NEJM Study on the Use of Fish Oil for Prevention of Cardiovascular Events

Editor's Note: *A recent study in the* New England Journal of Medicine[1] *(NEJM) reported that there is no cardiovascular protective benefit from fish oil supplements in high-risk patients (those with multiple cardiovascular risk factors or atherosclerotic vascular disease but not myocardial infarction). Some meta-analyses have also reported a lack of effect,[2,3] although other trials have reported 20% to 50% reductions in total mortality and sudden death using doses of 0.85 to 4.0 g/day, with treatment durations from 12 to 42 months.[4] The current study used 1 g/day and the results were reported after 1 year. For a perspective on this study, Medscape interviewed Howard Weintraub, Clinical Director of the Center for the Prevention of Cardiovascular Disease at New York University School of Medicine, New York University Medical Center.*

Medscape: Do you think the NEJM study definitively proves the case against use of fish oil supplements in preventing cardiovascular disease?

Dr. Weintraub: Other fish oil studies more or less came to the same conclusions, although the NEJM study was prospective, placebo-randomized, and large, with 12,513 patients. One was published in the *Journal of the American College of Cardiology* a year or so ago.[5] Another was a review we did at New York University, published in 2010.[6] It had some interesting data about the use of fish oils, but we couldn't support the idea that you should give these agents to everybody for prevention of cardiovascular events.

However, to make a broad, sweeping comment about fish oil on the basis of this one study may be premature. First, you want to recognize the use of 1 g rather than 4 g of fish oil. Next, the population that was studied was not hypertriglyceridemic. You also want to look at the fish oil that was used. Namely, some literature raises interest about the ratios of the different components of fish oil, namely eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Also, if you go to different stores -- a nutrition store or Costco -- you're at different ends of the spectrum. You may not only find very different ratios of EPA to DHA, but you also may have differences in purity or the presence of either fluorocarbons or mercury.

I think that taking fish oil in a daily dose of 1 g in the expectation of preventing cardiovascular morbidity and mortality or major events has been done mostly in Europe and is not practiced much here. It's rare to see somebody in this country who had either cardiac events or stents who is using fish oil just for that indication. There is some evidence in the literature for it, but the current prescriptions in the United States for fish oil are 4 g given for hypertriglyceridemia. I have not used fish oil for prevention of cardiovascular morbidity or mortality. Hence, as long as I haven't used it for this indication, this study doesn't have any impact on the way I use fish oil and won't put a nail in the coffin, or a nail in the lid.

Medscape: Are there studies on non-fish oil agents that might be more promising in preventing cardiovascular events?

Dr. Weintraub: There have been a number of recent disappointing studies on agents other than fish oil for preventing cardiovascular events. The current state of confusion about reducing cardiovascular risk is not helped by results from studies like AIM-HIGH[7] and THRIVE,[8] in which the addition of niacin [to a statin] provided no protection, although it might not have been expected to, based upon the baseline lipids of the population. Other studies, such as FIELD,[9] looked at fibrates, and ACCORD[10] studied the effect of intensive glucose lowering on cardiovascular outcomes. None of these studies showed any benefit with nonstatin agents for protecting against cardiovascular events or helped physicians in making decisions about how to treat patients.