Omega-3 for patients with cardiovascular disease

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Clinical question

Do omega-3 fatty acid supplements reduce the risk of recurrent cardiovascular (CV) events in patients with existing cardiovascular disease (CVD)?

Evidence

- Three recent high-quality RCTs[1-3] and a subsequent meta-analysis (N=20485)[4] did not show CVD or mortality benefit with omega-3 supplementation.
  -In 4837 Dutch patients with previous myocardial infarction (MI), major CV events and cardiac interventions at 3.3 years: 14.0% for omega-3s; 13.8% for placebo (*P*=.93).[1]
  -In 2501 French patients with recent MI, unstable angina, or ischemic stroke, nonfatal MI, stroke, or CV death at 4.7 years: 6.5% for omega-3s; 6.1% for placebo (*P*=.64).[2]
  -In 3851 German patients after MI,[3] sudden cardiac death at 1 year: 1.5% for omega-3s and placebo (*P*=.84).
- Another RCT published after the meta-analysis also found no CV benefit from 6 years of omega-3 supplementation in 12536 patients with diabetes or "near" diabetes, 59% of whom had previous CVD.[5]
- Previous RCTs where omega-3 supplementation was beneficial were not blinded[6,7] or had low use of standard CV medications (like statins).[6]
- One RCT[8] showed a decrease in all-cause mortality in patients with heart failure (27.3% with omega-3 vs 29.1% with placebo, *P*=.041), but achieved statistical significance only after adjusting for baseline characteristics.

Context

- Omega-3s are a group of polyunsaturated fatty acids found in fish oils, flax seed, canola oil, and soybeans.
- Lower rates of CVD among Inuit populations were thought to be the result of high marine omega-3 intake.[9]
- Meta-analyses of lower-level evidence (cohort trials) of omega-3s are inconsistent.[10,11]
- Canada's Food Guide,[12] the NICE guidelines,[13] and the American Heart Association[14] encourage consumption of fish 2 or more times a week for prevention of CVD.

Bottom line

Guidelines recommend increased dietary omega-3 consumption, but evidence does not support omega-3 supplements to prevent CV events in patients with CVD.

Implementation

Evidence suggests no benefit and even increased harm with nondietary general supplementation of micronutrients, such as antioxidant vitamins.[15] Conversely, lifestyle changes can have substantial benefits—eg, a Mediterranean diet[16] reduces CV events (NNT=12 to 14) in patients with high CVD risk.[17] Physical activity also consistently shows a dose-dependent decrease in mortality.[18] We should therefore encourage lifestyle interventions including a reasonable diet, exercise, and smoking cessation—not micronutrient supplementation—for our patients with CVD.

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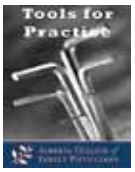

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