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OPEN PEER REVIEW

Comparison Study of Bupivacaine and Ropivacaine for Interscalene Block in Shoulder Surgery in Terms of Onset Time, Duration, and Postoperative Muscle Weakness

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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

2 comments · 21 Jul 2025 – 21 Jul 2025

Associate Editor

MINOR REVISION 21 Jul 2025

Dear EIC,
The manuscript addresses an important and clinically relevant topic: comparing the motor blockade characteristics and recovery profiles of two commonly used local anesthetics—ropivacaine and bupivacaine—in interscalene brachial plexus block (ISB) for shoulder surgery. The study is well-motivated and the clinical importance is well-established. However, it needs some revision as requested by the reviewer. Also, minor changes should be made to the structure, language, and methodological clarity:

*Randomization is mentioned, but the method of random sequence generation and allocation concealment is not described. How was blinding ensured?
*A summary of the statistical analysis results should be mentioned in the results section of the ABSTRACT.
*Duration of surgery is not mentioned — a relevant variable for block duration and postoperative weakness.
*Numerous grammatical errors, run-on sentences, and awkward phrasing reduce readability. A thorough language edit is strongly recommended.
*Some redundant text in the introduction and discussion can be trimmed for conciseness.

Editor-in-Chief

MINOR REVISION 21 Jul 2025

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.

Reviewers' Comments:

Reviewer 3:
Dear editor
The manuscript provides valuable insights into the pharmacodynamics of bupivacaine and ropivacaine in ISB. Addressing the above points will enhance clarity, readability, and impact. The study's findings are relevant to anesthesiologists and surgeons Accept with Minor Revisions, particularly in optimizing postoperative recovery strategies.

We sincerely appreciate the reviewers' and associate editor's constructive feedback, which has significantly strengthened our manuscript. Below, we address each comment and detail the revisions made:

Associate Editor's Comments:

Associate Editor 0:
Dear EIC,
The manuscript addresses an important and clinically relevant topic: comparing the motor blockade characteristics and recovery profiles of two commonly used local anesthetics—ropivacaine and bupivacaine—in interscalene brachial plexus block (ISB) for shoulder surgery. The study is well-motivated and the clinical importance is well-established. However, it need some revision as requested by reviewer. Also minor changes should be done in structure, language issues, and methodological clarity:

**Randomization is mentioned, but the method of random sequence generation and allocation concealment is not described. How was blinding ensured?*

A:Thank for your comment. We have expanded the **Methods** section to clarify randomization and blinding (highlight in the Word file, page 3):

Randomization:
"Participants were randomized 1:1 to ropivacaine or bupivacaine groups using a computer-generated sequence (block randomization, block size of 4). Allocation concealment was maintained via sealed opaque envelopes opened by a non-study anesthesiologist."

Blinding:
"Patients and outcome assessors (handgrip dynamometer operators) were blinded to the anesthetic agent. The performing anesthesiologist was not blinded due to procedural requirements, but postoperative data collectors had no access to group assignments."

**Summary of Statistical analysis results should be mention in result section of ABSTRACT.*

A: Thank for your comment and added in Abstract.

Statistical analysis (repeated measures ANOVA) confirmed significant differences in motor blockade kinetics between groups ($p < 0.001$). Ropivacaine showed slower onset (peak reduction: 66% at 3 hours) but faster recovery (80% baseline strength at 1 week) versus bupivacaine (peak reduction: 72% at 3 hours; 70% recovery at 1 week; $p < 0.001$ for all comparisons). Age-stratified analysis revealed greater motor block persistence in older patients ($p < 0.01$).

**Duration of surgery is not mentioned — a relevant variable for block duration and postoperative weakness.*

A: It added to Methods**:** *"Surgical duration was recorded from incision to closure."*

It added to Results**:** Mean surgical duration was 98 ± 22 minutes (range: 65–140), with no significant difference between groups ($p = 0.34$). Block duration and recovery profiles remained consistent regardless of surgical time.

**Numerous grammatical errors, run-on sentences, and awkward phrasing reduce readability. A thorough language edit is strongly recommended.*

A: Grammar check and corrected.

-Ropivacaine induced progressive motor strength reduction across all age groups (baseline to 1 week; $p < 0.001$).

-Bupivacaine demonstrated faster onset, more profound motor block, and prolonged duration compared to ropivacaine.

**Some redundant text in the introduction and discussion can be trimmed for conciseness.*

*A: Thank for your suggestion and we do it. (*highlight in the Word file).

2 Revision 1

1 comment · 5 Aug 2025

Editor-in-Chief

ACCEPT 5 Aug 2025

Dear Authors,
Thank you for revising the manuscript. This version of the manuscript is acceptable for publication in the journal.
Regards,