Dually Active HIV/HBV Antiretrovirals as Protection Against Incident Hepatitis B Infections: Potential for Prophylaxis

Mohaned Shilaih, Alex Marzel, Alexandra U Scherrer, Dominique L Braun, Helen Kovari, Mathieu Rougemont, Katharine Darling, Manuel Battegay, Matthias Hoffmann, Enos Bernasconi, Cédric Hirzel, Huldrych F Günthard, Roger D Kouyos &

BACKGROUND
Hepatitis B virus (HBV) has a detrimental effect on human immunodeficiency virus (HIV) natural course, and HBV vaccination is less effective in the HIV infected. We examine the protective effect of dually active antiretroviral therapy (DAART) for HIV/HBV (tenofovir, lamivudine, and emtricitabine) in a large cohort encompassing heterosexuals, men who have sex with men, and intravenous drug users who are HIV infected yet susceptible to HBV, with comprehensive follow-up data about risky behavior and immunological profiles.

METHODS
We defined an incident HBV infection as the presence of any of HBV serological markers (hepatitis B surface antigen, anti-hepatitis B core antibodies, or HBV DNA) after a negative baseline test result for anti-hepatitis B core antibodies. Patients with positive anti-hepatitis B surface antigen serology were excluded. Cox proportional hazards models were used, with an incident case of HBV infection as the outcome variable.

RESULTS
We analyzed 1716 eligible patients from the Swiss HIV Cohort Study with 177 incident HBV cases. DAART was negatively associated with incident HBV infection (hazard ratio [HR], 0.4; 95% confidence interval [CI], .2-.6). This protective association was robust to adjustment (HR, 0.3; 95% CI, .2-.5) for condomless sex, square-root-transformed CD4 cell count, drug use, and patient demographics. Condomless sex (HR, 1.9; 95% CI, 1.4-2.6), being a man who has sex with men (2.7; 1.7-4.2), and being an intravenous drug user (3.8; 2.4-6.1) were all associated with a higher hazard of contracting HBV.

CONCLUSIONS
Our study suggests that DAART, independently of CD4 cell count and risky behavior, has a potentially strong public health impact, including pre-exposure prophylaxis of HBV coinfection in the HIV infected.
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