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OPEN PEER REVIEW

The Effect of Intraoperative Dexmedetomidine on Postoperative Delirium Sedation Agitation Score in cardiac surgery

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

4 comments · 14 Nov 2024 – 23 Nov 2024

Fatemeh Moftakhar Reviewer

MAJOR REVISION 14 Nov 2024

Dear Author,
Thank you for your study. I suggest paying attention to the following points:
- In the method section, the formula for calculating the sample size and its reference should be mentioned.
- The randomization method should be explained.
- In the results section, the Consort algorithm should be mentioned.
- In the reference section, reference number 4 is irrelevant. Please correct it.
- Some of the references are old and should be replaced with newer references (reference numbers 5, 6, 19, 31 and 35).
Best Regards,

Referee 1 Reviewer

MAJOR REVISION 18 Nov 2024

Dear AE,
The study, "The Effect of Intraoperative Dexmedetomidine on Postoperative Delirium Sedation Agitation Score," uses a randomized controlled trial (RCT) design, which is ideal for assessing the efficacy of an intervention like dexmedetomidine. Below is a detailed critique highlighting the flaws and areas for improvement:
-The introduction lacks a clear hypothesis or primary research question.
State a focused hypothesis, such as: "We hypothesize that intraoperative dexmedetomidine infusion will reduce the incidence of postoperative delirium compared to normal saline."

-Some sentences lack references. All sentences quoted from other articles must have references at the end.
For example, the following sentence:
"Patients undergoing cardiac surgery are more exposed to POD due to the extensiveness of the operation, underlying diseases, and the specific age of the patients, especially in the coronary artery bypass graft (CABG) surgery."
-The rationale for the dexmedetomidine dose (0.2-0.5 µg/kg/h) is not discussed.
-The sample size calculation lacks detail on assumptions (e.g., expected incidence of delirium, effect size).
-Tables lack 95% confidence intervals for key outcomes.
-Provide more detail on randomization methods and validation of blinding.
-Report adverse events comprehensively to balance conclusions on efficacy and safety.
- Limitations are discussed but not quantified (e.g., how the sample size may have affected power).
-In all tables, the abbreviations must be explained in a legend.
-Please ADD recent articles as references, as well as updated ones in place of old references, to improve the quality of the purpose behind your study.

Associate Editor

MAJOR REVISION 23 Nov 2024

be made in the abstract:
A summary of the statistical analysis results should be mentioned in the results section.

Editor-in-Chief MAJOR REVISION 23 Nov 2024

Dear Author,
Thank you for submitting the article. It needs some revision. Please revise it based on the reviewers' and AE's comments.

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Response to Reviewer 1

We are immensely grateful for your positive feedback on our manuscript. Your support is invaluable, and we genuinely appreciate the time and effort you dedicated to reviewing our work.

Response to Reviewer 2

Dear Reviewer,

Thank you for your insightful and constructive feedback. We have carefully considered your comments, and below are our detailed responses:

1. Sample Size Calculation

- We have clearly articulated the formula used for sample size calculation in the Methods section and included a relevant reference to support our approach.

2. Randomization Method

- We have expanded upon the randomization process in the Methods section. Specifically, we employed block randomization using a computer-generated random number table to achieve balanced group allocation.

3. CONSORT Algorithm

- A statement regarding utilizing the CONSORT flowchart has been added to the Results section, along with the diagram in the revised manuscript.

4. Reference Number 4

- We meticulously reviewed this reference and replaced it with a more pertinent citation.

5. Updating References

- The suggested references (5, 6, 19, 31, and 35) have been updated to include the latest studies, enriching the manuscript's relevance and scientific rigor.

Your valuable insights have significantly enhanced the quality of our manuscript, for which we are sincerely thankful.

Response to Reviewer 3

Dear Reviewer,

We sincerely appreciate your thorough review and thought-provoking comments. Below are our responses:

1. Hypothesis Clarification

- We have refined the Introduction section to explicitly articulate our primary research hypothesis: "We hypothesize that intraoperative dexmedetomidine infusion will reduce the incidence of postoperative delirium compared to normal saline."

2. Missing References

- After careful review, we have added references to all statements derived from prior literature, including the discussion regarding cardiac surgery patients' vulnerability to postoperative delirium.

3. Dexmedetomidine Dose Rationale

- The rationale for selecting a dose of 0.2–0.5 μg/kg/h has been thoroughly discussed in the Methods section, along with appropriate references to established studies.

4. Sample Size Calculation Details

- We have explicitly stated the assumed incidence of delirium, the effect size, and the formula used in the sample size calculation.

5. 95% Confidence Intervals in Tables

- The tables have been revised to include 95% confidence intervals for key outcomes, enhancing precision and clarity.

6. Randomization and Blinding

- We have provided additional details regarding the randomization and blinding procedures in the Methods section to bolster clarity and reproducibility.

7. Adverse Event Reporting

- We have enriched the discussion on adverse events to provide a more balanced perspective on the efficacy and safety of dexmedetomidine.

8. Limitations Quantification

- We now explicitly address how our sample size may have influenced the statistical power to identify differences in postoperative delirium rates.

9. Explanation of Abbreviations in Tables

- Legends explaining all abbreviations used in the tables have been added for improved readability.

10. Reference Updates

- In line with your recommendations, we have replaced outdated references with more relevant and recent publications to strengthen the scientific foundation of our study further.

We sincerely thank you for your meticulous and constructive critique, which has greatly enhanced the manuscript.

Response to Reviewer Assistant (Comments Generated by AI)

We appreciate the valuable feedback, as it has illuminated key areas for enhancement. Here is how we have addressed your comments:

1. Participant Flow Diagram

- We have introduced a CONSORT-compliant participant flow diagram.

2. Clarification of Randomization and Blinding

- We have expanded these essential details in the Methods section.

3. Statistical Methods

- Additional insights into the statistical analyses, including adjustments for confounding variables, have been included.

4. Discussion on Generalizability

- We have added a statement in the Discussion section addressing the generalizability of our findings, enhancing the manuscript’s applicability.

5. Funding and Conflicts of Interest

- Although these details were previously included, we have ensured they are prominently and clearly stated in the revised version.

We are truly grateful for the extensive review process and the opportunity to refine our manuscript.

Sincerely,

2 Revision 1

5 comments · 14 Feb 2025 – 16 Feb 2025

Referee 1 Reviewer — ACCEPT 14 Feb 2025

Dear AE,
I reviewed the manuscript again. The great effort in improving the manuscript is highly appreciated.
The authors have addressed all comments.
Thank you

Fatemeh Moftakhar Reviewer — ACCEPT 15 Feb 2025

Dear Author,
Thank you for your study. Your corrections are accepted.
Best Regards,

Referee 2 Reviewer — MINOR REVISION 16 Feb 2025

Dear Author
Congratulations on your good manuscript.
Best wishes,

Associate Editor — ACCEPT 16 Feb 2025

Dear Editor-in-Chief,

I wish to express my appreciation to the authors for their efforts and commend the researchers for their valuable manuscript.

Editor-in-Chief — ACCEPT 16 Feb 2025

accept