

Risk of Hepatocellular Carcinoma with Hepatitis B Viremia among HIV/Hepatitis B Virus-Coinfected Persons in North America

[H. Nina Kim](#), [Craig W. Newcomb](#), [Dena M. Carbonari](#), [Jason A. Roy](#), [Jessie Torgersen](#), [Keri N. Althoff](#), [Mari M. Kitahata](#), [K. Rajender Reddy](#), [Joseph K. Lim](#), [Michael J. Silverberg](#), [Angel M. Mayor](#) First published: 29 March 2021

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Abstract

Background

Chronic hepatitis B (HBV) is the predominant cause of hepatocellular carcinoma (HCC) worldwide. Although HBV coinfection is common in HIV, the determinants of HCC in HIV/HBV coinfection are poorly characterized. We examined the predictors of HCC in a multi-cohort study of HIV/HBV-coinfected individuals.

Methods & Results

We included HIV/HBV-coinfected persons within 22 cohorts of the North American AIDS Cohort Collaboration on Research and Design (1995-2016). First occurrence of HCC was verified by medical record review and/or cancer registry. We used multivariable Cox regression to determine adjusted hazard (aHRs [95% confidence intervals]) of factors assessed at cohort entry (age, sex, race, body mass index), ever during observation (heavy alcohol use, hepatitis C), or time-updated (HIV RNA, CD4+ percentage, diabetes mellitus, HBV DNA).

Among 8,354 HIV/HBV-coinfected individuals (median age, 43 years; 93% male; 52.4% non-white), 115 HCC cases were diagnosed over 65,392 person-years (incidence rate, 1.8 [95% CI, 1.5-2.1] events/1,000 person-years). Risk factors for HCC included age 40-49 years (aHR, 1.97 [1.22-3.17]), age \geq 50 years (aHR, 2.55 [1.49-4.35]), hepatitis C coinfection (aHR, 1.61 [1.07-2.40]), and heavy alcohol use (aHR, 1.52 [1.04-2.23]), while time-updated HIV RNA $>$ 500 copies/mL (aHR, 0.90 [0.56-1.43]) and time-updated CD4+ percentage $<$ 14% (aHR, 1.03 [0.56-1.90]) were not. The risk of HCC was increased with

time-updated HBV DNA >200 IU/mL (aHR, 2.22 [1.42-3.47]) and was higher with each 1.0 log₁₀ IU/mL increase in time-updated HBV DNA (aHR, 1.18 [1.05-1.34]). HBV suppression with HBV-active antiretroviral therapy (ART) for ≥1 year significantly reduced HCC risk (aHR, 0.42 [0.24-0.73]).

Conclusion

HIV/HBV-coinfected individuals on ART with detectable HBV viremia remain at risk for HCC. To gain maximal benefit from ART for HCC prevention, sustained HBV suppression is necessary.