Peer Review File

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Reviewer A

Comment 1: From the meta-analysis, we can agree that dexamethasone reduces PONV and pain, but can't we draw conclusions about dose? Only two studies using 4-5 mg have been conducted, one of which has shown efficacy.
Reply 1: We are very grateful to reviewer for reviewing the paper so carefully. we have modified the conclusion section in the abstract as advised: "A preoperative single dose of 8-10 mg of dexamethasone has demonstrated a significant reduction in postoperative PONV and the requirement for additional antiemetic medications, along with alleviating postoperative pain after thyroidectomy. However, more RCTs are necessary to explore the effects of varying dexamethasone dosages, particularly 4-5 mg, on the incidence of postoperative PONV and pain."
Changes in the text: see Page 1-2, line 40-43.

Comment 2: Alternatives to dexamethasone should be mentioned: 5-HT3-receptor antagonists and droperidol or metoclopramide could be used for PONV. The side effects and cost-effectiveness of those drugs should be considered.
Reply 2: Considering the reviewer's suggestion, we have added content in the introduction to reduce the side effects and consumption ratio of other drugs for PONV: "Numerous medications are utilized to prevent postoperative nausea and vomiting (PONV) before thyroid cancer surgery, such as 5-HT3 receptor antagonists, droperidol, or metoclopramide. However, they share some common side effects, including headaches, constipation, elevated liver enzyme levels, restlessness, anxiety, and irregular heartbeats, and more. Studies have suggested that dexamethasone, a cost-effective medication with minimal side effects, may be beneficial in reducing postoperative PONV"
Changes in the text: see Page 2, line 55-58.

Comment 3: The side effects of dexamethasone are noted in the cited paper and should be discussed. Some papers describe the adverse effects of dexamethasone in head and neck surgery. Kainulainen S, Tornwall J, Koivusalo AM, Suominen AL, Lassus P. Dexamethasone in head and neck cancer patients with microvascular reconstruction: No benefit, more complications. Oral Oncol. 2017; 65:45-50.
Reply 3: Considering the reviewer's suggestion, we have added content in the discussion on the adverse effects of dexamethasone in head and neck surgery: "Dexamethasone, a corticosteroid, has been sparsely discussed in scientific literature for its potential to introduce complications in microvascular reconstruction surgeries for patients with head and neck cancer. Nevertheless, it is worth highlighting that numerous studies offer substantial evidence of its effectiveness in effectively alleviating postoperative pain and reducing overall opioid consumption."

Changes in the text: see Page 5, line 195-199.

Reviewer B

Comment 1: Is this meta-analysis registered with PROSPERO? If it is, you should make that clear in your article.
Reply 1: Thank you for your inquiry. To the best of my knowledge, the meta-analysis in question has not been registered with PROSPERO.

Comment 2: Is this also a literature review? If so did you use the PRISMA flowchart for inclusion of trials? Please make this clearer in your work.
Reply 2: Yes, this is also a literature review. We used the PRISMA flowchart for inclusion of trials and added content in the abstract and materials and methods.
Changes in the text: see Page 1, line 22-23 and Page 2, line 77.

Comment 3: The primary outcome needs to be made clearer: is the primary outcome use of dexamethasone reduces PONV, or is it that a particular dose of dexamethasone reduces PONV? Secondary outcomes (subgroup analysis) also need to be clearer.
Reply 3: Sincerely thank the reviewer for careful reading. As suggested by the reviewer, we have modified the background section in the abstract: The study aimed to evaluate the influence of a specific dexamethasone dosage on PONV incidence, with a secondary objective of assessing its impact on postoperative pain in patients undergoing thyroid surgery.
Changes in the text: Page 1, line 17-19.

Comment 4: When looking at pain relief improvements, there is no mention of whether nerve blocks were performed, or local anaesthetic infiltrated. This may have influenced your results, might be worth considering.
Reply 4: In 11 studies, only in Tarantino et al.'s study, anesthesia combined with a cervical plexus block resulted in a decrease in pain scores and no differences in postoperative pain observed between the dexamethasone treatment group and the control group. Furthermore, this article was not included in our pain analysis, so the analysis results of dexamethasone for pain relief were not affected.
Changes in the text: see Page 3, line 208-211.

Comment 5: In the results: there is no mention of the Jadad scoring, eg x number of trials were scored 5 and above, despite mentioning it in your methods.
Reply 5: Based on your sincere suggestions, we tried to amend the relevant part in the results.
Changes in the text: see Page 3, line 127.

Comment 6: Also in the results section, when reporting a reduction in pain with 8-10mg, how is this demonstrated? Is it in reduced opiate consumption? In reduced VAS scores? Needs clarifying please.
Reply 6: Thank the reviewer of pointing out this problem. We modify as follows: The research

results showed that administering dexamethasone at a dosage of 8-10 mg can significantly reduce pain VAS score in patients undergoing thyroidectomy (RD: -1.19; 95% CI: [-1.97, -0.41]; I^2 = 96%, P=0.003). However, subgroup analysis for a dosage of 4-5 mg did not demonstrate a significant reduction in pain score
Changes in the text: see Page 4, line 143-146.

Comment 7: In the discussion: (page 9, line 206) need to address the fact that Ahmad trial favours control in preventing PONV in the Forest plot. Also in the discussion the paragraph (lines 210-214) is a bit confusing, 'increasing dose' is this above 10mg? There is nothing in results about higher doses than 10mg. And what is the clinical difference being referred to?
Reply 7: We have inserted the citation for the Ahmad trial literature and adjusted the logical order of the following sentence, but the article does not provide an explanation for the differences with other experiments. To eliminate any potential confusion, the authors also have removed the following sentence: "However, we also noticed that increasing the dose of dexamethasone did not result in a significant clinical distinction, which contradicts the findings of Chen et al.'s study."
Changes in the text: see Page 5, line183-186, 191.

Comment 8: I think it would be useful in your conclusions to not only say doses of 8-10mg dexamethasone reduces PONV, but also reduces need for rescue antiemetics (as shown in your subgroup analysis).
Reply 8: We are very grateful to your comments for the manuscript. we have modified the conclusion section in the abstract as advised: “A preoperative single dose of 8-10 mg of dexamethasone has demonstrated a significant reduction in postoperative PONV and the requirement for additional antiemetic medications, along with alleviating postoperative pain after thyroidectomy. However, more RCTs are necessary to explore the effects of varying dexamethasone dosages, particularly 4-5 mg, on the incidence of postoperative PONV and pain”
Changes in the text: see Page 1, line 40-43.

Comment 9: Grammar:
Abstract: pg 1 line 16: change 'in inpatients' to 'in patients'
Abstract: pg 1 line 18: clarify primary outcome
Abstract: pg 1 line 37: add 'rather' to '8-10mg than dexamethasone'
Introduction: pg 2 line 65: add 'improve' before 'pain relief'
Page 7 line 178: figure 6, should be analgesic (not antalgics)
Supplementary figure 2 is not referenced in text - needs to be if going to use it.
Discussion: pg 9 line 216: change 'various action mechanisms' to 'various mechanisms of action'
Discussion: pg 9 line 220: should this read general anaesthesia for INTUBATION not extubation? and what is tumour wound pain? should this be surgical site incision pain?

The authors have revised the paper's grammar in accordance with the reviewer's suggestions and have marked the changes.