

Reviewer #1:

Scientific Quality: Grade C (Good)

Language Quality: Grade C (A great deal of language polishing)

Conclusion: Major revision

Specific Comments to Authors: Dear Editor Jia-Ru Fan Thank you for inviting me to review the manuscript submitted for publication in your journal. I have carefully reviewed this manuscript and made these comments. In this meta-analysis work, the author concluded that all four adjuvant therapies significantly outperformed hepatectomy alone in terms of prolonging OS and reducing recurrence risk. Among these therapies, radiotherapy emerged as the most effective adjuvant therapy. Overall, the manuscript can arouse the interest of the reader as the author said this is the first NMA to compare the efficacy of different adjuvant therapies specifically for HCC patients with MVI. However, I have some inquiries as follows.

-1. The number of studies included in the meta-analysis seems not so large, which weakens the credibility of the conclusion.

Response: Thank you for your feedback. Indeed, the relatively limited number of studies included in this manuscript may impact the credibility of our conclusions. We acknowledge this point. For adjuvant therapies in patients with MVI, the number of high-quality studies available is inherently limited. We have particularly focused on ensuring the quality, reliability, and rigor of each study included to ensure a certain level of credibility in our conclusions. Additionally, the relatively lower heterogeneity within our study and the utilization of Bayesian randomization models might contribute to increased credibility. We are also mindful of the limitation and discuss it further.

-2. As radiotherapy is the most effective adjuvant therapy for HCC patients with MVI, the manuscript should discuss more details. What is the supposed underlying mechanism? How to identify suitable patients for RT therapy after surgery? These issues are important and may be useful to the clinic.

Response: Thank you very much for your valuable suggestion, which is crucial for enhancing our manuscript. We have further delved into the potential mechanisms underlying radiotherapy as the optimal adjuvant therapy for hepatocellular carcinoma (HCC) post-surgery, thoroughly discussing which patients are more suitable for postoperative radiotherapy.

-3. In this manuscript, the author only focused on one adjuvant therapy. How about combining adjuvant therapies, what I mean is more than one adjuvant therapy after surgery. Are there some studies including these data? If so, how about the effectiveness? I reckon that this manuscript should be made some major revisions to meet the quality of acceptance.

Response: Thank you for your suggestion. We took into account the combination of various adjuvant therapies when formulating our inclusion and exclusion criteria, as well as designing the search strategy. Recently, within the past week, we re-conducted a literature search. Unfortunately, at present, there are no studies available regarding combined adjuvant therapies. The potential enhanced efficacy and safety of combined adjuvant therapies do indeed interest us, and we will further discuss this in the manuscript.

Reviewer #2:

Scientific Quality: Grade B (Very good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: Very interesting study regarding the different treatment options post hepatectomy in HCC patients with MVI. The study is well-written and easy to read. I agree with the authors that the main limitation is the small number of studies included in this systematic review. Here you are some few comments/suggestions in order to improve the quality and correct few mistakes:

Line 36, are these treatments in the correct order? I think radical hepatectomy should come before the liver translation as hepatectomy may or not be followed by the transplantation.

Response: Thanks for the suggestion, the order has been corrected.

Line 38, do you want to say that liver transplantation is the golden standard whenever is available? If yes, please clarify it in the text.

Response: Indeed, that was our intention, and it has been clarified in the text.

Line 67, please add more details regarding the HCC patients (males vs females, pediatrics vs adults).

Response: The age and gender requirements of HCC patients have been described.

Line 117, there is a typo in the final number of studies (14 not 114). Another typo in line 125 as well (extra "t").

Response: Thank you for the corrections. These errors have been rectified

The discussion part needs English revision, for example: line 182 (Our study found) is not correct, line 204 (OS instead of overall survival), line 206 (and) should be added before Hauier, line 210 (currently do not recommend) seems to be an incomplete sentence, etc.

Response: Thank you for the corrections. We have carefully revised the discussion section.

The tables order in the text should start from Table 1. The authors have presented Table 2 first followed by Table 1. Please correct the tables order.

Response: Thank you for the corrections. The order of the tables has been corrected.

Please add a figure for the survival analysis using Kaplan-Meier curves for the OS and RFS after different types of treatment.

Response: Thank you very much for your suggestion. We attempted to merge Kaplan-Meier curves for similar adjuvant therapies; however, this posed technical challenges. The 'MetaSurv' R package, upon which the merging of Kaplan-Meier curves relies, ceased maintenance nearly a decade ago and is incompatible with current software. Additionally, a crucial dataset, 'Number at risk,' was unavailable from the articles included in our study. While merged survival curves aren't always indispensable in a meta-analysis, your suggestion indeed would have been an enhancement. We regret that we were unable to add summarized Kaplan-Meier curves, but this does not have any impact on our study.

Reviewer #3:

Scientific Quality: Grade A (Excellent)

Language Quality: Grade A (Priority publishing)

Conclusion: Accept (High priority)

Specific Comments to Authors: In brief: Fourteen eligible trials (2,268 patients) reporting five different therapies were included. In terms of reducing the risk of recurrence, radiotherapy (RT) [HR: 0.34 (0.23, 0.5); SUCRA = 97.7%] was found to be the most effective adjuvant therapy, followed by hepatic artery infusion chemotherapy (HAIC) [HR: 0.52 (0.35, 0.76); SUCRA = 65.1%]. Regarding OS improvement, RT [HR: 0.35 (0.2, 0.61); SUCRA = 93.1%] demonstrated the highest effectiveness, followed by sorafenib [HR: 0.48 (0.32, 0.69); SUCRA = 70.9%]. I would like to commend the authors for the design and presentation of the results of the study. It is a paradigm shift.

Response: Thank you very much for reviewing and recognizing our manuscript.