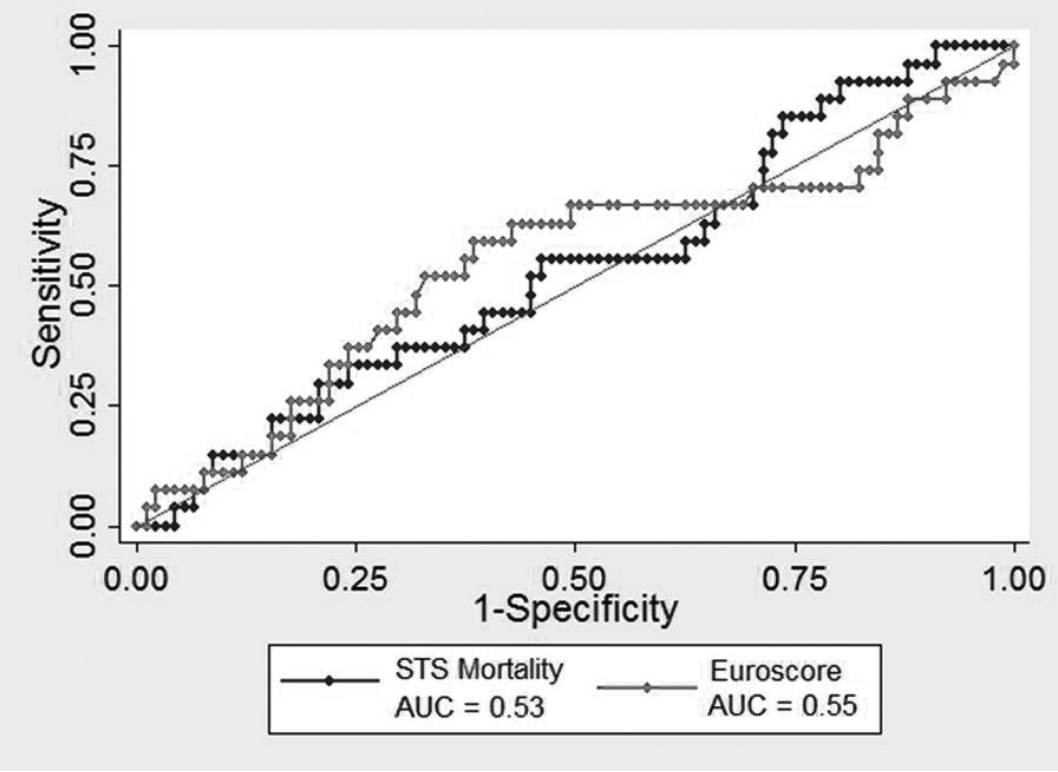

Abstract 43 Figure 1 Area under the curves (AUC) for both STS and Euroscore II. Both follow the diagonal line suggesting that they are not good predictors of outcome

vs 64.2mmHg; p < 0.005). Skin open to skin closure was significantly shorter in the S3 group (145 mins vs 101 mins; p < 0.001). There were no deaths or strokes in either group. 1 patient in the DFM group needed permanent pacing post procedure. 1 patient in the DFM group developed moderate aortic regurgitation. The mean gradient and peak gradient was significantly higher in the DFM group post procedure (17.9 vs 12.3; p = 0.016, and 31.1 vs 23.8mmHg; p = 0.013). In both groups there was no relationship between the size of the valve and the peak gradient using regression analysis (DFM; p = 0.181 and S3; p = 0.44). There was no difference in the mean number of days in hospital between both groups (2.6 vs 2.8; p = 0.47).

Conclusions There were no differences in safety between the Sapien 3 and DFM valves although we found the mean and peak gradients to be significantly higher with the DFM valve post procedure.

46 THE IMPACT OF PULMONARY ARTERY SYSTOLIC PRESSURE ON NEW YORK HEART ASSOCIATION FUNCTIONAL STATUS AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION

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Introduction Transcatheter aortic valve implantation (TAVI) is a therapeutic option for high surgical risk patients with symptomatic aortic stenosis. While improvements in pulmonary artery systolic pressure (PASP) following TAVI have been reported, data regarding the effect of changes in PASP on patient functional status are limited.

Methods We performed a retrospective analysis of all consecutive TAVI procedures recorded on the UK TAVI registry from our institution between January 2007 and January 2015. Functional status was defined by the New York Heart Association (NYHA) classification and PASP assessed by transthoracic echocardiography. Repeat measures of PASP and NYHA were performed prior to TAVI and at 1-, 6- and 12-– months following TAVI. Linear mixed model for repeated measures analysis was used to detect changes in PASP and NYHA over the three time points following TAVI and to measure their association. Adjusting for traditional risk factors, we subsequently evaluated whether PASP and NYHA predicted 1-year mortality following TAVI.

Results Over eight years, 299 patients (48% male, age 84 ± 8 years) underwent TAVI. During a mean follow-up of 775 days, 114 patients died. One month following TAVI, there was a significant reduction in PASP (37.3 ± 1.7 to 32.4 ± 1.7 mm Hg, p < 0.0001), which remained at 6-months (33.7 ± 1.9 mm Hg, p = 0.03), yet at 12-months the pressure had returned to baseline levels (35 ± 2.2 mm Hg). There was a significant decrease in NYHA at 1-month following TAVI (2.3 ± 0.1 to 1.5 ± 0.1, p < 0.0001). The improvement in NYHA persisted both at 6-months (1.5 ± 0.1, p < 0.0001) and at 12-months (1.6 ± 0.1, p < 0.0001) following TAVI. In linear mixed model analysis, after adjusting for left ventricular ejection fraction (LVEF), we observed an association between changes in PASP and NYHA following TAVI (coefficient 0.030 ± 0.01, p < 0.0001). An improvement in NYHA by one functional class was therefore associated with a reduction in PASP by 42 mm Hg.

In univariate Cox regression analyses, PASP, NYHA and LVEF, at 1-month following TAVI, all predicted 1-year mortality ($p < 0.05$). In multivariate analysis, only NYHA at 1-month following TAVI was independently related to 1-year mortality (hazard ratio 1.80, 95% confidence interval 1.21 to 2.69, $p = 0.004$).

Conclusion These data provide evidence that the reduction in PASP observed following TAVI is closely correlated with an improvement in NYHA functional class along with mortality at 1-year. This study will help enable cardiovascular clinicians to identify those patients likely to have a favourable symptomatic response to TAVI based on the echocardiographic PASP estimate post-procedure.

47 INADEQUACY OF EXISTING CLINICAL PREDICTION MODELS FOR PREDICTING MORTALITY POST TRANSCATHETER AORTIC VALVE IMPLANTATION

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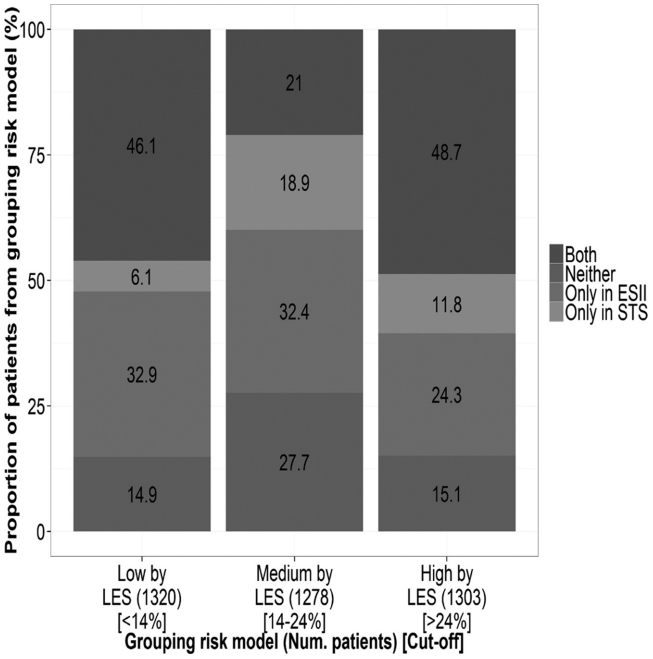
Introduction Clinical prediction models (CPMs) form the cornerstone of risk stratification for patients undergoing invasive procedures, helping to guide both treatment allocation and the consent process by enabling discussion of the magnitude of risks associated with the proposed treatment strategy. Several CPMs are used to predict mortality after Transcatheter Aortic Valve Implantation (TAVI). However, their performance in national cohorts distinct from those where they have been derived is unknown. We examined the performance of the Logistic EuroSCORE (LES), EuroSCORE II, Society of Thoracic Surgeons (STS), German Aortic Valve, FRANCE-2 TAVI and OBSERVANT-TAVI risk models in the British Cardiovascular Intervention Society UK TAVI registry, to examine if any can be used for practical use in external national cohorts of TAVI patients.

Methods The risk of 30-day mortality given by each CPM was retrospectively calculated, based on the published regression coefficients, for all 3980 patients in the UK TAVI registry from 2007 to 2012. Life status information was provided by the Office for National Statistics for each patient. Performance of each CPM was investigated through calibration and discrimination. Calibration is the agreement between the expected and observed event rates and was analysed by a calibration plot. Discrimination is how well the CPM can distinguish between those who will experience an event and those who will not, which was analysed by the area under the ROC curve (AUC). Furthermore, the level of agreement in risk classification between each of the considered CPMs was analysed at an individual patient level.

Results The observed 30-day mortality rate was 6.23%. All of the CPMs were miscalibrated and grossly over-predicted risk of 30-day mortality; the LES over predicted by a factor of three, while the STS underestimated risk. Discrimination was also poor, with AUC values of 0.58, 0.57, 0.62, 0.60, 0.62 and 0.57 for the LES, EuroSCORE II, STS, the German Aortic Valve, FRANCE-2 TAVI and OBSERVANT models, respectively. Additionally, risk classification agreement was low in both the surgical models and the TAVI specific models, an example is given in Figure 1.



Abstract 47 Figure 1 Bar plot giving the proportion of patients that agree in risk allocation based on the LES. The cut-off values were set to give approximately equal numbers of patients in each risk strata

Conclusions The performance of CPMs currently used in TAVI risk prediction was low when applied in a cohort of TAVI patient independent to those they were developed on. The TAVI specific FRANCE-2 CPM performed better than cardiac surgery based CPMs. Thus, development of TAVI CPMs are recommended either by updating existing CPMs or developing new risk scores in populations of interest.

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48 DETECTION AND MANAGEMENT OF ATRIAL FIBRILLATION IN THE PACING CLINIC

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Purpose Atrial fibrillation (AF) is a common arrhythmia and is a significant risk factor for stroke. Oral anticoagulants are effective treatments which substantially lower the risk of stroke in patients with AF. Sadly many patients are not prescribed anticoagulants.

Modern pacemakers are capable of acting as cardiac monitors and store episodes of AF or mode switch events (MS) which may indicate the presence of AF. Utilisation of this pacemaker technology by cardiac physiologists could improve early detection and treatment of AF improving patient outcomes and reduce stroke risk.

The audit aimed to investigate the frequency of AF in our pacemaker population and determine whether appropriate