

PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

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Title: Artificial intelligence application in diagnostic gastrointestinal endoscopy - Deus ex machina?

Reviewer's code: 05576048

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: France

Author's Country/Territory: Portugal

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Reviewer chosen by: Ya-Juan Ma

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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 Grade E: Do not publish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 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 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

In this review article, the authors present an overview of the use of artificial intelligence in diagnostic gastrointestinal endoscopy. The review covers first the use of AI in detection of dysplasia in Barrett's esophagus and detection of colorectal polyps. In both cases AI was applied to white light endoscopic (WLE) images. The description of the use of AI for characterization of colorectal polyps is provided for both WLE and advanced imaging modalities such as NBI or endocytoscopy. The authors refer reviewed results to PIVI guidelines. The final covered application is the use of AI for inflammatory Bowel Disease and support in prediction of endoscopic and histologic remission from endoscopic images. It also covers the use of machine learning in endocytoscopy images in ulcerative colitis. In conclusions a table with possible applications of AI in GI pathologies is provided. The conclusions, similarly to the whole review text are focused on comparison of AI software performance to the performance of endoscopist as a function of their experience. Overall, the paper is well written, but there are two major comments: 1) In my opinion this is more of a commentary rather than a review. It covers rather limited extent of papers (with only 52 references, which is a small number for a review paper). The authors state that they focus on the latest evidence, however an additional description of the search method / key words would be useful to better understand the extent of the research. As such, this paper could be considered for a publication as a commentary article that provides an interesting and timely overview of selected papers focused on comparison of the performance of AI vs. endoscopist in different level of training. However, to match the review standards it should provide more detailed insight into previously published papers. 2) Authors should consistently provide information on AI application to standard endoscopic images and also advance imaging modalities. Advance modalities are only covered for characterization of polyps



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and IBD. It would be good to comment if advanced imaging with AI was used for Barrett's esophagus and colorectal polyp detection. Minor comments: Please check grammar in the following two sentences: "Given the high rate (up to 30%) of missed adenomas during screening colonoscopy, it has been developed a deep learning based-program - Computer-aided detection (CAdE) systems - that has showed to reduce the miss rate of adenomas[18]." "In addition, the study shows that the AI system does not affect the efficiency of colonoscopy, maintaining similar withdrawal time I both groups."