Early Onset of MASLD Linked to Higher Cancer Risk

People diagnosed with fatty liver disease before age 45 were about 50% more likely to develop cancer.

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Earlier onset of metabolic dysfunction-associated steatotic liver disease (MASLD) was linked to a greater likelihood of developing cancer, with the risk decreasing as the age of MASLD onset increased, according to study results published in JAMA Network Open.

MASLD, the new name for non-alcoholic fatty liver disease (NAFLD), is responsible for a growing proportion of advanced liver disease. The buildup of fat in the liver can lead to inflammation, fibrosis, cirrhosis and liver cancer. Studies have found that MASLD is also linked to other types of cancer. With no effective approved medical therapies, disease management is dependent on lifestyle changes such as weight loss and exercise.

An estimated 25% of people worldwide have MASLD, and it is increasingly seen at younger ages. Chenan Liu, MD, PhD, of the Capital Medical University in China, and colleagues sought to understand whether developing fatty liver disease at an earlier age is linked to a greater risk for cancer.

The research team analyzed data from 179,328 participants in the Kailuan Cohort Study, an ongoing prospective study that began in June 2006. The analysis included 31,848 people with MASLD, who were matched by age and sex with an equal number of people without fatty liver disease. More than 80% were men, and the average age was approximately 51 years.

Among people in the MASLD group, most were diagnosed with fatty liver disease between ages 45 and 54. Compared to people without fatty liver disease, those with MASLD had a higher body mass index and larger waist, were more likely to have hypertension and engaged in limited regular exercise. These individuals also had higher levels of ALT liver enzymes, cholesterol and triglycerides.

Over a follow-up period of about 10 years, 2,415 people were diagnosed with any type of cancer, 53% of whom had MASLD. Among people diagnosed with fatty liver disease before age 45, digestive system cancers—including liver cancer and colorectal cancer—and lung cancer were most common. The researchers determined that MASLD was responsible for 18% of cancer risk.

As the age of MASLD onset increased, the risk of cancer decreased. People with MASLD onset before age 65 had a 13% higher risk of developing cancer compared to those without fatty liver disease, while people with MASLD onset between ages 45 and 54 had a 50% higher risk and those with MASLD onset before age 45 had a 52% higher risk. The difference was not statistically significant for people over 65.

Results were similar when looking only at digestive system cancers. Younger age at MASLD onset was associated with a greater risk for liver cancer and lung cancer, but the difference was not significant for colorectal, gallbladder or extrahepatic bile duct cancers.

“This study found that [MASLD] was associated with increased cancer risk and there was an interaction with onset age, such that the younger the onset age of [MASLD], the greater the cancer risk,” the researchers wrote. “This suggests that preventing and reducing [MASLD] in early life may be associated with significantly lower cancer prevalence.”

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