Is Fatty Liver Disease a Risk Factor for Cardiovascular Disease?

For people with NAFLD or NASH, treating metabolic problems may offer benefits beyond liver disease.

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While cardiovascular disease (CVD) is a leading cause of morbidity and mortality for people with non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH), liver fat itself may not raise the risk for heart disease after accounting for other risk factors, according to study findings published in the journal Hepatology.

“Taking this report alone, it suggests that there is no increased risk of CVD in persons with NAFLD above that conferred by other metabolic comorbidities,” Ian Rowe, PhD, of the University of Leeds, and Alina Allen, MD, of the Mayo Clinic, wrote in an accompanying editorial.

Non-alcoholic fatty liver disease and its more severe form, NASH, are responsible for a growing proportion of advanced liver disease worldwide. Often associated with obesity and diabetes, fatty liver disease is increasingly recognized as a component of metabolic syndrome, a cluster of risk factors associated with CVD. Over time, NAFLD can lead to liver fibrosis, cirrhosis and even liver cancer. With no approved medical therapies, disease management is dependent on lifestyle changes such as weight loss and exercise.

Michelle Long, MD, of Boston University School of Medicine, and colleagues sought to examine the links between NAFLD and heart disease, cancer and mortality.

The study included 10,040 participants from the Framingham Heart Study, the Coronary Artery Risk Development in Young Adults Study and the Multi-Ethnic Study of Atherosclerosis. Just over half were women, and the average age was 51 years. Using longitudinal databases, the researchers were able to explore potential links between liver fat and new diagnoses of heart disease and cancer over time.

Hepatitis steatosis (liver fat accumulation) was linked to all-cause mortality over an average 12.7 years of follow-up after adjusting for baseline CVD risk factors, including body mass index (BMI). But when the researchers took into account how various risk factors for heart disease varied over time, the association weakened, and the link between fatty liver and new cases of CVD was not statistically significant after accounting for BMI. There was also no significant association between

CVD-related mortality or new cancer diagnoses.

“In this large, multicohort study of participants with computed tomotgraphy-defined hepatic steatosis, accounting for change in CVD risk factors over time attenuated associations between liver fat and overall mortality or incident CVD,” wrote the researchers. “Our work highlights the need to consider concurrent cardiometabolic disease when determining associations between NAFLD and CVD and mortality outcomes.”

Rowe and Allen noted that prior studies of the link between fatty liver disease and CVD have yielded conflicting evidence. Previous research has shown that NAFLD is associated with a higher risk for diabetes and high blood pressure, both of which raise the risk for CVD.

“As a precursor to diseases that are known to increase the risk of CVD, NAFLD remains important to recognize and treat,” they wrote. “Hepatic steatosis may not be an independent predictor of CVD events but rather contributes to the terroir for the further development of diabetes and hypertension that drive increased CVD risk in persons with NAFLD.”

These findings have implications for the development of NAFLD and NASH treatments. Medications that improve metabolic abnormalities, such as semaglutide (Ozempic and Wegovy), may offer “significant gains for the person with NASH beyond their liver disease,” according to Rowe and Allan.

Click here to read the study abstract in Hepatology.

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