

High Prevalence of Hepatitis B Virus Infection Among People Living with HIV in Rural and Peri-urban Communities in Botswana

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Abstract

Background We aimed to determine the prevalence of hepatitis B virus (HBV) infection among people living with HIV (PLWH) in rural and peri-urban communities in Botswana. **Methods** PLWH from a previous population-based study, Botswana Prevention Combination Project (BCPP) which enrolled adults in 30 communities across Botswana (2013-2018), were screened for HBV surface antigen (HBsAg) and HBV core antibodies (anti-HBc). HBsAg positive (HBsAg+) samples were further screened for HBV core immunoglobulin M antibodies (anti-HBc IgM) and HBV e antigen (HBeAg). We quantified HBV viral load on participants who tested positive (n = 148) and negative for HBsAg (n = 381). **Results** Of 3304 participants tested, 271 (8%, 95% CI 7–9%) were HBsAg + while 1788 (56%, 95% CI 54–57%) of 3218 PLWH whom we tested had positive anti-HBc. Approximately 88% of HBsAg + participants were on antiretroviral therapy (ART); 40% and 56% of whom were receiving lamivudine and tenofovir containing ART respectively. Male Sex (RRR 1.8 [95% CI 1.2–2.7]) and the northern geographic region (RRR 2.5 [95% CI 1.4–4.7]) were independent predictors of HBV infection (HBsAg+). Of 381 persons with negative HBsAg who were tested for occult HBV, 126 (33%, 95% 29–38%) had positive HBV DNA. Eleven participants were highly viremic with high HBV viral load while on lamivudine or tenofovir containing regimen. Ten (91%) of these participants also had positive HBeAg serology, while 4 (36%) had positive anti-HBc IgM serology. **Conclusions** The prevalence of HBV was high among PLWH in Botswana, while on ART regimens with activity against HBV.

Keywords: Africa; Botswana; hepatitis B virus; human immunodeficiency virus; occult HBV.