



 VALVULAR HEART DISEASE

PREOPERATIVE EXERCISE CAPACITY BEST PREDICTS SURVIVAL AFTER SURGERY FOR CHRONIC NONISCHEMIC MITRAL REGURGITATION

ACC Poster Contributions

Georgia World Congress Center, Hall B5

Sunday, March 14, 2010, 3:30 p.m.-4:30 p.m.

Session Title: Novel Approaches to Measuring Outcomes in Valvular Disease

Abstract Category: Valvular Disease

Presentation Number: 1117-387

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Background: Exercise duration (ex dur) during ex treadmill testing (ETT) predicts long-term outcome among asymptomatic (asx) patients (pts) with mitral regurgitation (MR). However, the prognostic value of preop ex dur relative to other objective indices and clinical measures in pts who undergo mitral valve surgery (MVS) is unknown.

Methods: Therefore, among 40 pts (50% male, avg age at MVS 56 yrs, both symptomatic and asx) who underwent MVS for chronic severe nonischemic MR, we tested the hypothesis that preop ex dur on ETT (modified Bruce protocol) is a more potent predictor of (1) long-term postoperative survival and (2) persistence of functional class (FC) ≥ 2 symptoms ≤ 2 years after MVS than preop ETT maximum predicted heart rate achieved, chronotropic index, or heart rate recovery, radionuclide cineangiographic (RNCA) left (LV) or right ventricular (RV) EF at rest, peak ex, $r \pm$ ex change, echocardiographic (ECHO) LVEF, LV dimensions at diastole, systole or fractional shortening (FS), and clinical variables (age, gender, etiology, preop cardiac drug use, or preop FC).

Results: During av 8 ± 3 yr follow-up, 7/40 (17.5%) pts died: 3 sudden, 1 heart failure, 1 myocardial infarction, 2 noncardiac cause; 4 pts (including 3 who died) had persistent FC ≥ 2 symptoms ≤ 2 years after MVS. Preop ex dur predicted all cause postop death, thus among pts who exercised ≤ 7 mins (upper bound of the lower tercile of exercise times), avg annual risk (AAR) of postop death was 4.9% vs. patients who exercised > 7 minutes (AAR=0.91%, $p < .02$). Preop ex dur also predicted FC ≥ 2 symptoms ≤ 2 years after MVS ($p < .04$). Log rank comparisons of Kaplan Meier curves and Chi Square tests showed that neither age, gender, rheumatic etiology, cardiac drugs, preop FC, nor other ETT, RNCA, ECHO variables was associated with either outcome (NS, all variables).

Conclusions: Among pts with chronic severe MR undergoing MVS, preop ex dur predicts survival and symptom persistence better than commonly documented clinical measures or preop ETT, ECHO or RNCA variables. Future research should determine whether cardiac preconditioning before surgery is of value for improving outcomes among patients with MR who have poor exercise capacity before surgery.