

Dear Editors and Reviewers:

Thank you for your letter and for the reviewers' comments concerning our manuscript entitled "The value of the gamma-glutamyltranspeptidase-to-platelet ratio in the diagnosis of hepatic fibrosis in patients with chronic hepatitis B". (ID: 35755).

Those comments are all valuable and very helpful for revising and improving our manuscript, as well as an important guidance to our researches. We have studied the comments carefully and made adjustments which we hope meet with standards. Revised sections are marked red in the manuscript. The main adjustments in the manuscript and the responds to the reviewer's comments are as flowed:

Responds to the reviewer's comments:

Reviewer #1:

(1) The manuscript is presently difficult to read. Assistance from an English language consultant should be considered. For examples: Introduction: "fibrosis is an inevitable stage (?precursor? instead of: stage) of cirrhosis". Introduction: "Hepatic fibrosis... and the major cause of CHB". Introduction: "and low possibility for duplication (?reproducibility? instead of: possibility for duplication). Response: For language issues, we have been through for language editing, the above problems have been corrected

(2) Abstract says patients "were enrolled"; Introduction however states "retrospectively". So were patients enrolled prospectively?

Response: Agreeing with the reviewers, We have modified that sentence.

(3) In Introduction, the paragraph starting with "Maud Lemoine" should be moved into the Discussion; and I would make a Table out of those listed prior results so that it would be easier to compare prior results to the results in this present study.

Response: The author of the article reflects the different aspects, we consider the table difficult to express clearly.

(4) There are too many models described. I think that the authors should focus on addressing the question of the utility of the gamma-glutamyl transferase to platelet (count) ratio.

Response: The purpose of this article is to highlight the value of GPR, other indicators are compared with GPR.

(5) Was there involvement with or consultation with a Biostatistician? The authors need to consider addressing the relationships of the factors examined by performing stepwise multiple logistic regressions.

Response: We have consulted Biostatistician.

(6) Methods, Section 1.2.5: a reference should be provided after “guideline(s) of chronic hepatitis B in 2010”.

Response: Guideline of chronic hepatitis B in 2001 have been described in detail in this paper. We have to verify liver function classification is the guidelines of chronic hepatitis Bin 2001, has been modified in paper.

(7) Methods, Section 1.2.6 ROC analysis needs to be better defined and the method better described.

Response: The above problems have been corrected.

(8) Degrees of fibrosis on liver biopsy are divided into F1-F4. This is clearly a nonparametric variable. Did the authors consider using the Kruskal–Wallis test?

Response: This is a nonparametric variable, we were compared using the Multi - sample nonparametric Chi-square test.

(9) Was permission for this study obtained from a Human Studies Subcommittee at the Hospital or associated Medical School?

Response: Yes.

(10) Placing the actual AUC's in the Discussion it too complex to read. I would rely on a Table to summarize these results.

Response: Tables are summarized in the results.

Reviewer #2:

1.What is the 2001 China Viral Hepatitis Prevention and Treatment Program?

Response: 2001 China Viral Hepatitis Prevention and Treatment Program have been described in detail in this manuscript.

2.The normal range of TBil, AST, ALT, GGT, and platelet counts should be shown.

Response: This problem has been solved. The normal range of TBil, AST, ALT, GGT, and platelet counts has now been added to Materials and Methods

3. The methods of statistical analysis should be described in Table 1 and 2.

Response: This problem has been solved.

4. The meaning and the method of the connected in parallel are unclear in ROC analysis.

Response: This problem has been solved,

5. Figure legends are missing.

Response: This problem has been solved.

6. There is no description of HBV serum makers in the result section.

Response: The results are described in detail Correlation Analysis of GPR, APRI and

FIB-4 and Clinical Data, Correlation Analysis of GPR, APRI and FIB-4 and CHB Liver Function Classification, Correlation Analysis of GPR, APRI and FIB-4 and Hepatic Fibrosis Stages of CHB, ROC Analysis of GPR, APRI and FIB-4 in Diagnosis of Hepatic Fibrosis in CHB. HBV serum makers are used to describe each parameter, for example GPR, APRI and FIB-4.

7. The classification of liver fibrosis is not clear. What is the guideline of chronic hepatitis B in 2010?

Response: Guideline of chronic hepatitis B in 2001 have been described in detail in this paper. We have to verify liver function classification is the guidelines of chronic hepatitis B in 2001, has been modified in paper.

Reviewer #3:

Good work...Good references...There are some confusion things in abstract and discussion parts. GPR and APRI okay... where is the GPR and FIB-4 in text....

Response: Thank you for your affirmation of our article, GPR and FIB-4 in text have been described.

Reviewer #4:

This is a retrospective study to have examined the clinical applicability of GPR to predict the severity of liver fibrosis in patients with HBV hepatitis. I respect the authors' effort to deepen discussion in this controversial theme. However, they seem to be ignoring a couple of important reports proposing an opposite opinion (see below). They should have discussed reasons of the discordance between their own data and the previously reported data. 1) Li Q, et al. The Gamma-Glutamyl-Transpeptidase to Platelet Ratio Does not Show Advantages than APRI and Fib-4 in Diagnosing Significant Fibrosis and Cirrhosis in Patients With Chronic Hepatitis B: A Retrospective Cohort Study in China. *Medicine (Baltimore)*. 2016; 95: e33722) Stockdale AJ, et al. The gamma-glutamyl transpeptidase to platelet ratio (GPR) shows poor correlation with transient elastography measurements of liver fibrosis in HIV-positive patients with chronic hepatitis B in West Africa. Response to: 'The gamma-glutamyl transpeptidase to platelet ratio (GPR) predicts significant liver fibrosis and cirrhosis in patients with chronic HBV infection in West Africa' by Lemoine et al. *Gut*. 2016; 65: 882-4.

Response: Thank you for your suggestion. We have made modifications to the above problems.

Reviewer #5:

1. In general, the English is not good enough to meet the standard of publication, and need to be polished further.

Response: Thank you for your suggestion. We have made modifications to the above problems.

2. Introduction: "As an imaging examination, hepatic cirrhosis detection is a good tool for the diagnosis of hepatic fibrosis," What's "hepatic cirrhosis detection" examination? Did the authors mean the Fibroscan method? "Li Q et al. published an article in November 2016 showing that GPR assessment of hepatic fibrosis in CHB patients with $HBV-DNA \geq 5 \log_{10} \text{copies/ml}$ and $ALT \leq 2 \text{IU}$ is better than other noninvasive serum models in a Chinese population." It's seldom to see a CHB patient with $ALT \leq 2 \text{IU}$. Please check. "Wan-Li Wang and Qing Panget al. both reported that GPR could be used as an independent factor in the preoperative evaluation of patients with primary liver cancer caused by CHB." Does this statement mean that GPR can be used to evaluate liver cancer? That's interesting. "However, likely due to the sample size, they did not carry out an in-depth satisfied pathological study of hepatic fibrosis." What is "in-depth satisfied pathological study"? I cannot understand. "Based on these findings, to further explore the value of GPR in the diagnosis of hepatic fibrosis, we retrospectively analyzed a total of 652 outpatients and inpatients diagnosed with CHB in the General Hospital of Ningxia Medical University from May 2010 to January 2016, and performed correlation analysis and receiver operating characteristic curve (ROC) analysis of GPR, APRI and FIB-4 with age, gender, medical history, serum HBV DNA level, liver function (total bilirubin [TBil], alanine transaminase [ALT], aspartate aminotransferase [AST]), gamma-glutamyl transferase (GGT), platelet counts and hepatic fibrosis stage of 390 newly diagnosed CHB patients with complete data who were not treated with hepatoprotective therapy, anti-liver fibrosis drug or antiviral drugs." This sentence is too long and the expression is confusing.

Response: We have made modifications to the above problems.

3. Material and Methods: "According to the clinical diagnostic criteria in the "<Guidelines for prevention and treatment of chronic hepatitis B" in 2015," Please list the reference in which the "<Guidelines for prevention and treatment of chronic hepatitis B" was published. "A database of all data was established by Excel 2000" "stablished" change to "established". "correlation were determined Pearson correlation analysis" change to "correlation were determined by Pearson correlation analysis".

Response: We have made modifications to the above problems.

4. Results: "Pearson correlation analysis showed that GPR, APRI and FIB-4 were not associated with patient age, gender or the disease course, but were associated with disease TBil, AST, ALT, GGT, and platelet counts" "disease" should be deleted. "according to the 2001 China Viral Hepatitis Prevention and Treatment Program" Please list the reference of "the 2001 China Viral Hepatitis Prevention and Treatment Program" so that the readers can retrieve the full text of this Program. In Table 3. Correlation of GPR, APRI, FIB-4 (mean + SD) and fibrosis grade, the peak values of GPR, APRI, FIB-4 were at Fibrosis grading of F2, F3, F3 respectively. The mean values of GPR, APRI, FIB-4 were NOT increased as the severity of fibrosis grades worsening. This should be discussed. What's the meaning of "when GPR and

APRI were connected in parallel”, and what’s the meaning of “when GPR and APRI were connected in series”? Please explain “connected in parallel” and “connected in series”.

Response: We have made modifications to the above problems.

Reviewer #6:

correct the writing errors in the text.

Response: Thank you for your affirmation of our article. We have made modifications to the above problems.