RESPONSE TO REVIEWERS

We thank the reviewers for appreciating our paper and for their comments, which we found very helpful. The manuscript has been revised accordingly and we have accommodated the reviewers' comments wherever possible. Our response to the reviewers is as follows:

Reviewer 1:

Authors should discuss in more detail the use of MBP for colorectal anastomoses (left colon / sigmoid colon / anterior rectal resection). These may differ from those of colon-colon anastomoses or ileocolonic anastomoses.

The level of documentation of anastomotic type is not comprehensive in the studies included within this meta-analysis, therefore, conclusions cannot be drawn regarding the role of mechanical bowel preparation by differing type of anastomosis. A statement to the effect has been inserted into the study weakness section within the discussion.

"In addition, there was poor documentation regarding the nature of the anastomoses within the studies included, with a mixture of ileocolic, colon-colon and colorectal. The role of mechanical bowel preparation in various anastomosis types has not been well established."

Reviewer 2:

The authors present a comprehensive systemic review on one of the most controversial studies in colorectal and general surgery. I commend the authors for their extensive work.

We thank the reviewer for this comment.

A few points I think needs additional clarification (although somewhat described in the manuscript):

1. The debate about bowel prep shifted in recent years towards MBP with Oral ABX versus periop IV abx alone. In recent years two large NSQIP studies demonstrated the superiority of MBP + oral ABX. I think this point should be highlighted with more data presented as these studies shifted the pendulum back towards MBP vs. no MBP.

We have mentioned this. Although there are 4 studies (References 26-29) that have studied the effects of the addition of antibiotics to mechanical bowel preparation all four have used the same NSQIP database with slightly different number of patients. Including all four would have given a biased weighting to the outcome, so in accordance with meta-analytical principles, we included only the largest study in the analysis.

2. Another point that the authors mention is the heterogenicity between different surgeons on the matter, despite the extensive data on the matter, mainly because so many studies say different things. I would highlight the article from Zmora and Wexner that did a survey among ACS surgeons demonstrating the heterogenicity. Other than that, I congratulate the authors for a job well done and an interesting read.

We had already mentioned the article the reviewer is referring to (Ref 17). We have expanded the discussion.

Reviewer 3:

Your systemic review and metaanalysis is very well-written and informative.

We thank the reviewer for this comment.

Mechanical bowel preparation regimens vary by country and hospital, therefore its compliance and side effect is different. Given the limitation of metaanalysis, short comments and review of current regimens of mechanical bowel preparation will help us understand your conclusion.

The regimens used in the various studies have been listed in Table 3. We have now added a brief comment on this in the discussion.

Reviewer 4:

I enjoyed review of the manuscript, which showed that routine mechanical bowel preparation (MBP) does not benefit the patients undergoing colorectal surgery using the high-quality meta-analysis of randomized controlled trials. Furthermore, the study suggested that MBP might be feasible for selected patients in the real world based on the meta-analysis of observational studies. The scientific validity and clinical impact of the study seem to be superior to those of previous review studies on MBP published in major clinical journals.

We thank the reviewer for these positive comments.

In have only a minor concern that mixed use of abbreviations such as MBP and LOS and non-abbreviations are repeated throughout the manuscript, which is not a standard for English writing of biomedical scientific papers.

We apologise for this. All abbreviations have been removed from the abstract and core tip. In the main manuscript, abbreviations have been defined at first mention and we have then maintained consistency throughout the rest of the manuscript. Abbreviations have also been defined in the legends to the figures and footnotes to the tables.