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PEER-REVIEW REPORT

Name of journal: *World Journal of Gastrointestinal Surgery*

Manuscript NO: 86239

Title: Establishment and application of three predictive models of anastomotic leakage after rectal cancer sphincter-preserving surgery

Provenance and peer review: Unsolicited manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 06520051
Position: Peer Reviewer
Academic degree: MD, PhD
Professional title: Doctor, Professor
Reviewer's Country/Territory: Iran
Author's Country/Territory: China

Manuscript submission date: 2023-07-12

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-07-17 00:39

Reviewer performed review: 2023-07-28 09:18

Review time: 11 Days and 8 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Novelty of this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No novelty
Creativity or innovation of this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No creativity or innovation

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Scientific significance of the conclusion in this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No scientific significance
Language quality	[ ] Grade A: Priority publishing [Y] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [ ] Accept (General priority) [Y] Minor revision [ ] Major revision [ ] Rejection
Re-review	[Y] Yes [ ] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous
	Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

The authors established three predictive models of anastomotic leakage (AL) to explore their predictive efficacy and determine the best way in clinical applications. After reasonable setting groups of AL group and No AL group, the authors showed that the DeLong test revealed that the AUC value of the decision-tree model was lower than that of the random forest model ($P<0.05$). This result also draws a conclusion that the random forest model may be used to identify patients at high risk of AL after sphincter-preserving surgery for rectal cancer owing to its strong predictive effect and stability. In short, the topic of this manuscript is timely and interesting. The authors have organized the manuscript rationally, with good methodology and well-written English. However, some important editing needs to be done before publication: -The authors showed comprehensive study in this paper. I noticed in three models of nomogram, decision tree, and random forest, why the key variables are different in each group? -In my opinion, the BACKGROUND of Abstract is too simple, which cannot reflect the importance for constructing predictive models of AL.

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Reviewer's code: 06519670
Position: Peer Reviewer
Academic degree: MD

Professional title: Assistant Professor, Lecturer, Researcher

Reviewer's Country/Territory: Poland

Author's Country/Territory: China

Manuscript submission date: 2023-07-12

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-07-18 01:28

Reviewer performed review: 2023-07-31 02:44

Review time: 13 Days and 1 Hour

Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [Y] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Novelty of this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No novelty
Creativity or innovation of this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No creativity or innovation

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Conclusion	[ ] Accept (High priority) [ ] Accept (General priority) [Y] Minor revision [ ] Major revision [ ] Rejection
Re-review	[Y] Yes [ ] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous
	Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

Recently, anastomotic leakage (AL) occurs frequently after sphincter-preserving surgery for rectal cancer and has a significant mortality rate obesity, which lacks effective predictive models. To address this challenge, in this study, the authors aimed at to evaluating the predictive efficacy of the three models, including nomogram, decision tree, and random forest, on AL patients. The authors used primary clinical data, study variables, and statistical analysis to verify their hypothesis. The results showed that by comparing the predictive efficacy of the three prediction models, the random forest model performed the best and may be a useful alternative tool for predicting patients at a high risk of AL. So, in my opinion, this paper is well-written. The experimental design is reasonable, and the results reflects the conclusion as well. I recommend its acceptance after the minor revision. The detailed comments are: 1) In the “Study variables” part, the authors listed various variables. Among them, the TNM stage usually involves tumor size. So why the authors list tumor size as a separate variable? 2) For single factor analysis of AL, diabetes mellitus is listed as an important factor. What is the possible underlying mechanism of this phenomenon?