

⊙ ATRIAL FIBRILLATION

Omega-3 supplements do not prevent atrial fibrillation after CABG surgery

The benefit of omega-3 polyunsaturated fatty acids from fish and fish oils on cardiovascular health was first highlighted by epidemiological studies conducted in the 1970s. Over the past 40 years, the evidence for the favorable effects of these nutrients has continued to grow. However, studies of omega-3 therapy in patients with arrhythmias have yielded mixed results. For example, there has been no consensus as to whether omega-3 supplementation reduces the risk of atrial fibrillation (AF) in patients who have undergone cardiac surgery. The incidence of postoperative AF has been reported to be as high as 65% and, therefore, establishing whether omega-3 could be safe and effective as an antiarrhythmic agent in this setting is important.

In their randomized, double-blind, placebo-controlled trial, Palaniappan Saravanan and colleagues from the University of Manchester, UK have now shown that omega-3 supplementation did not reduce the incidence of postoperative AF among 108 patients undergoing elective CABG surgery. Moreover, there was even a trend towards a higher AF burden among patients in the omega-3 group.

Patients were randomly assigned to receive 2 g per day of an omega-3 supplement (Omacor®, Pronova BioPharma, Norway), which contained both eicosapentaenoic acid and docosahexaenoic acid, or to placebo (olive oil). Supplements were taken for between 5 and 100 days before surgery (median 16.5–17.0 days), and afterwards until hospital discharge.

This study differed from previous investigations into the effects of omega-3 on AF, as Dr Saravanan explains “we attached a continuous ECG monitor immediately after surgery and recorded the ECGs for 5 postoperative days. We also used the internationally recognized

cut off of ≥ 30 s of AF as significant, as this duration of AF has been shown to result in stroke.” Monitoring of AF has been less vigilant in earlier studies.

In addition, because a putative link between AF and inflammation has been reported, the investigators also monitored C-reactive protein levels as part of patient follow-up. To enable determination of the cellular effects of omega-3 supplementation in the atria, a sample of tissue from the right atrial appendage was taken during surgery.

During the 5-day postoperative period, the overall incidence of AF in the study population, as determined by continuous electrocardiographic monitoring, was 49.5%; however, the clinical incidence—where cases were identified by treating physicians—was just 38.8%. Although levels of eicosapentaenoic acid and docosahexaenoic acid were higher in the serum and atrial tissue of patients in the omega-3 group, as expected, there was no significant difference in the incidence of AF between the two treatment groups (omega-3, 56% versus placebo, 43%). Neither were there differences in the percentage of time that patients spent in AF, the duration of hospital stay, or in the serum level of C-reactive protein.

The finding that 2 g per day of omega-3 does not reduce the incidence of AF in patients who have undergone CABG surgery, and may even be proarrhythmic, would seem to preclude the use of this therapy in such patients. However, Dr Dariush Mozaffarian of the Brigham and Women’s Hospital and Harvard Medical School, USA is concerned that “the study may have been too small to detect a clinically important effect. Larger studies of this important research question are needed” he says. “One such large study, the OPERA [Omega-3 Fatty Acids for Prevention of Post-Operative Atrial Fibrillation] Trial, is about to start enrolling patients.”



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Saravanan and coworkers now plan to turn their attention to investigating the use of omega-3 in patients with paroxysmal AF without coronary heart disease. “[These] young, otherwise healthy individuals ... will either need long-term antiarrhythmic drug therapy or complex AF ablation ... we believe that this is where the current clinical need is for a safe and effective antiarrhythmic agent” says Dr Saravanan.

Alexandra King

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