Low rates of Hepatitis B and Human Immunodeficiency Virus coinfection in rural northern Tanzania

Sir,

Hepatitis B (HBV) is a leading cause of liver disease in resource-limited settings.[1] Hepatitis B shares infection routes with the human immunodeficiency virus (HIV). Therefore, areas with high HIV endemicity, such as sub-Saharan Africa, are expected to have high rates of HBV coinfection.[2] In the setting of HIV coinfection, both morbidity and mortality from HBV are increased, compared to non coinfected populations.[2] However, although the rates of HIV and HBV are well-established in high-income countries, there is a paucity of knowledge in many resource-limited settings. We conducted a prospective cohort study to determine the incidence of HBV coinfection in HIV-infected persons in Arusha, Tanzania. Informed consent was obtained from 156 consecutive HIV-infected, antiretroviral-naïve persons, who were initiating HIV therapy at the Selian Lutheran Hospital (n = 21) or Arusha Town Clinic (n = 135). The participants were enrolled for two, three-month time periods. The participants were tested for hepatitis B surface antigen (HBsAg) and Alanine aminotransferase (ALT). HBsAg was analyzed initially by the one-step rapid test (Abon Biopharm, Hangzhou, China) at the Selian Hospital Laboratory. For quality assurance, 15 samples, from the Arusha Town Clinic, were tested by a second rapid assay (Eurostrip, Euromedic Equipment, Netherlands) at a different laboratory.

Demographics showed an average age of 33 + 11 years, with 62% (88/141) being women. The average CD4 count was 105 + 91 cells/mL. The average ALT levels were 30 + 19 U/L among 82 specimens tested. Surprisingly, only 3.2% (5/156) of the HIV-infected participants were positive for HBsAg (95% CI, 1.0 to 7.3%).

The total seroprevalence of HBV coinfection among the HIV-infected persons, of 3.2%, was lower than expected and much lower than other reports, either from Tanzania, other parts of Africa or high-income countries.[2] In Dar es Salaam and Tanzania, Matee *et al.* reported 8.5% seroprevalence of HBsAg in the HIV-infected and 8.7% in the HIV-negative samples screened for blood donation.[3] In Ifakara, Tanzania, Fabian *et al.* reported 9.2% seroprevalence of HBV in HIV-infected patients.[4] Our population group differed from other locations in Tanzania, due to a large number of Massai inhabitants. The Massai are a nomadic tribe residing in the area, and the low HBsAg seroprevalence could be due to differences in customary habits, historical isolation, and/or lack of access to healthcare. Interestingly, a recent study by Honge *et al.* described how rapid tests might underestimate HBV prevalence in HIV-infected patients.[5] In our study we used two different brands to detect the HBV antigen, but both were rapid tests. On account of lack of resources in the area, we could not test for the prevalence of the hepatitis B core antibody, to assess the overall level of exposure of hepatitis B. In our study we did not address the vaccination history; however, HBV vaccination among adults is rare in rural Tanzania. We believe that this surprisingly low coinfection rate needs further research.

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