Abstract: 550

Determinants and prognostic value of cardiac magnetic resonance imaging derived infarct characteristics in non-ST-elevation myocardial infarction

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Background: The prognostic significance of cardiac magnetic resonance (CMR) derived infarct characteristics has been demonstrated in ST-elevation myocardial infarction (STEMI) cohorts but is undefined in non-ST-elevation myocardial infarction (NSTEMI) patients.

Purpose: To investigate determinants and the long-term prognostic impact of CMR imaging derived infarct characteristics in patients with NSTEMI.

Methods: Infarct size (IS), myocardial salvage index (MSI), and microvascular obstruction (MVO) were assessed using CMR imaging in 311 consecutive NSTEMI patients undergoing percutaneous coronary intervention (PCI) in three centers. CMR imaging was performed 3 [interquartile range (IQR) 2-4] days after admission. The clinical endpoint was defined as major adverse cardiac events (MACE) during median follow-up of 4.4 (IQR 3.6-4.9) years.

Results: Median IS was 7.0% (IQR 2.3-13.5) of LV myocardial mass (%LV) and MSI was 65.2 (IQR 36.7-82.9). Age (p=0.003), heart rate (p=0.002) and TIMI flow grade before PCI (p<0.001) were independent predictors of IS. Independent predictors of the MSI were age (p=0.001), heart rate (p=0.01), the number of diseased coronary arteries (p=0.001) and the TIMI flow grade before PCI (p<0.001). MACE occurred in 75 (24.1%) patients. CMR-derived infarct characteristics had no additional prognostic value in multivariable analysis.

Conclusion: In this prospective, multicenter NSTEMI cohort reperfused by PCI, age, heart rate, the number of diseased coronary arteries and TIMI flow grade before PCI were independent predictors of IS and MSI assessed by CMR. However, in contrast to STEMI patients there was no additional long-term prognostic value of CMR-derived infarct characteristics over and above traditional risk markers.