

# Early prediction of ventricular functional recovery after myocardial infarction by longitudinal strain study

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## Abstract

**Objective** There are some suggestions that global myocardial strain (GLS) early after ST-elevation myocardial infarction (STEMI) is a predictor of improvement in left ventricular ejection fraction (LVEF) after myocardial infarction. The goal of this study was to evaluate predictive value of GLS in patient with STEMI. **Methods** The study population consists of 43 patients with acute STEMI and no history of prior coronary intervention treated with primary percutaneous coronary intervention. LVEF and myocardial strain indices were measured 48hours and two months after STEMI by transthoracic echocardiography and speckle tracking method. More than 5% improvement in LV EF was considered significant improvement. **Results** GLS values were significantly higher in patients with >5% improvement in LVEF 2 months after the STEMI (GLS=15.76% in patients with >5% improvement vs. 11.54% in the other group,  $P < 0.05$ ). ROC analysis suggested GLS values more than 13.5 to be a predictor of significant LVEF improvement 2 month after STEMI. Higher GLS was observed in patients with inferior, posterior and inferoseptal STEMI versus anterior, extensive or antero-septal STEMI and in patients with right coronary occlusion versus occlusion of the left anterior descending or circumflex arteries. **Conclusion** We have observed that early longitudinal LV strain after STEMI is a predictor of during first 2 months after STEMI. This is a useful method to predict early LV recovery after STEMI. GLS values more than 13.5% is a significant predictor of significant LVEF improvement.

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