

PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastroenterology

Manuscript NO: 57192

Title: Application of Artificial Intelligence in Hepatology- Mini-review

Reviewer's code: 03889126

Position: Peer Reviewer

Academic degree: MD

Professional title: N/A

Reviewer's Country/Territory: China

Author's Country/Territory: Japan

Manuscript submission date: 2020-05-28

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-05-29 08:47

Reviewer performed review: 2020-06-06 03:16

Review time: 7 Days and 18 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input checked="" type="checkbox"/> Grade E: Do not publish
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 type="checkbox"/> Major revision <input checked="" 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

This is a mini review on the applications of artificial intelligence (AI) to the study of liver diseases. AI represents a rapidly developing field and has been proved to be a helpful tool in assisting image interpretation and clinical decision-making. The topic is of significant clinical relevance. However, there are several problems remain for the authors to address. Major comments: 1. The logic flow and presentation of the results could be optimized if different AI methods (deep learning vs. conventional machine learning) and disease types (diffuse liver diseases vs. focal liver diseases) were organized in separate sections. Explicit subheadings might be helpful as well. 2. Another major concern is about the strong conclusion and general impression given by the authors throughout the manuscript on the usefulness and accuracy of AI, without mentioning potential limitations of the current AI techniques. In my opinion the general message should be milder, these algorithms are promising but we need multi-center studies with a standardized workflow and strong external validation to test and improve generalizability and reproducibility. Thus, a paragraph discussing the limitations of AI in liver diseases is suggested. 3. The manuscript also lacks an important section which briefly describes the methodologies of current AI methods. Minor comments: 1. Introduction, third paragraph: the authors gave a very detailed and comprehensive description of NAFLD. However, NAFLD could not account for most diffuse liver diseases. It might be reasonable to shorten contents on NAFLD and give a line or two describing liver fibrosis. 2. The authors are suggested to mention the specific imaging modalities used in all cited studies. 3. Page 8, second paragraph: the study conducted by Sato et al. might better fit in the “diagnosis” (part 2) instead of the “risk assessment” (part 3) section.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: Artificial Intelligence in Gastroenterology

Manuscript NO: 57192

Title: Application of artificial intelligence in hepatology: Minireview

Reviewer's code: 03727233

Position: Editorial Board

Academic degree: MD, MHSc, PhD

Professional title: Chief Physician, MHSc, Statistician

Reviewer's Country/Territory: China

Author's Country/Territory: Japan

Manuscript submission date: 2020-05-28

Reviewer chosen by: Jin-Lei Wang

Reviewer accepted review: 2020-06-30 00:44

Reviewer performed review: 2020-06-30 01:18

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
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
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

If possible, I would very much like to read a section dedicated to successful applications



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of AI technologies in other specialties and how hepatologists can learn from them.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: Artificial Intelligence in Gastroenterology

Manuscript NO: 57192

Title: Application of artificial intelligence in hepatology: Minireview

Reviewer's code: 03648840

Position: Peer Reviewer

Academic degree: PhD

Professional title: Associate Professor

Reviewer's Country/Territory: Iran

Author's Country/Territory: Japan

Manuscript submission date: 2020-05-28

Reviewer chosen by: Jin-Lei Wang

Reviewer accepted review: 2020-06-30 16:35

Reviewer performed review: 2020-06-30 16:55

Review time: 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input checked="" type="checkbox"/> Grade E: Do not publish
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 type="checkbox"/> Major revision <input checked="" type="checkbox"/> Rejection
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

I had a look through the manuscript. While the subject is very interesting, I could not

find any specific methodology for conducting this minireview. As the methods section is quite important for any type of study, I suggest the authors to revise the whole manuscript by considering an appropriate methodology for writing a review paper and reporting the findings.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: Artificial Intelligence in Gastroenterology

Manuscript NO: 57192

Title: Application of artificial intelligence in hepatology: Minireview

Reviewer's code: 03009411

Position: Editorial Board

Academic degree: MD

Professional title: Associate Professor, Chief Physician, Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: Japan

Manuscript submission date: 2020-05-28

Reviewer chosen by: Jin-Lei Wang

Reviewer accepted review: 2020-06-30 08:46

Reviewer performed review: 2020-07-03 01:52

Review time: 2 Days and 17 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
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
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 application of artificial intelligence in medical imaging has a good prospect and

value. The authors summarize recent developments of AI concerning hepatology while focusing on the diagnosis and risk assessment of liver disease in this review. After modification, the article comprehensively expounds the application value and limitations of AI technology in the diagnosis of liver diseases.