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PEER-REVIEW REPORT

Name of journal: *Artificial Intelligence in Gastrointestinal Endoscopy*

Manuscript NO: 90574

Title: Artificial Intelligence for Characterization of Diminutive Colorectal Polyps: A Feasibility Study Comparing Two Computer-aided Diagnosis Systems

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 06191128
Position: Peer Reviewer
Academic degree: BMed, MBBS, MRCP
Professional title: Research Fellow
Reviewer's Country/Territory: United Kingdom
Author's Country/Territory: Netherlands

Manuscript submission date: 2023-12-07

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-12-11 22:37

Reviewer performed review: 2023-12-23 03:47

Review time: 11 Days and 5 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Novelty of this manuscript	[Y] Grade A: Excellent [ ] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No novelty
Creativity or innovation of this manuscript	[Y] Grade A: Excellent [ ] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No creativity or innovation

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Scientific significance of the conclusion in this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No scientific significance
Language quality	[Y] Grade A: Priority publishing [ ] 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: [Y] Yes [ ] No

SPECIFIC COMMENTS TO AUTHORS

I congratulate the authors on this interesting important piece of work which adds important evidence to the evaluation of CADx for colorectal polyps, albeit with a small sample size. Please see my minor revisions below Abstract (results section) - please also report the proportion of polyps that were diagnosed with low confidence when reporting the results of the self-critical AI4CRP. Abstract (results section) – It needs to be clearer that the numerical increase in the endoscopist's performance was after reviewing both CADx systems (AI4CRP and CAD-Eye) Abstract (conclusions section) – Please rephrase the final sentence to reflect that the endoscopist performance was non-significantly higher then both CADx-systems. Introduction – please clarify that non expert endoscopist do not consistently meet quality standards set by ASGE and ESGE. Methodology – Are you able to expand on the additional training in optical diagnosis that the endoscopist underwent? Methodology – please kindly expand on the sample size calculation (30 patients) which was based on a previous CADx feasibility study. Results – Are you able to report on the number of images that were excluded due to 'motion blur' and 'out of focus' images. Results – was any quantifiable testing performed

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for the latency? Results - Please rephrase the reporting of the expert endoscopist performance to reflect that the endoscopist diagnostic performance was non-significantly higher than both CADx-systems (instead of "did not increase significantly", as the study was not powered to detect this increase). Discussion – please expand on the limitation that the AI4CRP requires images to be manually captured by a human and the exclusion of some of these images due to being 'out of focus' or 'motion blur'. Discussion – a comment is made regarding "By comparing a commercially available CADx with an in-house developed CADx, unbiased comparison between the systems and a self-critical system was possible". I do not believe this is entirely true, as from my understanding, the AI4CRP was likely trainined with data from the same site that it was evaluated which can bias the performance to favour AI4CRP (as the CAD-EYE was unlikely trained with data from that site). Please rephrase this sentence to reflect this and add to the limitations that the AI4CRP was only validated at a site from which training data was acquired. Discussion – please rephrase the comment "Both CADx's diagnostic performances approximated the level of the expert endoscopist" to reflect the endoscopist diagnostic performance was non-significantly higher than both CADx-systems Discussion – the discussion section introduces results for PIVI and SODA but this is not reported in the main manuscript. Unfortunately I do not have access to the supplementary section, please kindly ensure these results are reported there. Discussion - please rephrase the comment "Diagnostic performances of self-critical AI4CRP and CAD EYE approximated the level of the expert endoscopist" to reflect the endoscopist diagnostic performance was non-significantly higher than both CADx-systems