

Metabolic syndrome increases risk of both major types of primary liver cancer

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Incidence rates of hepatocellular carcinoma (HCC) and intrahepatic cholangiocarcinoma (ICC) have increased in the U.S. This population-based study publishing in the August issue of *Hepatology*, a journal of the American Association for the Study of Liver Diseases, found that metabolic syndrome significantly increases risk of developing these primary liver cancers.

According to data from the [National Cancer Institute](#), 24,120 new cases of liver and intrahepatic bile duct cancer and close to 19,000 deaths from the diseases occurred in the U.S. in 2010. Major [risk factors](#) for HCC, the most common type of [liver cancer](#), are chronic infection with [hepatitis B](#) and C viruses and [excessive alcohol consumption](#). ICC, the second most common type of liver cancer, is associated with primary sclerosing cholangitis and [inflammatory bowel disease](#). However, the cause of up to half of HCC and ICC remains unknown.

"There has been an increase in the incidence rates of liver cancer—HCC and ICC—in the U.S.," explains lead author Tania Welzel, M.D., with the National Cancer Institute and Klinikum der J.W. Goethe-Universität. "While [metabolic syndrome](#) is a recognized risk factor for HCC and may also modify ICC risk, the magnitude of this effect has not been investigated on a large scale in the U.S." Metabolic syndrome comprises a group of medical conditions which include central obesity (excess abdominal-area weight), raised fasting glucose levels and diabetes mellitus, raised triglycerides, reduced HDL cholesterol, and hypertension.

For the present study, Dr. Welzel and colleagues examined the association between metabolic syndrome and development of primary liver cancers in the general U.S. population. Using the SEER-Medicare database, researchers identified individuals diagnosed with HCC or ICC between 1993 and 2005. A 5% sample of individuals residing in geographic regions similar to SEER registries was selected for comparison purposes. A total of 3649 HCC cases, 743 ICC cases, and 195953 individuals without cancer were identified and met study inclusion criteria.

The findings revealed that metabolic syndrome was present in 37% of persons who subsequently developed HCC and 30% of persons who developed ICC, compared to 17% of persons who didn't develop either cancer. Analyses showed metabolic syndrome was significantly associated with increased risk of HCC (odds ratio=2.13) and ICC (odds ratio=1.56). Individual components of metabolic syndrome—impaired fasting glucose level, dyslipoproteinemia, obesity and hypertension—were more common among persons who developed either HCC or ICC patients than among persons who did not.

"Our findings show a 2-fold increased risk for HCC and a 1.56-fold increased risk for ICC in those individuals with pre-existing metabolic syndrome," concluded Dr. Welzel. "The risk of developing these primary liver cancers is significant for individuals with this condition. Due to the high prevalence of metabolic syndrome, even small increases in the absolute risk for HCC and ICC may contribute to the increasing liver cancer burden." The authors suggest that metabolic syndrome may be the source behind a number of the idiopathic HCC or ICC cases in the U.S. and efforts to control the worldwide epidemics of obesity and diabetes could reduce the liver cancer burden.

More information: "Metabolic Syndrome Increases the Risk of Primary Liver Cancer in The United States: A Study in the SEER-

Medicare Database." Tania M. Welzel, Barry I. Graubard, Stefan Zeuzem, Hashem B. El-Serag, Jessica A. Davila, Katherine A. McGlynn. Hepatology; Published Online: June 30, 2011 ([DOI: 10.1002/hep.24397](https://doi.org/10.1002/hep.24397)); Print Issue Date: August 2011.

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