Antioxidants show no clear benefit against cardiovascular events, death in high-risk women

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Vitamins C and E and beta carotene, either individually or in combination, do not appear to reduce the risk of cardiovascular events or death among women at high risk for heart disease, according to a report in the August 13/27 issue of *Archives of Internal Medicine*, one of the JAMA/Archives journals.

Oxidative damage—harm to cells caused by exposure to oxygen—may contribute to the development of cardiovascular disease, according to background information in the article. In addition, compounds known as free radicals may damage artery linings, encourage blood clots and alter the function of blood vessels. “Antioxidants scavenge free radicals and limit the damage they can cause,” the authors write. “Diets high in fruit and vegetable intake, and thus rich in such antioxidants, have been associated with reduced rates of coronary heart disease and stroke. Vitamins C and E and beta carotene are potential mediators of the apparent protective effect of a plant-based diet on cardiovascular disease.”

Nancy R. Cook, Sc.D., of Brigham & Women’s Hospital and Harvard Medical School, Boston, and colleagues tested the effects of these compounds in the Women’s Antioxidant Cardiovascular Study, which followed 8,171 women 40 years or older (average age 60.6) beginning in 1995 to 1996. The women, who either had a history of cardiovascular disease or three or more risk factors, were randomly assigned to take

500 milligrams of ascorbic acid (vitamin C) or placebo every day; 600 international units of vitamin E or placebo every other day; and 50 milligrams of beta carotene or placebo every other day. Participants were followed up for the occurrence of heart events (including stroke, heart attack and bypass surgery) or death through 2005.

During the average study period of 9.4 years, 1,450 women had one or more cardiovascular events, including 274 heart attacks, 298 strokes, 889 coronary revascularization procedures (bypass surgery or angioplasty) and 395 cardiovascular deaths (out of a total 995 deaths). “There was no overall effect of ascorbic acid, vitamin E or beta carotene on the primary combined end point or on the individual secondary outcomes of myocardial infarction, stroke, coronary revascularization or cardiovascular disease death,” the authors write. “There were no significant interactions between agents for the primary end point, but those randomized to both active ascorbic acid and vitamin E experienced fewer strokes.”

No additional adverse effects were observed for those taking active pills vs. placebo, with the exception of a small increase in reports of upset stomach among those taking active beta carotene.

Source: JAMA and Archives Journals