PROGNOSTIC VALUE OF BASELINE AND CHANGES IN CIRCULATING SOLUBLE ST2 LEVELS AND THE EFFECTS OF NESRITIDE IN ACUTE DECOMPENSATED HEART FAILURE

Poster Contributions
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Background: Several studies have demonstrated prognostic utility of ST2 levels in chronic HF but fewer in hospitalized patients. Our goal is to investigate the association between baseline and post-treatment circulating soluble ST2 (sST2) level, in-hospital dyspnea status, and post-discharge adverse outcomes in acute decompensated heart failure (ADHF).

Methods: sST2 levels were measured in sequential plasma samples from 858 subjects with ADHF enrolled in the ASCEND-HF biomarker sub-study, and were related to in-hospital and post-discharge clinical outcome.

Results: Median(IQR) sST2 levels were 71.2 (48.2-111.1) ng/mL at baseline, 46.9 (32.4-70.3) ng/mL at 48-72 hours, and 39.5 (27.8 - 63.8) ng/mL at 30 days. Higher ST2 levels were associated with increased risk of death at 180-days (HR 2.21, P<0.0001 for baseline and HR 2.64, P<0.0001 for 48-72h sST2 levels). These results were however not independent of covariates and NT-proBNP (HR 1.29, P=0.23 for baseline and HR 1.33, P=0.23 for 48-72h sST2 levels). Patients (14.4%) who did not observe lower sST2 levels at follow-up (48-72h) had higher 180-day death rates (HR 2.43, P=0.0018) as compared to those who had lower follow-up sST2. Neither baseline or follow-up sST2 levels were associated with improvement in dyspnea. Median change in sST2 levels from baseline to 48-72 hours was greater in the placebo than in the nesiritide group (-26.1 [-45.9 to -12.0] versus -18.1 [-41.2 to -4.4], p=0.005); however, changes in sST2 from baseline to 30 days were similar between the two groups.

Conclusion: Elevated levels of sST2 were associated with an increase risk of adverse clinical events in ADHF. However, addition of sST2 to a standard risk model plus NT-proBNP levels did not improve prediction of 180-day outcomes. Nesiritide did not demonstrate incremental impact on sST2 levels over standard therapy.