Reviewer’s report

Title: Association between hepatitis B virus infection and metabolic syndrome: a retrospective cohort study in Shanghai, China.

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Reviewer: Chi-Ling Chen

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This study by Zhou et al. reported results from a retrospective follow-up study investigating the relationship between HBV infection (using HBsAg seropositive as exposed group and HBsAg seronegative as nonexposed group) and the development of metabolic syndrome (MS) in a community population. My comments followed:

Major comments:

1. The authors did not show results of the relationships between HBV infection and individual component of MS, especially lipid data. Several literatures reported the inverse association between HBV infection and lipid concentration, what about this study?

2. What about body mass index? What’s the role of BMI in the association between HBV infection and MS. Although central obesity (indicated by waist circumferences) is one of the components in the definition of MS, studies showed that it is BMI, not central obesity, that is closely related to HBV infection. The authors need to clarify this.

3. The distributions of gender, age, education, race, family income are equally distributed between the exposed and nonexposed groups (as shown in Table 1). Is it coincidence? Or some matching process had been performed? What’s the coverage rate of the so called “population-based infectious disease surveillance system in 1991” in Shanghai? How did the authors determine the MS status at baseline? It does not look like they had performed any other tests other than HBsAg at baseline.

4. The authors stated in the “Methods” section that they started their Cox proportional hazards regression model with the adjustment of age and gender as “crude hazard ratios”, but in their Table 3, their “unadjusted hazard ratios” only adjusted for age (as indicated in the footnote).

5. How about HBV viral loads and genotypes? Are there any dose gradients of HBV viral loads and the development of MS? Is there any genotype specific effect?

Minor comments:

1. Professional English editing is needed to correct numerous grammatical errors.

2. The statistical methods used for the results presented in Table 1 and Table 2
were not stated in the text.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests