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Non Invasive Imaging

MICROVASCULAR OBSTRUCTION AND INTRAMYOCARDIAL HEMORRHAGE DETECTED ON CMR AS PREDICTORS FOR MACE AND LEFT VENTRICLE ADVERSE REMODELLING. A META-ANALYSIS OF PROSPECTIVE STUDIES

Poster Contributions
Hall C
Sunday, March 30, 2014, 9:45 a.m.-10:30 a.m.

Session Title: CMR in Ischemic Heart Disease
Abstract Category: 17. Non Invasive Imaging: MR
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Microvascular obstruction (MVO) is a complication of coronary reperfusion therapy in acute myocardial infarction detected on cardiovascular magnetic resonance (CMR). It has been suggested that MVO may be an independent predictor for major adverse cardiac events (MACEs) and LV reverse remodeling (LVRR) especially if complicated with intra-myocardial hemorrhage (IMH). Objective: To determine the prognostic value of MVO and IMH detected by CMR as a predictor for MACEs and LV reverse remodeling in patients with AMI.

Methods: A systemic review of major databases for clinical trials using CMR to detect MVO and IMH and its association with MACE and LVRR with increase in LVEDVi and LVESVi in patients with AMI. Given the high heterogeneity (i.e. I2 > 25), random effect model was used.

Results: A total of 21 studies with 2745 patients fulfilled the inclusion criteria. The incidence for MVO was 66% (n:1846). The Risk Ratio (RR) for MACEs in the presence of MVO (RR 3.68, 95%CI 2-3), which showed that MVO on CE-CMR increases the chance of developing MACE by 3.32 fold. Head to head comparison of patients with and without MVO on initial CMR within 1 week for AMI showed a higher incidence of LVRR on the follow up CMR at a mean time of 6 months (SD+/-1). Patients with MVO had significantly higher volumes. The mean difference in LVEDVi and LVESVi between the initial and follow up CMR was 8.67 (95% CI 5.83-11.52) and 8.31 (95% CI 5.92-10.71) respectively.

Conclusion: MVO and IMH detected by CE-CMR are strong predictors for MACEs and LVRR.