TCT-643

Influence of cardiac motion on acquiring accurate measurements using Optical Frequency Domain Imaging (OFDI): Ex vivo study while heart beat and coronary flow being simulated

Kohki Koyama1, Shingo Kanwata1, Takehito Mitarai2, Yuuki Ishibashi3, Khetsu Yonezawa4, Ken Kogoji5, Tomoo Harada5, Yoshitomo J. Akaishi5
1St. Marianna University School of Medicine, Kawasaki, Japan

Background: Length measurements using intravascular ultrasound (IVUS) is limited to determine plaque volume and the volume of each plaque component (lipid, fibrous, bony). Characterization analysis was evaluated. Three-dimensional analyses were performed divided 3 groups with never, past and current smokers. Gray scale and IVUS tissue characterization analysis was evaluated. Three-dimensional analyses were performed to determine plaque volume and the volume of each plaque component (lipid, fibrous, and calcification).

Results: We assessed plaque changes between patients with CKD [n=81], estimated creatinine clearance (CrCl) <60 mL/min) and those without CKD (n=117) who underwent baseline and follow-up IVUS for non-intervened coronary segments in statin-treated patients with angina pectoris and hypertension using virtual histology-intravascular ultrasound (VH-IVUS).

Methods: We assessed plaque changes between patients with CKD [n=81], estimated creatinine clearance (CrCl) <60 mL/min) and those without CKD (n=117) who underwent baseline and follow-up IVUS for non-intervened coronary segments in statin-treated patients with angina pectoris and hypertension using virtual histology-intravascular ultrasound (VH-IVUS).

Background: Cigarette smoking is known to be associated with atherosclerosis and to be an important risk of cardiovascular disease. The aim of this study was to evaluate the impact of cigarette smoking in coronary plaque composition by integrated backscatter (IB) intravascular ultrasound (IVUS).

Methods: A total of 143 consecutive patients undergoing PCI were enrolled. A scatter (IB) intravascular ultrasound (IVUS). Results: The mean differences in stent length between OFDI and microscopy were 0.044 mm for 10 mm/sec pullback speed, 0.182 mm for 20 mm/sec, and 0.069 mm for 40 mm/sec. Intra class correlation coefficient (ICC) were 0.985 (95% CI 0.975-0.995) for 10 mm/sec, 0.971 (0.967-0.974) for 20 mm/sec, and 0.995 (0.991-0.998) for 40 mm/sec. The mean differences in two repetitive pullbacks were 0.026 mm for 10 mm/sec, 0.071 mm for 20 mm/sec, and 0.166 mm for 40 mm/sec. ICC were 0.995 (95% CI 0.992-0.999) for 10 mm/sec, 0.996 (0.994-0.999) for 20 mm/sec, 0.996 (0.993-0.999) for 40 mm/sec. ICC were 0.985 (95% CI 0.975-0.995)

Conclusions: Current smoking status is independently associated with lipid-rich plaques, contributing to the increasing risk of plaque vulnerability.

TCT-645

Impact of Renal Dysfunction on Changes of Plaque Characteristics in Non-intervened Coronary Segments in Statin-Treated Patients with Angina Pectoris and Hypertension

Young Jun Hong1, Youngkeun Ahn2, Jeong Gwan Cho3, Myung Ho Jeong4, Young Wook Jeong4, Hae Chang Jeong4, Sang Soo Kim4, Han Jun Kim4, Keun Ho Park4, Jong Chan Park5, Si Hyun Bho6, Doo San Sim7
1Heart Research Center, Chonnam National University Hospital, Gwangju, Korea, Republic of, 2Chonnam National University Hospital, Gwangju, Korea, Republic of

Background: It is not well known about the relation between renal function and plaque changes in patients with angina pectoris and hypertension. We assessed the impact of renal dysfunction on changes of plaque characteristics in statin-treated patients with angina pectoris and hypertension using virtual histology-intravascular ultrasound (VH-IVUS).

Methods: We assessed plaque changes between patients with CKD [n=81], estimated creatinine clearance (CrCl) <60 mL/min) and those without CKD (n=117) who underwent baseline and follow-up IVUS for non-intervened coronary segments in statin-treated patients with angina pectoris and hypertension using virtual histology-intravascular ultrasound (VH-IVUS).

Conclusions: In patients with angina pectoris and hypertension who uses statins, renal dysfunction is associated with plaque progression and increase of NC component at follow-up.