Conclusion The rate of SVD progression is 4 to 5 mmHg/year on average. BP type and post-operative hemodynamic are predictors of faster SVD. NoCalcif accounts for > 15% of SVD. Leaflet fibrosis is a component of SVD. Redo-surgery and VinV are associated with a better outcome, independently of failure mode, and should be considered in most SVD patients.

Disclosure of interest The authors have not supplied their declaration of competing of interest.

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Poster n°10

Impact of non-severe degenerative mitral stenosis on morbidity and mortality in patients with severe aortic stenosis undergoing transcatheter aortic valve replacement

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Introduction Severe degenerative mitral stenosis (DMS) is a known predictor of mortality in patients with symptomatic aortic stenosis (AS) considered for transcatheter aortic valve replacement (TAVR) but little data exist regarding mild to moderate DMS. We assessed the association of DMS with mitral annulus calcification (MAC) and evaluated the association of non-severe DMS and MAC with morbidity and mortality in patients with severe AS undergoing TAVR.

Method In a retrospective cohort of 346 patients with isolated severe AS undergoing TAVR, we evaluated the association of different DMS severities (based on transmitral mean pressure gradient (TMPG, mmHg)) and MAC severity with all-cause mortality and cardiovascular (CV) hospitalization/death. Severe DMS (TMPG > 10 mmHg) was excluded from the analysis.

Results Non-severe DMS (TMPG > 2 mmHg) was present in 42% of patients ($n = 147$) and moderate to severe MAC in 46% ($n = 131$). Patients with TMPG > 2 mmHg were predominantly female (66.7% vs. 41.7%, $P < 0.001$) with a higher LVEF and smaller diastolic LV volume than patients with no DMS ($P < 0.05$). In a multivariate analysis, TMPG (> 2 mmHg) and MAC (moderate to severe) were found to be independent predictors of mortality (HR = 1.17 [1.02—1.35], $P = 0.0245$ and HR = 2.01 [1.18—3.44], $P = 0.01$ respectively).

Conclusion Non-severe DMS is frequently associated with MAC in patients with severe AS undergoing TAVR. In the challenging context of DMS and MAC in patients undergoing TAVR, TMPG > 2 mmHg appears as an independent prognostic factor that discriminates high-risk patients.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Poster n°11

Normalized stroke volume in severe aortic stenosis with preserved ejection fraction: Reference values and outcome implications

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Introduction Appropriate normalization methods to scale Doppler-derived stroke volume (SV) in patients with aortic stenosis (AS) are poorly defined and reference values are lacking. We aim to establish reference values for normalized SV, to compare the prognostic value of SV normalized by different methods in AS and to examine the outcome of low-flow(LF) low-gradient(LG) AS with preserved ejection fraction(LVEF) based on newly defined reference values.

Method In 2781 normotensive adults without cardiovascular disease we defined normal relationships between SV and body size by nonlinear regression. We analyzed the prognostic performance of ratiometric and allometric normalized SV in 1450 patients with severe AS and preserved LVEF.

Results The allometric exponents that described the SV-height (H) and SV-body surface area (BSA) relationships were 1.32 and 0.88, respectively. In males, LF reference values were: < 28 ml/m^2, < 30 ml/m, < 30 ml/$(m^2)\hat{0}.88$, and, respectively, < 26 ml/$m\hat{1}.32$, and in females < 27 ml/m^2, < 28 ml/m, < 29 ml/$(m^2)\hat{0}.88$, and, respectively, < 24 ml/$m\hat{1}.32$. In patients with severe AS, SV/$H\hat{1}.32$ was most consistently associated with mortality and showed better prognostic performance than other normalized SV parameters. Compared to H-normalization, BSA-normalization markedly overestimated the frequency of LF(3% vs. 9%). In 1354 AS patients managed initially medically, LF/LG AS defined based on the 35 ml/m^2 cut-off showed better outcome than high gradient(HG) AS (adjusted HR 0.85[0.62—0.96]). When new reference values were used, the mortality risk of LF/LG AS was higher than that of HGAS (adjusted HR 1.37[1.06—1.89] for SV/BSA and adjusted HR 1.42[1.10—2.15] for SV/$H\hat{1}.32$).

Conclusion We provide reference values and appropriate normalization methods for SV by Doppler-echocardiography. Patients with LG severe AS, preserved LVEF and ''true'' LF are at high-risk of death during follow-up. (Fig. 1)

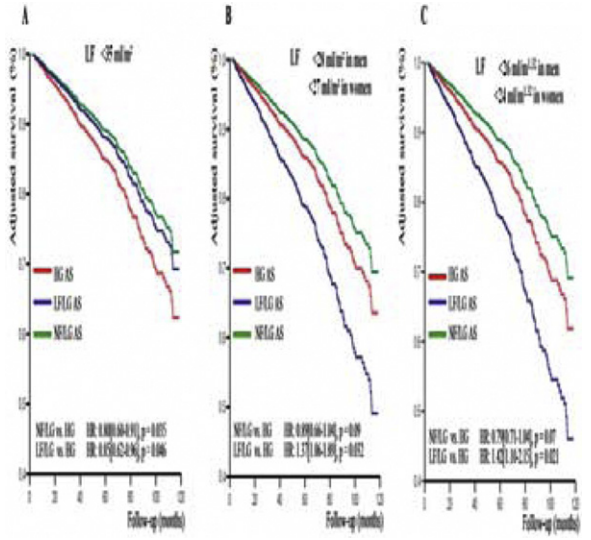

Fig. 1

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Poster n°12

Transaortic valvular replacement prognosis according to aortic stenosis category

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Introduction Transcatheter aortic valve replacement (TAVR) has revolutionized the prognosis of patients with severe aortic stenosis. Four categories of aortic stenosis can be defined depending on left ventricular ejection fraction (EF), mean transvalvular gradient and stoke volume index.
Aim Whether aortic stenosis category influence prognosis after TAVR regarding functional improvement and mortality.
Method In total, 263 TAVR patients with a complete baseline echocardiography and one year follow-up, were retrospectively classified into four categories: high gradient ($n = 211$); low-flow, low-gradient aortic stenosis with reduced EF ($n = 21$); low-flow, low-gradient aortic stenosis with preserved EF ($n = 8$) and normal-flow, low-gradient aortic stenosis with preserved EF ($n = 23$).
Results At 12 months follow-up, 39 deaths occurred (14.8%): 25 in the high gradient group (11.8%), 9 in the low-gradient, low-flow, reduced EF group (43%), 1 in the low-gradient, low-flow, preserved EF group (12.5%), 4 in the low-gradient, normal flow group (17.4%). In a multivariate model, one-year all-cause mortality was higher in low-gradient, low-flow, reduced EF group ($P < 0.0001$) than in others (HR = 3.86; 95% CI 1.83—8.14; $P = 0.0004$). Patients with low-gradient, low-flow, reduced EF had less improvement in terms of dyspnea one month after the procedure with more patients in the NYHA 4 stage in this group ($P = 0.003$).
Conclusion A complete echocardiography is necessary to evaluate aortic stenosis, its severity and its type before TAVR. Patients with low-gradient, low-flow reduced EF had a higher mortality rate one year after TAVR and remained more symptomatic one month after the procedure.
Disclosure of interest The authors declare that they have no competing interest.

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Poster n°13

Characteristics and prognosis of patients with significant tricuspid regurgitation

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Introduction Severe tricuspid regurgitation (TR) usually remains asymptomatic for a long period, and the diagnosis is often delayed, at an advanced stage of right heart failure (RHF). Only a minority of patients are referred to surgery. We aim to describe the characteristics and prognosis according to aetiologies of patients with significant TR.
Method Two hundred and eight consecutive patients with moderate-to-severe (grade III) or severe (grade IV) TR were included from echocardiography reports between 2013 and 2017. Median follow-up was 18(6—38) months.
Results Patients (mean age 75 years, 46.6% males) were divided into 4 groups according to TR aetiology, group 1: primary TR (15.4%), group 2: TR secondary to left heart disease with a history of left heart valve surgery (24.5%), group 3: TR secondary to left heart disease with no history of left valvular surgery (26%) and group 4: idiopathic TR (34.1%). During follow-up, 61 patients (29%) experienced at least one decompensation of RHF requiring hospitalization. Only 11 patients (5.3%) underwent tricuspid valve surgery during follow-up with a perioperative mortality of 36%. The 4 years survival was much lower than the expected survival of age- and sex-matched individuals of the general population (56 ± 4% vs. 74%). After adjustment for outcome predictors, patients with idiopathic TR had a higher risk of mortality (adjusted HR = 1.83[1.05—3.21]; $P = 0.034$) compared to other groups.
Conclusion Moderate-to-severe and severe TR is associated with a high-risk of hospitalization for RHF and death at 4 years and a low rate of surgery. (Fig. 1 Idiopathic TR is associated with worse outcome than other etiologies)