



Abstract 41 Figure 1 A Kaplan-Meier Estimator Plot illustrating survival according to the LV Stroke Volume Tertiles. Patients in the Upper Tertile had significantly better outcome compared to patients in the Lower Tertile [HR=0.37, 95% CI=0.1431–0.9652, $p = 0.03$]

improved myocardial function post procedure. Feature-tracking cardiovascular magnetic resonance (FT-CMR) is a novel method for quantification of myocardial strain and strain rate that can identify subtle changes in left ventricular (LV) mechanics prior to overt changes in LV ejection fraction (EF). Our aim was to compare the acute impact of TAVI on LV function between males and females defined by strain measurements.

Methods 59 patients, 34 males and 25 females matched for age (78.4 ± 7.19 years vs 78.8 ± 9.7 years $p = 0.876$), EuroSCORE II ($5.19 \pm 4.33\%$ vs $4.26 \pm 2.99\%$ $p = 0.788$) and presence of baseline myocardial fibrosis ($p = 0.829$) with severe, symptomatic AS were prospectively enrolled prior to TAVI. All patients underwent an identical 1.5T CMR protocol (Intera or Ingenia, Phillips Healthcare, Best, The Netherlands) at baseline and at a median of 4 days following TAVI. Endocardial and epicardial borders were traced manually on the end-diastolic slice, then strain and strain rate measurements were obtained using commercially available post-processing software (CVI42, Circle Cardiovascular Imaging, Calgary, Alberta, Canada).

Results TAVI was associated with a significant and comparable reduction in peak aortic pressure gradient and LV mass index in both men and women (Table 1). There was no significant difference in extent of pressure drop ($p = 0.374$) or extent of regression of LV mass index ($p = 0.095$) between men and women. There was no significant change in left ventricular end diastolic volume indexed (LVEDVI) or LVEF observed acutely following TAVI, in men or women (Table 1). Longitudinal strain (E_{ll}), circumferential strain (E_{cc}) and circumferential strain rate (SR_{cc}) did not change significantly in men or women (Table 2). However, TAVI was associated with a significant increase in longitudinal strain rate (SR_{ll}) in males ($p = 0.012$) that was not observed in females ($p = 0.184$) (Table 2).

Conclusion TAVI was associated with structural reverse remodelling that was comparable between males and females. Functional recovery in LV mechanics following TAVI may occur earlier in males than in females, although this may reflect the higher LVMI that men have at baseline prior to TAVI.

Interventional Cardiology

43

EUROSCORE II AND STS RISK MODEL SCORES IN AORTIC STENOSIS: CAN WE RELY ON THEM?

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Introduction The European System for Cardiac Operative Risk Evaluation II (EuroSCORE) and Society of Thoracic Surgeons (STS) risk models provide a method of predicating mortality of patients undergoing cardiac surgery. However, their validity in transcatheter aortic valve implantation (TAVI) remains controversial with some studies supporting its use as a good predictor of mortality whilst others find no association. We sought to investigate the validity of both EuroSCORE II and STS score as predictors of mortality in a real-life cohort of patients undergoing a TAVI.

Methods Between 2010–2014, 115 (79 ± 8 years old; 56 male) consecutive patients with severe AS scheduled for TAVI had EuroSCORE and STS score calculated prior to

Abstract 42 Table 1 Patient characteristics

	Pre-TAVI	Post-TAVI	p-value
PPG male (mmHg)	89.5 \pm 22.6	17.3 \pm 8.6	<0.001
PPG female (mmHg)	88.1 \pm 21.8	15.8 \pm 7.6	<0.001
LVMI male (g/m^2)	77.2 \pm 16.6	68.8 \pm 15.5	<0.001
LVMI female (g/m^2)	74.5 \pm 15.6	67.4 \pm 14.3	<0.001
LVEF male (%)	53.2 \pm 13.2	53.6 \pm 12.2	0.611
LVEF female (%)	55.0 \pm 13.8	55.9 \pm 12.2	0.528
LVEDVI male (ml/m^2)	101.0 \pm 26.0	99.9 \pm 23.2	0.650
LVEDVI female (ml/m^2)	96.1 \pm 24.1	93.3 \pm 20.1	0.204

PPG - peak pressure gradient
LVMI - left ventricular mass indexed
LVEDVI - left ventricular end diastolic volume indexed
LVEF - left ventricular ejection fraction

Abstract 42 Table 2 Strain characteristics

	Pre-TAVI	Post-TAVI	p-Value
E _{ll} male (%)	-14.1 ± 4.1	-15.1 ± 4.5	0.202
E _{ll} female (%)	-14.8 ± 4.1	-14.9 ± 5.57	0.873
SR _{ll} male (%/s)	-72.5 ± 22.0	-86.7 ± 24.9	0.012
SR _{ll} female (%/s)	-84.5 ± 28.3	-95.9 ± 38.8	0.184
E _{cc} male (%)	-16.6 ± 12.7	-14.1 ± 5.1	0.273
E _{cc} female (%)	-16.2 ± 4.9	-15.8 ± 5.1	0.524
SR _{cc} male (%/s)	-74.9 ± 35.1	-82.6 ± 37.1	0.281
SR _{cc} female (%/s)	-89.3 ± 44.6	-98.2 ± 43.5	0.484

E_{ll} - longitudinal strain
 SR_{ll} - longitudinal strain rate
 E_{cc} - circumferential strain
 SR_{cc} - circumferential strain rate

intervention. The patients were followed up for a median 187 days (IQR 93,1520).

Results During follow up, 27 patients died. Neither EuroSCORE nor STS were associated with prognosis in this cohort. EuroSCORE was not significantly associated with mortality, hazard ratio 1.33 per log unit ($p = 0.28$, 95% CI 0.90–2.20). This was similar to STS score, hazard ratio 1.08 per log unit ($p = 0.78$ 95% CI 0.63 – 1.87). However, both confidence intervals are relatively wide indicating that more patients are required to substantiate this finding.

Conclusions In this small cohort of patients, it would appear that neither EuroSCORE II nor STS are associated with overall survival. This cohort included many patients with poor mobility, previous CABG with LIMA graft and significant comorbidities not included in EuroSCORE/STS calculation. The scores might therefore have underestimated the true risk. More studies and more patients are required to further assess their validity. Although such scores have been accurately validated for open-heart surgery, we recommend that they should be interpreted with caution when attempting to predict risk in patients undergoing a TAVI.

Valve disease/pericardial disease/ cardiomyopathy

44 LOCAL VERSUS GENERAL ANAESTHESIA IN TRANSCATHETER AORTIC VALVE REPLACEMENT: A TERTIARY CENTRE EXPERIENCE

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Introduction Transcatheter aortic valve replacement (TAVR) is an option for patients with severe aortic stenosis who are declined conventional surgery due to comorbidities. TAVR is conventionally performed under general anaesthesia (GA) allowing intraoperative TOE imaging. We present our experience in patients having the procedure under local anaesthesia (LA).

Aims To assess safety and length of hospital stay in patients who have a TAVI under GA compared to LA.

Methods We retrospectively assessed all the transfemoral TAVR procedures conducted at our centre from 01/03/2011 when we started performing the procedure under LA. Of 221

patients, 145 had the procedure under GA and 71 under LA. In the GA group, the devices used were Sapien XT 95%, Sapien 3 (S3) 2%, Direct Flow Medical (DFM) 5%. In the LA group the devices used where S3 64% XT 8% and DFM 28%.

Results Both groups were similar with respect to age (80.2 vs 80.9), comorbidities, Euro Score (18.5 vs 18.8) and the severity of the aortic stenosis (AVA 0.66 vs 0.67cm², mean/peak gradient 45.5 vs 44.2, 77.1 vs 74.5mmHg). Tranoesophageal echocardiography for aortic annular measurements was used in 79.7% of GA patients whereas CT was used in 100% of LA patients. The procedure time was significantly shorter in the LA group measured from time in room to skin closure (108 mins v 143 mins; $p < 0.001$). Skin open to skin closure time were the same in both groups (78 mins v 79.4 mins; $p = 0.57$). There was no difference in 30 day: aortic regurgitation > mild (2.06% in GA and 2.82% in LA; $p = 0.744$), need for permanent pacing (2.32% in GA and 1.4% in LA; $P = 0.617$), and cerebrovascular accidents (1.4% and 1.4%, $p = 0.986$). The 30 day survival was significantly different (96.5% in GA and 100% in LA; $P = 0.023$) as was the mean number of days in hospital (7.1 in GA and 4.6 in LA; $P < 0.001$). No emergency conversions to GA were performed in the LA group, although there were two planned intubations, one to convert to the transaortic approach and one to perform a femoral artery repair.

Conclusions Performing a TAVR under LA is at least as safe as GA. In addition there is a reduced procedural time and length of hospital stay. LA is a safe and cost effective alternative to GA.

45 TRANSCATHETER AORTIC VALVE REPLACEMENT : A COMPARISON OF THE DIRECT FLOW MEDICAL AND SAPIEN 3 AORTIC VALVES A – SINGLE CENTRE EXPERIENCE

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Introduction Transcatheter aortic valve replacement (TAVR) is an option for patients with severe aortic stenosis who are declined conventional surgery. The Direct Flow Medical (DFM) valve is a non-metallic, double ring valve which is repositionable and retrievable and is relatively new to the UK market.

Aims The Freeman Hospital is the highest DFM volume centre in the UK. We wanted to compare the safety of this valve with the more established Sapien 3 (S3) TAVR valve.

Methods We retrospectively assessed all the S3 and DFM TAVR procedures performed under general and local anaesthetic at our centre since 04/11/2014 when we first started using DFM. Of 71 patients, 44 had the S3 valve inserted and 27 had the DFM valve inserted. The delivery approach was trans-femoral in all patients. In the DFM group 74% of the valves were inserted under local anaesthetic (LA) compared to 26% under general anaesthetic (GA) whereas in the S3 group 88% valves were inserted under LA and 12% under GA.

Results Both groups were similar with respect to age (82 vs 80.9), comorbidities, and EuroScore (15.9 vs 16.8). The severity of aortic stenosis was significantly greater in the S3 group (mean/peak gradient 46.5 vs 39; $p = 0.018$ and 77.3