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CARDIAC MAGNETIC RESONANCE IMAGING ASSESSING STUNNED MYOCARDIUM IN POST-MYOCARDIAL INFARCTION PATIENTS. META-ANALYSIS OF PROSPECTIVE TRIALS

ACC Moderated Poster Contributions
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Session Title: Imaging: MRI in Evaluation of Anatomy, Perfusion and Vasculature
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Background: Stunned myocardium is defined as a transient post-ischemic dysfunction. Myocardial stunning can lead to heart failure and cardiogenic shock if not properly detected and it changes physician management with regards to prognosis and treatment.

Objectives: To evaluate the sensitivity, specificity, negative and positive predictive values (PPV/NPV) of cardiac magnetic resonance imaging (CMR) assessing stunning myocardium. Two different techniques were evaluated: 1) Low dose dobutamine (LDD), and 2) Contrast delayed-enhancement (DE).

Methods: A systematic review of Medline, Cochrane, and Embase for all the prospective trials assessing myocardial stunning in subjects suffering an acute myocardial infarction (AMI) using CMR was performed using a hierarchical meta-analytical model.

Results: A total of 20 studies of CMR with 940 patients fulfilled the inclusion criteria. First MRI was performed 5±2 days post-AMI. The DE CMR studies used 50% a cut-off to determine recovery. The mean sensitivity and specificity were 82.6% (95% CI 81-84) and 83.3% (95% CI 82-85), whereas the PPV and NPV were 73% and 80.2%. LDD CMR used a 2mm change in LV wall motion as a cut-off. In these studies the mean sensitivity and specificity were 60% (95% CI 55-61), and 88% (95% CI 86-89), whereas the PPV and NPV were 81% and 73% respectively.

Conclusion: DE CMR provides the highest sensitivity and NPV of the two techniques in detecting stunned myocardium after AMI. Conversely, LDD CMR provides the highest specificity and PPV.