Reviewer's report

Title: Semiprone position is superior to supine position for paediatric endotracheal intubation during massive regurgitation: a randomized crossover simulation trial

Version: 0 Date: 20 Dec 2017

Reviewer: Narasimhan Jagannathan

Reviewer's report:

This is a randomized crossover simulation trial comparing the semi prone position to the supine position during massive regurgitation in a paediatric manikin. The authors have found that intubation in the semi prone position was significantly easier and faster when compared to the supine position both in terms of experienced difficulty (VAS score) and median time to intubation. The authors' have found that intubation in the semi prone position was superior to the supine position regarding both above end points. I do find the content interesting, and the creation if the simulated regurgitation novel. However, there are limitations in the methodology.

Please consider the following:

Introduction please describe what has been shown, and why the authors chose to do a new study on this topic.

It is unclear why the authors chose clinicians with different experiences with direct laryngoscopy in the study. There seems to be clinicians that are relatively inexperienced and clinicians that are very experienced with direct laryngoscopy. This would have influenced the results. Why didn't the authors choose clinicians that were relatively inexperienced or had similar levels of experience in order to have similar baseline clinician skill sets?

The groups studied are not homogeneous and this should represent a limitation in the current study. For further studies (even simulated), the groups should be more homogeneous.

It is difficult to visualize how a clinician intubating and stabilizing the head in the semi prone position (as shown in the picture), also would successfully place the tracheal tube in the trachea.

Why was a rigid suction not used for suctioning the simulated regurgitation? it is uncommon that a flexible suction be sufficient for the purposes of massive regurgitation? Is use of flexible suction by an assistant the standard practice in the author's country?
The power calculation used in the study is unclear. How was a difference of 5 seconds chosen? Can the authors provide also SD used for sample size calculation?

What was the definition of successful intubation? How were the time points measured for this study?

How was the correct placement of the ETT verified?

The authors’ should acknowledge that the main limitation in this study is there is the manikin that they chose, including oxygen desaturation, reflex activation of the airway including coughing, bearing down (leading to more regurgitation), bronchospasm, laryngospasm all of these would have influenced the results in real life including the time for successful tracheal intubation.

Turning an unconscious patient with an injured cervical spine may be problematic. I am unclear of whether pre-hospital providers would turn a patient in the emergency setting to intubate the trachea in the semi-prone position. Do the authors currently do this in their practice?

I doubt that the presence of a neck collar or even manual stabilization in case of suspected neck fracture can allow to perform this kind of positioning and ETI. The authors should address this issue and create a kind of list of pro and cons for placing the patients in this position.

The discussion should focus on the main results and not repeat results and methodology.

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

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