Mediterranean Diet, Omega-3 Show Anti-AD Effect

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Adherence to a Mediterranean diet is associated with reduced risk for Alzheimer's disease, and supplementation with omega-3 fatty acids appears to slow the progression of mild forms of the disease, according to two separate studies appearing in Archives of Neurology.

In a case-control study involving 1,984 people (average age 76.3 years), a greater degree of adherence to the Mediterranean diet was associated with a significantly lower risk of Alzheimer's disease, according to the article, which appeared online on Oct. 9, 2006. The investigators, led by Dr. Nikolaos Scarmeas of Columbia University in New York, assessed adherence to the Mediterranean diet on a 9-point scale (Arch. Neurol. 2006 [Epub doi10.1001/archneur.63.12.noc60109]).

Participants were questioned extensively about their diets over the previous year, and points could be accumulated for eating more than the median amount of fish, vegetables, legumes, and cereals; for eating less than the median amount of dairy, meat, and fat; and for drinking a moderate amount of alcohol.

Compared with people whose diets scored in the lower third of similarity to the Mediterranean diet, those with diets in the upper third were 69% less likely to have Alzheimer's. These results were adjusted for many factors, including age, sex, ethnicity, education, apolipoprotein E genotype, caloric intake, smoking, body mass index, and history of stroke, diabetes, hypertension, heart disease, and lipid levels.

The investigators found it noteworthy that their inclusion of a long list of vascular variables did not change the risk analysis. This finding indicates that the effect of the Mediterranean diet on Alzheimer's disease risk may be mediated by nonvascular mechanisms such as oxidation or inflammation. Indeed, other

Glycemic Control May Stop Dementia

MADRID — Tight control of blood glucose levels may decrease the incidence of dementia and Alzheimer's disease among patients with diabetes, researchers reported at the 10th International Conference on Alzheimer's Disease and Related Disorders.

The findings speak volumes about the need for early implementation of significant lifestyle changes among those at risk for diabetes, especially in light of the ongoing obesity epidemic, said Dr. Ronald Petersen, who moderated a press conference on the studies. "The number of people with Alzheimer's, and the number who will soon get it, is rising dramatically as the baby boomers turn 50, approaching the age of highest risk," said Dr. Petersen, vice chair of the Alzheimer's Association's Medical and Scientific Advisory Council. "Will this growth be redoubled by the rising tide of obesity and diabetes?"

Glycemic control is crucial in protecting diabetic patients from dementia, said Rachel Whitmer, Ph.D., of Kaiser Permanente, Oakland, Calif. Her population-based study included 22,852 members of Kaiser's Northern California Diabetes Registry surveyed from 1994 to 1996. Their mean age at baseline was 66 years; 66% were white, 10% black, and the rest were Hispanic, Asian, or Native American.

The patients were followed until 2005. By then, 11% had developed new-onset dementias. Hemoglobin A_{1c} (HbA_{1c}) was significantly associated with the incidence of dementia. Patients with the highest HbA_{1c} (15% and higher) were the most likely to develop dementia, with an elevated risk of 78% compared with those whose levels were below 10%. Diabetic patients are advised to keep their $HbA1_c$ below 7%.

Those with HbA_{1c} levels of 12%-15% were 22% more likely to develop dementia, while those whose levels were between 10% and 11.9% had a 16% increased risk. The increased risks remained significant even after adjusting for age, race, gender, weight, and diabetes treatment.

"This shows us that tight glycemic control continues to be as important as patients' age," Dr. Whitmer said at the meeting, presented by the Alzheimer's Association. "And it will become more and more important as we experience the epidemic of obesity in the United States."

—Michele G. Sullivan

studies have determined that components of the Mediterranean diet decrease markers of oxidative stress and inflammation.

The investigators acknowledged that there may be several alternative explanations for their findings. For example, degree of adherence to the Mediterranean diet could represent a consequence and not a cause of Alzheimer's disease.

The study on omega-3 fatty acids, published in the October 2006 issue of Archives of Neurology, was a randomized, placebo-controlled, double-blind clinical trial involving 204 people with Alzheimer's. Investigators at the Karolinska Institute, Stockholm, led by Dr. Yvonne Freund-Levi, randomized patients to receive 1.7 g of docosahexaenoic acid (DHA) and 0.6 g of eicosapentaenoic acid (EPA) or placebo daily for 6 months. At the end of 6 months, patients in both arms received the omega-3 fatty acids daily for an additional 6 months (Arch. Neurol. 2006;63:1402-8).

After the first 6 months there was no statistically significant difference between the two groups on the two measures of cognitive decline—the Mini-Mental State Examination (MMSE) and the cognitive portion of the Alzheimer's Disease Assessment Scale (ADAS-COG).

However, when investigators examined a subset of the patients—32 patients with very mild Alzheimer's disease—those receiving omega-3 fatty acid supplementation showed no decline in MMSE scores over 6 months, while the ones receiving placebo had a statistically significant decline.

Furthermore, during the next 6 months, when patients in the group formerly receiving placebo were switched to omega-3 supplementation, they had a similar slowing in cognitive decline.

The findings from this controlled trial are in agreement with results from earlier epidemiologic studies suggesting that a high intake of DHA-rich fish reduces the risk of developing Alzheimer's disease.

Although it is not known why omega-3 fatty acids may interfere with the progression of Alzheimer's disease, the investigators suggested that the anti-inflammatory effects of these agents may play a role.

Other epidemiologic evidence suggests that there may be a critical period of about 2 years before the onset of dementia during which the brain may be especially sensitive to anti-inflammatory agents.

The investigators cautioned, however, that their findings "cannot serve as a basis for general recommendations for treatment of [Alzheimer's disease] with dietary DHA-rich fish oil preparations," and that larger studies in patients with mild cognitive impairment are needed. ■