**CAN DIASTOLIC FUNCTION PARAMETERS BE USED TO DETERMINE THE TIMING OF SURGERY IN PATIENTS WITH SEVERE AORTIC STENOSIS?**

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Background: Diastolic function is abnormal in patients with aortic stenosis (AS). However, it is unclear whether it gradually gets worse with different severities of AS and whether similar to mitral regurgitation one can use these parameters such as left atrial (LA) volume to decide timing of aortic valve surgery in patients with asymptomatic severe AS.

Methods: Using our echocardiographic laboratory data base from 2002 to 2011, we selected173 patients (no AS (n=24); mild AS (n=19; MG 10-25 mmHg); moderate AS (n=18; MG 25-40 mmHg), asymptomatic severe AS (n= 85; MG >40 mmHg), symptomatic severe AS (n= 27; MG >40 mmHg)) for the study. Patients with sub-normal ejection fraction, more than moderate valvular heart disease other than aortic stenosis were excluded.

Results: Age, gender, hypertension and left ventricular ejection fraction were not different between the groups (p =0.67; 0.10; 0.73; 0.64). The diastolic function parameters as determined by LA volume index, E/e’ and pulmonary artery systolic pressure (PASP) showed a trend of worsening with worsening grades of aortic stenosis (overall P=0.02;0.0004;0.0005). However, LA volume index, E/e’ and PASP were not predictive of patients with symptomatic severe aortic stenosis

(AUC of 0.5, 0.6, 0.5).

Conclusions:

1) Diastolic parameters, namely LA volume, E/e', PASP get worse with worsening AS severity.

2) However, these parameters may not be able to identify patients with symptomatic severe aortic stenosis due to wide variation among different degrees of AS and thus are less likely to determine the timing of surgery in patients with severe asymptomatic aortic stenosis.