Abstract: P146

Impact of RV involvement on LV remodeling after acute myocardial infarction assessed by cardiac magnetic resonance Imaging

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On behalf: PREGICA MR

Topic(s):
Cardiac Magnetic Resonance: Dimensions, Volumes and Mass

Citation:
European Heart Journal - Cardiovascular Imaging (2019) 20 (Supplement 2), ii93

Funding Acknowledgements:
PHRC (Programme hospitalier de Recherche Clinique)

Objective:
The purpose of this study was to investigate the impact of the right ventricular involvement assessed by CMR in patients with reperfused acute myocardial infarction (AMI).

Materials and methods:
250 patients with reperfused AMI were included in a prospective multicenter study (clinical trials: NCT 01113268)–PREGICA Trial.
All patients underwent CMR imaging within 4 days following PCI and at 6-month follow-up. Right and left ventricular volumes and function were retrospectively calculated using dedicated software.
Data study consisted on topography and size of myocardial infarction and quantification of microvascular obstruction when present. Right and left ventricular remodeling were defined as end-diastolic volume (EDV) increase >20% between immediate CMR and 6-month follow-up. The presence of RV infarction was compared with the prevalence of LV and RV remodeling.

Results:
All patients were successfully reperfused within first 6 hours after chest pain onset.
Location of AMI was as follow: anterior: 140 (56%), inferior 75 (30%) and lateral 35 (14%).
RV infarction was observed in 85 patients (34%) of the cohort. RV remodeling did not occur alone. It was observed in 86 patients (34.7%) and was associated with LV remodeling.
A strong association between right and left ventricular remodeling was noted (p=0.027) and was associated with LVEF impairment.

Conclusion:
RV involvement in AMI is not rare and is a good predictor of LVEF impairment at 6 months.
LV and RV remodeling are strongly associated. LV infarct size and microvascular obstruction did not influence RV remodeling but had an important role in LV remodeling.
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