ACG: Carb-Heavy Diet Linked to Esophageal Cancer

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October 23, 2006

LAS VEGAS, Oct. 23 -- A diet heavy in carbohydrates might tip the scales in favor of a cascade of factors that lead to esophageal cancer, according to a study reported here.

The study, reported by Vijay S. Khiani, M.D., of Case Western Reserve in Cleveland, and colleagues, was reported at the American College of Gastroenterology meeting. The investigators found an association between the rising incidence of esophageal cancer in the U.S. and the increase in U.S. per-capita carbohydrate consumption over the past three decades.

Dr. Khiani and colleagues analyzed esophageal cancer incidence derived from the Surveillance, Epidemiology, and End Results (SEER) program from 1973 through 2001. The researchers also obtained data on American per-capita carbohydrate intake during the same time from the National Nutrient Data Bank, a program run by the U.S. Department of Agriculture.

Although the epidemiological data could not prove a causal link, Dr. Khiani noted that a carbohydrate-heavy diet can lead to obesity, which is known to predispose individuals to gastroesophageal reflux disease (GERD). This, in turn, has been linked to a greater likelihood for developing Barrett's esophagus, a precursor to lower-esophageal adenocarcinoma.

Linear regression analysis of the two data sets showed a significant relationship between the incidence of esophageal adenocarcinoma and per-capita consumption of carbohydrates in the American diet (P=0.0001).

More specifically, carbohydrate consumption increased from about 400 grams per day in 1973 to 500 grams per day in 2001, the study found. During the same period, the incidence of esophageal adenocarcinoma rose from 2,500 cases per year to nearly 15,000 cases per year.

The association held whether dietary carbohydrates came predominantly from cereals or from corn

syrup, a common ingredient in soft drinks and other processed foods, the researchers found.

However, carbohydrates were not significantly associated with mid-esophageal cancer, usually a squamous-cell carcinoma, which has been linked to smoking, the study found. This cancer has been declining in the United States during recent decades, probably because fewer people are smoking, Dr. Khiani said.

The ever-increasing presence of fast food in the American diet -- "burgers and fries" -- is likely a factor in increased U.S. carbohydrate consumption, Dr. Khiani said, although he noted that the study did not specifically address the reasons behind this trend.

Dr. Khiani stressed that the study does not support total carbohydrate avoidance, a strategy promoted by some fad diets.

On hearing of this study, some patients "may have more reason to think that it's a better idea to go ahead with the Atkins diet or a low-carb diet, but we don't know at this point," he said. "Further research still needs to be done to determine whether there is a direct causal relationship."

The investigators concluded, "This ecological study provides evidence for the hypothesis that excess carbohydrate intake in the U.S. population may partially account for the increased trend of incidence rate of adenocarcinoma of the esophagus. It is possible that obesity resulting from excess carbohydrate intake may be an intermediate link."

Action Points

Explain to patients who ask that this was an epidemiological study and that the results, while suggestive, do not prove a causal link between carbohydrate intake and esophageal cancer.

Primary source: American College of Gastroenterology 2006 Annual Scientific Meeting
Source reference:
Vijay S. Khiani et al. "Ecological association of rising incidence of esophageal adenocarcinoma with dietary carbohydrate intake." Abstract number 22. Presented at the American College of Gastroenterology 2006 Annual Scientific Meeting, Las Vegas, Nevada, October 23-25, 2006.