



To evaluate the efficacy and safety of ω -3FA supplementation versus placebo or no treatment for maintaining vascular access patency in ESKD patients undergoing HD” Tam et al (2018).

Abstract:

BACKGROUND: Maintaining long-term vascular access patency is necessary for high quality haemodialysis (HD) treatment of patients with the terminal and most serious stage of chronic kidney disease (CKD) – end-stage kidney disease (ESKD). Oral supplementation with omega-3 fatty acids (ω -3FA) may help to prevent blockage of the vascular access by reducing the risk of thrombosis and stenosis.

OBJECTIVES: To evaluate the efficacy and safety of ω -3FA supplementation versus placebo or no treatment for maintaining vascular access patency in ESKD patients undergoing HD.

SEARCH METHODS: We searched the Cochrane Kidney and Transplant Register of Studies up to 23 July 2018 through contact with the Information Specialist using search terms relevant to this review. Studies in the Register are identified through searches of CENTRAL, MEDLINE, EMBASE, conference proceedings, the International Clinical Trials Register (ICTRP) Search Portal, and ClinicalTrials.gov.

SELECTION CRITERIA: Randomised controlled trials (RCTs) of omega-3 fatty acids versus placebo that assessed the patency of arteriovenous fistula (AVF) or arteriovenous graft (AVG)

types of vascular access in ESKD patients.

DATA COLLECTION AND ANALYSIS: We assessed the risk of bias of each eligible study using the Cochrane Risk of Bias tool and made separate overall risk of bias judgments for the efficacy and safety outcomes. The certainty of evidence was assessed using the GRADE approach. The primary efficacy outcome was loss of vascular patency and the primary safety outcomes were occurrences of serious adverse events (e.g. death, hospitalisation, cardiovascular events, major bleeding). Secondary outcomes were the occurrence of non-serious adverse events (e.g. minor bleeding, gastrointestinal events and other adverse events). Efficacy effects were reported as risk ratios (RR) and safety effects as risk differences (RD) with 95% confidence intervals (CI). Studies were pooled separately by type of vascular access using a random-effects model.

MAIN RESULTS: Five studies (833 participants) were included; one was a very small pilot study of 7 participants. All studies compared oral ω -3FA supplements against placebo. Four studies enrolled participants with arteriovenous grafts (AVGs), and the other had participants with arteriovenous fistulas (AVFs). The risk of bias for both efficacy and safety outcomes was unclear for all studies, due mainly to incomplete reporting for allocation concealment and incompleteness of study follow-up. In AVF patients, ω -3FA supplementation probably makes little or no difference to the 12-month risk of patency loss (1 study, 536 participants: RR 1.01, 95% CI 0.84 to 1.21; moderate certainty evidence), risk of death (1 study, 567 participants: RD 0.00, 95% CI -0.03 to 0.02; moderate certainty evidence) and risk of hospitalisation (1 study, 567 participants: RD 0.00, 95% CI -0.08 to 0.08; low certainty evidence). There was no information on cardiovascular events and major bleeding. In AVG patients, it is very uncertain whether ω -3FA supplementation reduces the risk of patency loss within 6 months (2 studies, 41 participants: RR 0.91, 95% CI 0.36 to 2.28; very low certainty evidence) or 12 months (2 studies, 220 participants: RR 0.59, 95% CI 0.27 to 1.31; very low certainty evidence). ω -3FA supplementation may make little or no difference to the risk of death within 6 to 12 months in AVG patients (4 studies, 261 participants: RD 0.01, 95% CI -0.05 to 0.07; low certainty evidence). It is very uncertain if ω -3FA supplementation increases the risk of hospitalisation (3 studies, 65 participants: RD 0.08, 95% CI -0.11 to 0.28; very low certainty evidence), changes the risk of cardiovascular events (4 studies, 261 participants: RD -0.02, 95% CI -0.11 to 0.07; very low certainty evidence), or increases the risk of major bleeding (3 studies, 65 participants: RD 0.08, 95% CI -0.11 to 0.28; very low certainty evidence) within 6 to 12

months in AVG patients. There may be an increase in the risk of mild gastrointestinal adverse reactions (3 studies, 65 participants: RD 0.25, 95% CI 0.07 to 0.43; low certainty evidence) such as a sensation of bloatedness, gas or a fishy aftertaste.

AUTHORS' CONCLUSIONS: In CKD patients with an AVF, there is moderate certainty that ω -3FA supplementation makes little or no difference to preventing patency loss; and in patients with an AVG, it is very uncertain that ω -3FA supplementation prevents patency loss within 12 months.

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Reference:

Tam, K.W., Wu, M.Y., Siddiqui, F.J., Chan, E.S., Zhu, Y. and Jafar, T.H. (2018) Omega-3 fatty acids for dialysis vascular access outcomes in patients with chronic kidney disease. The Cochrane Database of Systematic Reviews. November 18th. 11:CD011353.

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