Responses to the reviewers' comments

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Title: Short-term clinical outcomes of laparoscopic vs open rectal excision for rectal cancer: A systematic review and meta-analysis.

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Response to the reviewers' comments

Reviewer's comments are identified by **R**. Authors' response by **A**.

Reviewer #00043396

R. This is a very up to date review of laparoscopic versus open rectal resection for cancer. It is well written and thoroughly researched. As such it adds to the current literature and many readers will find it of interest.

A. *Thank you for the time spent revising our manuscript and for your encouraging comments.*

Reviewer #0071777

R. Thank you for the opportunity to review this paper. Overall, this work describes a current systematic review and meta-analysis review of short-term clinical outcomes of laparoscopic vs open surgery for rectal cancer based on randomized clinical trials only. There are numerous publications from the past two decades that have evaluated and compared laparoscopic and open rectal cancer surgery. Since the first laparoscopic rectal resections in the earlies 90s, the technique has had and still has controversial points, including intraoperative and postoperative complications and outcomes. Most of the clinical results are already known but the paper is interesting because it is a review with a good study design, elegibility criteria and quality assessment.

R. I have a few suggestions: It should be interesting to mention, at least in the Discussion section, the technique of transanal total mesorectal excision (TaTME) as an emerging new tool in rectal cancer surgery.

A. *Thank you for your suggestion. This point has been added in the discussion section (Page 12).*

R. Regarding clinical outcomes, it would be also be important to include percentages of rectal perforation and conversion in the laparoscopic group if they are available.
A: *Conversion in the laparoscopic group is described at Page 8.*
Cornering rectal perforation, it is a critical complication during a rectal resection. However, it is not always reported and the consideration of this variable critically varies among the studies. As an example, it was not reported in the COREAN study; it is included within the group of intraoperative complications of the rectum in the ACOSOG Z6501 trial and within the group of "all perforations" in the ALACART study. The COLOR II described results separately for GI perforation and tumor perforation. Due to this heterogeneity, involving all included RCTs, the analysis of rectal perforation would be biased and weak. Thus, we opted to not perform a pooled analysis for this outcome.

R. Some grammatical and syntax errors should be corrected.
A. *Corrections have been performed. A professional editor (American Journal Expert) has revised the entire manuscript.*

Reviewer #02486710

R. Thank you for the opportunity to review this paper. This paper evaluates the well-known part of the issue (lap vs open for rectal cancer). The study design is good.
A. *We would like to thank the reviewer for the time spent in reviewing our manuscript and for the positive comment.*

R. Grammatical and syntax errors should be corrected.
A. *Corrections have been performed. A professional editor (American Journal Expert) has revised the entire manuscript.*

R. Introduction is too long for a well-known topic the ongoing issue is the efficiency of laparoscopic surgery to treat rectal cancer. I would just remove the first paragraph of the paper.
A. *According to the reviewer's suggestion, the first paragraph of the introduction has been removed.*

R. Possible issues of the laparoscopy RCTs should be included including having different type of surgeons, some of them had high conversion rates.
A. *The impact of the participation of different surgeons with different levels of proficiency in laparoscopy and thus conversion rates cannot be completely ruled out although we excluded studies performed during the surgeon's learning curve. Only two*

studies (the CLASSIC 2005 and the Ng 2009 trials) described conversion rates higher than 16.5%, a percentage that may be considered the average rate reported in the literature for experienced laparoscopic surgeons. Of note, these two studies have not been included in the sensitivity analysis, which aims to assess their influence. Remarkably, in the most recent RCTs (e.g. ACOSOG, AlaCaRT, COLOR II) this aspect was highly controlled and standardized; all surgeons involved in such trials were considered experienced and skilled surgeons in colorectal minimally invasive surgery.

R. Discussion reviews the well-known data please start with your main finding and shape it up with a planned manner

A. *According to the reviewer's comment, we re-structured the first part of the discussion. Thank you for your suggestion.*

R. Again the current problem is the oncological safety, recovery benefits of laparoscopy is well known, please mention about the novelty of the paper. What is new in the report. Please convince us about the novelty of the paper

A. *Emphasis has been put on the novelty and strengths of the paper in the Discussion.*

Reviewer #00041966

R. This is a very interesting meta-analysis on short term comparing laparoscopic and open rectal resection for rectal cancer. The manuscript is well written and comprehensive, the statistical analysis is complete.

The analysis includes both total and partial mesorectal excision and this is not clear in the title that could possibly be changed in "Short-term clinical outcomes of laparoscopic vs open rectal excision for rectal cancer: A systematic review and meta-analysis"

A. *We would like to thank the reviewer for the positive comments. We thank also for this interesting suggestion about the title that is now changed to "Short-term clinical outcomes of laparoscopic vs open rectal excision for rectal cancer: A systematic review and meta-analysis"*