

PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 50960

Title: Application of preoperative artificial neural network(preope-ANN) based on blood biomarkers and clinicopathological parameters for predicting long-term survival of patients with gastric cancer

Reviewer's code: 02537403

Position: Editorial Board

Academic degree: PhD

Professional title: Senior Lecturer

Reviewer's country: Romania

Author's country: China

Reviewer chosen by: Artificial Intelligence Technique

Reviewer accepted review: 2019-08-22 13:19

Reviewer performed review: 2019-08-28 08:44

Review time: 5 Days and 19 Hours

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language	(High priority)	<input type="checkbox"/> Anonymous
<input type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The TNM staging system of AJCC is the most important prognostic factor for gastric cancer, serving as the main instrument for clinicians to choose the therapeutic management. However, pTNM staging needs information from the histopathological results of the resection specimen, which prevents the management from guiding the preoperative treatment plan. Hence, accurate preoperative tumor evaluation providing an individualized treatment for these patients is crucial for improving the prognosis. However, the clinical TNM staging (cTNM) system based on the imaging examination does not achieve the ideal preoperative accuracy for the prediction of the outcome. Literature data show that the inflammation and nutrition indexes are significant to the survival of cancer patients. The artificial neural network (ANN) model is a new computational model developed by simulating the function of human brain that can create a nonlinear statistical model to analyze complex biological systems. This research combined the preoperative blood biomarkers (the inflammatory and nutritional indicators) and preoperative tumor characteristics to establish an ANN model in order to create a preoperative prediction system with the same accuracy of postoperative TNM staging. The results show that the accuracy of the preope-ANN model in predicting the 3-year survival rate is 91.7%; the accuracy and the fitting degree of the preope-ANN model were better than those of cTNM staging, and the preope-ANN could achieve the same prediction effect as pTNM staging. Moreover, the preope-ANN model can provide an even more detailed prediction for each patient than the TNM staging system and can be used to predict the long-term survival of patients before surgery and to choose the optimal individualized treatment according to the prognosis. Therefore, in patients with poor prognosis information before surgery, the prognosis may be improved by adopting neoadjuvant chemo-radiation. I read this paper with great interest. I was impressed



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by the complexity of this work and I consider that clinical implementation of this model may represent a step forward in the management of gastric cancer patients, and can be considered as part of preoperative risk stratification to guide the personalized treatment of patients. For the near future, the challenge is to create a web version of this model that can be dynamically adjusted for the input of different information.

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No

BPG Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No

PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 50960

Title: Application of preoperative artificial neural network(preope-ANN) based on blood biomarkers and clinicopathological parameters for predicting long-term survival of patients with gastric cancer

Reviewer's code: 03769068

Position: Editorial Board

Academic degree: PhD

Professional title: Professor

Reviewer's country: Brazil

Author's country: China

Reviewer chosen by: Artificial Intelligence Technique

Reviewer accepted review: 2019-08-19 15:44

Reviewer performed review: 2019-08-30 16:42

Review time: 11 Days

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language	(High priority)	<input type="checkbox"/> Anonymous
<input type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The manuscript 'Application of preoperative artificial neural network(preope-ANN) based on blood biomarkers and clinicopathological parameters for predicting long-term survival of patients with gastric cancer" submitted by Que et al. is an excelent job that evaluate the use of preoperative artificial neural network for predicting the long-term survival of patients with gastric cancer. However, the text formatting is inappropriate to World Journal of Gastroenterology standards. Please, correct the paper formatting.

INITIAL REVIEW OF THE MANUSCRIPT

Google Search:

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- ☐ No

BPG Search:

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ No

PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 50960

Title: Application of preoperative artificial neural network(preope-ANN) based on blood biomarkers and clinicopathological parameters for predicting long-term survival of patients with gastric cancer

Reviewer's code: 02572357

Position: Peer Reviewer

Academic degree: PhD

Professional title: Adjunct Professor

Reviewer's country: Brazil

Author's country: China

Reviewer chosen by: Artificial Intelligence Technique

Reviewer accepted review: 2019-08-22 13:24

Reviewer performed review: 2019-08-30 23:55

Review time: 8 Days and 10 Hours

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input checked="" type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input checked="" type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input type="checkbox"/> Grade C: Good	polishing	<input checked="" type="checkbox"/> Accept	<input type="checkbox"/> Onymous
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publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
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			<input checked="" type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

In results is written that the male to female ratio was 2.84 : 1, but reading the manuscript we see that there were 484 men and 1376 women. #Table 1 has a typo at the top #In the results is written that “in the training set, the univariate logistics regression (Table 2) shows that CEA, CA199, AFP, NLR, PLR, AGR, PNI, , tumor location, tumor size, cT stage and cN stage were significant factors in the 3-year OS of the patients (all $p<0.05$)”. Then all the variables that the authors chose to include were significant? If it is so, do the authors not think that it is uncommon? Should this not deserve a commentary?

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- ☐ No