Virological Response to Switch to Tenofovir/lamivudine in HIV-infected Patients with Hepatitis B Virus (HBV) Resistance to Lamivudine in a Hyperendemic Area for HBV Infection

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Background/Objective

Addition of tenofovir is often needed for HIV/HBV-coinfected patients in whom HBV resistance to lamivudine emerges after long-term combination antiretroviral therapy (cART) that contains only lamivudine for HBV. We aimed to evaluate the virological response after switch to tenofovir/lamivudine-containing cART in HIV/HBV-coinfected patients with HBV resistance to lamivudine.

Method

Between November 2010 and May 2015, two groups of HIV/HBV-coinfected patients were enrolled: cART-experienced patients with HBV resistance to lamivudine after long-term lamivudine-containing cART (lamivudine-resistant group); and cART-naive patients without lamivudine resistance (lamivudine-susceptible group). Serial blood samples were collected for determinations of plasma HBV DNA load every 12 weeks for 48 weeks, and subsequently annually for 5 years.

Result

Thirty-three and 55 HIV/HBV-coinfected patients were enrolled in the lamivudine-resistant and lamivudine-susceptible groups, respectively. Patients in the lamivudine-resistant group were significantly older (mean age, 42 vs. 36 years). The two groups of patients had similar plasma HBV DNA load (mean, 6.1 vs. 6.0 log10 copies/mL) before starting tenofovir/lamivudine-containing cART. The proportion of HBeAg-positive patients was 50.0% and 32.6% in the two groups, respectively (P=0.19). After a mean follow-up duration of 2.7 and 1.7 years, 32 (97.0%) and 42 (76.4%) patients in the two groups had completed the 48-week follow-up. At week 48, 81.3% and 90.5% of the patients in the two groups, respectively, achieved undetectable plasma HBV DNA load (<128 copies/mL) (P=0.42). Compared with those achieving undetectable plasma HBV DNA load, patients failing to achieve viral suppression at week 48 had higher HBV DNA load (8.0 vs. 5.7 log10 copies/mL, P<0.001), and were more likely to be HBeAg-positive (100% vs. 30.6%, P <0.001) before starting tenofovir/lamivudine-containing cART.

Conclusion

In the treatment of lamivudine-resistant HBV infection in HIV-infected patients, add-on tenofovir achieved a similar rate of suppression of HBV replication to tenofovir/lamivudine-containing cART as the frontline regimen for HIV/HBV coinfection at week 48.