



PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastroenterology

Manuscript NO: 63061

Title: ARTIFICIAL INTELLIGENCE in RECTAL CANCER

Reviewer's code: 04022782

Position: Peer Reviewer

Academic degree: MD

Professional title: Academic Fellow, Doctor, Instructor, Research Fellow

Reviewer's Country/Territory: United States

Author's Country/Territory: Turkey

Manuscript submission date: 2021-01-23

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-01-23 18:38

Reviewer performed review: 2021-01-24 01:02

Review time: 6 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 Grade E: Do not publish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 type="checkbox"/> Grade B: Minor language polishing <input checked="" 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 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



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SPECIFIC COMMENTS TO AUTHORS

Dear editors and authors, Below are my comments on this review article titled "Artificial intelligence in rectal cancer". Title and Abstract: The abstract should be revised extensively since it does not give any important information to readers on what can they learn from this review articles. It is inappropriate to use abstract for defining AI, machine learning, and deep learning. The authors mentioned about colorectal cancer here. Although colorectal cancer and rectal cancer are related, they are not the same. Clinically, the authors should establish a linkage from colorectal cancer to rectal cancer here. Otherwise, they can entirely ignore colorectal cancer and focus on rectal cancer instead since it is clearly a topic of focus based on the predefined title. Core tip: First, there is a typo in the "core tip" itself. Second, I thought I was reading the core tip of AI in general oncology. There is nothing to do with rectal cancer here. Introduction: It is appropriate to define AI, machine learning, and deep learning here. However, the schematic representation in Figure 1 is more like a figure for a PowerPoint presentation, but really too simple for publishing to a scientific article for the current state of AI. Plus, the labels of AI, Machine Learning, and Deep Learning in Figure 1 are not in English. I would recommend removing this figure and replace it with something that benefit readers more (if possible), for examples, how deep learning or convolutional neural networks (CNN) works. Once again, I have the same impression with the abstract such that colorectal cancer was emphasized here without a linkage to rectal cancer. Main content and tables: I like the organization that the authors divide the sections into the roles of AI in rectal cancer (i.e., diagnosis, treatment, and follow-up). However, there are so many times that I felt like the authors might not have sufficient statistical or technical background on AI. Here are some examples: • Faster Region-based Convolutional Neural Network (Faster R-CNN) was defined as a new AI system. In fact, many things in AI are new. Faster R-CNN is not a system, but it is an algorithm, framework, or



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architect. • AUC and ROC are separately defined. However, ROC was mentioned in the number of 0.912, which is basically an AUC. After a fact check, it supposed to be AUC or AUROC, not ROC alone. • “Using the ResNet-3D algorithm + SVM algorithm, which includes deep learning” was a bit confusing. ResNet doesn’t include deep learning, but it is a well-known deep learning architect. The tables do not show a clear summary of standardized results. I can not see the problem that the AI models in each study trying to solve (classification or regression). Normally, ML and DL are used to create predictive model, in which the common performance metrics included accuracy, AUC, Sensitivity, Specificity, RMSE (for regression), and F1. The presentation here are not well-organized. Plus, there are many typos here (e.g., %##,##) Important information like the number of training data and testing data are not clearly presented. Note that the number of cases are not the same as number of images used for training and testing. I also have no idea if the performance are all on the testing dataset. Conclusion: I am not convinced with the ending statement “prediction algorithms can be standardized by sharing data between centers, data diversity, and creating big data”. It was not entirely wrong, but more explanation is necessary before this section. The authors should also include more insight on the future direction in this section.



PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastroenterology

Manuscript NO: 63061

Title: ARTIFICIAL INTELLIGENCE in RECTAL CANCER

Reviewer's code: 03123399

Position: Editorial Board

Academic degree: MD, PhD

Professional title: Chief Physician, Director, Professor

Reviewer's Country/Territory: China

Author's Country/Territory: Turkey

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Reviewer chosen by: Lian-Sheng Ma

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input 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 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



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SPECIFIC COMMENTS TO AUTHORS

1.Please show specific methodology of AI in rectal cancer? 2.Without PET/CT or PET/MR radiomic data? 3.Without radiogenomics of rectal cancer? 4.Please give us the problems and prospects of AI in rectal cancer. 5.It is worth discussing on P5 "In the literature, the number of studies evaluating LN metastasis with AI in rectal cancer is limited. "? 6.The citation of references in the paper is not standard.



PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastroenterology

Manuscript NO: 63061

Title: ARTIFICIAL INTELLIGENCE in RECTAL CANCER

Reviewer's code: 05217301

Position: Editorial Board

Academic degree: PhD

Professional title: Professor

Reviewer's Country/Territory: China

Author's Country/Territory: Turkey

Manuscript submission date: 2021-01-23

Reviewer chosen by: Lian-Sheng Ma

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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
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
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SPECIFIC COMMENTS TO AUTHORS

Determining the optimal treatment plan for a patient with rectal cancer is a complex process and the oncological results and toxicity are not the same in every patient with the same treatment at the same stage. This article reviews the application of deep learning in the diagnosis of rectal cancer. Multicenter studies with large data sets can provide algorithms with higher accuracy rates. Prediction algorithms can be standardized by sharing data between centers, data diversity, and creating big data. It can provide the better information for the relevant researchers.



PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastroenterology

Manuscript NO: 63061

Title: ARTIFICIAL INTELLIGENCE in RECTAL CANCER

Reviewer's code: 05266461

Position: Peer Reviewer

Academic degree: N/A

Professional title: N/A

Reviewer's Country/Territory: China

Author's Country/Territory: Turkey

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input 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 checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
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SPECIFIC COMMENTS TO AUTHORS

Thank you for letting me review the present article entitled "ARTIFICIAL INTELLIGENCE in RECTAL CANCER". The paper may have merit but:

1. In the INTRODUCTION section, please give the abbreviation where "Machine learning" first appears.
2. In the ARTIFICIAL INTELLIGENCE IN DIAGNOSIS IN RECTAL CANCER section, the Detection of Lymph Node Metastasis was reviewed, why not review the studies of T stage or differentiation?
3. In the Artificial Intelligence in Detection of Distant Metastasis section, the MLM was reviewed, why not review the studies of SLM (if there is no definite CRLM, can we assess radiomics derived from the primary colorectal tumor to predict synchronous liver metastasis?)
4. This article did not include enough relevant advanced researches, such as molecular biological indicators, RAS mutations, MSI/MMR, or analysis of tumor microenvironmental features.
5. In the 3.B section: what is "PET-BT", is it a spelling mistake?