60% of Liver Cancer Cases Could Be Prevented

Hepatitis B vaccination, hepatitis C treatment, limiting alcohol consumption and lifestyle changes to manage obesity could avert 3 out of 5 liver cancer cases.

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At least 60% of liver cancer cases worldwide could be prevented by managing risk factors, including hepatitis B and C, excessive alcohol consumption and fatty liver disease, according to a Lancet Commission report launched to coincide with World Hepatitis Day on July 28. The commission recommends various measures that governments could implement to reduce liver cancer risk, but individuals can take several steps themselves.

"As three in five cases of liver cancer are linked to preventable risk factors, mostly viral hepatitis, alcohol and obesity, there is a huge opportunity for countries to target these risk factors, prevent cases of liver cancer and save lives," lead author Stephen Lam Chan, MD, of the Chinese University of Hong Kong, said in a Lancet news release.

Over time, chronic hepatitis B, hepatitis C, heavy alcohol consumption and metabolic dysfunction-associated fatty liver disease (MASLD) and its more severe form, metabolic dysfunction-associated steatohepatitis (MASH), can lead to serious liver complications, including cirrhosis and hepatocellular carcinoma (HCC), the most common type of liver cancer. HCC is often detected at late stages, when it is difficult to treat.

Worldwide, liver cancer is the sixth most common malignancy and the third leading cause of cancer death. A large share of cases are in China and other Asian countries with high rates of hepatitis B. The commission predicts that without action, the number of new liver cancer cases could increase from around 870,000 in 2022 to 1.52 million in 2050, and annual deaths could rise from 760,000 to 1.37 million.

Even as liver cancer cases increase overall, the main causes have been shifting. Thanks to vaccination and effective treatment, the proportion of cases linked to hepatitis B is expected to decrease from 39% in 2022 to 37% in 2050, while cases due to hepatitis C will fall from 29% to 26%. In contrast, the commission predicts that the global share of cases due to MASH will increase from 8% to 11%—a 35% jump—and alcohol-associated cases are projected to rise from 19% to 21% by 2050.

The commission set a target of reducing the number of new liver cancer cases by 2% to 5% annually, which would mean up to 17 million cases could be prevented and up to 15 million deaths averted by 2050.

“Liver cancer is a growing health issue around the world. It is one of the most challenging cancers to treat, with five-year survival rates ranging from approximately 5% to 30%,” said commission chair Jian Zhou, MD, PhD, of Fudan University in Shanghai. “We risk seeing close to a doubling of cases and deaths from liver cancer over the next quarter of a century without urgent action to reverse this trend.”

One of the most straightforward prevention steps is hepatitis B virus (HBV) vaccination. The Centers for Disease Control and Prevention (CDC) currently recommends the vaccine for all infants soon after birth, children and adolescents who were not vaccinated as babies, all adults ages 19 to 59 and older adults with risk factors, such as people who inject drugs, gay and bisexual men and those with occupation risk. These recommendations are controversial, however, and the new CDC immunization advisory committee appointed by Health Secretary Robert F. Kennedy Jr. could seek to limit vaccination to those at higher risk.

There is no vaccine for hepatitis C, but more than 90% of people can be cured with direct-acting antiviral medications taken for two to four months. The CDC recommends that all adults should be screened for hepatitis C virus (HCV) at least once, and experts recommend treatment for almost everyone who tests positive for active infection, but most people who need treatment are still not getting it.

MASLD (formerly known as non-alcoholic fatty liver disease, or NAFLD) and MASH (formerly non-alcoholic steatohepatitis, or NASH) are responsible for a growing share of advanced liver disease worldwide. Experts estimate that around a third of people in the United States have MASLD and about 5% have MASH. Rates are rising worldwide, including among children. As the new names suggest, these conditions are associated with overweight and obesity, type 2 diabetes and other metabolic problems that raise the risk for cardiovascular disease.

With only one approved medication (Rezdiffra), management of fatty liver disease largely relies on lifestyle changes, including weight loss and exercise. Weight-loss medications, such as semaglutide (Ozempic and Wegovy) and tirzepatide (Mounjaro and Zepbound), have shown promise for treating MASH and perhaps preventing MASLD. Many other types of drugs are being explored for MASLD/MASH, but progress has been slow.

“Liver cancer was once thought to occur mainly in patients with viral hepatitis or alcohol-related liver disease. However, today rising rates of obesity are an increasing risk factor for liver cancer, primarily due to the increase in cases of excess fat around the liver,” said report coauthor Hashem B El-Serag, MD, MPH, of Baylor College of Medicine. He suggests introducing screening for liver damage into routine health care for people at high risk for MASLD, integrating counseling about a healthy diet and regular physical activity into routine care and policies to promote healthy food environments.

The commission recommended several steps for policymakers to reduce the global burden of liver cancer, including:

- Intensifying efforts to increase hepatitis B vaccination and implementing universal HBV screening for adults;
- Targeted HCV screening in areas with high rates and increased access to hepatitis C treatment;
- Requiring labels on food with high sugar and fat content and potentially implementing taxes on products high in sugar;
- Restricting advertising of alcohol, requiring warning labels and potentially enacting taxes and minimum unit pricing;
- Raising public awareness about liver health and disease.
- Devoting more resources to early HCC detection, including better surveillance for people with cirrhosis;
- Improving and standardizing liver cancer screening;
- Reducing differences among countries in the clinical management of HCC;
- More provider training and integration of early palliative care for liver cancer patients.

“The message of the commission—that strengthening prevention, fostering collaboration and removing social and knowledge barriers can help avert the rapid rise of liver cancer—is one of possibility,” the Lancet editors wrote in an accompanying editorial. “Taking action to realize that possibility is vital for the health of many millions of people worldwide over the next 25 years.”

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