1550865

Perfusion Defects Identified on Cardiac CT after Acute Myocardial Infarction are Related to Degree of Ventricular Remodeling

Lessick, J; Agmon, Y; Carasso, S; Abadi, S; Aaronson, D; Engel, A; Rispler, S; Sabag, A; Hammerman, H; Roguin, A
Rambam, Haifa, Israel

Residual perfusion defects (PD) following acute myocardial infarction (AMI) are a sign of myocardial damage and, if still present late after contrast injection, a sign of no-reflow. We aimed to evaluate the relationship between residual PD and ventricular remodeling.
Methods: In 20 patients admitted with AMI who underwent primary angioplasty, CT was performed within 4 days and contrast echocardiography within one week and again at 4 months post-AMI. Perfusion defect area was measured on the first pass "coronary" scan (early PD) and on a late scan 6 minutes after contrast injection (late PD). Left ventricular end-diastolic (EDV) and end-systolic (ESV) volumes and ejection fraction (EF) were calculated from the 4- and 2-chamber views and differences calculated between baseline and 4 months.
Results: 15 patients had early PD and 7 late PD on CT. Late PD area was significantly related to both ESV and EF at 4 months ($p<0.05$) but not at baseline. Early PD area was significantly related to both baseline and 4 month ESV and EF.
By multivariate analysis, including baseline values of EDV, ESV and EF in the model, change in EDV was significantly related to late PD area ($r=0.79$), as was change in ESV ($r=0.61$). Change in EF, on the other hand, was inversely related to early PD area ($r=0.63$).
Conclusions: Early and late PD size on CT correlate better with 4 month than with baseline ventricular volumes and EF by univariate analysis. Multivariate analysis identifies a significant relation between early and/or late PD size and parameters of ventricular remodeling, suggesting that CT PD size may have important prognostic significance in post-AMI patients.