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OPEN PEER REVIEW

Effect of Position Change After Induction of Spinal Anesthesia with Hyperbaric 0.5% Bupivacaine on Duration of Analgesia and Opioid Demand in Percutaneous Nephrolithotomy Candidates

Alireza Jaffari, Homayoun Aghamohammadi, Masoud Forouzmehr

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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

5 comments · 10 Nov 2024 – 18 Nov 2024

Referee 1 Reviewer

MINOR REVISION 10 Nov 2024

Thank you for submitting your manuscript to this journal.
Please describe the novelty of your research in detail.
Describe the blinding method.

Referee 2 Reviewer

MAJOR REVISION 13 Nov 2024

Dear AE,
The research article addresses an important aspect of anesthetic practice, specifically evaluating how post-induction positioning (sitting-to-lateral) impacts analgesia duration and opioid demand in patients undergoing percutaneous nephrolithotomy (PCNL) with spinal anesthesia. The study is a prospective, randomized clinical trial comparing the effects of lateral and supine positioning on analgesic outcomes and opioid requirements.

-Some sentences lack references. All sentences quoted from other articles must have references at the end of each sentence.
For example, the following sentence:
“Enhancing postoperative pain control, minimizing recovery time, reducing nausea and vomiting, and optimizing analgesic requirements are critical goals.”

-The study does not discuss or control for intraoperative variables like patient movement, surgical position adjustments, or additional anesthetic or sedative use (like fentanyl or midazolam).

-While the lateral group showed a longer mean analgesia duration, the p-value (p=0.105) was above the accepted level of significance, indicating that this finding is not statistically significant.
The study should be more cautious in interpreting results and emphasize any lack of statistical significance.
- The study uses a relatively high dose of 15-20 mg of 0.5% hyperbaric bupivacaine without discussing why this specific range was chosen. In lower abdominal or urological surgeries, high doses can lead to excessive block height or unwanted side effects.
The rationale for this dosage range should be justified based on prior studies or dose-response curves. A control for different dosages could also clarify whether the positioning impact is dose-dependent.

-While the lateral position may improve sensory block, it is associated with neurovascular compression risks, particularly over prolonged durations.
Including a discussion of known risks associated with lateral positioning and recommendations for mitigating these would improve the study's clinical relevance.

Reza Farahmand Rad Reviewer

ACCEPT 14 Nov 2024

First of all, I congratulate you on your perfect article that was really useful and beneficial for the other researchers. Every single term in all columns is proper, acceptable and suitable for your research. I enjoyed it and wish you success.

Associate Editor

MAJOR REVISION 18 Nov 2024

Dear EIC,
Thanks to the authors and appreciation to the researchers. The manuscript presents valuable research. But some revisions are needed. The authors should revise it based on the comments. Also, a minor change should be made in the abstract: The study design should be mentioned in the first line of the methods section of the ABSTRACT.

Editor-in-Chief

MAJOR REVISION 18 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.

Reviewer 1:

Question:

First of all I congratulate you on your perfect article that was really useful and beneficial for the other researchers. every single terms in all columns are proper, acceptable and suitable for your research. i enjoyed and wish you a success.

Reply:

Thanks.

Reviewer 2:

Question:

Thank you for submitting your manuscript to this journal

Please mention the novelty of your research with details

Describe the blinding method

Reply:

We compared supine and lateral positions, which haven’t been done before.

There was no blinding in this research because all the patients were conscious.

Reviewer 3:

Question:

not accept

Reply: Thanks.

Reviewer 4:

Question:

Dear Author

Comments are attached to the manuscript file.

Best wishes,

Reply: Done in the file.

Reviewer 5:

Question:

Dear AE,

The research article addresses an important aspect of anesthetic practice, specifically evaluating how post-induction positioning (sitting-to-lateral) impacts analgesia duration and opioid demand in patients undergoing percutaneous nephrolithotomy (PCNL) with spinal anesthesia. The study is a prospective, randomized clinical trial comparing lateral and supine positioning and its effect on analgesic outcomes and opioid requirements.

Some sentences lack references. All sentences quoted from other articles must have references at the end of themselves.

For example below sentence:

Enhancing postoperative pain control, minimizing recovery time, reducing nausea and vomiting, and optimizing analgesic requirements are critical goals.

-The study does not discuss or control for intraoperative variables like patient movement, surgical position adjustments, or additional anesthetic or sedative use (like fentanyl or midazolam).

-While the lateral group showed a longer mean analgesia duration, the p-value ($p=0.105$) was above the accepted level of significance, indicating that this finding is not statistically significant.

The study should be more cautious in interpreting results and emphasize any lack of statistical significance.

- The study uses a relatively high dose of 15-20 mg of 0.5% hyperbaric bupivacaine without discussing why this specific range was chosen. In lower abdominal or urological surgeries, high doses can lead to excessive block height or unwanted side effects.

The rationale for this dosage range should be justified based on prior studies or dose-response curves. A control for different dosages could also clarify whether the positioning impact is dose-dependent.

-While the lateral position may improve sensory block, it is associated with neurovascular compression risks, particularly over prolonged durations.

Including a discussion of known risks associated with lateral positioning and recommendations for mitigating these would improve the study's clinical relevance.

Reply:

Those sentences without references are our own conclusions from the previous citations. And the sentence “Enhancing postoperative pain control, minimizing recovery time, reducing nausea and vomiting, and optimizing analgesic requirements are critical goals.” is our claim.

Nobody received sedation or other additional anesthetic use because we wanted to remove any noises and correlative impacts on the results.

The very limited number of words for the paper length cause not mentioning somethings.

PCNL is not such a prolong surgery (around 77.8±12.9 and 74.9±15.0 minutes on average for lateral and supine positions, respectively) which also included enough roll padding to protect neural plexuses from any damages.

Moreover, in PCNL cases, especially when the stones are in upper or mid ureter, the patients need anesthetic level of T4 which is totally different from lower urological surgeries.

Reviewer AI:

Question:

1. CONSORT Checklist for Randomized Trials

- Title and Abstract: The title indicates that it is a randomized trial. The abstract summarizes the trial design, methods, results, and conclusions.

- Introduction: The background provides scientific rationale, and specific objectives are stated.

- Methods:

- Trial Design: Clearly described as a prospective, randomized clinical trial.

- Participants: Eligibility criteria and settings are mentioned.

- Interventions: Details on the experimental (lateral position) and control (supine position) interventions are provided.

- Outcomes: Primary and secondary outcomes are defined, including pain levels and opioid consumption.

- Sample Size: The sample size is mentioned, but the method for determining it is not detailed.

- Randomization: The method of random allocation is not specified.

- Blinding: There is no mention of blinding participants or assessors.

- Statistical Methods: Statistical methods used for comparison are mentioned.

- Results: Participant flow is not illustrated with a diagram, and baseline data is not provided.

- Discussion: Limitations and generalizability are not discussed in detail.

- Funding: There is no mention of funding sources.

2. STROBE Checklist for Cohort Studies

- Title and Abstract: The study's design is indicated in the title.

- Introduction: Background and objectives are provided.

- Methods:

- Study Design: Key elements are presented.

- Setting: The setting is described.

- Eligibility Criteria: Clearly defined.

- Variables: Outcomes and potential confounders are mentioned.

- Statistical Methods: Statistical methods are described.

- Results: Participant numbers at each stage are not detailed.

- Discussion: Key results and limitations are not thoroughly discussed.

Summary of Findings

- The study adheres to many aspects of the CONSORT and STROBE guidelines, but there are notable gaps, particularly in detailing randomization methods, blinding, and providing a participant flow diagram.

- The results section lacks a comprehensive presentation of participant flow and baseline characteristics.

- The discussion does not adequately address limitations or the generalizability of the findings.

Recommendations

1. Enhance Randomization Details: Include specifics on how the random allocation sequence was generated and concealed.

2. Include Blinding Information: If blinding was not possible, this should be stated.

3. Participant Flow Diagram: Add a diagram to illustrate participant flow through the study.

4. Discuss Limitations: Provide a thorough discussion of the study's limitations and potential biases.

5. Funding Disclosure: Include information on funding sources to enhance transparency.

This review highlights the strengths and areas for improvement in the study's reporting, ensuring it meets the standards set by the relevant guidelines.

Reply:

- Sample Size was chosen based on the inclusion and exclusion criteria we mentioned in our study period. All the patients with abovementioned conditions were studied.

- Randomization method was completely non-criterion based: we divided them into the groups every other person based on their arrival.

- Blinding is impossible in such studies. Because the patients are conscious and knows how they went under study.

- Participant flow and base line data were preferred to be eliminated due the short limit of paper length.

- Limitations are already mentioned in the methodology itself due to the nature of our case. Generalizability can be applied to cases other than PCNL that can be done in lateral position.

- No funds were used.

- Participant numbers at each stage were not important or affected on the results.

- Limitations in this study is in the nature of the case (PCNL) and method (not blinding).

2 Revision 1

3 comments · 25 Dec 2024 – 28 Dec 2024

Referee 2 Reviewer — ACCEPT 25 Dec 2024

Dear AE.
Previous errors have been corrected, and there are no further recommendations.

Associate Editor — ACCEPT 28 Dec 2024

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

Editor-in-Chief — ACCEPT 28 Dec 2024

Dear AUTHROR,
We appreciate your attentiveness and prompt response to the reviewer's feedback. The manuscript is acceptable now.