Whole Grain Foods Linked to Lower Mortality

BY ROBERT FINN

FROM CIRCULATION: JOURNAL OF THE AMERICAN HEART ASSOCIATION

Consumption of whole grains, especially the bran component of whole grains, was associated with a significant decrease in the risk of all-cause mortality and cardiovascular disease–specific mortality in women with type 2 diabetes who were followed as part of the Nurses' Health Study.

After adjustment for age, women in the highest quintile of whole grain, cereal fiber, bran, and germ consumption had 16%-31% lower all-cause mortality than did women in the lowest quintile, Dr. Meian He of the Harvard School of Public Health, Boston, and colleagues reported.

After further adjustment for lifestyle and dietary risk factors, only bran consumption remained significantly associated with mortality.

Compared with women in the lowest quintile of bran consumption, those in the highest quintile had a 28% decrease in the risk of all-cause mortality and a 35% increase in the risk of mortality associated with cardiovascular disease.

"To my knowledge, this is the first study of whole grain and its components and risk of death in diabetic patients," Dr. Lu Qi, also of the Harvard School of Public Health and the study's senior author, said in a statement.

"These findings suggest a potential benefit of whole grain, and particularly bran, in reducing death and cardiovascular risk in diabetic patients," Dr. Qi added.

VITALS

Major Finding: Women with type 2 diabetes in the highest quintile of bran consumption had a 28% lower risk of all-cause mortality and 35% lower risk of cardiovascular disease–specific mortality than did women in the lowest quintile.

Data Source: The Nurses' Health Study.

Disclosures: The study was funded by the National Institutes of Health, the American Heart Association, and the Boston Obesity Nutrition Research Center. The investigators reported that they had no other disclosures.

The Nurses' Health Study began in 1976 with 121,700 female registered nurses aged 30-55 years. Data on participants' medical history, lifestyle, and medical diagnoses have been updated every 2 years.

For this study, the investigators focused on 7,822 women who were diagnosed with type 2 diabetes between 1976 and 2006. They excluded women who were diagnosed with diabetes before age 30 years and those with a history of cardiovascular disease or cancer reported on the 1980 questionnaire, when diet was first assessed (Circulation 2010 May 25 [doi:10.1161/CIRCULATIONAHA.109.907360]).

Women completed semi-quantitative food frequency questionnaires every 2 or 4 years between 1980 and 2002. Investigators used data on how often they consumed certain foods and beverages to estimate each woman's average intake of whole grains, as well as her intake of bran and cereal fiber.

Investigators followed the women for 26 years, for a total of 70,102 person-years. During that time, 852 women died, 295 of cardiovascular disease.

The researchers adjusted for age, smoking status, body mass index, alcohol intake, physical activity, parental history of myocardial infarction, menopausal status, use of hormone therapy, duration of diabetes, and various dietary factors including total energy intake, and intake of polyunsaturated fat, saturated fat, trans fat, magnesium, and folate.

Several different mechanisms could explain the association between bran consumption and mortality in women with diabetes, Dr. He and colleagues wrote. Their earlier research suggested that consumption of whole grains might protect against systemic inflammation and endothelial dysfunction.

"Diabetes is thought to be a chronic state of inflammation characterized by moderately increased levels of chemical markers for inflammation and endothelial dysfunction," Dr. Qi said in the statement, which was issued by the American Heart Association, one of the study's sponsors.

"Those markers have been found to be related to increased risk of [cardiovascular disease] in both diabetic and nondiabetic populations," Dr. Qi said. ■

Diabetes an Independent Risk Factor for Cellulitis

BY BRUCE JANCIN

FROM THE ANNUAL EUROPEAN CONGRESS OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES

VIENNA — Diabetes is a risk factor for recurrent cellulitis independent of obesity and advanced age, according to a Finnish case-control study.

The incidence of bacterial cellulitis is reportedly increasing in many countries. The growing prevalence of type 2 diabetes coupled with the obesity epidemic and the graying of the population may be important contributors to the problem, Dr. Matti Karppelin observed at the congress.

Prior case-control studies, including one led by Dr. Karppelin (Clin. Microbiol. Infect. 2009; 16:729-34) have identified obesity but not diabetes as being linked to increased rates of acute and recurrent bacterial nonnecrotizing cellulitis. Because that study included a mere 44 patients presenting with recurrent cellulitis, Dr. Karppelin and his colleagues decided to take another look at the diabetes question in a much larger patient population.

The Finnish investigators retrospectively identified 398 Finns who were treated for recurrent cellulitis in the year 2000 and compared them with a nationally representative control group of 8,005 Finns who did not have a history of cellulitis.

VITALS

Major Finding: The prevalence of diabetes was 21% among patients with recurrent cellulitis compared with 6% in controls.

Data Source: A retrospective study in which 398 Finns treated for recurrent cellulitis in the year 2000 were compared with a nationally representative control group of 8,005 Finns without a history of cellulitis.

Disclosures: Dr. Karppelin said he had no conflicts of interest.

The patients who had recurrent cellulitis were a median of 65 years old, 59% were women, and the group had a mean body mass index of 32.1 kg/m^2 compared with 26.9 kg/m^2 among the controls.

Of particular interest, the prevalence of diabetes was 21% among patients with recurrent cellulitis compared with 6% in controls.

In a multivariate analysis, diabetes was associated with a 69% increased risk of recurrent cellulitis independent of advanced age or obesity, according to Dr. Karppelin of the University of Tampere, Finland. ■

ADMA Levels Higher in Newly Diagnosed Diabetes Patients

BY SHARON WORCESTER

FROM THE ANNALS OF ENDOCRINOLOGY

Asymmetric dimethylarginine, or ADMA, is independently associated with diabetes, and may play a role in the development of insulin resistance, according to a study by Iranian researchers.

ADMA levels in the study were significantly higher in 40 recently diagnosed diabetic patients who were free of diabetes medications and diabetes-related complications (0.9 micromol/L), compared with 40 healthy controls matched with the patients for age, sex, and body mass index (0.7 micromol/L), reported Dr. Manouchehr Nakhjavani and colleagues at Tehran (Iran) University of Medical Sciences.

The investigators set out to evaluate the association between ADMA, a potent endogenous nitric oxide (NO) synthase inhibitor; high-sensitivity C-reactive protein (hs-CRP), a marker of chronic inflammation; and insulin resistance in patients with early-stage type 2 diabetes. Like ADMA, hs-CRP was significantly higher in the diabetes patients (3.0 mg/L) than in the controls (1.3 mg/L). Age- and sex-adjusted ADMA values were significantly correlated with the hs-CRP levels; a similar finding was reported in an earlier study, which suggested that a "complex interrelation … could exist between ADMA and chronic inflammation in the prediabetic and diabetic state," they noted (Ann. Endocrinol. 2010 April 30 [doi:10.1016/j.ando.2010.02.026]).

The adjusted ADMA levels in the current study also were significantly correlated with homeostasis model assessment of insulin resistance (HOMA-IR) in patients, but not in controls; the association with HOMA-IR in patients remained significant after the researchers controlled for body mass index, waist circumference, serum lipids, and hs-CRP, they reported.

The finding of an association between ADMA and insulin resistance independent of hs-CRP, body adiposity, and lipid profile, "possibly shows that high ADMA in early diabetes can lead to NO depletion or ineffectiveness of NO-mediated vasodilator mechanisms associated with the progression of insulin resistance to type 2 diabetes," the investigators wrote.

VITALS

Major Finding: Average ADMA levels were 0.9 micromol/L in 40 recently diagnosed diabetic patients who were free of diabetes-related complications and medications. The value was significantly higher than the 0.7-micromol/L average level seen in 40 healthy controls

Data Source: A case-control study of patients with early type 2 diabetes and healthy controls matched for age, sex, and body mass index.

Disclosures: The investigators noted that they had no relevant disclosures.

Additional studies to investigate this possibility, as well as to evaluate the association between ADMA and HOMA-IR in healthy individuals, are needed, the researchers concluded, noting that the lack of a finding of such an association in the current study conflicts with some prior studies. ■