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Titel des Beitrags: Prognostic value of late gadolinium enhancement in cardiovascular magnetic resonance imaging after acute ST-elevation myocardial infarction in comparison with single-photon emission tomography using Tc99m-Sestamibi.

Abstract: Infarct size is an important predictor of cardiac risk after acute myocardial infarction. The established modality for its assessment is Tc99m-Sestamibi Single-photon emission computed tomography (SPECT). In recent years, data are emerging demonstrating that scar size as assessed by late gadolinium enhancement in cardiovascular magnetic resonance imaging (CMR) as well as the presence of microvascular obstruction (MO) may also provide prognostic information, however, so far no direct comparisons of both modalities have been reported. We retrospectively analysed patients (n = 281) with acute ST-elevation myocardial infarction and primary angioplasty who underwent Tc99m-Sestamibi-SPECT and CMR on a 1.5 T scanner at a median of 4.3 (IQR: 3.7-5.1) and 4.9 (IQR: 4.1-5.9) days after the acute event, respectively. The primary endpoint of the study was a composite of all-cause mortality, recurrent myocardial infarction and congestive heart failure requiring hospitalization. During a median follow-up of 3.0 (IQR: 2.0-4.5) years, 24 events occurred. The best predictor was MO (P< 0.0001), followed by infarct size by CMR (P = 0.0043) and infarct size by SPECT (P = 0.012) (all
P-values corrected for clinical risk). In a multivariate model including clinical and periprocedural parameters, MO remained the only significant predictor in addition to clinical risk. The extent of MO as determined by CMR has an excellent prognostic value in predicting cardiac events following acute myocardial infarction and may be used as an alternative to infarct size assessment by Tc99m-Sestamibi-SPECT.