

# Plasma Omega-3 Polyunsaturated Fatty Acids and Survival in Patients with Chronic Heart Failure and Major Depressive Disorder

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## *Abstract*

The omega-3 fatty acid (FA) concentration is low in patients with coronary heart disease (CHD). Supplement of omega-3 FA improves cardiovascular outcomes in patients with CHD and heart failure (HF). However, plasma omega-3 FA and its role for prognosis in HF patients have not been examined previously. In this study, we explore the prognostic value of omega-3 polyunsaturated FA in HF patients with major depressive disorder (MDD). Plasma was obtained from HF patients with MDD who participated in the Sertraline Against Depression and Heart Disease in Chronic Heart Failure trial. FA methyl esters were analyzed by the method of a flame ionization detector. Weight percent is the unit of the omega compounds. The primary outcome was survival which was analyzed using Cox proportional hazards regression modeling. A total of 109 depressed HF patients had adequate volume for completion of the FA assays. Plasma total omega-3 (hazard ratio [HR] 0.65, 95% confidence interval [CI] 0.43-0.98) and EPA<sub>0.1 unit</sub> (HR 0.73, 95% CI 0.56-0.96) were significantly associated with survival of patients with HF and co-morbid MDD. The results suggest that low plasma omega-3 FA is a significant factor for reduced survival in HF patients with MDD.