Author’s response to reviews

Title: Effect of Postoperative Trendelenburg Position on Shoulder Pain after Gynecological Laparoscopic Procedures: A Randomized Clinical Trial

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Author’s response to reviews:

We would like to thank the Editor and the Reviewers for their valuable feedback on the revised manuscript and for the chance to be published in your journal pending revision. Kindly find below a detailed response to the Editor’s and Reviewer’s points raised and the amendments that have been made in the revised manuscript.

Editor Comments:

- Please underline the pain relief mechanism of the Trendelenburg position on the introduction.

The pain relief mechanism of the Trendelenburg position was added to the Background section to read: “The Trendelenburg position might decrease pain by reducing the mechanical pressure exerted by CO2 on the diaphragm and the upper abdominal muscles. CO2, known for its high solubility, would also be displaced to the pelvis that has a rich vasculature which in turn speeds up the resorption of pneumoperitoneum” (page 4, lines 77-80).

- Did you observe any hemodynamic and respiratory side effects induced by Trendelenburg position? Please indicate in the result section.
No hemodynamic or respiratory side effects were reported in any of the patients subjected to the Trendelenburg position. This was added to the results section to read: “We did not observe any hemodynamic or respiratory side effect that required any intervention in any of the patients throughout the study period and no patients were re-admitted due to any hemodynamic instability or respiratory adverse event” (page 8, lines 168-171).

- Please use the generic names of the drugs

The generic names of the drugs were used in Table 1: glycopyrrolate replaced robinul, acetaminophen replaced perfalgan, and ketoprofen replaced profenid (page 6, lines 117 and 131; Table 3, page 19).

- Please use lower case letter for "p" values in the Tables

The P in “P-value” has been changed to the lower-case letter “p” to read “p-value” in all the tables (pages: 17, 18, and 19).

- Please write the incidence of the PONV

The incidence of PONV was added to the results section as occurrence at any time post op to read: “Incidence of nausea at any time postop was not statistically different between the two groups (78% vs. 75% respectively with p=0.8) (page 8 and 9, lines 182-184)”. Since the severity of PONV fluctuates over the timeline specified, we also reported the NRS scores at each time point taken over the 24 hours to read “Nausea scores significantly decreased with time in both groups, and was significantly higher in the experimental group” (page 8, lines 181 and 182; Table 2, page 17).

Reviewers’ comments

(Reviewer 1):

This manuscript has discussed the important issue: the use of carbon dioxide (CO2) to insufflate the abdomen is the main contributor to post-operative shoulder pain. They maintained the patient in Trendelenburg for 24 hours postoperatively will significantly decrease postoperative shoulder pain and analgesic consumption, and proved the good effect on pain release. I have some suggestion in the following:
1. The author could emphasize the background illustration: why do they use the Trendelenburg positioning to release the pain sensation?

The pain relief mechanism of the Trendelenburg position was added to the Background section to read: “The Trendelenburg position might decrease pain by reducing the mechanical pressure exerted by CO2 on the diaphragm and the upper abdominal muscles. CO2, known for its high solubility, would also be displaced to the pelvis that has a rich vasculature which in turn speeds up the resorption of pneumoperitoneum” (page 4, lines 77-80).

2. The author could consider adding the laparoscopic time, intraoperative time and anesthetic time in the table.

The laparoscopic time and intraoperative time were added to Table 1 (Page 17). We did not document the anesthetic time since the duration from induction to incision and from surgery end-time till extubation are relatively short in the studied population procedures.

3. The follow-up PONV rate may be considered to add in the table.

The PONV scores were added to Table 2 (page 18).

4. The frequency of following the PONV may be added.

We understood that you are requesting the medications required in patients for PONV. Therefore we reported in the Results section the total rescue PONV medications that were required to read: “However, the total PONV medications used were significantly lower in the experimental group, metoclopramide consumption (10.00±14.95 mg vs. 4.08±0.16, p=0.016) and ondansetron consumption (0.85±2.00 mg vs. 0.16±0.80 mg, p=0.036)” (page 9, lines 184-186).

5. Why the author use the numerical rating scale to evaluate pain severity instead of other questionnaires?

The numerical rating scale is a universally accepted scale, simple, and straightforward. The patients find it quicker and easier than responding to a longer and more complicated questionnaires, therefore it is used as standard of care at our institution.
6. The postoperative opioid consumption may considered to be added in the table.

Thank you for the notice. The reported tramadol consumption is the total opioid amount that has been used for pain relief in the patients, this is a typo mistake. All opioids were converted to morphine equivalent dosing. This note has been added as a footnote in the Table (Table 3, page 19).

Reviewer (2)

- This study is about the effect of postoperative trendelenburg position on shoulder pain after gynecological laparoscopic procedures. There are many interventions mentioned in the literature on shoulder pain following laparoscopic gynecologic surgery. However trendelenburg position is not listed as one of the possible interventions in the literature. So the study can give new information to the literature.

Thanks for reviewing our manuscript and for your positive feedback.

The authors would like to note that the p-value for the total intra-op fentanyl was added to Table 1, which was not reported in the previous version of the manuscript.