

December 24, 2021

Dr. Wang

Re: Response for manuscript (Manuscript NO.: 72237, Retrospective Cohort Study)
"Association between anesthesia technique and complications after hip surgery in the elderly population"

Dear Dr. Wang,

Thanks for providing us with this great opportunity to submit a revised version of our manuscript. We appreciate the detailed and constructive comments provided by the reviewers. We have carefully revised the manuscript by incorporating all the suggestions by the review panel.

"(1) Science editor: The manuscript elaborated a case of association between anesthesia technique and complications after hip surgery in the elderly population. The manuscript is well written, but the conclusions are not particularly innovative. It is unacceptable to have more than 3 references from the same journal. To resolve this issue and move forward in the peer-review/publication process, please revise your reference list accordingly."

"(2) Company editor-in-chief: Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor. Authors are required to provide standard three-line tables, that is, only the top line, bottom line, and column line are displayed, while other table lines are hidden. The contents of each cell in the table should conform to the editing specifications, and the lines of each row or column of the table should be aligned. Do not use carriage returns or spaces to replace lines or vertical lines and do not segment cell content."

Respond:

Based on these comments and suggestions, we have made careful modifications to the original manuscript, and carefully proof-read the manuscript to minimize typographical and grammatical errors. We believe that the manuscript has been greatly improved and hope it has reached your magazine's standard.

We hope this revised manuscript has addressed your concerns, and look forward to hearing from you.

Sincerely,

Gao-Feng Zhao, Corresponding author of this manuscript

Encl. Responses to the comments from Reviewer 1 and 2.

Reply to Reviewer #1

Dear Reviewers,

Thank you very much for your time involved in reviewing the manuscript and your very encouraging comments on the merits.

Comments:

"The study is aimed to evaluate the effect of anesthesia on postoperative complications in elderly patients undergoing hip surgery. The title is "Association between anesthesia technique and complications after hip surgery in the elderly population"."

We also appreciate your clear and detailed feedback and hope that the explanation has fully addressed all of your concerns. In the remainder of this letter, we discuss each of your comments individually along with our corresponding responses.

To facilitate this discussion, we first retype your comments in italic font and then present our responses to the comments.

Comment 1:

This is a retrospective cohort study.

Response 1:

Thank you for your valuable time. We conducted such a retrospective cohort study to observe the effect of anesthesia on the adverse postoperative outcome of hip surgery in the elderly.

Comment 2:

2. Several factors influence the outcome of the study. Please discuss these.

Response 2:

Thank you for your valuable comments. There are indeed the following factors influence the outcome: the surgical team's requirements for anesthesia and surgical methods have biased the choice of each group of patients; the anesthesiologist has a personal preference for the choice of anesthesia; some of the lack of retrospective data collection has brought about; there is not a uniform standard for the outcome indicators of adverse reactions after surgery. We have added relevant content in the discussion section of the article and marked it in red. This part is available in the documents in the supplementary materials.

Comment 3:

3. According to the study design, the selection bias could be occurred.

Response 3:

3. Your opinion is very valuable, and there is indeed some selection bias, mainly due to the large subjectivity in the choice of anesthesia methods. Even through matching analysis, this part of the deviation cannot be eliminated. This is one of our major limitations and we have added this content in the article. We marked it in red. This part is available in the documents in the supplementary materials.

Comment 4:

4. How did the anesthesiologists choose the anesthetic technique?

Response 4:

4. Thank you for your valuable comments for reminding us very well. The anesthesiologist will first select the anesthesia method based on the surgical team's requirements for the patient's surgical method, wake-up time, and early activity time; when the existing anesthesia methods can meet the requirements of the surgical team, the choice of anesthesia method is often based on the anesthesiologist's personal experience and habits make choices. This indeed makes the selection offset inevitable and eliminated.

Comment 5:

5. Please review the literature and add more details in the discussion section.

Response 5:

5. Thank you for your valuable comments. We have added part of the discussion content based on previous documents and indicated in red font. This part is available in the documents in the supplementary materials.

Comment 6:

6. What is the new knowledge of the article?

Response 6:

6. We focused our attention on elderly patients, and found that general anesthesia and spinal anesthesia are not factors that affect the prognosis after surgery. At the same time, we found that postoperative inflammation indicators such as hsCRP and D dimer in patients with spinal anesthesia is more obvious than that of general anesthesia. So for high-risk Patients may try to avoid the use of spinal anesthesia.

Comment 7:

7. Please recommend to the readers "How to apply this knowledge for routine clinical practice?".

Response 7:

7. Both general anesthesia and spinal anesthesia can be used as anesthesia methods for hip surgery in elderly patients, and both will not affect the patients' adverse postoperative outcome indicators.

We would like to take this opportunity to thank you for all your time involved and this great opportunity for us to improve the manuscript. We hope you will find this revised version satisfactory.

Sincerely,

Gao-Feng Zhao, Corresponding author of this manuscript

-----End of Reply to Reviewer #1-----

Reply to Reviewer #2

Dear Reviewers,

Thank you very much for your time involved in reviewing the manuscript and your very encouraging comments on the merits.

Comments:

"Specific Comments to Authors: Thanks for this nice work."

We also appreciate your clear and detailed feedback and hope that the explanation has fully addressed all of your concerns. In the remainder of this letter, we discuss each of your comments individually along with our corresponding responses.

To facilitate this discussion, we first retype your comments in italic font and then present our responses to the comments.

Comment 1:

1. Frontal spinal anesthesia stands for what.

Response 1:

1. Thank you for the detailed review. It is our writing error. We have carefully and thoroughly proofread the manuscript to correct all the typos.

Comment 2:

2. what about patients who received epidural anesthesia?

Response 2:

Thank you for your valuable comments. As the hip surgery in our hospital is relatively mature, the operation time is relatively short. Except for a small number of patients who cannot tolerate it and choose to use epidural anesthesia, this part of patients has a small number of cases. These patients were excluded from the study.

Comment 3:

3. how many patients needed combined spinal and general anesthesia?

Response 3:

3. Thank you for your valuable comments. There are 70 patients needed combined spinal and general anesthesia.

Comment 4:

4. All patients underwent THR / hemiarthroplasty, please specify surgery ?

Response 4:

4. Thank you for the detailed review. The patients we included are hip surgery, mainly

including femoral fracture internal fixation and hip replacement surgery.

Comment 5:

5. Sample size should be justified

Response 5:

5. Thank you for your valuable comments for reminding us very well. We selected the most common postoperative complications of elderly patients, that postoperative delirium as the main index of our sample size calculation. According to the literature, the postoperative delirium complications of general anesthesia and spinal anesthesia are 53% and 56% (doi: 10.1111/ajag.12212. Epub 2015 Sep 13. PMID: 26364948.) . According to the formula, the sample size of each group needs at least 109 cases. We selected more than 800 patients in recent four years. However, in order to eliminate selection bias as much as possible, only 309 patients were obtained after using PSM for grouping comparison. The ratio of SA to GA cases was 1:2. There were 103 cases in SA group and 206 cases in GA group, which was close to the sample size calculated at the beginning.

Comment 6:

6. Duration of patients follow up

Response 6:

6. Thank you for the detailed review. In our study, we observed the postoperative complications of patients during hospitalization. These patients will receive our call back visit 90 days after being discharged from the hospital

I hope that the changes I've made resolve all your concerns about the article. I'm more than happy to make any further changes that will improve the paper and/or facilitate successful publication.

Sincerely,

Gao-Feng Zhao, Corresponding author of this manuscript

-----End of Reply to Reviewer #2-----