MEETING REPORT

Abstract 3: Improved aortic dimension assessment with specialist echocardiography clinics: a quality improvement study

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Background

Aortopathy is a common clinical problem. Guidelines recommend the use of double-oblique short-axis imaging (CT/MRI) for significant aortic dilatation. Echocardiography is more readily available and cost effective. However, accuracy and reproducibility are affected by operator variability. Good correlation between imaging techniques is vital for patient management, and may reduce health care expense and ionizing radiation.

Objectives

We investigated the effect of the dedicated specialist valve/aortopathy echocardiography clinics on the accuracy of measurements and correlation with CT/MRI, compared to routine echocardiography performed outside these clinics. We hypothesized that a dedicated specialist-based clinics would yield a better correlation with CT/MRI.

Methods

Thirty patients undergoing echocardiography in a specialist clinic for aortopathy, who also had correlative imaging with CT/MRI were the retrospectively analysed. Aortic measurements were obtained using the inner edge to inner edge in the end-diastole method. Correlative imaging was compared for the aortic root (aortic annulus, sinus of valsalva, sinotubular junction) and ascending aortic measurements. A similar cohort of 25 patients outside specialist echocardiography clinic was used for comparison.

Results

Patient baseline characteristics are outlined in Table 2. The difference in mean maximum aortic diameter was 2.5 (±2.4) mm for dedicated clinics, compared to

Table 2 Baseline characteristics.

Demographics	Specialist clinic	Non-specialist clinic	*P* value
Age (mean, years)	54 ± 12	57 ± 15	0.47
Gender (male)	73%	68%	
Imaging features			
Aortic valve morphology (*n*, %)	17 (57%)	8 (32%)	
Bicuspid			
Trileaflet	8 (27%)	13 (52%)	
Prosthetic valve	3 (10%)	4 (16%)	
Quadricuspid	2 (6%)	0 (0%)	
Time between echo and correlative imaging (mean, months)	5 ± 5	9 ± 7	0.02
Correlative modality	22 (73%)	23 (92%)	
MRI			
CT	8 (27%)	2 (8%)	

Table 3 Results.

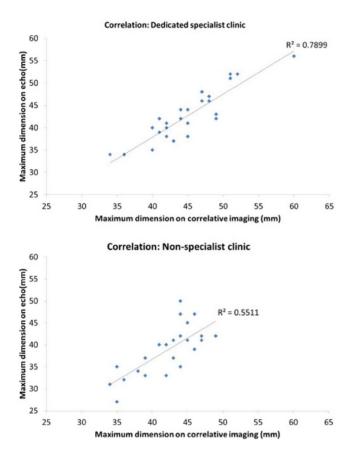| Aortic dimension	Specialist clinic	Non-specialist clinic	*P* value
Maximal dimension (mean, mm)	44.6 ± 5.4	42.0 ± 4.3	0.12
Difference in maximal dimension (mm)	2.5 ± 2.4	4.2 ± 2.8	0.03

Figure 3
Correlation of maximum dimension between dedicated specialist and non-specialist clinic.

4.2 (±2.8) mm for non-dedicated lists (*P* value 0.03) (Table 3). Bicuspid valves were the most common valve type in dedicated clinics (57%), compared to normal trileaflet valves (52%) in non-dedicated clinics. There was a significant difference in time to correlative imaging between the groups (Table 2).

Conclusions

There was a significantly better correlation between echo and cross-sectional imaging when the maximum aortic dimension was measured in a dedicated valve/aortopathy clinic (Fig. 3). Potential confounders include the time difference in correlative imaging and biases from retrospective analysis. Further investigation into this approach may reduce the need for cross-sectional imaging and offer a more cost-effective surveillance of aortopathy.