Reviewer’s report

Title: Effects of lubrication on air-sealing performance of a pediatric cuffed tracheal tube

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Reviewer: Saad Nseir

Reviewer's report:

The authors performed an in vitro study to determine whether lubrication of cuffed tracheal tubes reduce leakage. They compared three different conditions: no lubrication, water, and K-Y jelly (KY), and concluded that lubrication of the cuff significantly reduced air leakage of the pediatric CTT.

These results confirm those previously reported by in vitro and clinical studies.

In general, there are too many abbreviations in the manuscript resulting in difficult reading and understanding.

Abstract: actual results should be presented in this section. Additional results should also be shown here.

Background: it is unclear, at least to me, what was the rationale of this study. What is missing in the available data and what is the hypothesis?

Methods:

Authors stated (page 3, line 20): conventional cylindrical shape. Usually, the conventional standard shape is barrel shape and not cylindrical. Please clarify.

The authors should explain why they chose the Parker tracheal tube. Why didn't they compare different tubes, and different sizes? This might have allowed better generalization of their results.

They used gas-sampling tube to measure oxygen concentration, and determine the presence of air leakage. Was this method previously validated?

What was the duration of the experiments?

Discussion:

This section is too long and not well focused. What is really the punch line? What this study adds to the current literature?
As acknowledged by the authors, cuff lubrication has previously reported to be efficient for a short period of time. In addition, as shown in results section, lubrication was not totally efficient, even though it reduced leakage in part. Therefore, one could argue that this method is probably not the optimal option to reduce leakage and microaspiration in intubated patients. Other methods, such as continuous control of Pcuff were reported to be much more efficient. Please comment.

References are old and should be updated. There are several recent good studies and general reviews on this topic that should be discussed and cited.

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.

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I am able to assess the statistics

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