



PEER-REVIEW REPORT

Name of journal: *World Journal of Radiology*

Manuscript NO: 94017

Title: Predicting distant metastasis in nasopharyngeal carcinoma using gradient boosting tree model based on detailed magnetic resonance imaging reports

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer’s code: 05981658

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer’s Country/Territory: China

Author’s Country/Territory: China

Manuscript submission date: 2024-03-09

Reviewer chosen by: AI Technique

Reviewer accepted review: 2024-03-16 11:31

Reviewer performed review: 2024-03-16 11:42

Review time: 1 Hour

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 Grade E: Do not publish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
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 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 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

The article detailedly introduces the method of predicting distant metastasis in nasopharyngeal carcinoma using a gradient boosting tree model based on detailed MRI reports. It is suggested that the authors elaborate more on the data preprocessing steps in the methods section, including how missing data were handled and how variables were selected for model training. The use of a gradient boosting tree model and AUC evaluation is an effective approach. However, further discussion on the sensitivity and specificity of the model, as well as potential overfitting issues, is recommended. Additionally, comparing the performance of the gradient boosting tree model with other machine learning models (such as random forests, support vector machines, etc.) if possible, could add depth to the research. The article successfully shows that the gradient boosting tree model outperforms the traditional tumor node staging system in predicting distant metastasis in nasopharyngeal carcinoma. The authors are encouraged to further explore why certain variables (like the number of metastatic cervical nodes) have higher relative importance in the model and discuss the potential implications of these findings for clinical practice. Overall, the article is well-structured, but the authors



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are advised to check and correct any inaccuracies or unclear points in language. Additionally, introducing some figures to visually present model performance comparisons and variable importance might make it easier for readers to understand the results. Although the article briefly discusses the study's limitations, a more comprehensive discussion on how these limitations impact the interpretation of the results is recommended, along with suggestions for future research directions, especially on how to overcome these limitations.



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Peer-review model: Single blind

Reviewer’s code: 02708249

Position: Editorial Board

Academic degree: PhD

Professional title: Full Professor

Reviewer’s Country/Territory: France

Author’s Country/Territory: China

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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
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
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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 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 checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

This paper addresses the problem of distant metastasis in nasopharyngeal carcinoma patients. The study proposes a predictive model based on detailed MRI reading reports using the gradient boosting tree model to investigate the most significant contributors of metastasis in nasopharyngeal carcinoma. The paper is well written including the abstract, the key words and the background. Methods and results are well described, and the discussion also takes up the work of the literature. Have the populations been adjusted for age? A p-value test could be used to check this point. Did authors compare the performance of the Gradient Boosting Tree model to other existing models in the literature? Does the sex of the populations have an impact on the results?