P3391

Cholesterol crystals in culprit coronary artery with acute myocardial infarction and their relation to myocardial salvage

T. Nunohiro, S. Kuwasaki, T. Fukushima, S. Furudono, H. Suenaga, S. Takeshita, H. Nakashima

Nagasaki Harbor Medical Center, Department of Cardiovascular medicine, Nagasaki, Japan

The involvement of cholesterol crystals (CCs) in plaque progression and destabilization of atherosclerotic plaques has been recently recognized. However, little is known about CCs and myocardial salvage in the Acute myocardial infarction (AMI) patients. This study aimed to evaluate the association between the existence of CCs at the site of culprit coronary artery and myocardial salvage index (MSI).To investigate, we applied the diagnostic resources of Optical Coherence Tomography (OCT).

Methods: This study included 53 AMI patients (90% with STEMI) who underwent primary PCI within 24h of onset. 53 STEMI patients underwent magnetic resonance imaging (CMR) of 5th days and 3 months after PCI. Infarct size was measured on delayed-enhancement imaging, and area at risk was quantified on T2-weighted imaging. MSI was calculated as [area at risk – infarct size] × 100/area at risk. 3 months CMR with contrast-enhanced imaging of late gadolinium enhancement-LGE. Patients were divided 2 groups according to the existence of CCs at the site of culprit coronary artery.

Results: CCs occurs in 26 of 53 (49%). Acute 5th days risk area (13.5±4.1 vs 12.6±4.9, P=0.48) and 3months infarct size (5.3±3.5 vs 7.0±3.2, P=0.066) were not significant between CCs and no CCs group. But salvage index were significantly lower in patients with CCs group (47.7±17.5% vs 60.1±20.2%, P=0.021)

Conclusion: Salvage index in patients that CCs were found by the OCT analysis, remain low after AMI. This study demonstrates the potential correlation between the myocardial salvage and vulnerable morphological features of culprit lesion to the presence of CCs with AMI patients.