Reviewer’s report

Title: Hepatitis B Virus Sero-profiles and Genotypes in HIV-1 Infected and Uninfected Injection and Non-Injection Drug Users from Coastal Kenya

Version: 2 Date: 6 April 2015

Reviewer: Sanjay Bhagani

Reviewer’s report:

This is a cross-sectional study in Coastal Kenya examining the prevalence and sero-patterns of HBV amongst HIV-infected and un-infected IVDU, non-IVDU and non-drug using population of adults.

Whilst some of the results provide a fascinating insight into the epidemiology of HBV (and perhaps avenues for prevention of HBV infection), there are a number of issues that need careful consideration and further discussion:

a) The authors chose to use a rapid 5-panel diagnostic cassette for serological testing. As shown previously, serological testing can be notoriously unreliable in these settings and may need field validation (see Njai et al, J Clin Microbiol 2015, Franzeck et al, Plos One 2013) and whilst this cannot be remedied, these limitations need to be discussed.

b) The authors use evidence of needle-scars as evidence of injecting drug use, however, it is not clear whether this cohort is current IDU, ever IDU or is there a time-limit since last IDU to be included in this group.

c) It should be noted that the term ‘Clinical Stage’ is used to imply disease stage (and in the case of HBV, specifically liver disease stage, i.e chronic active hepatitis, inactive carriage, immunetolerant disease, etc) and NOT ‘infection stage’ (current chronic, past, susceptible, etc); I would urge the use of ‘infection stage’ rather than ‘clinical stage’ throughout the manuscript.

d) The definitions of infection stage are not very clear to me, for example the authors state 1=Acute (HBsAg +/-, HBcAb +/-) – surely in order to define acute HBV one would need BOTH HBsAg and anti-HBcAB (IgM) +/- HBeAg. These definitions need considerable attention since understanding the epidemiology/susceptibility is highly dependent on these definitions.

e) The authors also need to be aware that anti-HBc IgM can persist for many years after ‘acute’ infection and may sometimes be present in the context of a ‘flare’ associated with HBV – this needs discussion.

f) The similar background prevalence of HBsAg in HIV+/HIV- non-drug using and non- IDU population and HIV- IDU suggests that there is a background prevalence of perinatal/early childhood transmission of HBV and that there may be a second peak of adult transmission in susceptible patients post HIV-acquisition via IDU (or high risk sex as shown in the Mombasa FSW cohort) – this needs discussion, since there are important implications for prevention of transmission (i.e. completion of childhood vaccination schedules, booster
vaccinations for HIV+ adults, early use of TDF-based cART)

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare I have no competing interests