Author’s response to reviews

Title: The Efficacy of Continuous versus Single-injection Femoral Nerve Block in Total Knee Arthroplasty: A Systematic Review and Meta-analysis

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Author’s response to reviews:

Thanks for all your efforts about the reviewing. We respond the comments by point-to-point.

To Reviewer 1: Akihiko Hiyama

The authors evaluated to determine the efficacy of cFNB compared with the sFNB group and whether cFNB is a superior postoperative pain management modality in patients who had undergone TKA. Eight randomized controlled trials (N=626) that compared the efficacy of cFNB with sFNB were included. The primary outcome domains consist of visual analog scale (VAS) score at postoperative 24 and 48 hours. The secondary outcome domains include opioid consumption, length of hospital stay and incidence of nausea. The results showed that patients might benefit from a continuous femoral nerve block with regards to a reduced consumption of opioids in the early postoperative period. However, we did not find a clinically significant difference in pain scores at different time points between the cFNB and sFNB group.

There are some interesting things in this paper. However, there are several major concerns with the paper that limit the enthusiasm for the findings and raise questions about the interpretation and novelty of the findings.

Thank you for your comment. We have revised the manuscript as your suggestion by point-to-point.

These concerns are outlined below

1. The introduction is long and should be summarized specifically.

Thank you. We have shortened the introduction as your suggestion.
2. P10, "The analysis showed a significantly lower VAS score at 24 hours in the cFNB group in comparison with the sFNB group (SMD: -0.277; 95% CI -0.503 to -0.05; heterogeneity: I²=35.181; Fig. 2). VAS score at 24 hours in the cFNB and sFNB group were 47.1mm and 47.6mm, respectively" I do not agree with this data. I think there is no difference of VAS score at 24 h.

="Thank you for the comment. The difference in VAS scores between the two groups (0.5mm) did not reach the minimal clinically important difference (MCID) for TKA, which was reported to be 16.1 mm. There is no clinically significant difference of VAS score at 24h. We elaborated this on page 9.

“…. The difference in VAS scores between the two groups (0.5mm) did not reach the minimal clinically important difference (MCID) for TKA, which was reported to be 16.1 mm[15]….”

3. Show the VAS data at 48h respectively. The same applies to the amount of opioid.

="Thank you. We have revised our manuscripts as your suggestion to apply the amount of opioid and VAS data at 48 h respectively. (page 9 and page 10)

“…. VAS score at 48 hours in the cFNB and sFNB group were 49.1 mm and 47.8 mm, respectively…”
“…The total amount of opioids used at 24 hours in the cFNB and sFNB group were 16.6 mg and 25.7 mg, respectively. At 48 hours, a total of 31.4 mg and 42.1 mg of opioids were consumed in the cFNB and sFNB group, respectively..."

4. The discussion is also a list of results, please explain in detail. Please explain concretely and concisely what you are guided from the results about the discussion. The data is presented in the discussion, and the results and the discussion are intermingled.

="Thank you. We have revised our discussion and results section and have elaborated on several parts of the section accordingly.

5. "Further studies should investigate the association of cFNB and sFNB postoperative quadriceps strength and to provide more information to formulate a fall prevention strategy." This paper is a meta-analysis and the work is of great interest to readers. If possible, include the data in this paper.

="Thank you. The enrolled studies were not able to provide the relationship between quadriceps strength and falling down event and was unable to provide a prevention strategy. The statement only offers the direction of the future studies.

To Reviewer 2: Malte Holschen

Abstract: Very good

Background: I would recommend for shortening the introduction. Several studies and their results are already mentioned in this section. This belongs in the discussion or the results section.
Methods: Very good

Results: Very good and comprehensive

Discussion and conclusion: Well written. There is one topic which might be added. In times of rapid recovery some patients may start their first exercises a few hours after surgery. This rapid recovery might be impaired by a nerve block. This is of course just a thought and not evidence based…

Congratulations!

Thanks for your comment and your effort to review our work. We have shortened the introduction as your suggestion. About the nerve block impairing the rapid recovery, we have searched through the all medical article and there was no evidence-based data to prove this theory. As a result, we ultimately decided not to add this topic.