Ps5416 | bedside
Impact of diabetes on outcomes after TAVI procedure: a multicentre registry
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Aims: Several factors have been identified as predictors of early and midterm events after TAVI, but incidence and prognostic impact of diabetes, especially if insulin dependent, on their short and mid outcomes remains to be defined.

Methods and results: All consecutive patients undergoing TAVI at our Institutions were enrolled, and divided according to diabetes status. All-cause mortality at 30 days and at follow up was the primary end point, while periprocedural complications, rate of myocardial infarction, stroke, re-intervention at follow up and the secondary. All end points were adjudicated according to VARC.

511 patients were enrolled: 361 without diabetes, 78 with orally treated/diet controlled diabetes and 72 with insulin treated diabetes. Patients with orally treated diabetes were more frequently female and patients with insulin treated diabetes were younger. 30 days mortality was not significantly higher in patients with orally treated diabetes (6.4%) and insulin treated diabetes (9.7%) compared with non-diabetic patients (4.7%) (p=0.08). Bleeding, vascular complications, post procedural acute kidney injury and peri-procedural stroke were not significantly different in the three groups. At a median follow up of 400 days patients with insulin treated diabetes had a significantly higher mortality rate (33.3% Vs 18.6%; p=0.01), and higher myocardial infarction incidence (8.3% Vs 1.4%; p=0.002) if compared with patients without diabetes. Stroke and re-interventions at follow up were similar in the three groups. After multivariable adjustment insulin treated diabetes was independently correlated with death (HR 1.75, 95% CI 1.1-2.8) and myocardial infarction (HR 5.6, 95% CI 1.5-20.5).

Conclusion: Diabetes doesn't significantly affect rates of complications in TAVI patients. Insulin treated diabetes, but not orally treated diabetes, is independently associated with deaths and myocardial infarction at mid-term follow-up. Insulin treated diabetes should be included into dedicated scores to predict outcomes of patients after TAVI.

Ps5417 | bedside
Measurement of the aortic annulus diameter using transesophageal echocardiography and multislice computed tomography. Are they interchangeable?
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Background: Transesophageal echocardiography (TEE) is often considered as the reference method for the measurement of the aortic annulus diameter (AAD) during transcatheter aortic valve implantation (TAVI). In the present study, we evaluated whether Multislice Computed Tomography (MSCT) could reproduce and thus substitute to TEE.

Method: We compared AAD measurements performed using TEE, MSCT and transthoracic echocardiography (TTE) in 129 consecutive patients with severe aortic stenosis (AS) referred for TAVI. Using MSCT, AAD was measured in the 3-chamber view and at the level of the virtual basal ring. We calculated the mean (MD) of the long-axis (LA) and short-axis (SA) diameters, volumetric transformations emphasizing the weight of the SA (MD ≥ MD2 = 2SA + LA/3 ...), AAD derived from the cross-sectional area and from the circumference of the virtual basal ring. Comparisons between methods were assessed using single-measure intraclass correlation coefficient (ICC) and agreements as regard to the TAVI strategy (decision to implant and choice of the prosthesis' size based on manufacturer’s cutoffs recommendations) expressed using the kappa value.

Results: The 3C method (ICC=0.79, 95% interval 0.73-0.83), MD4 (ICC=0.76, 95% interval 0.69-0.81) and MDS (ICC=0.75, 95% interval 0.67-0.81) provided the highest correlation and the best agreement to TEE (kappa value of 0.47, 0.27 and 0.31 respectively) but remained lower than TTE (ICC=0.87; 95% interval 0.83-0.91; kappa=0.66). The agreement between MSCT and TEE varied with the degree of eccentricity of the aortic annulus or the degree of aortic valve calcification but in general, the values observed with TTE.

Conclusion: No direct or indirect MSCT method provided higher correlations to TEE than TTE. Consequently, no MSCT method could reproduce and thus substitute to TEE. Randomized prospective studies are clearly needed to evaluate which method provides the best clinical results, but we definitely demonstrate that MSCT and TEE are not interchangeable.

Ps5418 | bench
A novel device for antegrade percutaneous balloon aortic valvuloplasty: feasibility of the looped Inoue balloon technique in a swine model
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Objectives: The study aimed to assess the feasibility of a novel device and technique for antegrade percutaneous balloon aortic valvuloplasty (BAV) in a swine model.

Background: BAV is currently being applied more frequently compared to the past with the advent of transcatheter aortic valve replacement. Although the antegrade BAV approach offers several advantages over the retrograde approach, the antegrade approach is technically more complicated and demanding.

Methods: We developed a novel balloon catheter and a technique to simplify the antegrade BAV. The balloon catheter was designed to make a loop in left atrium by inserting two different sized stylets. The balloon catheter was easily dropped into the left ventricle via the mitral valve while maintaining the loop. The balloon catheter was advanced to the ascending aorta with holding the two stylets. Then, the balloon was inflated. We named the technique as the looped Inoue balloon technique. The feasibility of the looped Inoue balloon technique was assessed in a healthy swine with a body weight of 40kg by 4 independent operators. Every operator conducted the procedure twice.

Results: All procedures were successfully conducted; the procedural success rate was 100% in all operators. The average procedure time was 170±35 seconds. No procedure related complications were noted.

Ps5419 | bedside
Red blood cell distribution width predicts one-year mortality following transcatheter aortic valve implantation
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Purpose: Red blood cell distribution width (RDW) is a measure of heterogeneity in erythrocyte size; high levels are associated with increased long-term mortality following myocardial infarction, percutaneous coronary intervention (PTCA), and coronary artery bypass grafting (CABG). The objective was to assess whether baseline RDW is predictive of outcome following transcatheter aortic valve implantation (TAVI).

Methods: An observational cross-sectional study of all subjects undergoing TAVI implantation in an experienced European institution was conducted. The baseline characteristics and clinical outcomes from a series of 385 patients who underwent TAVI were collected. The study endpoints were defined according to VARC 2. All patients provided written informed consent for the procedure and data collection. Statistical analysis was performed using SPSS version 21.0. Univariate analysis followed by multivariate regression analysis was performed. The following covariates were adjusted for: regression analysis: age, sex, body mass index, logistic EuroSCORE, Society of Thoracic Surgeons score, previous MI, CABG, or PTCA, coronary artery disease, hypertension, chronic obstructive pulmonary disease, diabetes mellitus, peripheral vascular disease, chronic kidney disease, cerebrovascular disease, ejection fraction <35%, aortic annulus diameter, and sheath size.

Results: In univariate analysis RDW was found to be associated with 30 day mortality (p=0.02) and all-cause mortality at 1 year (p=0.015). No significant