

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Gastroenterology

**Manuscript NO:** 63331

**Title:** Radiomics and machine learning applications in rectal cancer: current update and future perspectives

**Reviewer's code:** 03031232

**Position:** Peer Reviewer

**Academic degree:** MD, PhD

**Professional title:** Professor

**Reviewer's Country/Territory:** France

**Author's Country/Territory:** Italy

**Manuscript submission date:** 2021-01-27

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2021-02-05 15:41

**Reviewer performed review:** 2021-02-11 08:28

**Review time:** 5 Days and 16 Hours

<b>Scientific quality</b>	[ <input checked="" type="radio"/> ] Grade A: Excellent [ <input type="radio"/> ] Grade B: Very good [ <input type="radio"/> ] Grade C: Good [ <input type="radio"/> ] Grade D: Fair [ <input type="radio"/> ] Grade E: Do not publish
<b>Language quality</b>	[ <input checked="" type="radio"/> ] Grade A: Priority publishing [ <input type="radio"/> ] Grade B: Minor language polishing [ <input type="radio"/> ] Grade C: A great deal of language polishing [ <input type="radio"/> ] Grade D: Rejection
<b>Conclusion</b>	[ <input checked="" type="radio"/> ] Accept (High priority) [ <input type="radio"/> ] Accept (General priority) [ <input type="radio"/> ] Minor revision [ <input type="radio"/> ] Major revision [ <input type="radio"/> ] Rejection
<b>Re-review</b>	[ <input checked="" type="radio"/> ] Yes [ <input type="radio"/> ] No
<b>Peer-reviewer statements</b>	Peer-Review: [ <input checked="" type="radio"/> ] Anonymous [ <input type="radio"/> ] Onymous Conflicts-of-Interest: [ <input type="radio"/> ] Yes [ <input checked="" type="radio"/> ] No



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#### **SPECIFIC COMMENTS TO AUTHORS**

the manuscript is well written and deals with all the current problems in the treatment of rectal cancer. the authors insist in particular on the problem of the therapeutic response to neo-adjuvant treatment and the possibility of organ preservation (looking and waiting). finally, the authors qualify their remarks by evoking the current limits.

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Gastroenterology

**Manuscript NO:** 63331

**Title:** Radiomics and machine learning applications in rectal cancer: current update and future perspectives

**Reviewer's code:** 00058392

**Position:** Peer Reviewer

**Academic degree:** PhD, MD

**Professional title:** Professor

**Reviewer's Country/Territory:** Belgium

**Author's Country/Territory:** Italy

**Manuscript submission date:** 2021-01-27

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2021-01-27 11:40

**Reviewer performed review:** 2021-02-18 10:36

**Review time:** 21 Days and 22 Hours

<b>Scientific quality</b>	<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
<b>Language quality</b>	<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
<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Peer-reviewer statements</b>	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**

This general review introduces the different concepts of radiomics and machine learning. It discusses the state-of-the-art, potential applications, hurdles and necessary steps to bring this technique to the clinic. Previous points are being discussed within the context of rectal cancer. Similar reviews already exists, however the cited studies and references included are very recent, and therefore this review provides an update of the already available literature. Therefore, I believe this review can be of added value to the field.

Remarks for the authors: 1. Check the order of the used abbreviations throughout the manuscript. For example, DWI, LR, LARC, ... are used without explaining first. 2. Can the authors discuss which sensitivity/specificity should be reached in order to be able to translate these techniques safely into a clinical setting? According to their own opinion or existing guidelines. 3. The expression "the curse of high dimonsionalty" is used. Can this be explained more. 4. The authors state "higher specificity (95 vs 100%) and specificity (60 vs 43%) compared to those reached by radiologist". Please state more clearly with percentage was obtained by radiologist and which by AI. 5. The authors state "although lower values were found in those studies that validated the model in an external dataset". Only 2 studies listed in the table have performed external validation. Therefore no significance can be reached and this statement should be nuanced. For example: a trend can be observed ... 6. Within the MRI - genotyping section, prediction of KRAS mutations were discussed. Is there no literature about other mutations/MSS status in RC as has been described in the CT section. 7. Can the authors elaborate on which algorithm, as described in table 1, has the highest applicability potential in the clinic (according to their opinion)? Or are they all equivalent? 8. An additional paragraph describing in short the progress of AI/ML in other cancer types and placing this in the context of RC - lessons to be learned, things in common, most progress in the

race to the clinic would be appreciated.

## RE-REVIEW REPORT OF REVISED MANUSCRIPT

**Name of journal:** World Journal of Gastroenterology

**Manuscript NO:** 63331

**Title:** Radiomics and machine learning applications in rectal cancer: current update and future perspectives

**Reviewer's code:** 00058392

**Position:** Peer Reviewer

**Academic degree:** PhD, MD

**Professional title:** Professor

**Reviewer's Country/Territory:** Belgium

**Author's Country/Territory:** Italy

**Manuscript submission date:** 2021-01-27

**Reviewer chosen by:** Man Liu

**Reviewer accepted review:** 2021-03-15 11:04

**Reviewer performed review:** 2021-03-16 12:37

**Review time:** 1 Day and 1 Hour

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

## SPECIFIC COMMENTS TO AUTHORS



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All comments/remarks have been properly addressed by the reviewers and therefore I believe that the revised manuscript is acceptable for publication.