



PEER-REVIEW REPORT

Name of journal: *World Journal of Gastrointestinal Oncology*

Manuscript NO: 102324

Title: Radiomics and Machine Learning for Predicting Metachronous Liver Metastasis in Rectal Cancer

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer’s code: 08355595

Position: Peer Reviewer

Academic degree: PhD, Professor

Professional title: Doctor

Reviewer’s Country/Territory: China

Author’s Country/Territory: United States

Manuscript submission date: 2024-10-14

Reviewer chosen by: Jia-Lin Zhang

Reviewer accepted review: 2024-11-12 06:34

Reviewer performed review: 2024-11-21 01:17

Review time: 8 Days and 18 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation



Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
Language quality	<input checked="" type="checkbox"/> Grade A: Priority publishing <input 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 checked="" type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input 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

Review Opinion for Letter to the Editor Submission Information: Title: Manuscript Title: Predicting Metachronous Liver Metastasis in Rectal Cancer: A Radiomics-Based MRI and Machine Learning Approach Author: Arunkumar Krishnan and Saleh A Alqahtani Submission ID: 102324 Summary of the Letter: 1、 This is an excellent article that systematically and comprehensively evaluates the study by Long ZD et al. The authors acknowledges the innovative predictive model developed by Long ZD et al to predict metachronous liver metastasis from rectal cancer , The predictive model for metachronous liver metastasis as evidenced by the area under the curve (AUC) of 0.919 in the training cohort and 0.901 in the validation cohort, highlighted its potential clinical utility. 2、 The model could potentially help clinically improve prognosis through personalised monitoring and treatment. The development of non-invasive predictive models like the one presented here has the potential to revolutionize clinical decision-making and improve patient outcomes. The suggestions aimed to address these challenges; future studies can refine predictive models. Ongoing research in this domain can potentially improve clinical outcomes and the quality of care for RC patients. 3、



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However, the authors also identified a several remaining inadequacies in the work of the research。 4、 Firstly, the model has not include genomic markers like KRAS/NRAS mutations, future studies need to integrate non-invasive genomic or liquid biopsy markers to improve the model accuracy and clinical applicability. 5、 Secondly, this is a retrospective research work, which may be subject to potential selective bias, and the need for external validation in different patient populations. 6、 Finally, and very importantly, this was a single-centre study with a limited number of patients and insufficient external inflammation, which further restricted the model's usefulness for clinical applications. authors also give specific directions for future research. 7、 Based on the above review, I recommend that the letter undergo acceptance with no changes before being considered for publication.I unreservedly recommend this article for publication.



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Reviewer's code: 06316516

Position: Peer Reviewer

Academic degree: Associate Chief Physician, MD

Professional title: Doctor

Reviewer's Country/Territory: Türkiye

Author's Country/Territory: United States

Manuscript submission date: 2024-10-14

Reviewer chosen by: Jia-Lin Zhang

Reviewer accepted review: 2024-12-20 08:01

Reviewer performed review: 2024-12-20 08:40

Review time: 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
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Conclusion	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input 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 type="checkbox"/> Anonymous <input checked="" type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The letter written by the authors, who have sufficient knowledge to make such an assessment, is valuable. The title chosen by the authors, who work in important centers, is also very appropriate. It is a text from which scientists working in this field can benefit and which will inspire future studies. Keywords have been chosen to reflect the scope of the main content. The manuscript has a good logical flow and gives sufficient space to each element discussed. The limitations of the study are also discussed in detail and details are included to strengthen the reader's perspective. The conclusions section is written realistically and line with the text. The text is reinforced by the use of up-to-date and appropriate references. I would like to congratulate the authors on the absence of bias in the references, the absence of unnecessary underlining of their work, and the observance of ethical rules. I consider the article to be grammatically and punctuationally correct, with appropriate use of abbreviations. Both the reviewed study and this letter to the editor will contribute meaningfully to ongoing efforts to improve the early detection and management of metachronous liver metastases in rectal cancer patients. I believe that the development of the non-invasive predictive models discussed



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will open new horizons in clinical decision-making and may improve patient outcomes. The recommendations discussed have the potential to form the basis for future studies and have the potential to improve predictive models. As stated promoting collaboration among radiologists, oncologists, surgeons, and data scientists will augment the model's development and implementation. Interdisciplinary approaches will foster a comprehensive understanding of rectal cancer and its metastasis, ensuring that the predictive model is clinically relevant and effective. I hope that this development will be implemented in a short period and the next step will be the use of these models in different centres and we will have knowledge of different geographies and different patient populations.



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Reviewer's code: 07943010

Position: Peer Reviewer

Academic degree: MD, PhD

Professional title: Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: United States

Manuscript submission date: 2024-10-14

Reviewer chosen by: Jia-Lin Zhang

Reviewer accepted review: 2024-12-27 00:58

Reviewer performed review: 2025-01-06 15:23

Review time: 10 Days and 14 Hours

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
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
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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 checked="" type="checkbox"/> Minor revision <input 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 letter has made some comments on a recently published study about a radiomics-based predictive model for predicting metachronous liver metastasis in newly diagnosed rectal cancer patients. The authors first acknowledged the potential clinical value of the predictive model, highlighting its potential in non-invasive risk assessment. Besides, they proposed several limitations of the study, such as its single-center, retrospective design, the exclusion of genomic and other omics data, and the lack of external validation et al. Finally, the authors provided some suggestions for future research. Overall, the letter has made some good points about the study. A few questions for authors that may benefit from mentioning in the manuscript: 1. The authors mentioned that “future studies could benefit from incorporating non-invasive genomic or liquid biopsy markers to improve the model's predictive accuracy and clinical applicability”. However, the available data through liquid biopsy remains quite limited, and due to the lack of standardized testing platforms, it is difficult to draw consistent conclusions. Plus, the AUC of the radiomics-based predictive models in the study has already exceeded 0.9. Whether integrating liquid biopsy data can improve



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predictive efficacy? More related data needs to be shown. Additionally, the costs of liquid biopsy tests are generally not covered by insurance, and the potential benefits in terms of cost-effectiveness remain to be further investigated. 2. The authors suggested integrating multi-omics data and conducting large-scale, multi-center validations. Are there more specific guiding directions for this? For instance, is there any previous studies reported data involving the combination of radiomics data with other types of omics? Or is there any related clinical trial ongoing? In general, the authors have proposed several promising directions for future research, such as conducting multicenter studies and integrating genomic, proteomic, and metabolomic data. It would be better to provide more specific guidance to enhance the feasibility of future studies.



RE-REVIEW REPORT OF REVISED MANUSCRIPT

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Professional title: Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: United States

Manuscript submission date: 2024-10-14

Reviewer chosen by: Xin-Liang Qu

Reviewer accepted review: 2025-01-11 02:05

Reviewer performed review: 2025-01-11 02:40

Review time: 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation



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Peer-reviewer statements	Peer-Review: <input type="checkbox"/> Anonymous <input checked="" type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

My questions and suggestions were appropriately addressed by the authors.



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Reviewer chosen by: Xin-Liang Qu

Reviewer accepted review: 2025-01-11 10:30

Reviewer performed review: 2025-01-11 10:36

Review time: 1 Hour

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Conclusion	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Peer-reviewer statements	Peer-Review: <input type="checkbox"/> Anonymous <input checked="" type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

I would like to thank the other reviewers for their detailed evaluation. The authors have taken all the suggestions into account and made the necessary revisions. For this I would also like to thank the authors. I believe that this final version of the manuscript is easier to read and more complete.