**Author’s response to reviews**

**Title:** Quadratus lumborum block versus transversus abdominis plane block for postoperative analgesia in patients undergoing abdominal surgeries. A systematic review and meta-analysis of randomized controlled trials

**Authors:**

Xiancun Liu (15165276689@163.com)
Tingting Song (ashley@163.com)
Xuejiao Chen (chenxuejiao753@163.com)
Jingjing Zhang (1126017128@qq.com)
Conghui Shan (1752973556@qq.com)
Liangying Chang (changly2019@163.com)
Haiyang Xu (haiyang1975@163.com)

**Version:** 2  **Date:** 05 Jan 2020

**Author’s response to reviews:**

Cover letter

Dear Kenneth C. Cummings,

Thank you very much for your email message and the attached reviewers’ comments with regard to our manuscript (manuscript IDBANE-D-19-00759R1). We also appreciate the comments on our manuscript made by the reviewers.

The manuscript has been revised carefully on the basis of the reviewers’ comments, and the responses to the reviewers are attached below.

The changes in the revised manuscript are highlighted in blue.

We hope the revised manuscript is acceptable for publication in BMC Anesthesiology.

Thank you again for your kind consideration of our manuscript.

Yours sincerely,

Xian-Cun Liu
Referee: 1

In the research article "Quadratus lumborum [QL] block versus transversus abdominis plane [TAP] block for postoperative analgesia…", the authors describe a systematic review and meta-analysis of a randomized control studies comparing TAP vs QL for pain control after abdominal surgery. Methods were conducted following PRISMA guidelines. The primary outcomes were defined as pain scores an opioid consumption and secondary outcomes defined as postoperative analgesia duration and PONV incidence. The meta-analysis demonstrated a modest, but statistically significant, reductions in pain at all time points and 24 hour opiate use in patients that receive QL block compared to TAP block. Overall, the methods seem robust and well-conducted and the paper is generally well-written. Nice work! This is the first systematic review and meta-analysis on this topic, helping to better define the roles of these techniques for postoperative pain management. I have a few comments and suggestions for the authors to consider…

C(1): This manuscript, like many, illustrates the difference between statistical significance and clinical relevance. I agree that the statistical analysis suggests benefit of QL over TAP. However, the clinical relevance of difference in pain of less than 2 points remains debatable. As such, I would simply advise the authors to comment on the difference between statistical and clinical difference, and perhaps lessen the strength of the support for the clinical benefit.

R(1): Thank you for the suggestion. Although my meta-analysis shows that there is a significant difference in the postoperative pain scores between patients receiving QL blocks and those receiving TAP blocks, it is true that differences in pain scores of less than 2 points have limited clinical relevance. Other factors may also affect the clinical differences in pain, which is a limitation of my study. Further studies are needed to clarify the more subtle clinical differences in pain after receiving a QL block compared with a TAP block after abdominal surgery. This has been added to the revised manuscript. (Please see pages 17 and 18).

C(2): In the Background, I think you can make a more compelling argument for the need of performing systematic review and meta-analysis. You talk about each block individually, and the few studies that have compared the 2 blocks with mixed conclusions. This is the basis for your manuscript. At the top of the page 4, the sentence "At present, many meta-analyses have shown that TAP block and QL block can reduce the score of postoperative pain…" This statement is a little misleading. You need to clarify that "many meta-analyses" does not mean comparing TAP vs QL, but instead compares TAP block to alternative pain strategies or QL block to alternative strategies. Otherwise, the reader could question the need for another meta-analysis on TAP vs QL.

R(2): Thank you for the suggestion. I agree with and accept these suggestions. I made in-depth revisions to the background, including removing the irrelevant content and adding more convincing evidence from the literature. Moreover, the misleading statement has been corrected in the revised manuscript. (Please see pages 3 and 4).

C(3): The majority of the text in the first paragraph discussing PCIA, PCEA, etc is irrelevant to the focus of your paper and can be removed. I would recommend deleting from "The classic postoperative analgesia…" motor block, urinary retention, and hypotension.

R(3): Thank you for the suggestion. This part has been deleted in the revised manuscript. (Please see pages 3 and 4).

C(4): I would suggest different terminology than "mature" and "embryonic" when describing TAP and
QL blocks. TAP block is older, QL block is newer. Please include a citation after the first sentence, ending in “… and it shows a better blocking effect.
R(4): Based on the reviewer’s suggestion, I have revised this. (Please see pages 3 and 4).

C(5): How can you have multiple primary outcomes? Are you able to select a single primary outcome, and the rest become secondary outcomes?
R(5): Thank you for the suggestion. Regarding this issue, I agree with the suggestion of the reviewer. I set the pain score as the primary outcome and the amount of opioid used, the postoperative analgesia duration and the incidence of postoperative nausea and vomiting as the secondary outcomes. (Please see page 6).

C(6): Can you clarify that pain was normalized on 0 to 10 scale, and opioid use was measured in measured/oral morphine equivalents?
R(6): I am sorry that I did not clarify how the pain score and opioid consumption were determined in the original manuscript. Therefore, I made added this information to the revised manuscript. (Please see pages 6 and 7).

Referee: 2
Congratulations on the great effort reviewing the literature extensively to find the RCT’S
Well written except for few required elaborations and grammar corrections.

C(1): Page 3 line 53 - The blocks can not be described as for Anesthesia, there are only for analgesia.
line 56-59 - Need better sentence formation.
R(1): According to the reviewer’s suggestion, I have deleted this point and modified the sentence in the revised manuscript. (Please see pages 3 and 4).

C(2): Page 4 line 6 Use reduce the amount of opiod consumed or user rather than the dose of opioid.
R(2): Thank you for the suggestion. The inappropriate statement has been replaced in the revised manuscript. (Please see page 4).

C(3): what is meant by under body surface (That is not needed at all).
R(3): A related explanation of “under body surface” was not found after repeatedly reviewing the relevant literature. Hence, it has been deleted from the revised manuscript as it is not needed.

C(4): Page 14 line 9 "It" what is meant by that, what originates from the thoracolumbar nerves. Describe. It can't be TAP plane right?line 37 Psoas quadrates muscle? Be specific where exactly the injection was described.
R(4): Thank you for the suggestion. “It” is the thoracolumbar nerve, which has been explained in the manuscript. In addition, a description of the injection site of the lumbar quadratus plane block has been added. (Please see pages 13 and 14).