

Peer Review File

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**Reviewer A**

Nice case series of 5 patients who received nivolumab prior to transplant.

**Comment 1:** I would recommend authors to ensure the grammatical errors are corrected and a detailed language editing service is utilized. More importantly, please provide more detail about why first three patients received only 1 dose of nivolumab shortly before transplant? Additionally patients had Child Pugh C disease and yet still received anti-PD-1 Ab.

**Reply:** For patient 1, he matched the proper liver during the treatment thus received transplantation with only 1 cycle. For patient 2 and 3, they suffered severe drug induced liver injury after receiving PD-1 treatment. Therefore they stop the PD-1 treatment.

**Changes in the text:** N/A.

**Comment 2:** What was the reason for using lenvatinib 16 g rather than approved dosage?

**Reply:** Both of these 2 patients were with a weight over 70 kg therefore with a higher dose of Lenvatinib.

**Changes in the text:** N/A.

**Comment 3:** This study is clearly hypothesis generating but can not provide enough evidence for routine use of anti-PD-1 prior to liver transplant.

**Reply:** Our conclusion is that PD-1 inhibitor may be potential to be used in the treatment of HCC before LT when the interval is sufficient.

**Changes in the text:** Page 2, Line 44-46.

**Reviewer B**

The authors analyzed 5 cases of advanced HCCs who received anti-PD-1 immunotherapy for a variety of cycles and liver transplantation was performed thereafter.

**Comment 1:** The paper needs heavily language editing. In abstract, for example, "as far as HCC therapy is concerned, the applications of PD-1 inhibitors would upregulate

T cell immunization, compared to immunosuppressed situation during transplantation. How to balance this treatment needs more clinic data."

Reply: We have our manuscript modified and edited by AJE.

**Comment 2:** What regimens of anti-PD-1 did the recipients receive before transplant? We may guess nivolumab from Table 1 but the authors needs to declare clearly. Besides, what do you mean "one cycle"? Why 3 patients received one cycle and the other 2 6 cycles?

Reply: We have mentioned that in the section of Methods and materials as followed: The PD-1 inhibitors used in this study were all nivolumab. The "cycle" means course of treatment in our manuscript, and we have corrected it into course for better comprehension. For patient 1, he matched the proper liver during the treatment thus received transplantation with only 1 cycle. For patient 2 and 3, they suffered severe drug induced liver injury after receiving PD-1 treatment. Therefore, they stop the PD-1 treatment.

Changes in the text: Page 4, Line 94.

**Comment 3:** Figure legends are not clear. Why only 4 images in Figure 1B and Figure 2B but there are 5 patients? What do Figure 3B and 4B mean? Figure 3B seems the same shown in one curve of Figure 3A.

Reply: We have modified our figure legends for better comprehension. Figure 3A and 3B showed dynamic changes in every patient and in total, respectively.

Changes in the text: Page 9, Line 234-235.

**Comment 4:** Do they all beyond Milan and UCSF criteria based on Figure 1A? Do the recipients receive immunotherapy for downstaging? In Table 1, HCCs in patient 3 and 4 were within UCSF criteria but the TNM stagings of them were both T4. Which one is correct?

Reply: Sorry for the mistake we made and we have made modification in table 1. Figure 1A showed imaging of recipients receive pretransplant treatment including TACE, RFA and immunotherapy before transplantation.

Change in the text: Table 1