NOVEL BIOMARKERS OF MYOCARDIAL STRESS AND FIBROSIS FOR IDENTIFYING ASYMPTOMATIC PROGRESSION TO A LOW LVEF IN COMMUNITY DWELLING OLDER ADULTS

Oral Contributions
Room 204 B
Saturday, March 29, 2014, 9:00 a.m.-9:15 a.m.

Session Title: Prognostic and Diagnostic Role of Biomarkers in Heart Failure
Abstract Category: 12. Heart Failure and Cardiomyopathies: Clinical
Presentation Number: 904-07

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Background: Older adults with asymptomatic low left ventricular ejection fraction (LVEF) are at risk for HF and death. We hypothesized that two novel biomarkers, soluble ST2 (sST2) and galectin-3 (Gal-3), associated with cardiac stress and fibrosis, could identify older adults at-risk for transitioning from a normal to a low LVEF.

Methods: Using the Cardiovascular Health Study (CHS), a cohort of community dwelling adults ≥ 65 years, sST2 and Gal-3 were measured in 2085 participants who had no history of HF and a normal LVEF by echocardiogram with a repeat study 3-years later. Those with interim HF were excluded. A low LVEF was defined as < 55%.

Results: The mean age was 72±5, 38% male. Median sST2 and Gal-3 levels were 22.7 (IQR18.1-28.4) ng/mL and 15.2 (IQR12.6-18.6) ng/mL respectively. 128 participants transitioned to a low LVEF (100 between 45-54% and 28<45%). Participants were divided into quintiles based on their biomarker levels and the incidence of a new low LVEF (Figure). sST2, but not Gal-3 was associated with a new low EF across quintiles (p<0.001). However, sST2 alone was no longer significant after adjustment for age, sex, and race.

Conclusions: sST2, but not gal-3, is associated with transition to reduced LVEF. Given that this finding loses significance after accounting for clinical characteristics, further study is warranted to determine the role for sST2 in older adults for predicting the progression from stage A to stage B HF.