EDITORIAL

Fish oil supplements fail to lower cardiovascular risk in diabetes

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DIETARY SUPPLEMENTATION WITH n-3 FATTY ACIDS (FISH OILS) IN PATIENTS WITH DIABETES is not associated with a reduction in cardiovascular events, a large randomised controlled study has found.[1]

The Oxford-based ASCEND trial (A Study of Cardiovascular Events in Diabetes) has prospectively followed a large cohort of patients to look at several interventions in diabetes patients, including supplementation with n-3 fatty acids compared with placebo.

Potentially eligible participants were identified from regional diabetes registers and general practice data in the UK. Men and women over 40 years of age were eligible if they had received a diagnosis of any type of diabetes and had no evidence of cardiovascular disease. There was no upper age limit. Key exclusions were contraindications to taking n-3 fatty acids, or inability to participate for at least five years of the trial. Existing users of over the counter (OTC) fish oils were asked to stop taking them but were eligible if they were only taking < 1 g/day.

Between June 2005 and July 2011, a total of 15,480 patients were randomised to once daily 1 g capsules containing either 840 mg of marine n-3 fatty acids or a matching placebo capsule (olive oil). Patients in the treatment and placebo groups were closely matched for demographic details. Nearly two-thirds (63%) of the patients were male, mean age was 63 years and mean BMI 31 kg/m^2, in both groups.

Mean follow-up was 7.4 years, and complete follow-up data were available for 15,341 patients (99.1%). Around three-quarters of the participants adhered to the protocol in each group, 77% in the active treatment and 76% in the placebo group. There was no significant difference between the groups in the use of OTC fish oil supplements; 10% at baseline and 7% at 6.7 years' follow-up.

The primary outcome was the first serious vascular event – a composite of vascular death (excluding intracranial haemorrhage), nonfatal myocardial infarction, or stroke, and transient ischaemic attack.

'These findings do not support the recommendations for routine dietary supplementation with n-3 fatty acids to prevent vascular events'

The secondary outcome was a composite of any serious vascular event or any arterial revascularisation procedure.

Serious vascular events occurred in 689 (8.9%) patients in the active treatment group and 712 (9.2%) patients in the placebo group; rate ratio (RR) 0.97 (95% CI: 0.87-1.08; P = 0.55). There were no trends to suggest that longer follow-up affected the results.

There was also no significant difference in the secondary outcome between the groups; 882 (11.4%) in the active treatment vs 887 (11.5%) in the placebo group.

This large trial confirms findings from previous meta-analyses of fish oil supplementation, and therefore does not support this as a therapeutic dietary supplement in diabetes. However, fish in the diet will include many more active compounds than fish oils alone, so a balanced diet including fish is not devalued by this study. As the study authors state:

'Fish clearly contain other nutrients, and consumption of one food alters the consumption of others.

'The recommendations to increase fish intake are based on observational evidence, but the randomised trials of supplements have largely not shown cardiovascular benefit.'

They conclude: 'These findings, together with results of earlier randomised trials involving patients with and those without diabetes, do not support the current recommendations for routine dietary supplementation with n-3 fatty acids to prevent vascular events.'

REFERENCE
1 The ASCEND Study Collaborative Group. Effects of n–3 fatty acid supplements in diabetes mellitus. *N Engl J Med* 2018;379:1540-50

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