

ORAL PRESENTATION

Open Access

Accuracy of aortic root annulus assessment with cardiac magnetic resonance in patients referred for transcatheter aortic valve implantation: a comparison with multi-detector computed tomography

Gianluca Pontone*, Daniele Andreini, Erika Bertella, Saima Mushtaq, Sarah Cortinovia, Andrea Annoni, Alberto Formenti, Giovanni Ballerini, Mauro Pepi

From 16th Annual SCMR Scientific Sessions
San Francisco, CA, USA. 31 January - 3 February 2013

Background

To compare the accuracy of cardiac magnetic resonance (CMR) evaluation of the aortic root as compared to multi-detector computed tomography (MDCT) in patients referred for transcatheter aortic valve implantation (TAVI).

Methods

In 50 patients, the following parameters were assessed with CMR and compared with those obtained with MDCT: aortic annulus (AoA) maximum diameter (AoA-Dmax), minimum diameter (AoA-Dmin), and area (AoA-A), length of the left coronary, right coronary, and non-coronary aortic leaflets, degree (grades 1 to 4) of aortic leaflet calcification and distance between AoA and coronary artery ostia.

Results

AoA-Dmax, AoA-Dmin and AoA-A were 26.45 ± 2.83 mm, 20.17 ± 2.20 mm, 444.88 ± 84.61 mm² and 26.45 ± 2.76 mm, 20.59 ± 2.35 mm and 449.78 ± 86.22 mm² by MDCT and CMR, respectively. The length of left coronary, right coronary, and non-coronary leaflets were 14.02 ± 2.27 mm, 13.33 ± 2.33 mm, 13.39 ± 1.97 mm, and 13.95 ± 2.18 mm, 13.30 ± 2.14 mm, 13.46 ± 1.80 mm by MDCT and CMR, respectively, while the scores of aortic leaflet calcifications were 3.4 ± 0.7 vs. 2.97 ± 0.77 . Finally, the distance between AoA and left main and right coronary artery ostia was

16.21 ± 3.07 mm, 16.02 ± 4.29 mm and 16.14 ± 2.83 mm, 16.14 ± 4.36 mm by CCT and CMR, respectively. There was close agreement between CMR and MDCT measurements, whereas aortic leaflet calcifications were underestimated by CMR.

Conclusions

Aortic root assessment with CMR including AoA size, aortic leaflet length and coronary artery ostia height is accurate in comparison to MDCT. CMR may be a valid imaging alternative in patients unsuitable for MDCT.

Funding

None.

Published: 30 January 2013

doi:10.1186/1532-429X-15-S1-O12

Cite this article as: Pontone et al.: Accuracy of aortic root annulus assessment with cardiac magnetic resonance in patients referred for transcatheter aortic valve implantation: a comparison with multi-detector computed tomography. *Journal of Cardiovascular Magnetic Resonance* 2013 15(Suppl 1):O12.