Dear editor of World Journal of Gastroenterology,

We are very grateful for considering publishing our article entitled 'Artificial Intelligence application in Diagnostic Gastrointestinal Endoscopy - *Deus ex machina*?'. We thank the reviewers for their contribution, and we take the proposed suggestion with great pleasure, considering that it certainly contributes to improving the quality of our paper.

After a detailed analysis of the comments and suggestions contained in the opinions sent to us, the article has undergone some changes, which are indicated below.

Thank you once again for your time and interest.

Sincerely,

Fábio Pereira Correia

Reviewer 1 - Response to 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.

   Answer:

   For the construction of this review, we did a search on several scientific search engines with several keywords. No time limitation was used. At the end of the introduction, we introduce the following:

   'In this review, we aimed to show the latest evidence in some of the areas of AI applied to Gastroenterology and understand how far these developments supplant human capacity. For this, we conducted a search on several platforms (PubMed, MEDLINE and EMBASE), with no time limit, and we gave special emphasis to articles that compared the performance of these systems and endoscopists.'

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 and IBD. **It would be good to comment if advanced imaging with AI was used for Barrett's esophagus and colorectal polyp detection**.

Answer:

Regarding the advanced imaging techniques, we have reviewed the most recent studies on the application in Barrett's esophagus and introduced a new paragraph:

'Currently, there is no evidence that advanced imaging techniques, such as chromoendoscopy, autofluorescence endoscopy, or confocal laser endomicroscopy, are an advantage over high-definition white-light endoscopy (WLE)[7].

Volumetric laser endomicroscopy (VLE) is a recent endoscopic imaging technology based on the use of optical coherence tomography to produce high-resolution scans of 6-cm segments of the esophagus, with surface and subsurface image depth greater that 3 mm[15, 16]. In this way, it is possible real-time diagnosis surface and subsurface lesions, as well as guide their endoscopic treatment [15, 16].

VLE scans comprise a large amount of visual information with numerous gray shaded images, making its interpretation complex and time-consuming even by experts[17-19]. It was developed CAD systems able to identify early BE neoplasia in ex vivo VLE images with better performance than VLE experts[17], mainly when multi-frame analysis is used[18]. However, further studies are needed to validate in vivo data. Trindade AJ et al[19] also created an artificial intelligence image enhancement software, termed intelligent real-time image segmentation (IRIS), that identifies 3 VLE features previously associated with histologic dysplasia (hyper-reflective surface, hyporeflective structures and the lack of a layered architecture) and displays them using different colour schemes superimposed over the VLE image to facilitate the interpretation of these. Studies are underway to assess the effectiveness of this AI system.'

Regarding the application of these advanced techniques in the investigation of colorectal polyps, we have found no relevant evidence.

3) 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."

Answer:

We rewrite the citations suggested by the reviewer.