

1677

Global longitudinal strain during dobutamine stress echocardiography can predict left ventricular remodeling after anterior wall acute myocardial infarction

Onishi T.; Iwakura K.; Okamura A.; Koyama Y.; Inoue K.; Iwamoto M.; Tanaka K.; Nagai H.; Hirao Y.; Oka T.; Tanaka N.; Fujii K.
Sakurabashi-Watanabe Hospital, Osaka, Japan

Background: Although dobutamine stress echocardiography (DSE) at the early stage of acute myocardial infarction (AMI) is useful for the prediction of functional and clinical prognosis, the interpretation requires expertise. In this study, we sought to investigate if global longitudinal strain (GLS) during DSE after AMI can predict left ventricular remodeling (LVR).

Methods: Consecutive 30 patients with anterior wall AMI (18 male, age = 58 ± 13 years) were performed DSE 3 days after AMI. GLS was calculated as an averaged value of peak longitudinal strain in the apical 4- and 2-chamber views at baseline echocardiography, low-dose DSE (10 $\mu\text{g}/\text{kg}/\text{min}$) using available software (QLAB, Philips Medical Systems). Left ventricular remodeling (LVR) was defined as an echocardiographically determined increase in both EDVI and ESVI of 20% or more from baseline to the 6 month follow-up echocardiography.

Results: 12 patients (40%) evolved with LVR. The change in GLS during low-dose DSE was significantly different between the remodeling and non-remodeling group ($8 \pm 5\%$ v.s. $27 \pm 20\%$, $p < 0.05$). Interestingly, it predicted LVR with sensitivity of 88%, specificity of 92% at the cut-off value of 12% (Area under the curve = 0.94, $p < 0.0001$).

Conclusion: The change in GLS during low-dose DSE can be used as a predictor for the LVR after AMI. This observation has promise for clinical applications.

Abstract 1677 Figure.

