

POSTER PRESENTATION

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Relationship between location and size of myocardial infarction and their reciprocal influences on post-infarction left ventricular remodeling

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Background

Patients with anterior MI experience worse LV remodeling and dysfunction than non-anterior MI patients. It remains unclear whether this difference is due to larger MI size or whether infarct location plays a role beyond MI size.

Study aim

To assess the relationship between myocardial infarction (MI) location and size and their reciprocal influences on post-infarction left ventricular (LV) remodeling.

Methods

A cohort of 260 reperfused ST-segment elevation MI patients was studied with cardiovascular magnetic resonance (CMR) at 1-week (baseline) and 4-month (follow-up). Area at risk (AAR) and MI size were quantified by T2-weighted and late gadolinium enhancement imaging, respectively. Adverse LV remodeling was defined as increase in LV end-systolic volume $\geq 15\%$ at follow-up.

Results

One-hundred twenty-seven (49%) patients had anterior MI and 133 (51%) patients had non-anterior MI. Although the degree of myocardial salvage was similar between groups ($p=0.74$), anterior MI patients had larger AAR and MI size than non-anterior MI patients yielding worse regional and global LV function at baseline and follow-up. At univariable analysis, anterior MI

was associated with increased risk of adverse LV remodeling ($p=0.017$) and lower LV ejection-fraction at follow-up ($p=0.001$), but not when accounted for baseline MI size. Accordingly, at multivariable analysis baseline MI size but not its location was an independent predictor of adverse LV remodeling (OR=1.061, $p<0.001$) and ejection-fraction at follow-up (Beta-coefficient=-0.255, $p<0.001$).

Conclusions

Anterior MI patients experience more pronounced post-infarction LV remodeling and dysfunction than non-anterior MI patients due to greater magnitude of irreversible ischemic LV damage without any independent contribution of MI location.

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