



Interventional Cardiology

MULTICENTER EVALUATION OF PROSTHESIS OVERSIZING FOR THE SAPIEN 3 TRANSCATHETER HEART VALVE - IMPACT ON NEW PACEMAKER IMPLANTATIONS

Poster Contributions
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Authors: *Costanza Pellegrini, Won-Keun Kim, Andreas Holzamer, Thomas Walther, Patrick N. Mayr, Jonathan Michel, Tobias Andreas Rheude, Michael Joner, Teresa Trenkwalder, Albert M. Kasel, Adnan Kastrati, Heribert Schunkert, Michael Hilker, Helge Möllmann, Christian Hengstenberg, Oliver Husser, German Heart Center, Munich, Germany*

Background: Prosthesis sizing in transcatheter aortic valve replacement (TAVR) uses certain prosthesis oversizing (OS) to achieve device success. However, an increase in OS may increase the need for permanent pacemaker implantations (PPI). Although there are recommendations for OS for the SAPIEN 3 transcatheter heart valve (S3-THV), the influence of OS on PPI has not been evaluated.

Methods: Between January 2014 and January 2016, 709 patients without prior pacemaker were treated with S3-THV at three TAVR centers in Germany. OS was calculated on Multislice CT as (nominal prosthesis area/patient aortic annular area - 1)*100 and categorized into 7 categories: (-5% and under; -4% to 0%; +1% to +5%; +6% to +10%; +11% to +15%; +16% to +20%; and over +20%) with -4% to 0% as the reference.

Results: The incidence of new PPI was 15% (108/709). Median OS was significantly larger in patients with PPI (9% [2.5-15] vs. 7% [0-14]; p=0.043). In the multivariable analysis OS was an independent predictor of PPI (OR 1.027 95%CI [1.004-1.049]; p=0.023, per % increase). Rates of PPI showed a stepwise increase with each category of OS. In the reference category, PPI rate was 10%. Compared to the reference OS category, the adjusted risk of PPI was significantly elevated from +3% OS throughout the entire sizing range (see Figure).

Conclusions: An increase in OS increases need for PPI using the S3-THV.

