



Letter to the Editor

A commentary on “Continuous adductor canal block is a better choice compared to single shot after primary total knee arthroplasty: A meta-analysis of randomized controlled trials” [Int. J. Surg. 2019; Epub ahead of print]



Dear Editor,

We read with great interest the recently published systematic review and meta-analysis by Wang C et al. [1] entitled “Continuous adductor canal block is a better choice compared to single shot after primary total knee arthroplasty: A meta-analysis of randomized controlled trials”. The authors concluded that compared with a single shot adductor canal block (SACB), continuous adductor canal block (CACB) provided better analgesia after total knee arthroplasty (TKA). Therefore, CACB was recommended as the analgesic method for early post-operative pain treatment after TKA. We appreciate the authors’ analysis; however, we have some concerns about the findings in this review.

First, a high heterogeneity among studies could not lead to a firm conclusion according to the Cochrane Handbook for Systematic Reviews [2]. The heterogeneity in this meta-analysis in the pain scores with rest at 4 h ($I^2 = 91\%$), 12 h ($I^2 = 80\%$), and 24 h ($I^2 = 66\%$) were high. Although the authors conducted sensitivity analysis by excluding one trial at a time to recalculate the pooled mean differences for the remaining trials, the analyzed data was not provided. They just stated that none of the studies affected the results. To figure out the source of high heterogeneity in this review, we performed sensitivity analysis to evaluate the heterogeneity in the pain score with rest at 4 h, and found that the I^2 changed from 91% to 0% after eliminating the study by Camber et al. [3], which indicated that it may be the source of the high heterogeneity. For readers to better understand the main source of heterogeneity and the reliability of their results, we advise the authors to provide the detailed sensitivity analysis results.

Second, the conclusion drawn from the pooled data on the pain scores was not convincing. The study only included 8 RCTs ($n = 642$); however, the pooled data of the pain scores analysis involved 2088 patients, which was the total number of the four time points (4, 12, 24, 48h). The authors concluded that the use of CACB after TKA surgery was associated with a lower pain score at rest or movement ($n = 2088$, $p < 0.00001$). Obviously, the patients were repeatedly included in this analysis, which could influence the strength of the results, and even lead to incorrect conclusions. Additionally, despite the authors evaluated the quality of the evidence with the GRADE method, we are confused why the overall evidence for outcomes was moderate. We suggest the authors to give the detailed information on how the GRADE method was used. It is necessary to define the analysis methods used in meta-analysis.

In conclusion, Wang C et al. investigated which ACB method provided better pain relief after TKA [1]. However, the results of this meta-analysis should be interpreted with caution due to the above mentioned limitations. We believe that our remarks on this meta-analysis will

contribute to a more accurate elaboration of the findings presented by Wang C et al. [1].

Provenance and peer review

Not Commissioned, internally reviewed.

Data statement

This is a correspondence of the literature; all the data presented are available and cited in the references section.

Ethical approval

N/A for this kind of research.

Sources of funding

None.

Research registration number

N/A for this kind of research.

Declaration of competing interest

None.

References

- [1] C. Wang, Z. Chen, X. Ma, Continuous adductor canal block is a better choice compared to single shot after primary total knee arthroplasty: a meta-analysis of randomized controlled trials, *Int. J. Surg.* S1743–9191 (2019) 30277–30278, <https://doi.org/10.1016/j.ijisu.2019.10.012>.
- [2] J. Higgins, S. Green (Eds.), *Cochrane Handbook for Systematic Reviews of Interventions* Version 5.1.0, The Cochrane Collaboration, 2011, <https://handbook.cochrane.org>.
- [3] U. Canbek, U. Akgun, N.H. Aydogan, C.Y. Kilinc, A.I. Uysal, Continuous adductor canal block following total knee arthroplasty provides a better analgesia compared to single shot: a prospective randomized controlled trial, *Acta Orthop. Traumatol. Turcica* S1017–995X (2019) 30500–30505, <https://doi.org/10.1016/j.aott.2019.04.001>.

Yidan Tang, Min Xu, Jin Liu*

Department of Anesthesiology and Translational Neuroscience Center, West China Hospital, Sichuan University, Chengdu, 610041, China
E-mail address: scujinliu@gmail.com (J. Liu).

<https://doi.org/10.1016/j.ijisu.2019.10.041>

Received 22 October 2019; Accepted 23 October 2019

Available online 05 November 2019

1743-9191/ © 2019 IJS Publishing Group Ltd. Published by Elsevier Ltd. All rights reserved.