**Reviewer's report**

**Title:** Comparison of a loading dose of dexmedetomidine combined with propofol or sevoflurane for hemodynamic changes during anesthesia maintenance: a prospective, randomized, double-blind, controlled clinical trial

**Version:** 0 **Date:** 22 Aug 2017

**Reviewer:** Cheng Ni

**Reviewer's report:**

The manuscript "A comparison of a loading dose of Dexmedetomidine combined with Propofol or Sevoflurane for hemodynamic changes during anesthesia maintenance: a prospective, randomized, double-blind, controlled clinical trial" provide a clinical trial to reveal the intraoperative effects of combined dexmedetomidine on hemodynamics, including blood pressure and heart rate.

The study indicated an interesting phenomenon that Dex could increase the BP during propofol, but not sevoflurane anesthesia, which could be potential valuable to reveal the action mechanism of Dex.

Comments for the methods and results:

1. 382 patients were screened for study participation; but only 84 patients were enrolled into the study: please describe the reason for the 298 patients that were not enrolled in the study.

2. One patient assigned to P+ DEX group and one assigned to S+ DEX group were withdrawn without receiving DEX. One patient assigned to P+NS group was excluded due to receiving sevoflurane and one assigned to S+NS group was excluded because of receiving DEX.

   Please explain the reason that the patients in Dex group have not received Dex, the patient in P group received sevoflurane, or the patient in NS received Dex.

3. Why the Dex was applied before the end of the operation, but not the beginning, or other time points.
4. Two-way repeated-measures ANOVA should be applied to compare repeated data between groups including SBP, DBP, MAP and HR.

5. The operation and anesthesia time was significantly longer in sevoflurane group than propofol group, is there any relationship between inhaled anesthesia and longer duration, as well as between the different hemodynamics and longer duration.

Comments for the discussion:

The study indicated that postsynaptic located α2 adrenoreceptors in peripheral blood vessels produce vasoconstriction and this increase in blood pressure is probably due to the vasoconstrictive effects of DEX when stimulating peripheral α2 receptors. But in a longer duration or larger dose of Dex infusion with or without propofol (even in epidural anesthesia), Dex could lead to hypotension. Thus, peripheral α2 receptors could not be the only reason for the hypertension in P group, and please consider and list the other possible mechanisms, such as the interaction between anesthetics and Dex, the blood volume status, and the different operation stage.

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

Yes

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
Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal