Reviewer's report

Title: Effects of intravenous infusion of lidocaine and dexmedetomidine on inhibiting cough during the tracheal extubation period after thyroid surgery

Version: 0 Date: 04 Feb 2019

Reviewer: Alessandro Belletti

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Dr. Li and colleagues present report in their manuscript results of single-center RCT investigating the effect of intraoperative infusion of lidocaine and dexmedetomidine on cough at extubation following thyroid surgery. They found that both drugs reduce the incidence of cough as compared with placebo, as well as the total amount of fluids in cervical drainage at 24 h.

The work is potentially interesting; yet, there are some issues that in my opinion require to be addressed:

1. It is not entirely clear to me who was blinded, although I understand that this was a probably a double-blind study. The Authors should however clearly specify that patients, treating physicians and outcome assessors were blinded to group assignment, and study drug were prepared by study personnel not otherwise involved in the study. Furthermore, the method used to ensure allocation concealment should be specified: sealed opaque envelopes? Web-randomization by study personnel not otherwise involved?

2. The Authors should improve their description of sample size calculation. They refer to a pilot study, by no additional data are reported. Were results of the pilot study published? Which results yielded this pilot study? Which was the expected incidence of cough in the control group and the estimated reduction in the treatment groups?

3. Concerning outcome, I believe that reporting only cough and drainage amount is somewhat insufficient. In my opinion, additional outcome data should be reported, and in particular:

   - incidence of study-drug side effects, i.e. local anesthetic toxicity, supraventricular and ventricular arrhythmias, intraoperative bradycardia and hypotension, intraoperative need for vasopressors, intraoperative fluid balance, postoperative need for supplemental oxygen or prolonged respiratory support (e.g. NIV or reintubation), postoperative length of hospital stay, postoperative mortality, postoperative complications according to Clavien-Dindo classification

   - incidence of major surgery-related adverse events potentially prevented by cough prevention, i.e. cervical hematoma, need for surgical revision, need for transfusion, days until drainage removal...

   - if available, postoperative pain scores
4. As a related point, the Author should discuss the clinical significance of their findings. I.e. the drainage volume was reduced by something like 25-30 mL, looking at figure 3. Do the Authors believe this is a clinically-relevant difference?

5. I kindly ask the Authors to provide absolute data for both hemodynamic parameters and drainage amount. I appreciate the figures, yet I would also prefer to have the precise values of MAP, HR and volume, rather than trying to estimate them from the graphs.

6. Given that postoperative bleeding is a key outcome of this study, I suggest to present additional data on preoperative coagulation (e.g. platelets, coagulation test, and use of antithrombotic medications), although I acknowledge that given inclusion criteria (ASA I-II 18-65 yr old subjects) it is unlikely to have included patients with coagulation abnormalities or under antithrombotic therapy

7. The Authors report trial registration on Chinese Clinical Trial Registry in the Abstract, and on ClinicalTrials.gov in the Methods. Please edit for consistency

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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