

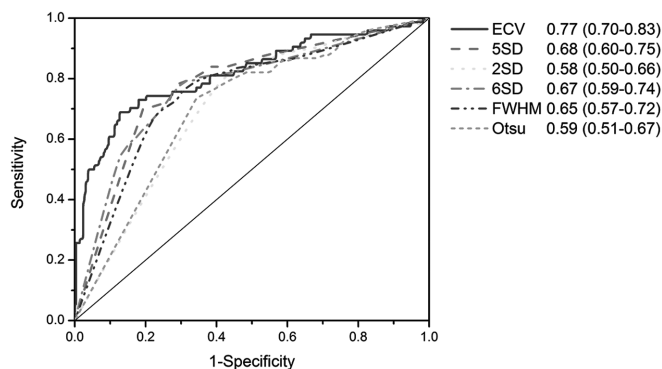
Reduced convalescent wall motion score correlated with acute ECV ( $p < 0.01$ ), and acute LGE for 5 SD ( $p < 0.01$ ), 6 SD ( $p < 0.01$ ) and FWHM ( $p = 0.01$ ), but not 2 SD ( $p = 0.2$ ) or Otsu ( $p = 0.6$ ). Acute infarct ECV demonstrated a significantly higher c-statistic for prediction of improved segmental convalescent wall motion score than all threshold measures of acute transmural LGE extent ( $p \leq 0.02$  for all, Figure 1).

Acute infarct ECV outperforms threshold-based LGE transmural extent to predict segmental LV functional recovery in reper-fused AMI.

**Abstract 20 Table 1** Infarct characteristics

Characteristic	Acute visit	Convalescent visit	P value
Ejection fraction, %	48 ± 9	58 ± 7	<0.01
LV EDV <sup>1</sup> , ml/m <sup>2</sup>	81 ± 16	85 ± 21	ns
LV ESV <sup>1</sup> , ml/m <sup>2</sup>	41 ± 12	36 ± 13	<0.01
LGE transmural extent, %	79 ± 12	61 ± 16	<0.01
LGE infarct volume, ml	16 ± 11	10 ± 8	<0.01
LGE MO volume, ml	2 ± 2		
Area at risk, ml	41 ± 17		
Myocardial salvage index	0.55 ± 0.25		
Infarct native T1	1333 ± 110	1244 ± 124	<0.01
Remote native T1	1189 ± 71	1146 ± 72	ns
Infarct ECV	0.56 ± 0.14	0.57 ± 0.19	ns
Remote ECV	0.30 ± 0.06	0.29 ± 0.06	ns

Data as mean ± SD. <sup>1</sup>LV EDV<sup>1</sup> Left ventricular end diastolic volume, indexed to body surface area, <sup>1</sup>LV ESV<sup>1</sup> Left ventricular end systolic volume, indexed to body surface area. LGE measurements made with visual analysis



**Abstract 20 Figure 1** Receiver operator characteristic (ROC) curve comparing infarct ECV and LGE thresholds in dysfunctional segments ( $n = 163$ ) with improvement in wall motion score at 90 days. Remote segments not shown. C-statistic and 95% confidence intervals are shown in the legend for each method. ECV had a significantly higher c-statistic than all threshold-based measures ( $p \leq 0.02$  for all).

## REFERENCES

- Schulz-Menger J, et al. *J Card Magn Reson* 2013;**15**:35
- Otsu N. *IEEE Trans Sys Man Cyber*. 1979;**9**:62–6

## 21 LEFT ATRIAL REMODELLING FOLLOWING TREATMENT OF SYMPTOMATIC SEVERE AORTIC STENOSIS

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**Background** Left atrial (LA) size is an adverse prognostic marker. Aortic stenosis results in increased filling pressures with progressive left atrial enlargement and dysfunction. Intervention for aortic stenosis results in LV reverse remodelling, however the effect of TAVI or SAVR upon LA function remains poorly understood and the two treatments have not been directly compared.

**Aim** We assessed LA size and function in patients with severe symptomatic aortic stenosis before and 6 months TAVI and SAVR.

**Methods** All patients underwent an identical 1.5T CMR protocol and were in sinus rhythm at time of imaging. LA volumes were derived using the biplane area-length method (Figure 1). The total LA emptying fraction was derived as: (LAVmax–LAVmin)\*100/LAVmax.

**Results** 23 SAVR patients (age 72.7 ± 7.5 years, 83% male, EuroSCORE II 1.40 ± 1.11%) and 23 TAVI patients (age 80.7 ± 6.9 years, 57% male, EuroSCORE II 4.99 ± 2.97%). The left atria of the TAVI group were significantly more dilated at baseline than those of the SAVR group ( $p = 0.039$ ) however both groups were comparable at 6 months ( $p = 0.227$ ). Similarly, the LA emptying fraction of the TAVI group was significantly lower than the SAVR group at baseline ( $p = 0.003$ ) with comparable function seen at 6 months ( $p = 0.08$ ) (Table 1).

**Abstract 21 Table 1** LA volumes and emptying fraction before and after TAVI and SAVR

TAVI	Baseline	6 months	p Value
Maximum LA volume (mls/m <sup>2</sup> )	63.3 ± 17.0	52.8 ± 14.0	0.001
Total LA emptying fraction (%)	36.9 ± 12.6	43.4 ± 10.4	0.011
SAVR	Baseline	6 months	p Value
Maximum LA volume (mls/m <sup>2</sup> )	53.2 ± 15.1	48.2 ± 11.7	0.09
Total LA emptying fraction (%)	48.5 ± 12.8	48.7 ± 9.1	0.945

**Conclusions** TAVI, but not SAVR, was associated with a significant reduction in LA volume and concomitant improvement in emptying fraction at 6 months. These preliminary findings may reflect worse LA function at baseline in the TAVI group or improved valvular haemodynamics with TAVI compared to SAVR.

## 22 SURGICAL AORTIC VALVE REPLACEMENT (SAVR) UPON RIGHT VENTRICULAR FUNCTION: A CARDIAC MRI STUDY

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**Background** Right ventricular function is of prognostic importance in a variety of clinical settings but its complex anatomic geometry can pose a challenge to 2-dimensional imaging modalities. Right ventricular dysfunction is thought to occur following cardiac surgery and independently predicts adverse outcomes. However a clear mechanism for this dysfunction remains undefined.

**Aim** To accurately assess the effect of SAVR upon right ventricular function in patients treated for severe symptomatic aortic stenosis.

**Methods** All patients underwent an identical 1.5T CMR protocol before and 6 months after surgery (Intera, Phillips Healthcare, Best, The Netherlands or Avanto, Siemens Medical Systems, Erlangen, Germany).