derived parameters of LA function (LA SV and LA EF) in predicting LV function.

Methods Twelve-patients underwent CMR at 3T (Achieva CV, Philips Healthcare, Best, The Netherlands) within 3 days following AMI. CMR protocol included: cines and late gadolinium enhancement (LGE) imaging (0.1 mmol/kg gadolinium DTPA). Indexed LAEDV (LAEDVi), end-systolic volume (LAESVi) and ejection fraction were computed by bi-plane method. Voxel FT for the LA in the long axis 4-chamber cines was analysed offline using commercially available software (cvi42 v5.1, Circle Cardiovascular Imaging Inc., Calgary, Canada).

Results Demographics and basic CMR parameters are mentioned in Table 1. Analysis time was longer for manual contouring and computation of LA EF and SV compared to 4-CH strain analysis (4 ± 2 min versus 2 ± 1.5 min, $p = 0.01$). On univariate analysis, LV EF was correlated to peak longitudinal strain (PLS) ($p = 0.01$) and peak radial strain (PRS) ($p = 0.02$). On multivariate regression analysis, PLS of LA was most strongly correlated to LV EF (R=0.68; $p = 0.015$). All other parameters did not achieve statistical significance.

Conclusion Peak left atrial longitudinal strain (PLS) is the only parameter of LA function, which independently correlates to LV ejection fraction. PLS of the LA is easily assessed on 4-chamber cines alone and takes less time to compute than the manually generated parameters of LA function.

Abstract 14 Table 1 Demographics and basic CMR values

	n = 12
Age (years)	55.4 ± 11.2
Male	75%
Hypertension	25%
Hypercholesterolaemia	42%
Smoker	50%
LV EF	48 ± 10
Infarct Volume (ml)	16.7 ± 11.9

Values expressed as n (%) or mean ± SD

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15   **PREDICTORS OF RIGHT VENTRICULAR REMODELLING IN REPERFUSED INFERIOR MYOCARDIAL INFARCTIONS: CMR VOXEL FEATURE TRACKING BASED FEASIBILITY STUDY**

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Background RV function after STEMI has important prognostic implications. However, changes in RV function over time after inferior-STEMI and the incidence of RV remodelling remain unclear. We aimed to investigate which parameters of RV function after inferior-STEMI influence RV remodelling at 3 months.

Methods Twenty-one patients underwent CMR at 3T (Achieva CV, Philips Healthcare, Best, The Netherlands) within 3-days and 90-days following reperfused inferior/posterior STEMI. The CMR protocol included: cines and LGE imaging (0.1 mmol/kg gadolinium DTPA). Infarct location was determined from LGE images. Indexed RV end-diastolic volume (RVEDVi), end-systolic volume (RVESVi) and ejection fraction were derived from the short-axis stack cines for day-3 and day-90 scans. Offline strain analysis was performed for day-3 scans by voxel feature tracking (FT) for the RV and RA in the 4-chamber cines using commercially available software (cvi42 v5.1, Circle Cardiovascular Imaging Inc., Calgary, Canada).

Results Mean age of our population was 57 ± 12 years-old. 86% patients were male. RV EF improved significantly from day-3 scan to day-90 scans ($40 \pm 12.6\%$ vs. $49 \pm 10.9\%$, $p < 0.001$). Day-3 RV EF demonstrated correlation to RV PLS ($p = 0.03$), RV PRS ($p = 0.03$) and RA TTP LSR (0.018). On multivariate stepwise analysis, RV PLS showed the strongest correlation (R=0.44; $p = 0.04$). Day-90 RV EF was most strongly correlated to TTP of LSR of RA (R=0.48, $p = 0.048$). Relative change in RV EF was also correlated to RV PLS ($p = 0.03$).

Conclusion Voxel FT derived RV functional parameters, mainly PLS, correlates well with Day 3 RV EF and with relative change of RV EF at day-90. Interestingly, day-90 RV EF showed the strongest correlation to time to peak longitudinal strain rate (TTP LSR) of the RA. This may be because TTP SR parameters reflect mechanical dyssynchrony after the acute ischaemic event. This concept needs further clarification in larger studies.

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16   **RELATIONSHIP OF MITRAL ANNULAR PLANE SYSTOLIC EXCURSION AND INTRA-MYOCARDIAL HAEMORRHAGE IN REPERFUSED ST-ELEVATION MYOCARDIAL INFARCTION**

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Background Mitral annular plane systolic excursion (MAPSE) is known to have prognostic importance in patients with acute myocardial infarction (MI). In post-MI patients with MAPSE <8 mm, the combined mortality and hospitalisation incidence is 43.8%. Similarly, intra-myocardial haemorrhage (IMH) in the infarct-core is an independent marker of prognosis. We hypothesised that the MAPSE on 4-chamber cine-CMR is correlated to left ventricular ejection fraction (EF) and to the presence of IMH.

Methods Fourty-four patients received CMR examination at 3T (Achieva CV, Philips Healthcare, Best, The Netherlands) within 3 days following acute MI. Cine, T2-weighted, T2*-imaging and late gadolinium enhancement (LGE) imaging were performed. Infarct and microvascular obstruction (MO) extent were measured from LGE images. The presence and extent of IMH was investigated by combined analysis of T2w and T2* sequences. MAPSE was computed (medial, lateral and average) using the 4-chamber cine (Figure 1).

Results Mean age of our studied population was 58.27 ± 11.41. CMR parameters were as follows: LVEF $48.2 \pm 11.4\%$; infarct volume of 15.5 ± 12.2 ml and averaged MAPSE of 10.27 ± 2.1 mm. Controlling for risk factors, IMH was strongly negatively correlated to average MAPSE (r=-0.65; $p < 0.001$). Averaged MAPSE was also moderately correlated to LVEF (r = 0.47; $p = 0.001$).

Conclusion Averaged MAPSE, which is a simple CMR derived parameter of longitudinal function, has the potential to predict the presence of IMH in the setting of re-perfused acute MI. This parameter could be easily measured at bedside by transthoracic echocardiography to predict presence of IMH.