INTERACTION BETWEEN ST2 LEVELS AND EXERCISE TRAINING IN PATIENTS WITH CHRONIC HEART FAILURE: ANALYSIS FROM THE HF-ACTION TRIAL

ACC Moderated Poster Contributions
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Background: ST2 is a promising biomarker in patients with heart failure. The aim of this study was to examine the relationship between plasma levels of ST2, outcomes, and the clinical benefit of exercise training in ambulatory heart failure patients (LVEF ≤ 0.35, NYHA class II-IV) enrolled in the HF-ACTION trial.

Methods: HF-ACTION randomized 2331 patients to either exercise training or usual care and contained a biomarker substudy. ST2 was analyzed in 912 patients with evaluable plasma samples. Cox models were used to assess the relationship between ST2, long-term outcomes, and the treatment effect of exercise training.

Results: In univariable analysis, ST2 was a strong predictor of death or hospitalization (HR = 1.48, p < 0.0001), cardiovascular death or heart failure hospitalization (HR = 2.14, p < 0.0001), and all-cause mortality (HR = 2.33, p < 0.0001). In multivariable models, ST2 remained a significant predictor of outcomes after adjustment for clinical variables and NTproBNP. There was a statistically significant interaction between exercise training and the outcome of all-cause mortality, such that patients with lower ST2 levels were more likely to have a benefit with exercise training than patients with higher levels (p = 0.016 for ST2*treatment interaction) (Figure).

Conclusions: ST2 was an independent predictor of outcome in this cohort of ambulatory heart failure patients. The benefit of exercise training may differ across patient ST2 levels and requires further investigation to confirm.