Follistatin-like 3 (FSTL3) levels are increased in acute heart failure patients

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Introduction: Follistatin-like 3 (FSTL3) is a secreted protein that has been suggested to play an important role in modulating cardiac remodeling and hypertrophy. In this study, we aim to determine whether: 1) FSTL3 is incrementally elevated in patients with HF vs those with other cardiovascular disease (CVD); and 2) increased FSTL3 is associated with 2 or more hospital admissions due to major adverse CV events (MACE) within 1 year.

Methods and results: We measured circulating levels of FSTL3 using commercially available ELISA (R&D systems) in a total of n=696 patients. FSTL3 levels were compared between: 1) healthy-aging volunteers with no prior major CVD (n=267, age 67±6 years) and 2) patients admitted to cardiology unit for various CVD (n=429, age 66±14 years); among those (n=178, age 68±13 years) had HF. Patients with HF had 2-fold higher FSTL3 levels vs healthy age-matched controls vs those with other CVD ($p<0.001$). Occurrences of MACE were recorded up to 1 year for patients admitted to cardiology unit. On univariate analyses, patient with 2 or more MACE within 1 year (n=91, 27%) had significant elevated FSTL3 levels (P=0.003), is associated with older age ($P<0.005$). On multivariate analysis, high FSTL3 levels (P=0.034) is an independent predictor of 2 or more MACE admissions within 1 year after adjusting for age, clinical comorbidities and medications.

Conclusions: FSTL3 is incrementally increased in patients with HF and is associated with poorer prognosis. Elevated FSTL3 levels is associated with increased risks of cardiac hospital readmissions for patients with multiple CV morbidities.