

PEER-REVIEW REPORT

Name of journal: World Journal of Hepatology

Manuscript NO: 63850

Title: Comparison of unenhanced magnetic resonance imaging and ultrasound in detecting very small hepatocellular carcinoma

Reviewer's code: 02832130

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: Japan

Manuscript submission date: 2021-02-04

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-02-04 03:23

Reviewer performed review: 2021-02-05 04:17

Review time: 1 Day

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The authors of this study investigated the recently increased impact of unenhanced magnetic resonance imaging (MRI) in detecting very small hepatocellular carcinoma (≤ 2 cm in diameter, Barcelona staging 0) compared with unenhanced ultrasonography (US). The subject of this manuscript is of value, but there are a few of defects need to be modified. 1.The title of this manuscript is relatively long and not easy to understand, should the author revise it,or delete:(≤ 2 cm in diameter, Barcelona staging 0). 2.There are too many descriptions about tumor diameter and staging in this paper, and they are inconsistent. For example:(≤ 2 cm in diameter, Barcelona clinical stage 0);(≤ 2 cm in maximum diameter, Barcelona stage 0) ;(≤ 2 cm in maximal diameter), etc. Is it the maximum diameter, it should be described clearly. It is suggest that after describing the definition of tumor diameter and stage in method section of the article, there is no need to define it repeatedly in the full text. 3.HCC detection section: The diagnosis of HCC was confirmed by ultrasonography (US), magnetic resonance imaging (MRI), computed tomography (CT), enhanced dynamic CT, and abdominal angiography. All patients underwent abdominal angiography to confirm the single nodules. The maximum diameter of the HCC nodules was scaled by US or MRI. Are the ultrasonography (US), magnetic resonance imaging (MRI) and computed tomography (CT) unenhanced?It should be described clearly. 4.Why these cases are not diagnosed directly by dynamic contrast-enhanced MRI, but by enhanced CT. 5.The diagnosis methods of these patients should be described clearly, DSA? Enhanced CT, pathological diagnosis after surgical resection? 6.Have these patients been treated with TACE. 7.How many patients underwent surgical resection. 8.The imaging findings of these cases should be added, especially the unenhanced MRI findings. 9.The reasons for these patients to undergo unenhanced MRI should be added.

PEER-REVIEW REPORT

Name of journal: World Journal of Hepatology

Manuscript NO: 63850

Title: Comparison of unenhanced magnetic resonance imaging and ultrasound in detecting very small hepatocellular carcinoma

Reviewer's code: 05576868

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: United States

Author's Country/Territory: Japan

Manuscript submission date: 2021-02-04

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-02-04 21:51

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input checked="" type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Overall: Overall a valuable paper. The paper can be improved by refining grammar and a more clear background and discussion section. The paper describes how unenhanced MRI, which has improved in recent years, has superior sensitivity to US in detecting very small HCC. This is especially useful as early detection can result in improved prognosis. This study suggests a potential role for unenhanced MRI in surveillance imaging, compared to ultrasound. This study is limited in that it does not have comparisons to contrast enhanced MRI, which is becoming standard surveillance imaging in many institutions. This study suggests that clinical centers which have access to MRI may opt for unenhanced MRI compared to ultrasound. **Specific Comments:**

1 **Title.** Does the title reflect the main subject/hypothesis of the manuscript? -No, since the paper is essentially a comparison between MRI and US in small lesions, would rephrase to something more clear, such as "Comparison of unenhanced MRI and Ultrasound in detecting very small hepatocellular carcinoma." The phrase "recently increased impact" suggests the paper is examining the outcomes of this change which it does not. -Same recommendation for short title: Comparison of MRI and US in detecting very small HCC

2 **Abstract.** Does the abstract summarize and reflect the work described in the manuscript? -Overall abstract is understandable. However recommend simplifying the background and remove the phrase "the increased impact" in AIM. -Core tip should be simplified as well

3 **Key words.** Do the key words reflect the focus of the manuscript? -Yes

4 **Background.** Does the manuscript adequately describe the background, present status and significance of the study? -Yes, however overall clarity can be improved. In essence this study is examining the effectiveness of unenhanced MRI for surveillance imaging, which can be especially useful in patients with negative tumor markers and very small lesions. -Recommend removing results in the introduction, as this should be

reserved for results and discussion. 5 Methods. Does the manuscript describe methods (e.g., experiments, data analysis, surveys, and clinical trials, etc.) in adequate detail? -Please describe how patients were selected to undergo unenhanced MRI vs Ultrasound vs both. If this was retrospective, why were both performed? -Please clarify what would happen if a lesion was detected on these surveillance image. What imaging criteria or classification system was used to identify patients with HCC (for example LIRADS)? -When using acronyms (such as HCC, MRI, S...) please describe them fully once before using them in the paper 6 Results. Are the research objectives achieved by the experiments used in this study? What are the contributions that the study has made for research progress in this field? -This study succinctly demonstrates a higher sensitivity of unenhanced MRI compared to US for HCC surveillance of very small tumors. 7 Discussion. Does the manuscript interpret the findings adequately and appropriately, highlighting the key points concisely, clearly and logically? Are the findings and their applicability/relevance to the literature stated in a clear and definite manner? Is the discussion accurate and does it discuss the paper's scientific significance and/or relevance to clinical practice sufficiently? -Overall the authors demonstrate potential value for unenhanced MRI. However, expanded discussion on the advantages of this technique compared to standard multi-phase contrast MRI should be included as institutions with MRI may simply opt for perform a full study. In addition, the authors should briefly discuss limitations of unenhanced MRI compared to US and standard MRI (cost, need for more definitive imaging, etc). -Discussion on false positives detected on MRI would also be relevant. For example, can dysplastic or regenerative nodules mimic HCC? 8 Illustrations and tables. Are the figures, diagrams and tables sufficient, good quality and appropriately illustrative of the paper contents? Do figures require labeling with arrows, asterisks etc., better legends? Figures are appropriate. -A table including the primary study results should be included 9 Biostatistics. Does the



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Publishing
Group**

7041 Koll Center Parkway, Suite
160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgooffice@wjgnet.com
<https://www.wjgnet.com>

manuscript meet the requirements of biostatistics? -Yes 10 Units. Does the manuscript meet the requirements of use of SI units? -Yes 11 References. Does the manuscript cite appropriately the latest, important and authoritative references in the introduction and discussion sections? Does the author self-cite, omit, incorrectly cite and/or over-cite references? -References are adequate. 12 Quality of manuscript organization and presentation. Is the manuscript well, concisely and coherently organized and presented? Is the style, language and grammar accurate and appropriate? -Paper would be significantly improved with revision of grammar. In addition, the background, abstract, and discussion would benefit from more clear and simple language. 13 Research methods and reporting. Authors should have prepared their manuscripts according to manuscript type and the appropriate categories, as follows: (1) CARE Checklist (2013) - Case report; (2) CONSORT 2010 Statement - Clinical Trials study, Prospective study, Randomized Controlled trial, Randomized Clinical trial; (3) PRISMA 2009 Checklist - Evidence-Based Medicine, Systematic review, Meta-Analysis; (4) STROBE Statement - Case Control study, Observational study, Retrospective Cohort study; and (5) The ARRIVE Guidelines - Basic study. Did the author prepare the manuscript according to the appropriate research methods and reporting? -Overall the study is adequately described. 14 Ethics statements. For all manuscripts involving human studies and/or animal experiments, author(s) must submit the related formal ethics documents that were reviewed and approved by their local ethical review committee. Did the manuscript meet the requirements of ethics? -Yes