These were taken at multiple time points (baseline, 6 and 24 hours post procedure). Calculated volumetric parameters included 3D end-diastolic volume (EDV) and end-systolic volume (ESV), stroke volume (SV) and 3D LA volume (LAV). Diastolic function was monitored using the indices mean E/E and systolic function/contractility was measured with dP/dt max and early peak systolic velocity (S’). The FloTrac system (consisting of the Vigileo monitor and sensor), uses a clinically validated algorithm to provide continuous cardiac output (CO), stroke volume (SV) and systemic vascular resistance in real-time.

**Results** TAVI resulted in an immediate increase in cardiac output (3.7 (baseline), 4.6 (6 hours) 4.5 l/min (24 hours), p<0.05 baseline vs 6 hours and 24 hours) with no significant change in systemic vascular resistance (1162, 1292 and 1367 dyns/cm²). However, 6 hours post-TAVI there was a significant decrease in systolic function as measured by dP/dt max/EDV (see Abstract 164 figure 1A) and co-existent impairment of diastolic function as indicated by medial E/E’ values (see Abstract 164 figure 1B), which was associated with an appropriate increase in LA volume (70.3, 82.6 and 72.8 ml, p<0.05 baseline vs 6 hours). Following this, there was a recovery of both systolic and diastolic indices. In addition, another marker of systolic function, S’ increased after 24 hours (6.4, 6.6, 5.2 cm/s, p<0.05 baseline vs 24 hours and 6 hours vs 24 hours). Concurrent with this recovery, we observed a significant decrease in EDV and ESV at 24 hours post-TAVI (EDV: 94.9 to 83.4 ml, p<0.05; ESV: 41.9 to 33.5 ml, p<0.05). These changes in haemodynamics were associated with significant increase of troponin I levels at 24 hours and increase in CK-MB at 6 hours after the procedure (troponin: 0.06 vs 1.19 µg/l, p<0.05; CK-MB: 1.6 vs 6.6 µg/l, p<0.05).

**Conclusion** Successful TF TAVI results in an immediate improvement in cardiac output. However, overlying this, within the first 24 hours both systolic and diastolic dysfunction occurs. The rise in the markers of myocardial injury suggest this may be due to myocardial stunning and/or some periprocedural myocardial damage. Recovery of contractility is observed after 24 hours.

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**THE OXVALVE STUDY: ECHOCARDIOGRAPHIC SCREENING FOR VALVULAR HEART DISEASE IN THE COMMUNITY SETTING: METHODOLOGY, FEASIBILITY AND PRELIMINARY RESULTS**

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**Introduction** Valvular heart disease (VHD) is poorly researched in comparison with other areas of cardiovascular disease. Principle limitations are the diverse nature of patients with VHD, inability to identify individuals at the earliest stages of disease and lack of an appropriate investigational infrastructure. Studies addressing the contemporary epidemiology and natural history of VHD are scarce but demonstrate an increasing prevalence in the elderly, associated with significant morbidity and mortality. Cohort studies in the USA are ongoing but there are no European or UK studies to date. We have developed a large scale, prospective community echocardiographic screening study within the adult Oxfordshire population, to determine the epidemiological characteristics of VHD in the UK for the first time, to assess the acceptability of echocardiographic screening for VHD, and establish cohorts with well-characterised genetic and echocardiographic phenotypes for future study. Herein, we present preliminary data for the first 1080 patients, with enrolment ongoing.

**Methods** Patients ≥65 years, registered with participating general practices (GP) and with no known VHD, were invited to attend their GP surgery where routine demographic and cardiac data were collected and a focused examination undertaken. Participants underwent a standard transthoracic echocardiogram (TTE) according to British Society of Echocardiography guidelines. The threshold for inclusion in the screen positive group was deliberately low to capture all manifestations of VHD. Participants were given preliminary results, before completing a shortened Spielberger STAI questionnaire.

**Results** Uptake was 46% (age range 65–96 years; male to female ratio 1:1.1). VHD was detected in 33% of participants and prevalence increased with increasing age (see Abstract 165 figure 1). Mitral regurgitation and aortic regurgitation were the most common lesions detected (present in 17% and 14% respectively). The majority of VHD was graded as mild (84%); only 1% of VHD detected was severe. The majority of participants (99%) described themselves as calm or relaxed at the time of screening; none expressed significant levels of worry or tension. 98% would be prepared to undergo repeat echocardiography as screening for VHD.

**Conclusions** The prevalence of VHD in adults aged over 65 in the Oxfordshire population, using a low threshold for detection, is approximately 35% and increases with age. Mitral regurgitation is the most common lesion, and the majority of detected VHD is mild. Echocardiographic screening for VHD is feasible in the primary care setting and acceptable in this group of patients.
Aortic regurgitation quantification with cardiovascular magnetic resonance predicts clinical outcome

Background The timing of valve surgery in asymptomatic patients with significant aortic regurgitation can be challenging. Current indications focus on symptoms and left ventricular (LV) dilation/dysfunction, but prognosis is already reduced by this time. Quantification of the regurgitation has not previously been used to guide management, likely due to the difficulty of achieving this with echocardiography. Cardiovascular magnetic resonance (CMR) can accurately quantify aortic regurgitation and LV volumes, and we examined whether either could predict symptom development and the need for aortic valve surgery.

Methods 94 asymptomatic patients with moderate or severe aortic regurgitation on echocardiography were identified from four high volume CMR centres. CMR scans were performed to quantify aortic regurgitation and LV volume indices, and subsequent clinical follow-up occurred for up to 7 years (mean 2.6±2.1 years). The best predictors of progression to symptoms and other conventional indications for surgery were determined.

Results Aortic regurgitant fraction was the best predictor of clinical outcome; area under the curve (AUC) on receiver operating characteristics analysis 0.93 (p<0.0001), with a specificity of 95% and sensitivity of 78% for predicting the progression to symptoms and surgery. Survival without surgery was 88% for patients with a regurgitant fraction <37%, compared to 6% for those with a regurgitant fraction ≥37% (see Abstract 167 figure 1). Regurgitant volume >38 mls and regurgitant volume index >25 ml/m² were also good predictors (AUC 0.91 and 0.90 respectively), though regurgitant fraction had significantly greater predictive power (OR 1.26 compared to 1.09 for regurgitant volume). LV volumetric indices also predicted outcome, but less strongly than measures of regurgitation: LV end-diastolic volume >267 mls (AUC 0.85), LV end-systolic volume >88 mls (AUC 0.78). Regurgitant fraction and volume were the only independent outcome predictors on multiple logistic regression analysis. The predictive ability of CMR applied to patients with both moderate and severe aortic regurgitation on echocardiography. Supporting data also comes from a comparison...