

Background Sub-Saharan Africa carries a high burden of co-infection with HIV-1 and hepatitis B virus (HBV). In this region, individuals with HIV-1/HBV co-infection on antiretroviral therapy (ART) frequently receive lamivudine as the only agent active against HBV, raising concerns for development of HBV resistance to lamivudine. We aimed to determine the prevalence, clinical, and virologic outcomes of chronic HBV infection, including HBV resistance to lamivudine, in a cohort of HIV-1 seropositive Kenyan women on long-term ART. Methods In this prospective cohort study, HIV-1 seropositive women initiated three-drug ART regimens that included lamivudine as the single drug active against HBV. Archived samples were tested for HBsAg, with further testing to determine HBeAg seroprevalence, HBV DNA suppression, and lamivudine resistance. We estimated the prevalence of chronic HBV and examined associations between HBV co-infection and clinical and virologic outcomes with chi-square tests, logistic regression, Kaplan-Meier and Cox regression. Results In a cohort of 159 women followed for a median of 3.4 years (interquartile range 1.4-4.5), 11 (6.9%; 95% CI 3.1-10.7) had chronic HBV infection. Of these, 9 (82%) achieved undetectable plasma HBV DNA levels. One woman developed lamivudine resistance, for an incidence of 3 per 100 person-years. The HBV co-infected women were at greater risk for abnormal ALT elevations compared to HIV-1 mono-infected women (HR 2.37; 95% CI 1.1-5.3). There were no differences between HBV-infected and uninfected women in mortality, CD4 count, or HIV-1 RNA suppression. Conclusion The prevalence of chronic HBV in this cohort was similar to recent studies from other African populations. Given our long-term follow-up, lamivudine resistance was lower than expected for HIV-1/HBV co-infected patients. Improved screening for HBV and extended follow-up of HIV-1/HBV co-infected individuals are needed to better understand the impact of different ART regimens on clinical outcomes in this population.