Effects of Marine Omega-3 Fatty Acids on Cardiovascular Outcomes in Patients with Ischemic Heart Disease: A Meta-Analysis

Hammad Rahman, MD\(^1\); Tehseen Hammad, MBBS\(^2\); Edo Kaluski, MD\(^1\)

1. Guthrie Health System/ Robert Packer Hospital, Sayre, PA, USA, 2. Services Hospital, Lahore, Pakistan

**Background**
- Previous meta-analyses (1-3) had not addressed the impact of marine omega-3 fatty acids (n-3 FAs) specifically in the ischemic heart disease (IHD) patients. The role of n-3 FAs in the IHD population remains uncertain.

**Objective**
- To investigate the effects of n-3 FAs on cardiovascular (CV) outcomes in the IHD patients

**Methods**
- Total of 8 randomized trials (4-11) having ≥ 200 patients with at least ≥ 1-year follow-up period were selected using PubMed/Medline, EMBASE and the CENTRAL (Inception- 30 November 2018) evaluating n-3 FAs supplementation in patients with IHD (excluded trials with fish advice alone).
- The primary outcome was major adverse cardiovascular events (MACE) [composite of myocardial infarction (MI), stroke, CV mortality and coronary revascularization (CR)]. The secondary outcomes were components of the MACE and all-cause mortality. The outcomes were estimated as relative risk (RR) with 95 % confidence interval (CI) using a random effects model.

**Results**
- In analysis of 23,383 patients with IHD (mean age of 57±7 years and mean follow-up of 31±17 months), use of n-3 FAs did not result in significant reduction of MACE (RR: 0.93; 95% CI, 0.84-1.04; P=0.22) as compared to the control group (Figure 1). In contrast, n-3 FAs significantly lowered CV mortality (RR: 0.79; 95% CI, 0.65-0.96; P=0.02) in patients with IHD (Figure 2).
- There was no significant reduction in terms of MI (RR: 0.87; 95% CI, 0.67-1.12; P=0.27), all-cause mortality (RR: 0.97; 95% CI, 0.80-1.18; P=0.75), stroke (RR: 0.72; 95% CI, 0.10-4.95; P=0.74), and CR (RR: 0.99; 95% CI, 0.92-1.06; P=0.69) with the n-3 FA use.

**Conclusion**
- Use of n-3 FAs led to improved CV mortality in patients with IHD, however, it failed to reduce the overall MACE.

**Disclosure**
- All authors declared no conflict of interest
Effects of Marine Omega-3 Fatty Acids on Cardiovascular Outcomes in Patients with Ischemic Heart Disease: A Meta-Analysis

Hammad Rahman, MD1; Tehseen Hammad, MBBS2; Edo Kaluski, MD1

1. Guthrie Health System/ Robert Packer Hospital, Sayre, PA, USA, 2. Services Hospital, Lahore, Pakistan

References


5. Rauch B, Schiele R, Schneider S, Diller F. Omega, a randomized, placebo-controlled trial to test the effect of highly purified omega-3 fatty acids on top of modern guideline-adjusted therapy after myocardial infarction. Circulation. 2010;122:2152-2159


