Estimate of myocardial salvage in late presentation acute myocardial infarction by comparing functional and perfusion abnormalities in predischarge gated SPECT.

PURPOSE: We hypothesized that, because of persistent stunning, the extent of post-treatment functional abnormalities detected using gated single-photon emission computed tomography (SPECT) could be representative of the initial risk area in acute myocardial infarction (AMI) treated by reperfusion therapy.

MATERIALS AND METHODS: In 48 AMI patients, we acquired two 99mTc-sestamibi gated SPECT studies (at admission with tracer injection before treatment and at discharge 5 to 10 days later). We assessed the myocardial salvage defined by the admission minus predischarge summed rest score, and we compared it with the value obtained by subtracting the extent of perfusion defect from the extent of wall motion or wall thickening abnormalities in predischarge gated SPECT. Myocardial salvage was expressed as salvage index (salvaged myocardium divided by initial risk area). RESULTS: There was a good correlation between summed rest score salvage index and wall motion (Spearman's rho = 0.754, p or = 0.10 with 73% sensitivity, 88% specificity, and 83% accuracy. The wall motion salvage index was highly sensitive (91%) but poorly specific (13%, p< 0.002 vs wall thickening salvage index) and less accurate (69%, p< 0.05 vs wall thickening salvage index). CONCLUSIONS: 99mTc-sestamibi...
gated SPECT allows assessing myocardial salvage using only post-treatment data. The salvage index derived using wall thickening as surrogate of admission perfusion defect correlates well with the salvage index measured by comparing pre- and post-treatment perfusion defects.