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**Early, aggressive treatment of type 1 diabetes
substantially lowers risk of cardiovascular disease, research shows**

DALLAS – Dec. 21, 2005 – Intensive and early treatment of type 1 diabetes substantially lowers the risk of cardiovascular ailments such as heart disease and stroke, a new multicenter study shows.

Researchers at UT Southwestern Medical Center and 27 other U.S. medical institutions found that patients who receive early and aggressive treatment for the disease, including the use of insulin pumps or multiple daily (three or more) insulin injections, glucose monitoring and lifestyle intervention as young adults, reduced their risk of serious cardiovascular disease by almost 60 percent.

Their findings are based on a long-term study of patients who took part in the Diabetes Control and Complications Trial (DCCT) more than a decade ago. UT Southwestern participated in the follow-up clinical study of DCCT patients called the Epidemiology of Diabetes Interventions and Complications (EDIC) study. EDIC examined long-term effects of aggressive treatment compared with conventional blood glucose control. The latest findings appear in today's issue of the *New England Journal of Medicine*.

The initial DCCT results, announced in 1993, showed that intensive glucose control prevents or delays eye, nerve and kidney damage – common complications of type 1 diabetes. At the time, however, researchers had not followed participants long enough to investigate whether intensive treatment also lowered the risk of heart attack and stroke.

“We were one of the centers following about 60 patients, and when we started most of our patients were, on average, 30 to 35 years old,” said Dr. Philip Raskin, professor of internal medicine and the lead DCCT researcher at UT Southwestern. “We reported short-term health benefits of early, intensive treatment, but at that time the patients weren't old enough to experience some of the cardiovascular disease and events that can afflict older patients with type 1 diabetes. As that population has aged, the strategy of early intervention and aggressive control of the disease has shown tremendous health advantages.”

(MORE)

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The original National Institutes of Health-funded trial began in 1983 and enrolled 1,441 people throughout the country. At that time, management of type 1 diabetes usually consisted of a few daily insulin injections and daily blood or urine glucose screening. Researchers enrolled patients between the ages of 13 and 39 and those randomly assigned to intensive treatment were asked to keep glucose levels as close to normal as possible.

After six years, the group of patients undergoing intensive treatment had longer-lasting health benefits than conventionally treated patients. They had fewer health complications, and their blood glucose levels were lower. Aggressive management of diabetes in the patients showed a 58 percent reduction in the risk of serious cardiovascular events such as heart attacks and strokes.

Dr. Raskin said that among the volunteers continuing to participate in the study, the aggressively treated patients had less than half the number of cardiovascular events than the conventionally treated group.

Type 1 diabetes typically affects younger individuals and is usually diagnosed before the age of 40. Most patients are diagnosed by the age of 14. Type 1 diabetes – which affects about 1 million people in the United States – is associated with a lack of insulin. Pancreatic islet cells quit producing insulin in the quantities needed to maintain a normal blood glucose level, and patients must regiment their diets and take insulin daily to metabolize blood glucose.

Type 1 diabetes accounts for between 5 percent and 10 percent of all diabetes cases. Diabetes is the most common cause of blindness, kidney failure and amputations in adults and a major cause of heart disease and stroke.

“We don’t know why type 1 diabetes causes these complications. People who have it seem to have more problems with cardiovascular disease, particularly women,” Dr. Raskin said. “But now we know with intensive treatment, we can reduce this risk considerably.”

The EDIC study was funded by the NIH.

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