Rapid Review Alert September 12, 2012

ADVANCES

In EPA & DHA Research

Abstract (as published in JAMA)

Context: Considerable controversy exists regarding the association of omega-3 polyunsaturated fatty acids (PUFAs) and major cardiovascular end points.

Objective: To assess the role of omega-3 supplementation on major cardiovascular outcomes.

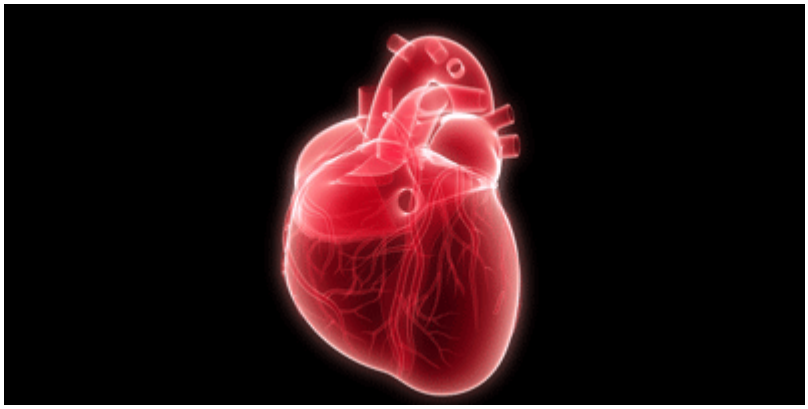
Data Sources: MEDLINE, EMBASE, and the Cochrane Central Register of Controlled Trials through August 2012.

Study Selection: Randomized clinical trials evaluating the effect of omega-3 on all cause mortality, cardiac death, sudden death, myocardial infarction, and stroke.

Data Extraction: Descriptive and quantitative information was extracted; absolute and relative risk (RR) estimates were synthesized under a random-effects model. Heterogeneity was assessed using the Q statistic and I2. Subgroup analyses were performed for the presence of blinding, the prevention settings, and patients with implantable cardioverter-defibrillators, and meta-regression analyses were performed for the omega-3 dose. A statistical significance threshold of .0063 was assumed after adjustment for multiple comparisons.

Data Synthesis: Of the 3635 citations retrieved, 20 studies of 68 680 patients were included, reporting 7044 deaths, 3993 cardiac deaths, 1150 sudden deaths, 1837 myocardial infarctions, and 1490 strokes. No statistically significant association was observed with all-cause mortality (RR, 0.96; 95% CI, 0.91 to 1.02; risk reduction [RD] −0.004, 95% CI, −0.01 to 0.02), cardiac death (RR, 0.91; 95% CI, 0.85 to 0.98; RD, −0.01; 95% CI, −0.02 to 0.00), sudden death (RR, 0.87; 95% CI, 0.75 to 1.01; RD, −0.003; 95% CI, −0.012 to 0.006), myocardial infarction (RR, 0.89; 95% CI, 0.76 to 1.04; RD, −0.002; 95% CI, −0.007 to 0.002), and stroke (RR, 1.05; 95% CI, 0.93 to 1.18; RD, 0.001; 95% CI, −0.002 to 0.004) when all supplement studies were considered.

Rapid Review Alert



Another Flawed O-3 & CVD Meta-Analysis

Review of:
Rizos EC Ntzani EE Bika E Kostapanos MS and Elisaf MS (2012). Association between omega-3 fatty acid supplementation and risk of major cardiovascular disease events: A systematic review and meta-analysis. JAMA 308:1024-1033.

GOED Take-Aways

- Results from the current systematic review and meta-analysis do not change the totality of the publicly available scientific evidence demonstrating a cardiovascular benefit of EPA and DHA in healthy populations, as well as in the majority of populations with pre-existing cardiovascular ailments. Therefore, consumers should continue to take omega-3 products for heart health.
- The extensive list of long-chain omega-3 recommendations from professional organizations and government bodies continues to grow because the science is so compelling.

What Else Should You Know?

- The population of interest was diseased, not healthy.
- Subjects' background intake of EPA and DHA, as well as tissue levels, were not considered, making it difficult to draw any valid conclusions about the effects of supplemental intake.
- The study design was the reason many of the studies included in the present meta-analysis failed to demonstrate a benefit.
  - Small
  - Population characteristics
  - Dosage
  - Not designed to evaluate CVD end points
  - Underpowered-not a failure to demonstrate an effect; rather a failure to detect an effect
  - Subjects in more recent trials were maintained on better and more extensive pharmaceutical regimens (e.g. cardiac glycosides, antiarrhythmics, antihypertensives, hypolipidemics, antianginals, anticoagulants, beta-blockers, calcium channel blockers, diuretics, vasodilators, etc…) than those in earlier trials. This presents a significant challenge in trying to determine if omega-3s can reduce cardiovascular disease risks if

Conclusions: Overall, omega-3 PUFA supplementation was not associated with a lower risk of all-cause mortality, cardiac death, sudden death, myocardial infarction, or stroke based on relative and absolute measures of association.

you are already giving patients a handful of other drugs that contribute to achieving that objective.
- It has been estimated that low n-3 polyunsaturated fatty acid intakes account for 72,000-96,000 deaths per year from CVD in the United States alone (Danaei et al., 2009).

Suggested Citation

Global Organization for EPA and DHA Omega-3s (2012). Omega-3s & CVD Events [Peer commentary on the paper “Association between omega-3 fatty acid supplementation and risk of major cardiovascular disease events: A systematic review and meta-analysis” by Rizos EC Ntzani EE Bika E Kostapanos MS and Elisaf MS (2012). JAMA 308:1024-1033.].

Reference

Danaei G Ding EL Mozaffarian D Taylor B Rehm J Murray CJ and Ezzati M (2009). The preventable causes of death in the United States: Comparative risk assessment of dietary, lifestyle, and metabolic risk factors. PLoS Med 6: e1000058.

Our mailing address is:
GOED News Alert
1075 Hollywood Ave.
Salt Lake City, UT 84105