with patients already planning to undergo surgery at the time of CMR scanning, which showed similar regurgitant fractions in the surgical group (mean ±SD: 45.4%±12.1%) compared to the initially asymptomatic patients who developed symptoms or other indications for surgery (42.8%±10.4%); p=0.32. Subjects who remained asymptomatic had a significantly lower regurgitant fraction: 25.3±8.6% (p<0.0001 vs both the planned surgical group and the symptom progression group).

Conclusions CMR quantification of aortic regurgitation and LV volumes accurately predicts the progression to symptoms/surgery. Its use in patients with aortic regurgitation should be encouraged.

168 β-BLOCKER THERAPY IMPROVES CLINICAL OUTCOMES IN PATIENTS WITH MODERATE TO SEVERE MITRAL REGURGITATION

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Background Volume overload seen in mitral regurgitation (MR) leads to neuro-endocrine activation including heightened sympathetic activity. Experimental data have reported protective effects of beta-blockers (BBs) on myocardial function in MR suggesting that BB therapy may be beneficial in MR. However, the effect of BB therapy on clinical outcomes in MR has not been defined. Hence, in this large observational study we investigated the impact of BB therapy on clinical outcome in patients with moderate to severe MR.

Methods The Health Informatics dispensed prescribing, morbidity and mortality database for the population of Tayside, Scotland was linked through a unique patient identifier to the Tayside echocardiography database (>110 000 scans). Patients with a diagnosis of moderate or severe MR from 1993 to 2008 were identified. Cox regression model (adjusted for age, gender, left ventricular dimensions and function, left atrial diameter, cardiovascular (CV) history and concurrent CV medications) was used to assess the impact of BB therapy on all-cause mortality and cardiovascular events (CV death or hospitalisations).

Results A total of 4437 patients with moderate to severe MR (mean age 74 Â±11 years, 46% males) were identified. MR was categorised as functional in 2523 (57%) and organic in 1894 (43%) while 1324 (30%) were on BBs. Over a mean follow-up of 3.9 years there were 2287 (51%) all-cause deaths and 2333 (52%) CV events. Those treated with BBs had a significantly lower all-cause mortality with an adjusted HR of 0.65 (95% CI 0.56 to 0.75, p<0.0001) and fewer CV events with an adjusted HR of 0.79 (95% CI 0.69 to 0.90, p<0.0001).

Conclusions This large observational study suggests that BB therapy is associated with an improved survival and a lower risk of CV events in patients with moderate to severe MR. These observations needs to be confirmed in prospective studies and support the rationale for undertaking a future randomised clinical trial.

169 MID-WALL FIBROSIS IS AN INDEPENDENT PREDICTOR OF MORTALITY IN PATIENTS WITH AORTIC STENOSIS

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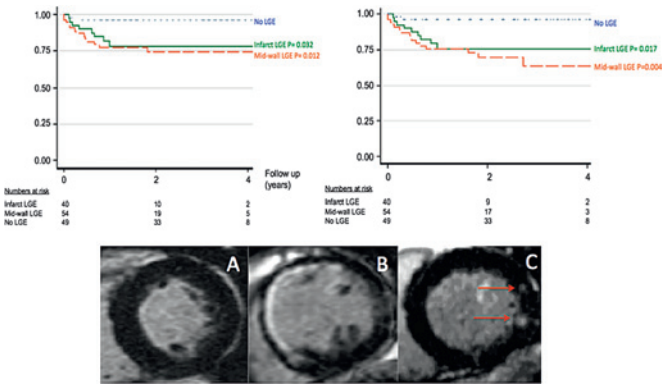
Introduction Predicting adverse clinical outcomes in aortic stenosis is challenging. Late gadolinium enhancement (LGE) has been associated with an adverse prognosis in a range of other cardiac conditions. Using late gadolinium enhancement, we sought to assess the prognostic significance of mid-wall and infarct patterns of myocardial fibrosis in aortic stenosis.

Methods Between January 2003 and October 2008, consecutive patients with moderate or severe aortic stenosis (aortic valve area <1.5 cm^2) underwent cardiovascular magnetic resonance with assessment of myocardial fibrosis by late gadolinium enhancement. Patients were categorised into absent, mid-wall or infarct patterns of late gadolinium enhancement by blinded independent observers. Patient follow-up was completed using the National Strategic Tracing Scheme.

Results 143 patients (aged 68±14 years; 97 male) were followed up for 2.0±1.4 years. 81 patients had coronary artery disease, 72 underwent aortic valve replacement and 27 died. Compared to those with no late gadolinium enhancement (n=49), univariate analysis revealed that patients with mid-wall fibrosis (n=54) had an eight-fold increase in all-cause mortality despite similar aortic stenosis severity and coronary artery disease burden. Patients with an infarct pattern (n=40) had a six-fold increase. Mid-wall fibrosis (HR, 5.35 (95% CI, 1.16 to 24.56); p=0.03) and ejection fraction (HR 0.96 (95% CI, 0.94 to 0.99); p=0.01) were independent predictors of all cause mortality by multivariate analysis. Conclusion: Mid-wall fibrosis is an independent predictor of mortality in patients with moderate and severe aortic stenosis. It has incremental prognostic value to ejection fraction and may provide a useful method of risk stratification in patients with advanced disease (Abstract 169 figure 1).



Abstract 169 Figure 1 Kaplan-Meier curves of cardiac mortality (left) and all cause mortality (right) according to pattern of LGE (A= No LGE, B= Infarct LGE, C= Mid-wall LGE).

Abstract 169 Table 1

	No LGE	Mid-wall LGE	Infarct LGE	p Value
Number of patients	49	54	40	–
Mean age yrs	64±16	70±11	70±13	0.031
Documented CAD %	37	42	98	<0.001
Ejection fraction %	69±13	58±21	44±18	<0.001
Aortic valve area	1.05±0.37	1.00±0.31	0.91±0.26	0.111
Indexed LV mass g/m2	92.6* (86.0, 99.6)	113.7* (104.5, 123.8)	97.8* (90.9, 105.2)	0.005
Mortality rate (deaths / 1000 pt years)	15.7	142.7	173.7	
	* Geometric mean (95%)			