Reviewer’s report

Title: Can high-flow nasal cannula reduce the rate of reintubation in adult patients after extubation? A meta-analysis

Version: 0 Date: 04 Jul 2017

Reviewer: Gonzalo Hernandez

Reviewer’s report:

First meta-analysis on this topic with positive results supporting the role of high-flow oxygen therapy for preventing reintubation.

Well performed and written paper. I have some major concerns:

- I know authors included papers published in the timeframe ranging from 1946 to July 2016, but in my opinion, some important papers have been published shortly after this range: Eg. OPERA trial (Oct/2016); Fernandez R, Ann Intensive Care 2017. I understand authors, but submission has been delayed 1 year and the risk of missing some important papers is relevant.

- ABSTRACT: results and conclusions is confusing: Eg. ... Compared with COT, HFNC was associated with lower rate of intubation , and the same result was found in the comparison between NIPPV. Eg. Conclusion: HFNC is a reliable alternative of NIPPV to reduce rate of reintubation compared with COT.

- BACKGROUND: ... NIPPV may prevent post-extubation respiratory failure and avoid reintubation [8-12]...: in my opinion, the new guidelines should be cited, as report a strong recommendation for preventive NIPPV after extubation in high-risk patients.

- RESULTS: Heterogeneity: ... No statistical heterogeneity was found... In my opinion, statistical heterogeneity can be safely excluded but a comment on clinical heterogeneity should be added: Eg, the analysis regarding reintubation rate compared to COT includes two trials on general critical care population and two centered on patients after cardiac surgery, with clearly different results. And the same for the OPERA trial, with negative results in patients after abdominal surgical intervention. HFNV seems to work differently after surgical patients at low risk for failure.

- CONCLUSIONS: ... Compared to COT, HFNC could reduce... I consider that a meta-analysis like this one with positive results should not conclude with "could", but a stronger word.

MINOR COMMENTS: refs 9 and 10 have some spelling errors (Ferrer M instead of FeORer M).

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

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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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Needs some language corrections before being published

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