

Abstract number: Euro19A-OP069

Abstract type: Oral Presentation

Reference: This abstract was presented at EuroPCR 2019, 20-24 May 2019, Paris

Link: <https://abstractbook.pconline.com/export/pdf/id/130069>

Published on: 3 May 2019

Etiology-based clinical scenarios predict procedural outcomes in patients undergoing transcatheter tricuspid valve edge-to-edge repair

BESLER C. (1), SCHLOTTER F. (1), ROMMEL K. P. (1), ORBAN M. (2), BRAUN D. (2), NOACK T. (1), MASSBERG S. (2), THIELE H. (1), HAUSLEITER J. (2), LURZ P. (1)

(1) Heart Center - University of Leipzig, Leipzig GERMANY (2) Medizinische Klinik und Poliklinik I, Klinikum der Universität München, Munich GERMANY

THEME: Interventions for Valvular Disease

TOPIC(S): Tricuspid / Pulmonary valve

AIMS

Transcatheter tricuspid valve repair (TTVR) is an emerging technique to treat tricuspid regurgitation (TR) in patients at increased surgical risk. Predictors of adverse events are scarce, and stratification by TR etiologies is lacking.

METHODS AND RESULTS

We report the procedural outcomes of 164 patients undergoing TTVR for TR from a bi-center registry classified into four etiology-based clinical scenarios (CS): lone atrial fibrillation TR (Afib-TR), pulmonary hypertension TR (PHT-TR), concomitant mitral regurgitation TR (MR-TR), and TR in patients on dialysis (Dialysis-TR). TTVR procedural success was defined as a TR reduction by ≥ 1 grade. Clinical characteristics, procedural outcomes and the co-primary endpoints mortality and a combined endpoint (mortality, re-hospitalization and tricuspid valve re-intervention) at mid-term follow-up at one year were evaluated. In total, 164 patients were assessed. Forty-four (27%) patients were categorized as Afib-TR, 30 (18%) as PHT-TR, 74 (45%) as MR-TR, and 11 (7%) as Dialysis-TR. We applied a stepwise categorization approach that classified patients on chronic hemodialysis into Dialysis-TR; patients not undergoing dialysis with MR grade ≥ 3 into MR-TR; patients not meeting the inclusion into Dialysis-TR or MR-TR with an invasively-determined systolic pulmonary artery pressure > 50 mmHg into PHT-TR; and the remaining patients into Afib-TR in case a history of atrial fibrillation/flutter existed. Five patients (3.0%) did not meet pre-specified inclusion criteria and were excluded from the analysis. Procedural success was $> 80\%$ in all CS and did not differ between groups ($p=0.38$). The Dialysis-TR CS had the highest STS-scores (14.60 [12.93; 30.03]; $p<0.01$), largest coaptation gap (6mm [3.61; 7.17]; $p=0.03$), and rate of NYHA class ≥ 3 ($n=11/11$ (100%); $p<0.01$). Patients categorized into the Afib-TR CS had the lowest STS-scores (3.09 [2.99; 4.28]; $p<0.01$), lowest rate of NYHA class ≥ 3 ($n=35/44$ (79.5%); $p<0.01$), and highest functional capacity (6MWT; 316m [264; 341]; $p<0.01$). Concomitant MR clipping was highest in MR-TR CS (69/74 (93%); $p<0.01$). Within the group of patients that had procedural success, CS predicted the combined primary endpoint (Afib-TR CS ($n=5/37$ (13.5%), PHT-TR CS ($n=15/26$ (57.7%)), MR-TR CS ($n=25/69$ (36.2%), and Dialysis-TR CS ($n=4/9$ (44.4%); $p<0.01$). One-year mortality was highest in the PHT-TR CS when compared to the other CSs ($p=0.03$). One-year heart failure hospitalization was highest in the PHT-TR CS (12/26 (46.2%); $p=0.02$). The rate of re-intervention was not significantly different among CSs.

CONCLUSIONS

Stratification according to etiology-based clinical scenarios may add value to the risk prediction in the heterogeneous patient population of TR patients currently evaluated for TTVR, overcoming some of the limitations of regression-based risk prediction models and may better guide decision-making in the TTVR patient population.

