DIAGNOSTIC VALUE OF INDEX OF MICROCIRCULATORY RESISTANCE FOR DETECTION OF MICROCIRCULATORY DAMAGE EARLY AFTER ANTERIOR VERSUS NON-ANTERIOR MYOCARDIAL INFARCTION

i2 Poster Contributions
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Background: Recently, the index of microcirculatory resistance (IMR) is used for assessment of microcirculatory function in acute myocardial infarction (AMI) patients at the time of emergency percutaneous coronary intervention (PCI). This study sought to evaluate the diagnostic value of IMR for detection of microcirculatory damage after AMI in certain territories of the coronary circulation.

Methods: In 29 patients after PCI for AMI, IMR was measured with a pressure sensor/thermistor-tipped guidewire. All patients had ceCMR scans within 2 weeks. Microvascular obstruction (MVO), gold standard for assessment of microvascular damage, was defined as a dark core of hypoenhancement within hyperenhanced tissue area. The diagnostic values of IMR for each infarct-related artery were analyzed (left-anterior-descending artery [LAD] versus non-LAD).

Results: The median IMR was 30U (8 to 170). Sixteen patients (55%) had MVO (60% in the LAD and 50% in the non-LAD, p=NS). In LAD infarcts patients, IMR was significantly higher in patients with MVO than in patients without MVO (60±47 versus 15±6U, p=0.04). In non-LAD infarcts patients, conversely, IMR value was similar between patients with and without MVO. In patients with LAD infarcts, IMR was the only independent predictor of the presence of MVO on the ceCMR scan.

Conclusions: The IMR measured acutely provides accurate microvascular function in AMI patient at the time of emergency PCI only in the territory of the LAD.