THE INCIDENCE, CLINICAL PREDICTORS AND PROGNOSTIC VALUE OF REVERSE LEFT VENTRICULAR REMODELING IN PATIENTS WITH STEMI UNDERGOING PRIMARY PCI

Poster Contributions
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Background: Left ventricular remodeling (LVR) is a relatively common (about 30%) and unfavorable event occurring after acute myocardial infarction (MI). The opposite phenomenon, LV volume reduction after coronary reperfusion, known as reverse LVR (r-LVR), was introduced in patients with chronic heart failure undergoing cardiac resynchronization therapy and was reported as a predictor of favorable outcome. However, few data are available on r-LVR after ST-segment elevation MI (STEMI) with use of primary percutaneous coronary intervention (PPCI) and ‘anti-remodeling’ medications. We aimed to determine the incidence, clinical predictors, and prognostic value of r-LVR in large numbers of STEMI patients.

Methods: We included 1,244 STEMI patients from the Korea Working Group on Myocardial Infarction, who had LV end-systolic volume (LVESV) at baseline and follow-up echocardiography after PPCI. The r-LVR was defined as a reduction >10% in LVESV at the follow-up.

Results: r-LVR occurred in 466 (37.5%) patients. By multivariable analysis, door-to-balloon (DTB) time (OR 0.98, 95% CI 0.997-1.000, p=0.028), direct arrival to PPCI-capable hospital (OR 1.36, 95% CI 1.005-1.832, p=0.047), maximum troponin I (OR 1.04, 95% CI 1.002-1.006, p=0.001), initial LV ejection fraction (EF) (OR 0.98, 95% CI 0.965-0.998, p=0.028), initial LVESV (OR 0.97, 95% CI 0.964-0.979, p<0.001), and extent of coronary artery disease (OR 0.82, 95% CI 0.680-0.990, p=0.039) were the independent predictors of r-LVR after adjusting relevant clinical, echocardiographic, and angiographic variables. Cumulative major adverse clinical events (MACE), defined as death, MI, or revascularization, at two years were not different between r-LVR group and no r-LVR group (13.6% vs. 13.4%, p=0.932).

Conclusions: This study showed that r-LVR frequently occurred in patients with STEMI who underwent PPCI and independent predictors of r-LVR were DTB time, direct arrival to PPCI-capable hospital, maximum troponin, initial LVEF, initial LVESV, and extent of coronary artery disease. However, the prognostic role of r-LVR on MACE was not definite at two years.