impaired LVEF on prognosis in patients undergoing transfemoral versus transapical TAVI.

**Methods:** All consecutive patients undergoing transfemoral or transapical TAVI in our centre were prospectively enrolled from June 2007 to December 2013. LVEF was measured using the Simpson biplane method and classified as good (≥50%), moderate (31-50%), and severely impaired (≤30%) at transthoracic echocardiography not later than 3 months before TAVI.

**Results:** In total, 263 (mean age 81.6±7.5, male 41.8%, logistic EuroSCORE 23.2±15.0%) and 224 (mean age 80.0±6.5, male 46.0%, logistic EuroSCORE 27.4±16.6%) patients underwent transfemoral and transapical TAVI, respectively. In the transfemoral group, LVEF was ≥50%, 31-50%, and ≤30% in 170 (64.6%), 67 (25.5%) and 26 (9.9%) of patients, respectively. In the transapical group, LVEF was ≥50%, 31-50%, and ≤30% in 149 (66.5%), 52 (23.2%) and 23 (10.3%) of patients, respectively. Thirty-day all-cause mortality was not associated with LVEF. An impaired LVEF < 50% predicted 2-year mortality for transapical (HR 1.86, 95% CI 1.06 to 3.26, p=0.03) but not transfemoral TAVI (HR 0.82, 95% CI 0.39 to 1.69, p=0.58) after multivariate adjustment.

**Conclusions:** An impaired LVEF before TAVI affects the prognosis differently per TAVI approach. The LVEF may be considered in deciding the most appropriate approach for TAVI.

## TCT-733

### VARC Endpoint Definition Compliance Rates in Contemporary TAVI Studies

*Magdalena Dorfmeister[1], darren mylotte[2], Ali Andalib[3], Pascal Thériault-Lauzier[4], Waleed Alharbi[3], Mina ~ Girgis[3], Michael Chetrit[3], A. Pieter Kappetein[5], Rudiger Lange[1]*

*[1]German Heart Center Munich, Munich, Germany, [2]University Hospital Galway, Galway, Ireland, [3]Mcgill University Health Centre, Montreal, Quebec, [4]McGill University, Montréal, Quebec, [5]Erasmus MC, Rotterdam, Netherlands*

**Background:** The Aortic Valve Academic Research Consortium (VARC) endpoint definitions were established to standardize the evaluation of clinical outcomes following transcatheter aortic valve implantation (TAVI). It remains unclear, however, to what extent and in which manner these definitions are used in publications.

**Methods:** We performed a systematic review of the literature to identify TAVI-related manuscripts published between Feb. 2011 and Feb. 2014. Two physicians independently reviewed these manuscripts and categorized them into 3 groups: a 'compliant' group comprised of VARC-defined endpoints only, a 'non-compliant' group comprised of non-VARC-defined endpoints only, and a 'mixed compliant' group comprising VARC- and non-VARC-defined endpoints.

**Results:** The search yielded a total of 5023 manuscripts and 514 were included in the analysis. At least one VARC definition was used in 275 (54%) manuscripts while 223 (43%) did not use any VARC definitions. We excluded from the analysis 16 (3%) manuscripts which dealt with outcomes not defined in VARC. Of the manuscripts using VARC, 49 (10%) were classified as compliant and 226 (46%) as mixed compliant. The following endpoints were more often defined using VARC vs. non-VARC: MI (64% vs 36%), stroke (56% vs. 44%), bleeding and (79% vs 21%) vascular complications (70% vs. 30%), AKI (63% vs. 37%), reintervention (67% vs. 33%) and composite endpoints (52% vs. 48%). The following endpoints were less often defined using VARC vs. non-VARC: mortality (59% vs 41%), valve-dysfunction (82% vs. 18%), TAVI-related complications (59% vs. 41%), NYHA (73% vs. 27%) and QOL (91% vs. 9%). After publication of the first VARC manuscript, VARC usage in TAVI publications increased from 29% at 6 months to 59% at 30 months. After publication of the revised VARC definitions VARC-2 usage increased from 3% at 6 months to 27% at 18 months, while VARC usage in general remained at 54%.

**Conclusions:** Although VARC definitions are well accepted within the "community", usage in peer-reviewed manuscripts remains suboptimal. Further studies are warranted to better understand how to improve compliance and adapt these findings in future VARC iterations.

## TCT-734

### The Role of Right Sided Hemodynamic Parameters as Predictors of 30 Day Outcome After Transcatheter Aortic Valve Replacement: The Impact of Right Ventricular Stroke Work Index

*Rajiv Tayal[1], Manjusha Anna[1], Cheng Chu[1], Martin Miguel I Amor[1], Geru Wu[1], Najam Wasty[1], Marc Cohen[1]*

*[1]Newark Beth Israel Medical Center, Newark, NJ*

**Background:** Right ventricular function and pulmonary hypertension are often not taken into consideration in the prognostication of patients undergoing TAVR; accordingly their impact on patients undergoing TAVR remains relatively poorly defined. We sought to explore their effect on 30 day outcomes in patients undergoing TAVR.

**Methods:** We collected complete baseline demographic and hemodynamic data obtained by right heart catheterization on 120 consecutive patients undergoing TAVR at our institution over a 1 year period. 30 day rate of death or hospital readmission were then examined. Statistical calculations were performed using JMP software.

**Results:** There were 5 deaths and 5 readmissions within 30 days. Mean age was 82.8 +/-8.2 years, BSA 1.82 +/-0.26m2, STS score 8.14 +/- 5.53, aortic valve area (AVA) 0.63+/-0.16cm2, mean gradient 50.4+/-13.7mmHg, creatinine 1.37+/-0.82 mg/dL, MELD score 10.4+/-4.3, and length of stay 5.5+/-4.5 days. 61.7% were female, 84.2% hypertensive, 34.2% diabetic, and 74.2% had coronary artery disease. 63.3% procedures were transfemoral (TF), 33.3% transapical (TA), and 3.3% trans-aortic (Tao). Trends toward higher event rates were seen with higher STS scores, lower pre-operative AVA, mean gradients, left ventricular ejection fraction (LVEF),cardiac output (CO), cardiac index (CI) or that had TA access. Low post-operative CO and right ventricular stroke work index (RVSWI) were associated with statistically significant higher 30 day mortality and readmission rates. Pre- or post-operative right atrial pressure (RAP), pulmonary capillary wedge pressue (PCWP), trans-pulmonary gradient (TPG), pulmonary vascular resistence (PVR), creatinine, and MELD score had no effect (Table 1).

**Table 1. Univariate Analysis of Hemodynamic Parameters as Predictors of 30 Day Outcomes**

| N=120 | Pre-TAVR | 30 Day Death or Readmission (Prob >ChiSq) | Post-TAVR Day 1 | 30 Day Death or Readmission (Prob>ChiSq) | p-Value for Change in Hemodynamics Post TAVR |
|---|---|---|---|---|---|
| RAP (mmHg) | 11.6+/-4.22 | 0.3146 | 7.36 +/-3.68 | 0.4608 | <0.0001 |
| PASP (mmHg) | 40.4+/-12.3 | 0.8588 | 37.2+/-9.55 | 0.6468 | 0.0016 |
| PADP (mmHg) | 20.5+/-7.2 | 0.7086 | 16.6+/-5.56 | 0.6529 | <0.0001 |
| MPAP (mmHg) | 28.5+/-9 | 0.8343 | 23.1+/-6.41 | 0.9850 | <0.0001 |
| ***CO (L/min)*** | 3.83+/-1.33 | 0.4437 | 4.67+/-1.63 | ***0.0482**** | <0.0001 |
| CI (L/min/m2) | 2.08+/-0.7l | 0.6866 | 2.56 +/-0.9 | 0.115 | <0.0001 |
| PVR (Woods units-m2) | 2.32+/-2.54 | 0.8621 | | | |
| TPG (mmHg) | 8.05+/-6.9 | 0.8969 | | | |
| ***RVSWI (mmHg x mL/m2)*** | 5.46 +/- 4.81 | 0.2827 | 6.9 +/- 3.9 | ***0.049**** | 0.0003 |

**Conclusions:** TAVR results in statistically significant improvements in most hemodynamic parameters. Poor post-TAVR CO and RVSWI were the strongest hemodynamic parameters of death or readmission after 30 days.

## TCT-735

### Postdilatation Of Ballon-expandable Transcatheter Aortic Valves Is Safe And Efficiently Reduces Postprocedural Aortic Regurgitation

*Maximilian Niemann[1], Patrick Ranosch[1], Sandra Freitag-Wolf[2], Doreen Brehm[1], Rainer Petzina[3], Georg Lutter[3], Norbert Frey[1], Derk Frank[1]*

*[1]Dept. of Cardiology and Angiology, UKSH, Kiel, Germany, [2]Institute of Medical Informatics and Statistics, UKSH, Kiel, Germany, [3]Dept. of Cardiac and Vascular Surgery, UKSH, Kiel, Germany*

**Background:** Significant aortic regurgitation (AR), in particular paravalvular AR, remains a relevant complication in patients undergoing transcatheter aortic valve implantation (TAVI) for symptomatic aortic stenosis. It remains unknown whether postdilatation (PD) as a treatment for paravalvular AR after TAVI improves AR and interferes with clinical outcome. The aim of this study was to investigate the impact of PD to reduce paravalvular AR after TAVI and its potential relevance for long-term survival.

**Methods:** 416 patients underwent TAVI at our institution from 2008-2013 using balloon-expandable Edwards Sapien and Sapien XT prostheses. 406 pts were available for complete retrospective analyses. The severity of paravalvular AR was evaluated by procedural angiography and, in a subgroup of patients, also with echocardiography 7d and 1 y after TAVI. Decision to postdilate or not was made by the team of implanting physicians immediately after valve deployment. The severity of AR for these analyses was evaluated by investigators blinded to the outcome.

**Results:** At a median follow-up of 308d (IQR 92-670), a total of n=143 deaths occurred, 30d mortality was 7.9% (n=32). 54.2% were treated via transfemoral (30d mortality 4.1%), 33.7% transapical (30d mortality 14.6%) and 12.1% transaortic access (30d mortality 6.1%). Mean age was 81.4y (±6.15), 56.7% were females, the mean log. EuroScore was 27.5% (±17.3). PD was carried out in n=137/406 pts (33.7%) and led to a significant reduction of paravalvular AR (Chi-square test p< 0.001). Of note, PD was not associated with increased complications according to VARC-2 criteria (including new pacemaker, p=0.66, and periprocedural stroke p=0.55, Irwin-Fisher Test). A significant postprocedural AR (> grade 1+) was associated with a worse prognosis in the total n=406 cohort (HR 1.69, CI 1.1-2.5).

**Conclusions:** These findings indicate that PD of ballon-expandable TAVI valves is a safe and efficient method to reduce paravalvular AR. In addition, this study shows that pts undergoing PD do not have an inferior prognosis as expected according their initial AR (p=0.302). Further investigations will address the long-term follow-up including AR and durability of postdilated valves.