

# Diabetes identified as risk factor for liver cancer across ethnic groups

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Diabetes was associated with an increased risk for developing a type of liver cancer called hepatocellular carcinoma, and this association was highest for Latinos, followed by Hawaiians, African-Americans, and Japanese-Americans, according to results presented here at the Sixth AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved, held Dec. 6-9.

"People with [diabetes](#) have a two- to threefold higher risk for [hepatocellular carcinoma](#) compared with those without diabetes," said V. Wendy Setiawan, Ph.D., assistant professor in the Department of Preventive Medicine at Keck School of Medicine of the University of Southern California. "We also found that the interethnic differences in the prevalence of diabetes were consistent with the pattern of hepatocellular [carcinoma](#) incidence observed across ethnicities: Ethnic groups with a high prevalence of diabetes also have high hepatocellular carcinoma rates, and those with a lower prevalence of diabetes have lower hepatocellular carcinoma rates."

The number of new cases of hepatocellular carcinoma in the United States tripled in the past three decades, with Latinos and African-Americans experiencing the largest increase in incidence. Prior research has suggested that diabetes may be a risk factor for hepatocellular carcinoma, and its increasing incidence may be contributing to the rising rate of hepatocellular carcinoma.

"People with diabetes should be aware that their condition is associated

with a higher risk of developing hepatocellular carcinoma," Setiawan said. "Maintaining a healthy weight, managing their diabetes, preventing and treating hepatitis infection, and limiting alcohol and tobacco use should be in their priority to-do list."

In addition, Setiawan said that public health efforts encouraging obesity/diabetes prevention and effective diabetes management should be directed at high-risk populations.

Setiawan and colleagues examined if the association between diabetes and hepatocellular carcinoma differed by race/ethnic group. They analyzed data from more than 150,000 people enrolled in the Multiethnic Cohort Study between 1993 and 1996. During the study follow-up period of about 15 years, 506 cases of hepatocellular carcinoma were reported: 59 cases in non-Hispanic whites, 81 in African-Americans, 33 in Hawaiians, 158 in Japanese-Americans, and 175 in Latinos.

Compared with non-Hispanic whites, Latinos had 2.77 times the risk for being diagnosed with hepatocellular carcinoma, the highest risk identified. Native Hawaiians had 2.48 times the risk; African-Americans, 2.16; and Japanese-Americans, 2.07.

The prevalence of diabetes was consistent with that of hepatocellular carcinoma. Sixteen percent of Hawaiians, 15 percent of Latinos and African-Americans, 10 percent of Japanese-Americans, and 6 percent of non-Hispanic whites had diabetes. Compared with those without diabetes, Latinos with diabetes had 3.3-fold higher risk for hepatocellular carcinoma; Hawaiians, 2.33-fold higher risk; Japanese-Americans, 2.02-fold higher risk; African-Americans, 2.02-fold higher risk; and non-Hispanic whites had 2.17-fold higher risk.

Hepatocellular carcinoma was attributed to diabetes in 26 percent of

cases in Latinos, 20 percent of Hawaiians, 13 percent of African-Americans, 12 percent of Japanese-Americans, and 6 percent of non-Hispanic whites, the researchers estimated. According to Setiawan, eliminating diabetes could potentially reduce hepatocellular carcinoma incidence in all racial/ethnic groups, with the largest potential reduction possible in Latinos.

**More information:** Abstract Number: PR09

Presenter: V. Wendy Setiawan, Ph.D.

Title: Diabetes and racial/ethnic differences in hepatocellular carcinoma risk: the Multiethnic Cohort

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Background: Hepatocellular carcinoma (HCC) incidence has tripled in the US over the past three decades. Diabetes has been suggested as an emerging risk factor for HCC and its increasing prevalence may contribute to the rising incidence of HCC. Data from prospective studies on the relationship between diabetes and HCC in multiethnic populations are scarce. Here we examined whether the association between diabetes and HCC risk differs across racial/ethnic groups, and whether the association is modified by known HCC risk factors.

Methods: We conducted a prospective analysis of 169,479 African-American, Native Hawaiian, Japanese-American, Latino and white men and women who were recruited into the Multiethnic Cohort (MEC) Study between 1993 and 1996. During a median follow-up period of 15.7 years, a total of 506 incident HCC cases (59 whites, 81 African Americans, 33 Hawaiians, 158 Japanese, and 175 Latinos) were identified among the cohort participants. Data on known and suspected risk factors were obtained from baseline questionnaire. Serologic testing

for hepatitis B (HBV) and C (HCV) infection was performed on a subset of cohort subjects (233 cases and 460 non cases). Cox proportional hazards models stratified by sex and adjusted for age, alcohol drinking, body mass index (BMI in kg/m<sup>2</sup>) and cigarette smoking were used to calculate relative risks (RRs) and 95% confidence intervals (CIs) for HCC associated with diabetes for each ethnic group. The population attributable risk percent associated with diabetes was also calculated for each ethnic group.

Results: Incidence rates of HCC markedly differed across race/ethnic groups; the age-adjusted RRs for HCC (vs. whites) were 2.77 (95% CI: 2.03, 3.78) for Latinos, 2.48 (95% CI: 1.59, 3.86) for Native Hawaiians, 2.16 (95% CI: 1.52, 3.07) for African Americans, and 2.07 (95% CI: 1.51, 2.38) for Japanese. The age- and sex-adjusted prevalence of diabetes at baseline also varied across ethnic groups: 16% in Hawaiians, 15% in Latinos, 15% in African Americans, 10% in Japanese, and 6% whites (P

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