Liver Diseases after Initiation of Antiretroviral Therapy in HIV-infected Patients with and without HBV or HCV Co-infection

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Background: Co-infection of hepatitis B virus (HBV) or hepatitis C virus (HCV) with HIV is common in Thailand. The prevalence of HBV infection was 8.7%, and HCV infection was 7.8%. HBV or HCV co-infection with HIV has been associated with an increased mortality rate, an increased risk of progression to chronic liver disease, and hepatotoxicity associated with antiretroviral therapy (ART). At present, there is limited information of the comparison between HIV-infected patients with and without HBV or HCV co-infection in term of liver diseases after initiation of ART.

Methods: We conducted a retrospective cohort study of HIV-infected patients who visited and received ART in the Infectious Disease Clinic in Ramathibodi Hospital between January 2005 and February 2006. Clinical characteristics, immunological and virological response, liver function tests, clinical outcomes and liver outcomes were studied and compared between patients with and without HBV or HCV co-infection. Kaplan-Meier analysis was used to determine liver abnormalities after initiation of ART between the two groups.

Results: A total of 92 patients were analyzed. The demographic showed that 10 (10.9%) patients had HBV co-infection, 19 (20.7%) patients had HCV co-infection and 3 (3.3%) patients had both. The overall mean age (SD) was 38.3 (8.0) years and 54.3% of patients were males. There were no differences in history of hepatotoxic drug uses between two groups ($p > 0.05$). The number of patients with diabetes mellitus were higher in HBV or HCV co-infection group ($p=0.048$) while there were indifferent in other underlying diseases ($p > 0.05$). The median baseline CD4 cell count and HIV RNA, and the distribution of initial ART regimen were not different between the two groups ($p > 0.05$). There were no differences in immunological and virological response over time between the two groups until the 6th year follow-up ($p > 0.05$). All results of median values of baseline and annual liver function test were within normal ranges but there were some minor differences between the two groups. Of all, 12 (13%) patients with liver diseases were exclusively in HBV or HCV co-infection group ($p < 0.001$). Of these 12 patients, 10 (10.9%) had abnormal liver function and 7 (7.6%) had cirrhosis/liver fibrosis. No clinical hepatitis was observed in both study groups. Kaplan-Meier analysis of liver diseases after initiation of ART revealed that the HBV or HCV co-infection group had a significantly higher probability of liver diseases (log-rank test, $p < 0.001$) during a median 6-year follow-up period after initiation of ART.

Conclusions: HIV-infected patients with HBV or HCV co-infection have more liver diseases after initiation of ART than patients without HBV or HCV co-infection. Close monitoring of HIV-infected patients with HBV or HCV co-infection is highly recommended. Detection of HBV or HCV co-infection is mandatory among HIV-infected patients.