PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 58137

Title: Application of artificial intelligence in the diagnosis and treatment of hepatocellular carcinoma: A review

Reviewer's code: 00069630

Position: Editorial Board

Academic degree: MD

Professional title: PhD

Reviewer's Country/Territory: China

Author's Country/Territory: Spain

Manuscript submission date: 2020-07-08

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-07-09 10:33

Reviewer performed review: 2020-07-14 02:03

Review time: 4 Days and 15 Hours

Scientific quality	[Y] Grade A: Excellent [ ] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[Y] Grade A: Priority publishing [ ] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[Y] Accept (High priority) [ ] Accept (General priority) [ ] 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

In recent years, the application of AI in medicine has made great progress. Liver cancer, as a highly malignant tumor, is a hot spot in AI research due to its difficulties in diagnosis and treatment. The study summarized the application research of AI in different diagnosis and treatment methods of liver cancer, comprehensively showed the application prospect and limitation of AI in the field of liver cancer at present, which has important reference value for the majority of medical workers. I agree with the publication of the article.

PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 58137

Title: Application of artificial intelligence in the diagnosis and treatment of hepatocellular carcinoma: A review

Reviewer's code: 02982391

Position: Editorial Board

Academic degree: FACG, MD, PhD

Professional title: Professor

Reviewer's Country/Territory: Saudi Arabia

Author's Country/Territory: Spain

Manuscript submission date: 2020-07-08

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-07-10 07:59

Reviewer performed review: 2020-07-14 05:13

Review time: 3 Days and 21 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
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) [Y] Accept (General priority) [ ] 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

Thank you for the opportunity to review the above-titled manuscript. The topic is interesting to the readers. However, there are issues to the authors to fix. Page 1: Institution (should be Author/institute): Miguel Jiménez Pérez MD, PhD, Rocío González Grande MD. Page 2: Abstract: Treatment mentioned once in the abstract, but there is no substantial knowledge about treatment and how AI is used in the treatment. [deep-learning (DL) and machine learning (ML)] stated, but no information about them or in what way they differ, and which one is used in the review. Page 3: Core Tip: Not clear how AI can resolve the problems stated earlier in the first one or two sentences. Page 4: "artificial neural networks (ANNs) or classification and regression trees (CART), have all been used in multiple studies in the field of medicine [Add a reference]. Page 4: Last two lines: "...as this is a very common tumor [Use Cancer Statistics 2020 for more specific information and add it as a reference]. Figure 5: Before Figure 1: The readers have not been prepared for Figure 1, not it was stated in the text. Page 5: Under section 2: ".....CNN (It is not clear what is CNN, it should be explained earlier in 3-4 lines) Page 6: top line: item 2.4 PET and 2.5 Histology were not stated here; they should. Page 13: the conclusions could be strengthened. Page 13: Create a new section about "future directions in research"- what are the three top priorities in research in this area explain each in 3-5 lines. Ref: Two references to consider as well- .(1) Azer SA. Deep learning with convolutional neural networks for identification of liver masses and hepatocellular carcinoma: A systematic review. World J Gastrointest Oncol. 2019;11(12):1218-1230. doi:10.4251/wjgo.v11.i12.1218 (2) Nanni L et al 2020. Deep learners and deep learner descriptors for medical applications. Springer, Vol 186. --https://www.springer.com/gp/book/9783030427481 Table 1: Change the tables to become landscape- The first column should be Author (year)Ref, the second column

should be the title of the article, the third is aims of the study, the third is the diagnostic technique, the fourth is AI tool used (CNN or …), the Fifth (University of first author, Country)   Table 2: The first column should be Author (year)Ref, the second column should be the title of the article, the third is number of patients, the fourth the study aims, the fifth is diagnostic technique used, the sex is AI tool used (CNN or …) and outcomes, the six column (University of first author, Country)   Under table 2 add: All studies were retrospective studies in their design, except the study by Liang et al [45] was prospective.

PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 58137

Title: Application of artificial intelligence in the diagnosis and treatment of hepatocellular carcinoma: A review

Reviewer's code: 02937551

Position: Peer Reviewer

Academic degree: PhD

Professional title: Professor, Research Fellow

Reviewer's Country/Territory: China

Author's Country/Territory: Spain

Manuscript submission date: 2020-07-08

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-07-09 00:51

Reviewer performed review: 2020-07-16 09:30

Review time: 7 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
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) [Y] Accept (General priority) [ ] Minor revision [ ] Major revision [ ] Rejection
Re-review	[ ] Yes [Y] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

AI has experienced spectacular advances over the last 10 years for application in the field of medicine, and is now used for diagnostic, therapeutic and prognostic purposes in almost all fields. This review summarizes the research progress of AI in imaging / histological diagnosis, treatment and prognosis evaluation of HCC. It is very interesting and attractive. Recommended for publication.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 58137

Title: Application of artificial intelligence in the diagnosis and treatment of hepatocellular carcinoma: A review

Reviewer's code: 02982391

Position: Editorial Board

Academic degree: FACG, MD, PhD

Professional title: Professor

Reviewer's Country/Territory: Saudi Arabia

Author's Country/Territory: Spain

Manuscript submission date: 2020-07-08

Reviewer chosen by: Jia-Ping Yan

Reviewer accepted review: 2020-09-02 06:06

Reviewer performed review: 2020-09-02 06:21

Review time: 1 Hour

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[Y] Grade A: Priority publishing [ ] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[Y] Accept (High priority) [ ] Accept (General priority) [ ] Minor revision [ ] Major revision [ ] Rejection
Peer-reviewer statements	Peer-Review: [ ] Anonymous [Y] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

Thank you for submitting an amended version of your manuscript. The authors have improved their manuscript and addressed points raised by the reviewer. The article is suitable for publication.