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**Editors-in-Chief and Co-Editors**

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Dear Editors,

We would like to thank you for your helpful comments and suggestions. Our point-by-point responses to these comments are provided below. We hope that our responses and revisions are satisfactory and that our manuscript is now suitable for publication in *World Journal of Hepatology*.

**Responses to the Reviewer #1**

Comments to the Author:

Please correct the following shortcomings in your paper.

1, I hope the author(s) will reduce the study's abstract, taking into account the balance in providing information across its different portions.

**Response**

Thank you for your important comment. We have reduced the abstract word count, mainly in the CASE SUMMARY section, by deleting the descriptions of ANA and prednisolone amount. The revised sentences are as follows;

#### Original

Page 3, line 18-23: “However, multiple strictures of the intrahepatic and extrahepatic bile ducts with dilatation of the peripheral bile ducts appeared on magnetic resonance cholangiopancreatography after 3 years of achieving SVR. Although liver enzymes, including alkaline phosphatase, remained within the normal range, the imaging findings were consistent with primary sclerosing cholangitis (PSC), suggesting an overlap of AIH and PSC.”

#### Revised

Page 3, line 17-20: “However, multiple strictures of the intrahepatic and extrahepatic bile ducts with dilatation of the peripheral bile ducts appeared on magnetic resonance cholangiopancreatography after 3 years of achieving SVR, which were consistent with primary sclerosing cholangitis.”

2, The introduction to the current study must be structured into three paragraphs that explain the following in order: - The first paragraph explains the significance of the current research. - The second paragraph describes the knowledge gap that the current study attempts to fill. - The third paragraph must clarify the research problem and how to tackle it within the context of the present study's purpose.

#### **Response**

As per your suggestions, we have divided the introduction into three paragraphs to make each point easier to understand. We have described the background behind the effectiveness of DAA treatment for HCV in the first paragraph. However, as there are concerns regarding the changes in the immune system induced by the rapid viral clearance of DAAs, we have also mentioned various studies which have investigated immune recovery following DAA treatment and the potential risk of autoimmune diseases onset in the second paragraph.

3, What are the study's strengths and weaknesses? What are the present study's next steps? These two questions must be addressed in the final paragraph of the discussion section.

### **Response**

Thank you for your insightful comment. The strength of the present report finding's lies in its proposal that the rapid changes in immune function associated with the clearance of HCV may lead to the development of autoimmune diseases, such as AIH. However, its weakness is its inability to definitively prove the underlying mechanism of this association. Our next endeavor involves accruing additional cases to clarify the mechanism. We have added the sentences detailing the information as follows;

Page 13, line 16-20: "Our case suggested that AIH and PSC development may be attributed to the rapid changes in immune function induced by DAA treatment. However, it was not possible to directly elucidate the mechanism underlying the

association in this report. Therefore, accumulation of similar cases to clarify the mechanism is required.”

4, I would like the author(s) to revise the conclusion section so that it is apparent whether the present study's purpose was met, i.e. whether the current research's problem was solved.

### **Response**

Immune system changes induced by the rapid viral clearance of DAAs have been a cause for concern. In the present report, we encountered a rare case of AIH with PSC that developed after DAAs treatment. Given that the present study is a case report, further studies are necessary to clarify the frequency and mechanism of autoimmune liver diseases after DAA treatment. We have added the following sentences in the conclusion section;

Page 14, line 4-6: “Further studies are necessary to clarify the frequency and mechanism of autoimmune liver diseases following DAA treatment.

5, Some references are outdated and should be replaced with modern references from the year 2023 and at least five years before that.

### **Response**

As you pointed out, we have updated the references wherever it was possible.

6, Some grammatical errors and typos necessitate the author(s)' attention. That's it.

**Response**

As per your suggestion, we have attentively proofread our document, and consulted a professional English editing company.