Obesity Linked to Increased Kidney Disease Risk in Type 1 Diabetes

The study analyzed long-term follow-up from the DCCT.

REVIEWED BY IAN H. DE BOER, MD

For patients with type 1 diabetes, obesity is an important risk factor for the development of diabetic kidney disease, according to a report in the *Journal of the American Society of Nephrology.*

Our results suggest that weight control is important in type 1 diabetes and that overweight patients with type 1 diabetes may need further evaluation and treatment," said Ian H. de Boer, MD, of the University of Washington in Seattle, lead author of the study. "For these patients, lifestyle interventions such as exercise and diet may be useful in preventing kidney and heart disease."

Dr. de Boer and colleagues analyzed long-term follow-up data on nearly 1,300 patients with type 1 diabetes from the Diabetes Control and Complications Trial (DCCT). The DCCT was a landmark study showing that intensive insulin therapy and keeping blood sugar levels as close to normal as possible lowers the risk of microvascular complications. The current study focused on how obesity — specifically central obesity measured in terms of waist circumference — affected the risk of kidney disease.

MICROALBUMINURIA DEVELOPMENT

During an average of nearly 6 years follow-up, 8.4% of patients developed microalbuminuria. Risk was 4.5% for patients receiving intensive insulin therapy compared to 12.8% for those receiving conventional insulin treatment.

The investigators found that the risk of microalbuminuria was significantly higher for patients with central obesity. The bigger the waist measurement, the higher the risk. Specifically, for each 4-inch increase in waist circumference, the risk of microalbuminuria increased by 34%. This relationship remained significant after adjustment for other risk factors, including intensive insulin therapy.

Obesity did not affect the rate of decline in kidney function, based on creatinine clearance. Other risk factors for faster declines in creatinine clearance were older age, conventional insulin therapy, smoking and poorer control of blood sugar levels.

OBESITY GROWING PROBLEM IN TYPE 1 DIABETES

"Obesity is a growing problem for people with type 1 diabetes, but little was previously known about whether it affects risk for kidney disease in this group," said Dr. de Boer. "Our research shows that central obesity is associated with an increased risk of developing microalbuminuria which is not only an important sign of kidney disease but also a marker of increased risk for cardiovascular disease."

The results suggest that losing weight might help reduce the risk of kidney and heart disease in obese patients with type 1 diabetes, although further study would be needed to confirm this.

The new report also provides an interesting follow-up to the DCCT and other studies with regard to the value of intensive insulin therapy. "Although intensive insulin therapy is associated with weight gain, our study showed again that, overall, intensive insulin therapy is protective against kidney disease in type 1 diabetes," Dr. de Boer said. "In fact, intensive insulin therapy was associated with preservation of creatinine clearance over time, a benefit that had not been previously described." ■

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De Boer IH, et al. Central obesity, incident microalbuminuria, and change in creatinine clearance in the epidemiology of diabetes interventions and complications study. *J Am Soc Neph.* Available at: www.jasn.org. Accessed on: Dec. 5, 2007.