of Renal Function on Outcomes After Stent Implantation for Left Main Coronary Artery: A Report From the Multicenter Assessing Optical Percutaneous Coronary Intervention for Left Main Coronary Artery Stenting Registry

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BACKGROUND The clinical outcomes after PCI for the LMCA are reportedly acceptable in selected patients, whereas those in patients with chronic kidney disease remain unclear. We aimed to assess the impact of renal function on the clinical outcomes after stent implantation for the LMCA.

METHODS The study design of the AOI LMCA stenting registry has been previously described. Excluding 13 patients for data insufficiency, we assessed 1607 patients undergoing stent implantation for unprotected LMCA lesions between 2004 and 2012 and divided them into 3 groups according to renal function, between which the clinical outcomes were compared: receiving maintenance hemodialysis, 96; eGFR <60 mL/min without hemodialysis, 698; and eGFR ≥60 mL/min, 813. In-hospital death was distinguished from the long-term clinical outcomes. The cumulative incidences of clinical events were estimated by Kaplan-Meier curves and were compared using the log-rank test. Cox proportional hazard models were constructed to adjust for potential confounders.

RESULTS The median follow-up duration was 4.6 (95% CI 4.5-4.8) years. Between patients with hemodialysis, eGFR <60 mL/min, and eGFR ≥60 mL/min, there were no significant differences in the 5-year cumulative incidence of definite or probable stent thrombosis (0% vs. 0.5% vs. 1.4%, p=0.12) and myocardial infarction (1.5% vs. 3.1% vs. 3.6%, p=0.71), whereas hemodialysis patients had the significantly