

Peer Review File

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Reviewer A

Authors retrospectively compared the treatment outcomes in patients with HCC treated with RFA or MWA. As the results, authors concluded RFA is superior in prognosis with PSM analysis. The results were different from previous studies. Authors should show more detailed data and discuss more.

1. Tumor size could not be adjusted after PSM although it was a critical factor. Tumor size should be adjusted.
2. Recurrence pattern (local rec, intrahepatic distant rec, or extrahepatic) should be described more detail.
3. Ablated size should be also included to the variable.
4. Authors should analyze recurrence-free survival only in patients who could achieve complete ablation with arteriography-enhance CT after procedures.
5. Anti-HBV treatment should be also described.

Review A: Thank you very much for your advices, as per your requests I have revised our article and the following is the response to each of your suggestions:

Reply 1: Thank you for your advice. The tumor size was significantly different before PSM ($P < 0.0001$), and the difference was significantly reduced after using a matched tolerance of 0.1.

Reply 2: Thank you for your reminder. We did not monitor the site of recurrence, which has been noted in our limitation (see page 14-15, line 308-309).

Reply 3: The ablation range was full coverage of the tumor and covered 0.5-1cm beyond the tumor boundary (see page 7, line 137-138).

Reply 4: The patients included in our study were all complete ablation after enhanced CT evaluation.

Reply 5: We greatly appreciate your suggestion and we describe anti-HBV viral treatment. (see page 7, line 148).

Reviewer B

Thank you very much for your abundant work to review your experience with microwave ablation (MWA) as well as radiofrequency ablation (RFA) in the treatment of hepatocellular

carcinoma in cirrhotic livers. Your conclusion is that RFA is superior in terms of overall and tumor-free survival. The main flaw of your manuscript is the inclusion of only patients with complete response. It should be clarified, which patients these are.

Obviously, you have more experience with RFA under CT guidance than with MWA and MRI guidance, which is an insurmountable confounding factor for a significant bias, which might render your analysis inconclusive. From my point of view, this manuscript represents abundant work with a comprehensible result, however the presentation of the data as well as the constrained validity of the conclusions prevent me from an unrestrained recommendation for publication in TCR in its present form.

Reviewer B: Many thanks for your suggestions. We have revised our article, and the following is a response to each of your recommendations:

Comment 1: How many patients have been treated twice initially after confirmation of incomplete response?

Reply 1: All patients were completely ablated in a single session.

Comment 2: Was there a difference whether MWA or RFA treated patients were more prevalent in this group? Was there a difference in prevalence in the RFA or MWA treated groups?

Reply 2: Before PSM, baseline data showed that compared to MWA group, the RFA group had a higher proportion of patients with diabetes (24.0% VS. 17.5%, $P=0.036$), BCLC stage 0 (35.6% vs. 20.4%, $P<0.0001$), solitary tumors (71.1% vs. 63.1%, $P=0.022$), tumor with a size of $<3\text{mm}$ (73.2% vs. 49.6%, $P<0.0001$), and lower Fib levels (2.70 ± 0.82 vs. 2.89 ± 1.01 , $P=0.003$). A PSM method was used to balance the potential biases between two groups (see page 9, line179-185).

Comment 3: How did you define complete response?

Reply 3: We appreciate your suggestion and have added the definition of complete response (see page 7, line 146-147).

Comment 4: Furthermore, the technical conduction of the procedures is not sufficiently described. Which RFA and MWA technique, respectively, was in use?

Reply 4: Thank you for your reminder. We have added some RFA and MWA steps to the article (see page6-7, line130-135).

Comment 5: How did you perform the procedures? How did you decide whether to use computed tomography (CT) or magnetic resonance imaging (MRI) for guidance?

Reply 5: CT-guided ablation was used in most patients. MRI has the advantage of helping to visualize the plumbing system. MRI guidance is preferred when the tumor is near bile ducts or blood vessels.

Comment 6: Which percentage of incomplete ablation, which local recurrence rate did you reach?

Reply 6: Thank you very much for your reminder. All patients had complete ablation, and we did not monitor the site of recurrence, which has been noted in our limitation (see page 14, line301-302).