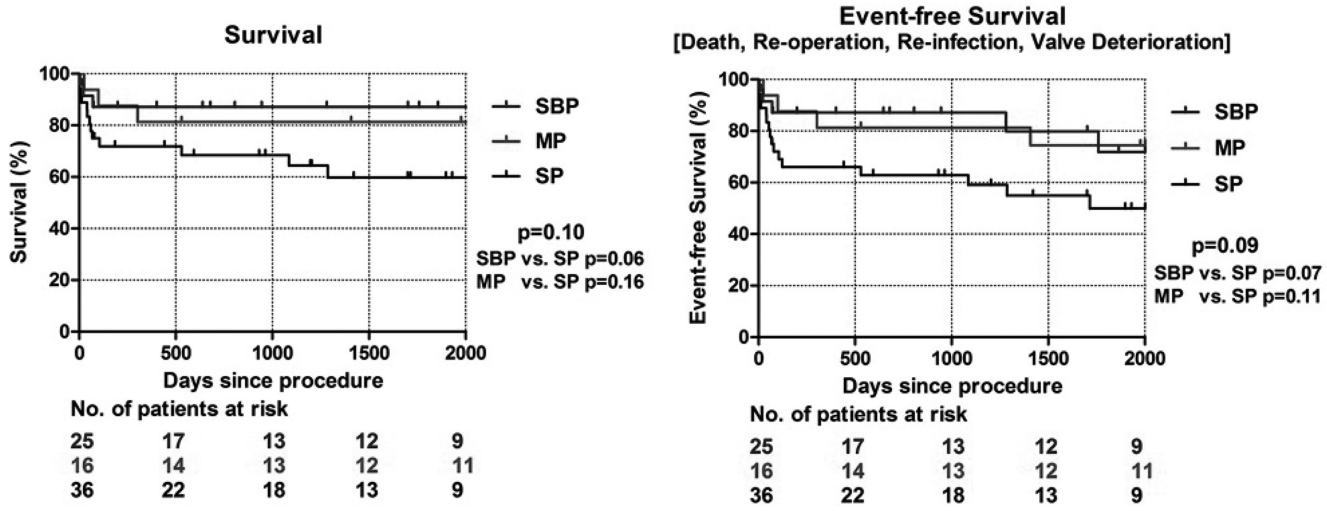

Abstract 139 Figure 1

SP: 8.3%, p = 0.08). Mean follow-up was 1489 days. Survival was best in the SBP group (87.1% vs. MP: 81.3%, SP: 71.9%) at one year and at five years (SBP: 87.1%, MP: 81.3%, SP: 59.8%, SBP vs. SP p = 0.06). Event-free Survival was 87.1% (SBP), 81.3% (MP), 71.8% (SP) at one year and 74.5% (SBP), 71.8% (MP) and 49.9% (SP) at five years (p = 0.09). Re-operation for re-infection occurred in 8.0% (SBP), 18.7% (MP) and 16.7% (SP) (p = 0.55). No patient experienced valve deterioration.

Conclusion Despite a higher pre-operative risk of SBP patients, survival was similar compared to a younger cohort of MP patients and superior to patients with SP. This is most likely an effect of the more radical excision of infected material and should be the preferred surgical option particularly in older patients with complicated IE. In younger patients, the risk of re-infection should be weight against the risk of valve degeneration when the decision is made in favour of MP.

140 TWO DECADES OF MITRAL VALVE SURGERY – TRENDS AND OUTCOMES IN ELDERLY PATIENTS

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Introduction Mitral valve (MV) surgery is the standard treatment for MV disease. During past decades interventional treatments were implemented, raising awareness of MV treatment particularly in the elderly patient group. We analysed changes of referral patterns, baseline characteristics and outcomes of elderly patients undergoing MV surgery during the past two decades.

Methods Our in-hospital database was retrospectively explored for patients treated surgically for MV disease. Patients with concomitant and redo-procedures, as well as endocarditis were left in the study cohorts. This yielded 1788 patients treated between 1994 and 2015. Of those 471 patients (26.3%) were aged ≥75 years. This group was further divided into two cohorts according to the year of their surgery, Decade-1 (1994–2005, total n = 701, ≥75 yrs n = 113/16.1%) and Decade-2 (2006–2015, total n = 1087, ≥75 yrs n = 358/32.9%).

Results Patient age increased from 77.8 ± 3.0 yrs (Decade-1) to 79.6 ± 3.1 yrs (Decade-2, p < 0.01). Patients treated in Decade-1 were more likely to be in NYHA class IV (22.1% vs. 5.0%, p < 0.01) and to have impaired renal-function (45.1% vs. 5.6%, p < 0.01) and LV-Function (37.2% vs. 11.7%, p < 0.01) as well as peripheral vascular disease (37.2% vs. 9.2%, p < 0.01). Proportion of rheumatic MV disease decreased (26.5% [n = 30] vs. 11.7% [n = 42], while degenerative disease increased (43.4% [n = 49] vs. 56.7% [n = 203], p = 0.01). The rate of MV-repair for degenerative disease increased from Decade-1 to 2 (51.0% [n = 25] vs. 71.9% [n = 146], p < 0.01), the rate of re-operative procedures did not change (6.2% vs. 9.8%, p = 0.34). MV surgery was more often performed as a combined procedure in Decade-2 (46.9% [n = 53] vs. 62.6% [n = 224], p < 0.01). Correspondingly, ischaemic time increased from 70.4 ± 26.1 to 78.1 ± 28.4 min during the two decades (p = 0.01). Postoperative 1-, 12- and 24 months survival improved significantly from Decade-1 to 2 (87.9%, 75.7%, 72.9% vs. 92.9%, 87.1%, 83.6%, $p_{logrank}$=0.01).

Conclusions During two decades of MV surgery, the number of elderly patients increased and their survival continuously improved. While they were referred earlier for surgery, valve pathology changed towards degenerative disease, concomitant procedures increased and MV-repair was achieved more frequently.

141 AORTIC ROOT REPLACEMENT IN PATIENTS WITH BICUSPID AORTIC VALVE DISEASE DOES NOT INCREASE OPERATIVE RISK – A SINGLE CENTRE EXPERIENCE

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Objective Bicuspid aortic valve disease (BAV) is associated with aortic root dilation (RD), increasing the risk of adverse aortic root events. Current guidelines recommend concomitant root replacement (ARR) in patients undergoing aortic valve replacement (AVR) when the root diameter (ARD) is ≥45 mm. However, ARR is believed to increase surgical risk and adherence to the guidelines is low. We reviewed current practice of

surgery for BAV at our centre and compared long-term outcomes of AVR, either isolated or with ARR.

Methods Our in-hospital database was explored for patients who were treated for congenital BAV between 2004 and 2015. Patients with concomitant replacement of the ascending aorta and coronary artery bypass grafting (CABG) were left in the group, concomitant non-aortic heart valve procedures and patients with functional BAV were excluded. The remaining 242 patients were divided according to the treatment received, into patients receiving ARR (n = 59) or isolated AVR (n = 183). A sub-analysis of patients with pre-existing RD was performed.

Results ARR patients were significantly younger (58.3 ± 14.6 yrs vs. 64.3 ± 12.0 yrs, p < 0.01) and had a significantly higher logistic EuroSCORE (11.3 ± 10.3% vs. 6.1 ± 8.3%, p < 0.01). Mean ARD was 39.5 ± 7.1 mm in ARR vs. 34.5 ± 5.4 mm in AVR (p < 0.01). In the AVR group, 32.2% of patients had an ARD ≥ 40 mm (n = 59), from these, 8.2% (n = 15) had an ARD ≥ 45 mm prior to the procedure. Procedural times were significantly longer in ARR (Bypass time: 110.3 ± 36.2 mins in ARR vs. 78.2 ± 31.0 mins in AVR, p < 0.01), in 8.2% of AVR patients (n = 15) concomitant aortoplasty was performed. Perioperative complications were similar after both procedures, as stroke occurred in 1.7% (n = 1) after ARR and 2.2% (n = 4) after AVR (p = 1.0), dialysis was not necessary in any ARR patient and in 1.1% (n = 2) in AVR (p = 1.0). In ARR, survival at 30 days was 100% vs. 99.5% in AVR (p = 1.0). Median follow-up was 6.1 years. Survival at 5 years was 91.7% in ARR vs. 82.9% in AVR (p = 0.88). During the observational period, 3.4% (n = 2) of the AVR group needed repeat surgery on the ascending aorta due to an increase in ARD.

Conclusion Our experience shows, that one-third of patients receiving AVR for BAV is not treated according to current guidelines. Re-operations in this group were due to pre-existent RD. However, ARR does not increase perioperative risk and therefore we recommend ARR as the appropriate treatment in patients with pre-existent RD.

142 EFFECTS OF TRUNCATING VARIANTS IN TITIN ON CARDIAC PHENOTYPE AND LEFT VENTRICULAR REMODELLING IN DILATED CARDIOMYOPATHY

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Background The clinical course of dilated cardiomyopathy (DCM) is variable: while 20% of patients die within 5 years of diagnosis, up to 15% recover fully. DNA variants that truncate the sarcomeric protein titin (TTNtv) are found in up to 20% of DCM. We sought to characterise the phenotype of TTNtv DCM and evaluate the effect of TTNtv on left ventricular remodelling in DCM.

Methods 661 prospectively recruited DCM patients underwent targeted sequencing of TTN and cardiac MRI (CMR) scanning to evaluate left and right ventricular volumes, function, wall thickness and mass (Siemens scanners, 1.5T). TTNtv in constitutive exons were confirmed by Sanger sequencing or visual inspection of reads on IGV. Quantitative phenotypes were compared using t-tests or Mann-Whitney U tests as appropriate.

A subgroup of 122 patients underwent follow up CMR scanning. Linear regression analysis was used to determine the effects of TTNtv on interval change in left ventricular ejection fraction (LVEF), left ventricular volumes and mass.

Results Targeted sequencing of 661 patients with DCM (mean age 57.3 years, 68% male) identified 62 patients (9.4%) with confirmed truncating variants in TTN (A band, n = 48; I band, n = 11; M band, n = 3).

There was no difference in age at diagnosis between patients with and without TTNtv (54.1 yrs vs 57.7 yrs, p = 0.05). Patients with TTNtv had lower maximum and mean left ventricular wall thickness and lower indexed left ventricular stroke volume and mass (Table 1). There was no difference in baseline left or right ventricular ejection fraction between patients with and without TTNtv.

122 DCM patients (mean age 54.3 years, 66% male) underwent an additional CMR with a median follow-up interval of 2.6 years (IQR 1.4–4.6 years). Amongst these, 21 patients (16.9%) had TTNtv in constitutive exons (A band, n = 17; I band, n = 3; M band, n = 1).

67% of patients with TTNtv (14/21) showed an improvement in LVEF >5% compared to 50% of patients without TTNtv (51/101). The mean interval improvement in LVEF between baseline and follow up studies was 6.2% in patients with TTNtv compared to 4.6% in those without (p = 0.55). In regression analysis, the presence of a truncating variant in TTN was not predictive of the interval change in LVEF, indexed left ventricular end diastolic volume, end systolic volume, stroke volume and mass (Table 2).

Conclusion These data show that TTNtv DCM is phenotypically characterised by thinner left ventricular walls, lower left ventricular mass and indexed stroke volume in the absence of overt differences in ejection fraction or age at diagnosis. Notably, these data show that there is no evidence that DCM patients with TTNtv have a different pattern of left ventricular remodelling compared to patients without TTNtv. This

Abstact 142 Table 1 Comparison of baseline quantitative CMR phenotypes in patients with and without truncating variants in TTN (TTNtv)

Phenotype	Mean (sd) TTNtv+ (n = 62)	Mean (sd) TTNtv- (n = 599)	P value
LVEF (%)	38.3 (13.9)	39.3 (12.5)	0.62
LVSVi (mls)	43.2 (11.9)	47.7 (14.8)	0.03*
LVESVi (mls)	78.8 (38.2)	82.0 (39.1)	0.32
LVEDVi (mls)	122.9 (37.2)	129.6 (42.1)	0.17
LVMi (g)	82.8 (21.4)	93.3 (30.4)	0.002*
Max LV wall thickness (mm)	9.1(1.9)	10.1 (2.2)	<0.001*
Mean LV septal wall thickness (mm)	7.3 (1.6)	8.0 (1.9)	0.003*
Mean LV lateral wall thickness (mm)	5.0 (1.2)	5.7(1.6)	<0.001*
RVEF (%)	36.1 (14.5)	37.6 (13.9)	0.47
RVSVi (mls)	40.6 (13.7)	44.4 (14.8)	0.10
RVESVi (mls)	42.6 (17.7)	44.0 (22.8)	0.94
RVEDVi (mls)	83.2 (19.3)	88.4 (28.9)	0.44

* indicates significance at p < 0.05. LVEF/RVEF = Left/right ventricular ejection fraction. L/RVEDVi = indexed left/right ventricular end diastolic volume. L/RVESVi = indexed left/right ventricular end systolic volume. L/RVSVi = indexed left/right ventricular stroke volume. LVMi = indexed LV mass