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Titel des Beitrags: Gender differences in contrast-enhanced magnetic resonance imaging after acute myocardial infarction.

Abstract: Besides different risk profiles for cardiovascular events in men and women, several studies reported gender differences in mortality after acute myocardial infarction (AMI). As infarct size has been shown to correlate with mortality, it is widely accepted as surrogate marker for clinical outcome. Currently, cardiovascular imaging studies covering the issue of gender differences are rare. As magnetic resonance scar characterization parameters are emerging as additional prognostic factors after acute myocardial infarction, we sought to evaluate gender differences in CMR infarct characteristics in patients after acute myocardial infarction. We prospectively analyzed patients (n = 448) with AMI and primary angioplasty, who underwent contrast enhanced cardiac magnetic resonance (CMR) imaging on a 1.5 T scanner in median 5 [Galatius-Jensen et al. in BMJ 313(7050):137-140, (1996), Burns et al. in J Am Coll Cardiol 39(1):30-36, (2002)] days after the acute event. CMR scar size was measured 15 min after gadolinium injection. In addition presence and extent of microvascular obstruction (MVO) was assessed. A matched pair analysis was performed in order to exclude confounding by gender related co-morbidities and gender differences in established clinical risk factors. Matching process according to clinical risk defined by GRACE score
resulted in 93 mixed gender couples. Women were significantly older than men (64.4 ± 11.9 vs. 60.5 ± 12.3, p = 0.03) and presented with a significantly better ejection fraction before angioplasty (48.9 ± 8.4 vs. 46.2 ± 8.9, p = 0.04). Infarct size did not differ significantly between women and men (13.5 ± 10.7 vs. 15.1 ± 11.8, p = 0.32). Size of MVO was significantly smaller in women than in men (0.48 ± 1.3 vs. 1.2 ± 3.0, p = 0.03). Comparing scar characterization between women and men with similar risk profiles revealed no gender differences in scar size. Size of MVO, however, was significantly smaller in women and might reflect better cardioprotective mechanisms in women. Whether these changes have prognostic implications has to be tested on a larger patient population.