

Epidemiological data for hepatitis D in Africa

Authors' reply

Jose Debes and Shemal Shah highlight the paucity of data from east Africa, one of our major findings. The authors draw attention to a study from Tanzania, where samples that initially tested positive for antibodies against hepatitis D virus by a commercial assay did not test positive on retesting with a second assay.¹ The performance of the second assay relative to the first was unknown. Given that the first assay was used widely in the studies included in our analysis without confirmation by a second assay, we elected not to take retesting into account for the study from Tanzania and to maintain consistency with data available from the other studies. Further research is required to determine whether there is a generalisable issue with the specificity of hepatitis D virus antibody testing in Africa. We agree that considerations of assay specificity are important in this setting, as also seen with the detection of antibodies against hepatitis C virus.² In the case of hepatitis B virus testing, however, there appears to be an issue of reduced sensitivity, rather than reduced specificity, when using rapid screening tests for HBsAg.³

We are less clear about the assertion that suppression of hepatitis B virus replication with antiviral therapy makes hepatitis D virus positivity less likely. The hepatitis D virus particle comprises an RNA genome, a single hepatitis D virus-encoded antigen, and a lipoprotein envelope provided by hepatitis B virus. Nucleoside and nucleotide analogues inhibit replication of hepatitis B virus, but rarely lead to HBsAg loss. Although long-term suppression of hepatitis B virus replication might possibly also result in the suppression of hepatitis D virus replication, evidence in support of this statement is at best conflicting.^{4,5} It is nonetheless important to emphasise

that eradication of hepatitis D virus at the population level must ultimately rely on the implementation of effective policies to reduce hepatitis B virus transmission.

Edouard Tuaillon and colleagues describe the use of dried blood spots (DBSs) for the detection of antibodies against hepatitis D virus in a large survey of adult volunteers in Burkina Faso. Consistent with our conclusions,⁶ the authors observed localised clusters of endemicity, and exploration of the risk factors for hepatitis D virus infection in the same population would be of interest. The report indicates that DBS offer a promising tool for obtaining representative measurements of the prevalence of hepatitis D virus. Validation data will increase confidence in the reliability of DBS testing for antibodies against hepatitis D virus. Important technical challenges remain: use of elutes from DBS samples reduces overall testing sensitivity, and whether DBS testing is a suitable method for hepatitis D virus RNA detection in Africa remains to be demonstrated.

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- 1 Winter A, Letang E, Vestatus Kalinjuma A, et al. Absence of hepatitis delta infection in a large rural HIV cohort in Tanzania. *Int J Infect Dis* 2016; **46**: 8–10.
- 2 King S, Adjei-Asante K, Appiah L, et al. Antibody screening tests variably overestimate the prevalence of hepatitis C virus infection among HIV-infected adults in Ghana. *J Viral Hepat* 2015; **22**: 461–68.

- 3 Geretti AM, Patel M, Sarfo FS, et al. Detection of highly prevalent hepatitis B virus coinfection among HIV-seropositive persons in Ghana. *J Clin Microbiol* 2010; **48**: 3223–30.
- 4 Soriano V, Vispo E, Sierra-Enguita R, et al. Efficacy of prolonged tenofovir therapy on hepatitis delta in HIV-infected patients. *AIDS* 2014; **28**: 2389–94.
- 5 Béguelin C, Friolet N, Moradpour D, et al. Impact of tenofovir on hepatitis delta virus replication in the Swiss HIV cohort study. *Clin Infect Dis* 2017; **64**: 1275–78.
- 6 Stockdale AJ, Chaponda M, Beloukas A, et al. Prevalence of hepatitis D virus infection in sub-Saharan Africa: a systematic review and meta-analysis. *Lancet Glob Health* 2017; **5**: e992–1003.

