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PROGNOSTIC VALUE OF MICROVASCULAR OBSTRUCTION AND INFARCT SIZE MEASURED BY CARDIAC MAGNETIC RESONANCE IN PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION: A META-ANALYSIS OF INDIVIDUAL PATIENT DATA

Oral Contributions
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Background: Aim of this study is to evaluate the prognostic value of the presence of microvascular obstruction (MVO) and infarct size, measured by cardiovascular magnetic resonance imaging (CMR), in STEMI patients treated with primary percutaneous coronary intervention (pPCI). No multicenter/multivendor observational study has previously been reported.

Methods: A multicenter, multivendor meta-analysis of individual patient data was set up. Data from 9 centers (8 studies) from 7 countries were pooled. The primary outcome was major adverse cardiovascular event (MACE) defined as any of the following events: all cause death, myocardial re-infarction and congestive heart failure.

Results: In this preliminary analysis from 5 studies, 819 STEMI patients (age mean, 60.4 ± 12.9), treated with pPCI underwent a CMR scan 4 days (IQR 2;6) after the event. MVO measured with late gadolinium enhancement (MVO-LGE), was present in 484 patients (59.2%) and absent in 334 patients (40.8%). Median follow-up after CMR was 11 (IQR 6; 23) months. MACE occurred in 123 patients. Age (Exp(B) = 1.017, P = 0.021), diabetes (Exp(B) = 1.671, P = 0.012), prior myocardial infarction (Exp(B) = 2.048, P = 0.012), prior PCI (Exp(B) = 2.243, P = 0.003), TIMI-flow (0, 1 and 2, Exp(B) = 1.869, P = 0.017), MVO-LGE (Exp(B) = 3.654, P = 0.001), infarct size %LV (Exp(B)= 1.029, P = 0.001) and left ventricular ejection fraction (Exp(B) = 0.877, P = 0.007), were univariable predictors for the occurrence of MACE. Multivariable Cox regression revealed an independent relation between MVO-LGE (Exp(B) = 2.695, 95.0% CI for Exp(B), LL: 1.593, UL: 4.559, P = 0.001) and MACE adjusted for previous mentioned variables. IS%LV did not remain a predictor for major adverse cardiovascular events in the multivariable analysis (Exp(B) = 1.010, P = 0.186).

Conclusions: MVO measured with CMR is an independent predictor for MACE in patients with STEMI treated with pPCI.