

# Inter-vendor comparison of Transcatheter Aortic Valve Replacement prosthesis sizing software\*

## IntelliSpace Portal (9) allowed for the fastest and most reproducible measurement of aortic annulus parameters



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### Background

Correct sizing of the aortic annulus and determination of coronary height is crucial for the efficacy and safety of trans-catheter aortic valve replacement (TAVR). We aimed to compare 3 different software solutions and manual measurements with respect to MDCT-derived annulus sizing parameters, reproducibility and processing time for TAVR planning and to evaluate the impact on patients' outcome.

### Methods

One-hundred-seventeen patients with severe aortic stenosis prior to TAVR were included. Prosthesis sizes were determined separately using 3 different platforms: I) 3mensio, II) Philips IntelliSpace Portal (7), and III) Philips IntelliSpace Portal (9). In addition, manual measurements were performed. Intra- and inter-observer reproducibility as well as systematic differences were assessed. Finally, hypothetical prosthesis sizing was related to patient outcome using 3mensio as the clinical reference standard.

### Results

Intra- and inter-observer reproducibility were excellent for all annulus parameters (ICCs 0.787–0.994). Distances to coronary ostia showed excellent intra-observer reproducibility except for 3mensio (ICC LCO: 0.655; RCO: 0.020), while inter-observer reproducibility was poor except for IntelliSpace Portal (9). For annulus parameters, slightly larger values were observed for IntelliSpace Portal (9) when compared to the other platforms. IntelliSpace Portal (9) allowed for the fastest and most reproducible measurement of aortic annulus parameters (although it did result in slightly larger annulus sizing).

### Conclusions

Reproducible measurement of aortic annulus parameters can be obtained by all investigated post-processing solutions. All post-processing platforms are likely to result in similar and reliable measurements and thus can be used interchangeably.

\* Baessler B., et al, Software-automated multidetector computed tomography-based prosthesis-sizing in transcatheter aortic valve replacement: Inter-vendor comparison and relation to patient outcome, International Journal of Cardiology, 2018, vol. 272  
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