



## IMAGING AND DIAGNOSTIC TESTING

### ALTERED MYOCARDIAL GLUCOSE UTILIZATION AND THE REVERSE MISMATCH PATTERN ON 18F-FDG PET DURING THE SUB-ACUTE PHASE FOLLOWING REPERFUSION

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

Monday, April 04, 2011, 3:30 p.m.-4:45 p.m.

Session Title: Nuclear Cardiology/PET: Miscellaneous

Abstract Category: 39. Nuclear Cardiology/PET

Session-Poster Board Number: 1131-177

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**Background:** Reperfused myocardium post acute myocardial infarction (AMI) may have altered metabolism with implications for therapy response and function recovery. We explored glucose metabolism and the 'reverse mismatch' (RMM) pattern (decreased 18F-fluorodeoxyglucose (18F-FDG) uptake relative to perfusion) in patients who underwent mechanical reperfusion with percutaneous coronary intervention (PCI) for AMI.

**Methods:** Thirty-two patients with anterior wall AMI treated with acute reperfusion, with left ventricular ejection fraction  $\leq 45\%$ , underwent rest 82Rb and 18F-FDG PET 2-10 days post-AMI. Resting echocardiograms were used to assess wall motion abnormalities.

**Results:** Significant RMM occurred in 15 (47%) patients and was associated with a shorter time to PCI of 2.9h (2.2h, 13.3h) compared to patients without significant RMM: 9.8h (4.2h, 19.8h) ( $p = 0.03$ ). Within the peri-infarct regions, significant RMM occurred more frequently ( $p < 0.001$ ) and these segments were more likely to have wall motion abnormalities (OR = 3.2 (1.1, 9.2)) compared to segments without significant RMM.

**Conclusions:** RMM is a common pattern on perfusion/18F-FDG PET during the sub-acute phase following reperfusion of AMI. RMM is associated with shorter times to PCI, increased wall motion abnormalities, and occurs more frequently in peri-infarct regions. These findings support the hypothesis of a myocardial metabolic shift during the sub-acute phase of recovery.

