THE INFLAMMATORY BIOMARKER YKL-40 AS A NEW PROGNOSTIC MARKER FOR ALL-CAUSE MORTALITY IN PATIENTS WITH HEART FAILURE

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Biomarkers in Heart Failure: Something Old, Something New
Abstract Category: 14. Heart Failure: Clinical
Presentation Number: 1227-587

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Background: Despite progress in management of patients with heart failure (HF) these patients still have a poor prognosis. We tested the hypothesis whether the inflammatory biomarker YKL-40 alone or in combination with high-sensitivity C-reactive protein (hs-CRP) and/or N-terminal-pro-B natriuretic peptide (NT-proBNP) could be a new prognostic biomarker for all-cause mortality in patients with HF.

Methods and Results: A total of 717 of the 1000 patients with severe left ventricular systolic dysfunction included in the EchoCardigraphy and Heart Outcome Study were included in Denmark and had blood sample available for serum YKL-40 determination. Mean age of patients was 70 years, and 73% were male. During the 7 years follow-up period 458 patients died. Patients were categorised according to serum YKL-40 at entry into four quartiles: quartile I with median serum YKL-40 = 60 μg/L (5%-95% Confidence interval (CI): 30-82), quartile II: YKL-40 = 107 μg/L (CI: 86-132), quartile III: YKL-40 = 169 μg/L (CI: 142-221), and quartile IV: YKL-40 = 286 μg/L (CI: 230-770). Hazard ratios for all-cause mortality were with quartile I as reference 1.33 (CI:0.99-1.80), 1.35 (CI:0.99-1.82), and 1.54 (CI:1.14-2.08) for serum YKL-40 II to IV quartiles, respectively following multivariable adjustment for cardiovascular risk factors (age, left ventricular ejection fraction, gender, history of heart failure, ischemic heart disease, chronic pulmonary disease, diabetes mellitus, stroke, hypertension, NT-proBNP, hs-CRP, and renal function).

Conclusions: Serum YKL-40 is significantly associated with all-cause mortality in patients with HF and could potentially be a new prognostic biomarker in these patients.