New Data May Help Explain Conflicting Effects of Fish Oil

BY KATE JOHNSON
Montreal Bureau

BOSTON — New studies showing conflicting results about the effect of fish oil on the heart add weight to the notion that perhaps age and health status influence whether omega-3 fatty acids prevent or promote cardiac arrhythmias, Dr. Anthony Aizer said.

His study, which he presented at the annual meeting of the Heart Rhythm Society, linked increased fish consumption with a higher risk of developing atrial fibrillation (AF) in healthy male physicians (aged 40-84 years) who were enrolled in the previously reported Physicians' Health Study (N. Engl. J. Med. 1989;321:129-35).

The findings corroborate recently published results from the Danish Diet, Cancer, and Health study (Am. J. Clin. Nutr. 2005;81:50-4), but contrast with data from the Cardiovascular Health study (Circulation 2004;110:368-73), said Dr. Aizer, an electrophysiologist at New York University Medical Center.

"One hypothesis is that omega-3 fatty acids have some effects on the autonomic nervous system—in particular, by increasing parasympathetic tone. In generally healthy individuals without CVD, it is sometimes thought that an increase in autonomic tone may play a role in the development of AF," he said in an interview. "In contrast, in older, less healthy individuals it's possible that other effects are more significant. In certain individuals, the effect of omega-3 fatty acids that enhance cardiac tissue refractoriness may have a more significant impact, thereby preventing AF."

Dr. Aizer's analysis of the Physicians' Health Study included 17,679 men who had completed a fish consumption questionnaire in 1983 and of whom 7% reported AF 15 years later. He found that men who reported eating five or more fish meals per week had a 55% higher rate of AF, compared with men who ate fish only once a month.

But two other smaller studies that were presented as posters at the meeting reported the cardiac benefits of omega-3 fatty acids.

A prospective study of six patients with paroxysmal AF showed that an infusion of 100 mL of omega-3 fatty acids resulted in an increase in atrial refractoriness, a reduction in AF inducibility, and a prolongation of fibrillatory cycle length, reported Dr. Hercules E. Mavrakis, from Heraklion University Hospital in Heraklion, Crete, Greece.

And another study of 26 patients with inducible ventricular tachycardia (VT) at 3 or more months post myocardial infarction showed strong benefits of oral omega-3 fatty acid capsules (180 mg eicosapentaenoic acid and 120 mg docosahexaenoic acid) daily, compared with placebo, over a 40-day treatment period, reported Dr. Glenn D. Young from the Cardiovascular Research Centre in Adelaide, Australia.

At the end of the study, VT was no longer inducible in 5 of the 12 treated patients, and 5 of the remaining 7 patients required more aggressive stimulation to induce arrhythmia. By contrast, in the 14 control patients, VT was no longer inducible in only 1 patient, and 3 of the remaining 13 patients required more aggressive inducement.

"Statistically, it was a very significant result. There seems to be a direct effect of fish oil in preventing ventricular tachycardia," Dr. Young said in an interview. "People can achieve that level with only [two or three] oily fish meals a week."

Dr. Aizer said his finding of a higher incidence of AF with increased fish consumption cannot be interpreted as causal. "This wasn't a randomized, controlled trial [of fish consumption]—there could always be an association of fish with some other factor that's causing the atrial fibrillation."

And he noted that another important association within this same cohort was a reduced rate of sudden cardiac death in those who ate more fish.

"The message of this study is not to stop eating fish," he stressed. Rather, it suggests that "population groups play a significant role in what's going on, and that needs to be considered in terms of further analysis." ■

Statin Pretreatment Cuts Risk of Postop Atrial Fib

BY RITA EVANS
Contributing Writer

ATLANTA — A 40-mg dose of atorvastatin given 7 days before cardiac surgery reduced by 60% the relative risk of postoperative atrial fibrillation in a single-center, randomized trial of 200 patients.

"For the first time, a specific statin, at a specific dose, at a specific time" has been shown in a prospective, randomized, controlled trial to reduce postoperative atrial fibrillation in patients undergoing elective surgery, Dr. Germano Di Sciascio said at a press conference announcing the results of the Atorvastatin for Reduction of Myocardial Dysrhythmias After Cardiac Surgery (ARMYDA-3) study at the annual meeting of the American College of Cardiology.

Pretreatment with statins may reduce the postoperative inflammatory response.

DR. DI SCIASCIO

The study results are not confirmatory, however, because the trial was small and the placebo group included more patients with diabetes (42 vs. 32) and left atrial enlargement (46 vs. 36) than did the atorvastatin group.

Postoperative atrial fibrillation, which develops in up to 40% of coronary artery bypass patients and 50% of valve surgery patients, increases the risk of complications and lengthens hospitalization.

In the study, 200 cardiac surgery patients, none of whom were already taking a statin, were randomized 7 days before their procedures to receive either 40 mg of atorvastatin (101 patients) or a placebo (99 patients). The incidence of postoperative atrial fibrillation was 57% in those on placebo and 35% in those given the statin, for a relative risk reduction of 60%. Length of stay also decreased from 6.9 days in the placebo patients to 6.3 days in the statin-treated patients, a statistically significant reduction.

The benefits of atorvastatin were apparent even when taking into account patient characteristics that might have inflated the risk of atrial fibrillation, including advanced age and high blood pressure.

Because none of the study patients took a statin prior to the study, the investigators were able to examine the observational link between statin therapy and reduced risk for postoperative atrial fibrillation. In addition, because atorvastatin was being used to prevent atrial fibrillation rather than to reduce cholesterol, a 40-mg dose was selected, rather than the typical 80-mg dose.

Dr. Di Sciascio, professor and chairman of cardiology and director of the department of cardiovascular sciences at the University Campus Bio-Medico in Rome, speculated that statins reduce the postoperative inflammatory response. Patients who went on to develop atrial fibrillation had higher C-reactive protein levels than did those who did not develop atrial fibrillation. In placebo and atorvastatin-treated patients, those who developed atrial fibrillation had postoperative peak C-reactive protein levels that exceeded 180 mg/L.

Dr. Di Sciascio had no conflicts of interest to declare, and the study was not a sponsored trial. ■

In Permanent Atrial Fibrillation, Regular Exercise Can Be Beneficial

BOSTON — Regular, moderate exercise can help control ventricular rate in patients with permanent atrial fibrillation, according to a study presented as a poster at the annual meeting of the Heart Rhythm Society.

"Patients with atrial fibrillation [AF] find it difficult to exercise, so this is a new idea," Dr. Jurgita Plisiene, a cardiologist at University Hospital in Aachen, Germany, said in an interview.

Ventricular rate increases during exercise, making it difficult for patients to improve their exercise capacity. But 4 months of twice-weekly exercise, involving walking or jogging for 60 minutes, increased exercise capacity in her 10 subjects with permanent AF, while at the same time regulating their ventricular rate.

The patients had a mean age of 59 years and a mean 10 years' duration of permanent AF. They undertook individualized, physician-directed exercise programs tailored to their physical capacity. Physical exercise tests and Holter ECG recordings were performed at baseline and after 4 months.

The study found that the exercise program decreased the subjects' mean ventricular rate by 12%. The mean rate at rest decreased from 87 to 78 beats per minute, and at almost every exercise level a significant ventricular rate decrease was observed.

In addition, overall exercise capacity, as estimated by repeated lactate measurements and by questionnaires, also significantly improved.

—Kate Johnson

Insulin Use May Avert Atrial Fib In Diabetics With Heart Failure

ATLANTA — Insulin use appears to protect against atrial fibrillation in diabetic patients with heart failure, Dr. Somjot S. Brar said at the annual meeting of the American College of Cardiology.

If this initial observation in a large community-based population of patients with heart failure is subsequently confirmed, it could lead to a lower threshold for switching diabetic patients from oral agents to insulin therapy. They might benefit in two ways: improved glycemic control and protection against the most common sustained arrhythmia, added Dr. Brar of Kaiser Permanente and the University of California, Los Angeles.

He identified 28,009 patients with heart failure in a managed care data base, 45% of whom were diabetic; 38% of the diabetic patients with heart failure were on insulin therapy. "These heart failure patients are similar to what most internists, family physicians, and cardiologists would see," he said.

Insulin users had an adjusted prevalence of atrial fibrillation (AF) that was 20% less than diabetic non–insulin users or nondiabetic heart failure patients in a multivariate logistic regression analysis. The model controlled for numerous potential confounders including age; gender; socioeconomic status; cardiovascular risk factors; and the use of statins, ACE inhibitors, and other drugs that may potentially prevent AF. Insulin's apparent protective effect was equally robust and consistent in men and women of all ages, according to Dr. Brar.

He hypothesized that insulin use protects against AF on the basis of reports in the literature suggesting that patients on insulin have a lower incidence of postoperative AF.

—Bruce Jancin

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