



GENDER BASED DIFFERENCES IN LEFT AND RIGHT VENTRICULAR SIZE AND FUNCTION IN PATIENTS UNDERGOING MITRAL VALVE SURGERY.

ACC Poster Contributions

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Session Title: Novel Approaches to Measuring Outcomes in Valvular Disease

Abstract Category: Valvular Disease

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Background: Guidelines for mitral valve (MV) surgery are similar for men and women and include symptoms and LV parameters. Prior studies have shown increased mortality in women. To address differences in outcome, we evaluated gender-specific indices of LV and RV function in pts undergoing MV surgery.

Methods: We analyzed 758 pts undergoing MV surgery. All cause long term mortality was 11% (87 pts) in 3 yrs of follow up. All 87 pts that died were matched to 171 pts who survived (living controls). We analyzed pre-op echos in these 258 pts (mean age 67+/-13).

Results: A mixed effects model was used to obtain adjusted means by gender using the matched set as random effects. Differences in LV and RV parameters between genders are shown in the table. ROC analysis revealed optimal thresholds for predicting overall mortality: basal RV diameter (RVD1) ≥ 3.5 cm (HR 6.5, $p < 0.0001$), LV end-systolic volume index ≥ 27.6 ml/m² (HR 2.0, $p = 0.004$), LV end-diastolic volume index ≥ 55.4 ml/m² (HR 2.1, $p = 0.004$), and tricuspid regurgitation severity ≥ 2 (HR 1.9, $p = 0.007$). RVD1 was an independent predictor of mortality (HR 1.9, $p = 0.003$).

Conclusion: There are important gender differences in LV and RV volumes in pts undergoing MV surgery. Larger LV and RV volumes predict late mortality in both genders. Despite smaller volumes in women, mortality was similar in men and women. Although specific cut-off values for LV and RV volumes are not defined, echo parameters leading to surgical referral may need to be revised to reflect gender differences.

Adjusted Means Between Genders Controlling for Mortality

Variable	Women	Men	P-value
LV end systolic volume index (ml/m ²)	23.8 \pm 2.5	33.4 \pm 3.4	0.0019
LV end diastolic volume index (ml/m ²)	54.9 \pm 2.5	74.8 \pm 2.7	<0.0001
Basal RV diameter in cm (RVD1)	3.6 \pm 0.1	4.0 \pm 0.1	0.0002
RV systolic area index	5.1 \pm 0.3	6.4 \pm 0.4	0.001
Right atrial volume index (ml/m ²)	26.0 \pm 2.9	33.2 \pm 3.9	0.035