PROGNOSTIC VALUE OF BASELINE CARDIOVASCULAR MAGNETIC RESONANCE IMAGING MEASURES OF LEFT VENTRICULAR GEOMETRY AND FUNCTION IN 366 PATIENTS UNDERGOING SURGERY FOR ISCHEMIC CARDIOMYOPATHY: RESULTS FROM NIH SPONSORED STICH TRIAL

Poster Contributions
Hall C
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Introduction: STICH (Surgical Treatment of Ischemic Heart Failure) is a randomized trial which tested the hypothesis that two surgical approaches, coronary artery bypass surgery and surgical ventricular reconstruction (SVR), may improve mortality in patients with ischemic cardiomyopathy and a left ventricular (LV) ejection fraction (EF) <35%. A subset of these patients included baseline cardiovascular magnetic resonance imaging (CMR). CMR predictors of survival in this high-risk population are presented and analyzed.

Methods and Results: Of the 1000 SVR eligible patients, 366 had a baseline CMR study, 192 in patients assigned to the CABG only group and 174 to the CABG plus SVR group. The mean age of this group was 61 years, 14% were women, 35% had diabetes mellitus, on good medical regimen similar to all SVR eligible patients. The mean LVEF was 28%. Adjusted for baseline clinical characteristics, pharmacological therapy and treatment assignment to SVR versus no SVR, LVEF was a strong predictor of survival (RR=0.035 per %; p=0.0007). Adjusted in addition for LVEF, LV end diastolic volume index (RR=1.10 per 10 ml/m2; p=0.0002), LV end systolic volume index (RR=1.11 per 10 ml/m2; p=0.0006), LV stroke volume index (RR=1.48 per 10 ml/m2; p=0.001), LV radius of curvature (RR=1.17; p=0.04), and LV wall motion score index (RR=1.81; p=0.04) were significant predictors of survival when added individually. Baseline LV mass index was not a predictor of survival. An exploratory analysis suggested that SVR might have been associated with higher mortality in those with a more severely dilated LV (LVESI >71 ml/m2) with lower EF (<27%) and trend toward lower mortality in those with smaller ventricles with higher EF.

Conclusions: CMR measures of LV function, size and shape provide significant prognostic information incremental to clinical and treatment variables in patients with ischemic cardiomyopathy undergoing surgical therapy. An exploratory analysis suggests possible worsened outcomes with SVR in those with severely remodeled left ventricles.