SOUTHWESTERN NEWS

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VITAMIN E APPEARS TO REDUCE RISK OF HEART DISEASE IN DIABETICS

DALLAS — April 29, 1996 — Although diabetics face an increased risk of atherosclerosis, or hardening of the arteries, the risk may be curbed with high doses of natural vitamin E supplements, say researchers in UT Southwestern Medical Center at Dallas' Center for Human Nutrition.

"This is exciting because it may be a new way to prevent heart disease in diabetics," said Dr. Ishwarlal Jialal, an associate professor of pathology and internal medicine and senior author of the paper detailing the research study. "It's the first study to include men and women with both type I and type II diabetes who have a wide range of glucose control. This study goes a couple of steps further than any previous work."

Results of the placebo-controlled, randomized study conducted by Dr. Cindy J. Fuller, formerly a postdoctoral fellow in the center and now an assistant professor at the University of North Carolina at Greensboro, and Jialal are being published in the May issue of The American Journal of Clinical Nutrition.

Numerous studies have shown that vitamin E, an antioxidant, can reduce susceptibility to heart disease in nondiabetic patients by inhibiting the oxidation of low-density lipoprotein (LDL), the "bad" cholesterol. This oxidative process is believed to lead to atherosclerosis, a condition in which arteries become clogged with fatty deposits. Last year, Jialal, also a senior investigator in the center, reported that a minimum dose of 400 International Units of vitamin E per day produced a protective effect.

Few studies have dealt with diabetic patients even though they are more prone to

(MORE)

premature atherosclerosis, the leading cause of heart attacks and strokes. It is not clear why diabetics are at increased risk, but researchers know they have a lower concentration of antioxidants and a tendency to oxidize more "bad" cholesterol. Diabetics also experience greater protein glycation than nondiabetics. Protein glycation is the result of glucose binding to proteins. If glucose binds to LDL, it increases the buildup of atherosclerotic plaque. Diabetics typically have high glucose levels.

Jialal and his team wanted to see if vitamin E could reduce LDL oxidation and decrease protein glycation in diabetics.

Twenty-eight men and women with insulin-dependent diabetes mellitus (type I) and non-insulin-dependent diabetes mellitus (type II) in varying stages of glycemic control were assigned randomly to receive either a placebo or 1,200 IU of vitamin E for eight weeks. The Recommended Dietary Allowance for vitamin E is 10 milligrams. (One IU of vitamin E is roughly equivalent to 1 mg of vitamin E.)

Compared with the placebo group, the supplemented group had significant reductions in LDL oxidation. There was no effect on the level of protein glycation. "The benefit to LDL oxidation was seen in both type I and type II diabetes," Jialal said.

Other authors on the paper were Manisha Chandalia, formerly a fellow in the center and now a UT Southwestern intern; Dr. Abhimanyu Garg, an associate professor of internal medicine; and Dr. Scott Grundy, director of the center and holder of the Distinguished Chair in Human Nutrition.

The study was funded by the Henkel Corp.

Jialal recently received a three-year grant from the American Diabetes Association to continue his studies on Vitamin E, oxidation, glycation and monocyte function in diabetics.

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