Diabetes Predicts Loss of Liver Function in People With NAFLD

People with type 2 diabetes also had a fivefold higher risk for liver cancer.

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People who have both non-alcoholic fatty liver disease (NAFLD) and type 2 diabetes have a significantly higher risk of liver failure and liver cancer compared to those without diabetes, according to study results reported in The Lancet Gastroenterology & Hepatology.

Arising from the accumulation of fat in the liver, NAFLD and its more severe form, non-alcoholic steatohepatitis (NASH), are responsible for a growing proportion of advanced liver disease worldwide. As a result of inflammation, NAFLD can lead to liver fibrosis, cirrhosis and even liver cancer. With no effective approved medical therapies, disease management depends on lifestyle changes such as weight loss and exercise.

Some 70% of people with type 2 diabetes have liver disease, and the American Diabetes Association recently recommended that adults with diabetes or prediabetes should be screened for NAFLD. But how diabetes affects the loss of liver function in people with fatty liver disease is unclear.

Rohit Loomba, MD, of the University of California San Diego, and colleagues examined the risk of hepatic decompensated cirrhosis, or loss of liver function, in adults who had NAFLD with or without type 2 diabetes. For this meta-analysis, they used data from six cohorts in Japan, Turkey and the United States. The study participants underwent magnetic resonance elastography to assess liver fibrosis between February 2007 and June 2021.

The primary outcome was hepatic decompensation, or liver failure, defined as ascites (abdominal fluid accumulation), variceal bleeding (due to enlarged veins in the stomach or esophagus) or hepatic encephalopathy (brain dysfunction); the secondary outcome was hepatocellular carcinoma, the most common type of primary liver cancer.

The study population consisted of 2,016 people, of whom 736 people had type 2 diabetes, 114 had hepatic decompensation and 47 had liver cancer at baseline. More than half (53%) were women, the average age was about 51 years and the average body mass index was 31.3, meeting the criteria for obesity.

In the liver function analysis, among the 1,737 people with available longitudinal data, 602 had type 2 diabetes. Overall, 105 went on to experience liver function loss over a median follow-up period of 2.8 years. People with diabetes had a much greater risk for liver decompensation than those without diabetes at one year (3.37% versus 1.07%, respectively), three years (7.49% versus 2.92%) and five years (13.85% versus 3.95%).

In the liver cancer analysis, 1,802 people without hepatocellular cancer at baseline were followed for a median of 2.9 years; 639 of them had type 2 diabetes. Here, 18 people with diabetes and four people without diabetes went on to develop liver cancer. Again, people with diabetes had a significantly greater risk for liver cancer than those without diabetes at one year (1.34% versus 0.09%, respectively), three years (2.44% versus 0.21%) and five years (3.68% versus 0.44%).

After adjusting for age, race/ethnicity and body mass index, the researchers found that type 2 diabetes and glycated hemoglobin (a measure of blood sugar levels over time) were independent predictors of liver function loss; this remained the case after adjustment for fibrosis. People with diabetes had more than twice the risk of liver function loss. Diabetes was also an independent predictor of liver cancer, and people with diabetes had more than a fivefold higher risk.

“Among people with NAFLD, the presence of type 2 diabetes is associated with a significantly higher risk of hepatic decompensation and hepatocellular carcinoma,” wrote the researchers. “These data serve as a call to action to prevent type 2 diabetes and reduce the growing burden of NAFLD and NAFLD-related hepatocellular carcinoma.”

The study authors recommended that people with diabetes should be assessed for NAFLD, followed more closely and offered early treatment options, such as lifestyle management, bariatric surgery or weight-loss medications.

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