PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 57161

Title: Artificial intelligence based real-time microcirculation analysis system for laparoscopic colorectal surgery

Reviewer's code: 03476715

Position: Editorial Board

Academic degree: MD, PhD

Professional title: Professor

Reviewer's Country/Territory: China

Author's Country/Territory: South Korea

Manuscript submission date: 2020-07-06

Reviewer chosen by: Jia-Ping Yan

Reviewer accepted review: 2020-08-17 14:16

Reviewer performed review: 2020-09-07 10:44

Review time: 20 Days and 20 Hours

Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [Y] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish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

The authors reported the application of Artificial intelligence (AI) based real-time analysis microperfusion (AIRAM) to predict the risk of anastomotic complication in the patient with laparoscopic colorectal cancer surgery, which seems interesting and applicable. However, several issues should not be ignored: 1) The training data set consists of 10,000 ICG curves from 200 different locations in the ICG videos of 50 patients. However, a training set including 50 patients is rather small. 2) The study evaluates the risk of anastomotic complication in the patient with laparoscopic colorectal cancer surgery by laparoscopic colorectal cancer surgery, and how about the accuracy and consistency of anastomotic complication in conventional surgical. 3) The inclusion criteria of this study are patients who have sigmoid or rectal cancer. As we know, the right colonic carcinoma usually undergoes primary anastomosis, so how about the effectiveness of this model in evaluating the right colonic carcinoma. 4) Many factors can lead to anastomotic complications with hypoperfusion of blood acting as one of the risk factors. So, whether AIRAM is effective remains to be proven. 5) How does the author find 200 ROIs are the appropriate size? 6) Can this technology be used to predict the prognosis of anastomotic complications after gastrectomy and esophagectomy? 7) Can the authors make a comparison between his study with other microcirculation studies based on AI? 8) The clearance rate of indocyanine green is significantly affected by liver function, especially in the case of liver cirrhosis. Therefore, severe liver function impairment, such as liver cirrhosis, should be excluded. 9) How to divide training set and test set? 10) What is the "gold standard" for "risk-safe", "risk-intermediate", and "risk-dangerous"?

PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 57161

Title: Artificial intelligence based real-time microcirculation analysis system for laparoscopic colorectal surgery

Reviewer's code: 03656584

Position: Editorial Board

Academic degree: MD, MSc

Professional title: Associate Professor, Associate Specialist, Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: South Korea

Manuscript submission date: 2020-07-06

Reviewer chosen by: Jia-Ping Yan

Reviewer accepted review: 2020-09-20 02:05

Reviewer performed review: 2020-09-24 13:40

Review time: 4 Days and 11 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) [ ] Accept (General priority) [Y] 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

Anastomotic leakage is a common and serious complication after colorectal cancer operation, and poor blood supply is an important reason for the occurrence of it. The author used artificial intelligence to evaluate the ischemic state of colostomy marked by indocyanine green staining. The design idea of the study is good, the research content and data are very detailed, which has certain guiding significance for clinical. It is suggested that the author further elaborate the specific algorithm of artificial intelligence in order to promote peer learning.