

Evaluation of gender influence on left ventricular dimensions and outcome in aortic regurgitation.

## **Introduction**

Current European and American guidelines(1,2) recommend surgical intervention for aortic regurgitation when patients become symptomatic due to the valve regurgitation, or in asymptomatic patients when there is LV systolic dysfunction or when the ventricle becomes excessively dilated. However, despite the fact that normal LV dimensions, volumes and ejection fraction differ significantly among men and women(3,4), and also depend on age(5), there is currently no differentiation of guideline criteria for surgical interventions according to gender or age. While, several recent studies have demonstrated that gender significantly influences left ventricular remodeling(6), and that women present different LV remodeling in aortic stenosis(7,8), the ventricular response in aortic regurgitation has been less well characterized. In particular, it is unknown how differences in gender and age of LV dimensions might affect outcome, and whether we can use the same cutoff values for surgical thresholds in females as in men. Indeed criteria for surgery in aortic regurgitation are based on studies of the 1990 analyzing outcomes of mainly male young patients who underwent aortic valve replacement surgery in the 1980s(9-11). Importantly these studies included very few women.

## **Aim of study**

Our objective is to examine the effect of preoperative ejection fraction and left ventricular dimensions on survival and reverse remodeling after valve repair for aortic regurgitation, and their interaction with gender.

## **Methods**

### Inclusion criteria

Inclusion criteria are consecutive patients aged >18 years with moderate to severe ( $\geq$  grade 3) aortic regurgitation included in the Aviator registry

### Exclusion criteria

- 1) Pediatric patients < 18 years age
- 2) Patients operated for aortic root dilatation without significant aortic regurgitation.
- 3) Patients operated for acute events (endocarditis) or aortic dissection

### Primary outcome

Overall survival, natural history and postoperative survival in female vs male patients stratified

### Secondary outcome

Cardiovascular survival free of rehospitalization for heart failure.

Reverse remodeling in echocardiographic data after intervention.

*Heart Valve Society Aortic Valve Database research proposal*

Statistical methods

Cox analysis with a time dependent covariate for time of surgery will be used. Analysis will be both performed for unadjusted survival and adjusted survival for covariates such as age, renal function etc... Patients will be matched for age and other risk factors using propensity score and inverse propensity score weighting will be used in cox analysis.

**Variables needed:**

Pre- and post-operative transthoracic echocardiogram data, demographic data, preoperative health survey, main reason for referral, last follow-up date and status, reported hospitalization for heart failure.

**Time schedule**

6 months after receipt of data.

**References**

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