**IS ECHOCARDIOGRAPHY RELIABLE IN EVALUATING THE ASCENDING AORTA COMPARED TO COMPUTED TOMOGRAPHY IN PATIENTS WITH BICUSPID AORTIC VALVE?**

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Background: American College of Cardiology / American Heart Association guidelines recommend surgery in patients with bicuspid aortic valve (BAV) and dilated ascending aorta (> 5 cm). It is unclear whether transthoracic echocardiography (TTE) itself is adequate in evaluating the ascending aorta in these patients or additional computed tomography (CT) is needed.

Methods: Using our echocardiography laboratory database from 2004 to 2011, we included a total of 29 patients with BAV (age 58±12 yrs; males 66%) who had both TTE and CT. Time between the imaging modalities was 22 ± 50 days(mean ± SD). The results showed excellent correlation between maximum ascending aortic diameter measured by TTE and CT (r =0.91; p<0.0001) (Figure) with good limits of agreement (0.07 cm ± 0.53 cm; mean±1.96 SD). However, in 7% (2% to 22%; 95% CI) of patients, CT measurement exceeded TTE measurement by ≥ 0.5 cm.

Conclusions: 1) TTE and CT scans have good limits of agreement for the assessment of ascending aortic size in patients with BAV; 2) In a small number of patients, however, aortic size measured by CT scan exceeded the TTE measurement by ≥0.5 cm, which could significantly change patient management. Larger studies are needed to confirm our findings and understand the strengths and limitations of each imaging modality.

