

Abstract

Circ Cardiovasc Qual Outcomes. 2010 Jun 15. [Epub ahead of print]

Blood Eicosapentaenoic and Docosahexaenoic Acids Predict All-Cause Mortality in Patients With Stable Coronary Heart Disease: The Heart and Soul Study.

Pottala JV, Garg S, Cohen BE, Whooley MA, Harris WS.

Cardiovascular Health Research Center, Sanford Research/USD and Sanford School of Medicine, Sioux Falls, SD; Emory University School of Medicine, Atlanta, Ga; and Medicine and Epidemiology and Biostatistics, University of California, San Francisco, and Section of General Internal Medicine, VA Medical Center, San Francisco, Calif.

BACKGROUND: Omega-3 fatty acid (n-3 FA) blood levels and intake have been inversely associated with risk for sudden cardiac death, but their relationship with all-cause mortality is unclear.

OBJECTIVE: The purpose of this study was to determine the extent to which baseline blood n-3 FA levels are associated with reduced risk for all-cause mortality in patients with stable coronary heart disease.

METHODS: The Heart and Soul study used a prospective cohort design with a median follow-up of 5.9 years. Patients were recruited between 2000 and 2002 from 12 outpatient facilities in the San Francisco Bay Area. Standard cardiovascular risk factors, demographics, socioeconomic status, health behaviors, and inflammatory markers were collected at baseline. Fasting blood levels of eicosapentaenoic and docosahexaenoic acids were measured and expressed as a percent of total blood FAs. Vital status was assessed with annual telephone interviews and confirmed by review of death certificates.

RESULTS: There were 237 deaths among 956 patients. Cox proportional hazards models were used to evaluate the extent to which blood eicosapentaenoic and docosahexaenoic acids were independently associated with all cause mortality. Compared with patients having baseline eicosapentaenoic and docosahexaenoic acids levels below the median (<3.6%), those at or above the median had a 27% decreased risk of death (hazard ratio, 0.73; 95% confidence interval, 0.56-0.94). This association was unaffected by adjustment for age, sex, ethnicity, center, socioeconomic status, traditional cardiovascular risk factors, and inflammatory markers (hazard ratio, 0.74; 95% confidence interval, 0.55-1.00, $P < 0.05$).

CONCLUSIONS: In these outpatients with stable coronary heart disease, blood n-3 FA levels were inversely associated with total mortality independent of standard and emerging risk factors, suggesting that reduced tissue n-3 FA levels may adversely impact metabolism.

PMID: 20551373