PREVENTIVE CARE

■ Coffee Use and Reduced Diabetes Risk

In the short term, caffeine reduces insulin sensitivity and impairs glucose tolerance, but it also increases energy expenditure and contains potassium, niacin, magnesium, and antioxidant substances that may have beneficial effects on the development of diabetes. This study followed 41,394 men and 84,276 women for 12 to 18 years in the Health Professionals’ and Nurses’ Health studies. In both groups, higher coffee consumption was strongly associated with reduced risk for type 2 diabetes even after adjustments were made for age, body mass index, and other risk factors.

The multivariate relative risks for diabetes according to regular coffee consumption groups (0, <1, 1 to 3, 4 to 5, or ≥6 cups per day) in men were 1.0, 0.98, 0.93, 0.71, and 0.46 respectively (P = 0.007 for trend). The corresponding relative risks in women were 1.0, 1.16, 0.99, 0.7, and 0.71 respectively (P <0.001 for trend). Persons who drank 4 cups or more daily of decaffeinated coffee also had a lower relative risk of developing diabetes (0.74 for men and 0.85 for women) compared with nondrinkers. These data suggest that long-term coffee consumption is associated with a statistically significant lower risk for type 2 diabetes, although the data do not prove a cause and effect relationship. It is premature to advise increased coffee drinking as a means to prevent diabetes.

CARDIOVASCULAR CARE

■ Aortic Stenosis Increases Surgery Risk


Aortic stenosis occurs in 2% to 9% of adults older than 65 years of age. The authors studied 108 patients with moderate (mean gradient 25 to 49 mm Hg) or severe (mean gradient >50 mm Hg) aortic stenosis, and 216 control patients who underwent noncardiac surgery at a
hospital in the Netherlands. Compared with control patients, whom authors matched by calendar year and type of surgery, patients with aortic stenosis had a higher rate of death and myocardial infarction (MI) (14% vs 2%, P <.001). The severity of aortic stenosis also predicted perioperative complications, with 31% in patients with severe aortic stenosis compared to 11% in patients with moderate aortic stenosis (P = .04). Even after adjusting for higher coexisting cardiac risk factors, patients with aortic stenosis had a fivefold increase in the risk of perioperative death and nonfatal MI (odds ratio = 5.2, 95% CI 1.6 to 17).

During preoperative consultation, clinicians should be diligent in listening to the heart and should carefully assess any patients with systolic murmurs. Patients with possible important aortic stenosis, especially those with symptoms (heart failure, possible angina, syncope, or presyncope) must undergo echocardiography. In symptomatic patients with aortic stenosis, valve replacement should be considered before surgery.

CT Scans for Coronary Artery Calcium


Computed tomography (CT) to measure coronary artery calcium scoring (CACS) is being aggressively marketed to screen for coronary artery disease, although its clinical value remains unclear. The authors studied whether CAC assessment, combined with Framingham Risk Score (FRS), provided predictive information that was superior to either method alone. Between 1990 and 1992, providers screened with CACS and FRS 1,461 asymptomatic adults without diabetes, but with coronary risk factors. During 7 years of follow-up, 84 patients experienced MI or coronary heart disease (CHD) death. Compared with an FRS of <10%, a score of >20% predicted the risk of MI or CHD death (hazard ratio = 14.3). CAC scores were categorized as 0, 1-100, 101-300, or >300. Compared to a score of 0, a score >300 predicted MI or CHD death (HR = 3.9). For patients with an FRS of <10% or an FRS of >20%, the CACS did not change the predicted risk substantially. Even in the absence of CAC (score = 0), 14 of 316 participants had MI or CHD death during the study.

In this study, CACS improved the accuracy of FRS predictions only in participants whose FRS was between 10% to 19%. For these persons, a CACS >300 was associated with an added CHD event risk. These study results will not settle the controversy about whether CACS is able to motivate patients to modify their CAD risk factors in a manner that makes it worth the cost and effort.

Smoking, Inflammation, and Colon Cancer


Previous studies revealed an association between cigarette smoking and the development of adenomatous colorectal polyps. Among more than 39,000 men and women in the Chicago Heart Association Detection Project in Industry Study, smokers had a relative risk of death from colorectal carcinoma of 1.87, compared to those who never smoked (95% CI 1.08 to 3.22). The risk for women who smoked more than 20 cigarettes daily compared with those who never smoked was 2.49 (95% CI 0.87 to 7.12). Erlinger and colleagues report the results of a nested case-control study of over 22,000 adults in Washington County, Md., who were followed for 11 years after baseline measurement of C-reactive protein (CRP). Plasma CRP concentrations were higher among cases of colon cancer than among controls (2.69 vs. 1.97 mg/L; P <.0001), but not among cases of rectal cancer (P = .32). The lack of an association with rectal cancer could be a result of reduced opportunity to find a relationship due to small numbers of rectal cancer cases or due to an alternative biologic pathway.

Nurse practitioners can use the knowledge that colorectal cancer is another tobacco-associated disease to counsel patients about the harmful effects of tobacco and to guide individual screening decisions. We know that smokers can reduce CRP levels by quitting. However, whether inflammation should be treated early with nonsteroidal inflammatory drugs such as aspirin to reduce the risk of cancer is not clear.