

Use of fish oil supplements does not significantly reduce rate of failure of grafts for hemodialysis

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Among patients with new synthetic arteriovenous grafts (a synthetic tube grafted between an artery and vein) for vascular access for hemodialysis, daily ingestion of fish oil did not decrease the proportion of grafts with loss of patency (remaining open) within 12 months, according to a study in the May 2 issue of JAMA. However, fish oil recipients had a longer time without thrombosis (formation of a blood clot), half the thrombosis rate, and a clinically meaningful reduction in frequency of radiological and surgical interventions.

“Optimal hemodialysis requires reliable vascular access. Current options include the arteriovenous fistula [surgical creation of a connection between an artery and vein], synthetic arteriovenous graft, and central venous catheter, which in the United States are used in 55 percent, 21 percent, and 24 percent of prevalent patients receiving hemodialysis, respectively. The arteriovenous graft was the predominant vascular access type in North America during the early 1990s but fell out of favor owing to its high complication rates and associated costs.

Charmaine E. Lok, M.D., M.Sc., of the University of Toronto and Toronto General Hospital, and colleagues conducted a randomized controlled trial that compared arteriovenous graft patency and rates of [thrombosis](#) and intervention in patients with end-stage renal disease who received [fish oil](#) supplementation vs. placebo following creation of an arteriovenous graft. The study was conducted at 15 North American

dialysis centers from November 2003 through December 2010, enrolling 201 adults with stage 5 chronic kidney disease (50 percent women, 63 percent white, 53 percent with diabetes), with follow-up for 12 months after graft creation. The participants were randomly allocated to receive fish oil capsules (four 1-gram capsules/day) or matching placebo on day 7 after graft creation. The primary outcome measure for the study was the proportion of participants experiencing graft thrombosis or radiological or surgical intervention during 12 months of follow-up.

The researchers found that there was no significant difference in the proportion of fish oil recipients and placebo recipients with loss of native patency (48 percent [48/99] vs. 62 percent [60/97], respectively. “However, the rate of these events was significantly lower in the fish oil group. The frequency of thrombosis events was reduced by half in the fish oil group, and the frequency of corrective interventions was lower.”

The 12-month event-free rate (i.e., no loss of native patency of arteriovenous graft) was 48 percent in the fish oil group, compared with 32 percent in the placebo group. The reasons for arteriovenous graft loss were similar between treatment groups. The 12-month thrombosis-free rate was higher in the fish oil group (64 percent vs. 47 percent).

The researchers note that the use of arteriovenous grafts has declined over the last 10 years, largely driven by the emphasis on use of fistulas. “Arteriovenous grafts may be suitable for patients receiving hemodialysis whose veins are unsuitable for fistula creation or who have experienced prior problems with fistula nonmaturation. However, compared with functioning fistulas, arteriovenous grafts may require a 3- to 4-fold higher frequency of interventions to maintain equivalent long-term patency. Identification of safe and inexpensive agents that prolong arteriovenous graft patency and reduce the frequency of interventions to salvage [graft](#) complications might encourage increased use of grafts.”

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