



Heart Failure

SERIAL MEASUREMENT OF INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 7 PREDICTS CHRONIC HEART FAILURE OUTCOMES AND VENTRICULAR REMODELING: RESULTS FROM THE PROBNP OUTPATIENT TAILORED CHRONIC HEART FAILURE THERAPY (PROTECT) STUDY

Oral Contributions

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Authors: *Shweta Motiwala, Anju Bhardwaj, Jackie Szymonifka, Arianna Belcher, Rory Weiner, Aaron Baggish, Hanna Gaggin, James Januzzi, Massachusetts General Hospital, Boston, MA, USA*

Background: Insulin-like growth factor binding protein 7 (IGFBP7) may be a marker for cardiovascular (CV) outcomes, prognosis, and remodeling in chronic heart failure (HF).

Methods: 142 subjects with left ventricular systolic dysfunction (LVSD) were followed through 908 visits over 10 ± 3 months. Amount of time spent with IGFBP7 level ≤ 102.9 pg/mL (study median) and change from baseline to final value were considered across study visits, and used to assess risk for adverse CV events and echocardiographic parameters of LV remodeling.

Results: Median IGFBP7 values at baseline and 3 months were higher in patients with CV events (96.1 vs. 74.7 pg/mL, $p = 0.005$; 109.9 vs. 76.7 pg/mL, $p = 0.009$). Baseline elevated IGFBP7 level was associated with high cumulative hazard (Figure) that was additive to baseline NT-proBNP ($p < 0.001$); serial measurement at 3 months added prognostic value to baseline level ($p = 0.009$). Duration of time spent with IGFBP7 ≤ 102.9 pg/mL was associated with a lower rate of CV events (28.0% if always low vs. 61.3% if always high; $p = 0.001$) and independently predicted fewer CV events even adjusted for NT-proBNP (OR = 0.88; 95% confidence interval [CI] = 0.81-0.96, $p = 0.006$). Increase in IGFBP7 predicted increase in LV volume (OR = 35.2; 95% CI = 2.1-599.8, $p = 0.01$). Use of beta-blockers and loop diuretics reduced IGFBP7 level (both $p < 0.05$).

Conclusion: In chronic HF due to LVSD, serial measurement of IGFBP7 provides independent prognostic information and may predict deleterious myocardial remodeling.

