Reviewer: Good Work and you can upload the synthesized data so that effective research could be carried out still more. Page No. 1 - Line 3, dataset description mentioned both as positive patient. Table 1 has the clinical features considered for work according to you and after applying the process u derived table 2 but features are not matching. List all the attributes and then apply the procedure to get reduced potential feature for further processing. Feature extraction, selection, and model building - clarity for this topic, LASSO explanation is required. Figure 4 required to be optimized and not able to infer.

Response: Thanks for the reviewer's kind suggestion. The manuscript has been thoroughly revised according to your suggestion and edited by a native speaker, so we hope it can meet the journal's standard. The details as shown in below:

1. We apologize for the error in describing HBeAg positive patients and negative patients. We have revised it and which can be seen in line 7, page 9.

2. Table 1 describes the basic clinical characteristics of HBeAg-positive and HBeAg-negative patients. In figure 3, we list all the attributes including the aforementioned clinical characteristics and 21 immune-related inflammatory factors and then apply procedure of the RF-BFE algorithm to get reduced potential feature. Table 2 show the candidate selected features on the basis of Figure 3.

    In order to make the data more effective and match, we have reanalyzed Table 2 and Figure 3 according to the HBeAg-positive and HBeAg-negative groups. The details can be found in line 17-23, page 9; page 18 and 21. In addition, we have added the other matching parameters into Table 1 in the revised manuscript.

3. In the part of "Feature extraction, selection, and model building" in the original manuscript, we mainly describe how to select and validate optimal feature using a machine learning strategies. We have changed the topic of this part to "Significant features selection" in revised manuscript and which can be found in line 13, page 7.

4. We have added the LASSO explanation and We have added detailed explanation about LASSO in revised manuscript and which can be found in line 19-22, page 7: "LASSO constructs a linear model, which penalizes the regression coefficients with an L1 penalty, shrinking many of them to zero. It performs both variable selection and regularization in order to enhance the prediction accuracy and interpretability of the resulting statistical model."

5. We have optimized Figure 4 and which can be seen in page 21.

Sincerely,

Guiqinag Wang, Professor of Medicine, Chief
Department of Infectious Diseases, Peking University First Hospital, No.8, XiShiKu

Street, XiCheng District, Beijing 100034, China.

john131212@126.com