Diet Can Increase Stroke Risk

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versity in New York and the senior investigator for both of the new studies.

Both studies used data collected in the Northern Manhattan Study of 3,298 people living in northern Manhattan in 1993. The subjects were thoroughly assessed at baseline, and 3,183 answered a food frequency questionnaire that was used to calculate daily fat and sodium intake. At entry, this group had a mean age of 70 years; 63% were women, 21% were white, 24% were African American, and 52% were Hispanic. They were followed for an average of 5.5 years, during which 142 had an ischemic stroke.

The analysis of the link between stroke incidence and dietary fat assessed fat intake both as a continuous variable and as a dichotomous variable, with 65 g/day as the dividing line between a low- and high-fat diet. The National Cholesterol Education Program recommends that fat should be about 30% of total caloric intake; a person who eats 2,000 calories per day should have a daily fat intake of no more than 65 g. About 36% of people in the study reported eating more than 65 g of fat daily.

In the dichotomous analysis, the ischemic stroke incidence was 60% higher in people who consumed more than 65 g of fat daily, compared with those who ate 65 g or less, reported Halina White, a researcher at Columbia. This analysis controlled for a variety of demographic, clinical, and dietary variables. When adjusted for total caloric intake, the increased risk of stroke linked with a high-fat diet rose to 90%.

"These are reasonable hazard rates that are close to the increased risk for stroke in patients with hypertension," said Dr. Sacco, who is also director of stroke and clinical care at Columbia. He speculated that atherosclerosis may be the mechanistic link between high dietary fat and stroke. High-fat diets usually lead to increased serum levels of total cholesterol and LDL cholesterol, he said.

The sodium analysis divided participants into three groups with mean daily sodium intakes of 4 g or more, 2.4 g or less, or between 2.4 g and 4 g. In an analysis that controlled for potential confounding variables including hypertension, people who ate 4 g or more per day had an 84% higher risk of ischemic stroke than people who consumed 2.4 g or less per day, reported Armistead D. Williams III, M.D., a neurologist at Columbia.

People who ate between 2.4 and 4 g per day had a slightly but not significantly increased risk of stroke, compared with those with the lowest intake. Because the analysis controlled for differences in blood pressure, it's possible that some other, unknown biologic mechanism explains the link between dietary sodium and stroke risk. But blood pressure could still play a role, Dr. Sacco said at the meeting, sponsored by the American Stroke Association. ■

Low-Volume Centers Doing EC-IC Bypass

SAN FRANCISCO — The number of hospitals at which external carotid to internal carotid bypass procedures are performed is increasing, but so is associated mortality, Sepideh Amin-Hanjani, M.D., said at the annual meeting of the Congress of Neurological Surgeons.

Growth of external carotid to internal carotid (EC-IC) bypass procedures is greatest at low-volume centers and among inexperienced surgeons, said Dr. Amin-Hanjani, of Harvard Medical School, Boston.

In an analysis of 558 operations performed at 158 American hospitals by 145 surgeons between 1992 and 2001, the annual number of admissions for EC-IC bypass almost doubled from 190 per year from 1992 to 1996, to 360 per year from 1997 to 2001. Mortality more than doubled, from 2.5% to 5.9%, Dr. Amin-Hanjani said.

The median numbers of procedures per hospital and per surgeon were 3 and 2, respectively, over the decade. For 29% of patients, their EC-IC bypass was the only one recorded at the hospital for the year, and for 42% of patients, their surgeon performed no other EC-IC bypass.

Cerebral ischemia was the indication in 74% of procedures, followed by unruptured aneurysms (19%), and ruptured aneurysms (7%). Mortality was highest (21%) in patients with ruptured aneurysms, followed by those with unruptured aneurysms (7.7%), and cerebral ischemia (2.4%).

These findings were based on data from the Healthcare Cost and Utilization Project's third Nationwide Inpatient Sample.

"This technically demanding procedure has become a very low-volume operation at nearly all U.S. centers," Dr. Amin-Hanjani said. Surgeons need experience with at least 20-30 cases to achieve patency rates of 90%-100%.

—Norra MacReady