

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  $26.45 \pm 2.83$  mm,  $20.17 \pm 2.20$  mm,  $444.88 \pm 84.61$  mm<sup>2</sup> and  $26.45 \pm 2.76$  mm,  $20.59 \pm 2.35$  mm and  $449.78 \pm 86.22$  mm<sup>2</sup> by MDCT and CMR, respectively. The length of left coronary, right coronary, and non-coronary leaflets were  $14.02 \pm 2.27$  mm,  $13.33 \pm 2.33$  mm,  $13.39 \pm 1.97$  mm, and  $13.95 \pm 2.18$  mm,  $13.30 \pm 2.14$  mm,  $13.46 \pm 1.80$  mm by MDCT and CMR, respectively, while the scores of aortic leaflet calcifications were  $3.4 \pm 0.7$  vs.  $2.97 \pm 0.77$ . Finally, the distance between AoA and left main and right coronary artery ostia was

$16.21 \pm 3.07$  mm,  $16.02 \pm 4.29$  mm and  $16.14 \pm 2.83$  mm,  $16.14 \pm 4.36$  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.