Reviewer’s report

Title: Is tracheostomy a better choice than translaryngeal intubation for critically ill patients requiring mechanical ventilation for more than 14 days? A comparison of short-term outcomes

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Reviewer: Grant Sanders

Reviewer’s report:

In this retrospective analysis of ICU admissions requiring prolonged mechanical ventilation, the authors show a correlation with tracheostomy and decreased hospital mortality and higher successful weaning rates. Although the mortality results are intriguing, the higher proportion of MICU patients, DNR patients, CHF patients, and chronic liver disease patients in the translaryngeal intubation group may account for some of this increased mortality. Additionally, the higher proportion of trauma and brain disorder patients (potentially single organ illness) may also accentuate this mortality difference. The known, and unknown, differences in the two groups is inherent to any retrospective study, which the authors address with a case-control propensity matched analysis. This matching process eliminated many of these differences, and the mortality differences still persist.

I think expanding the discussion section to include why tracheostomy is associated with decreased mortality is needed to convince readers of the results (decreased VAP?, improved early mobility?, better pulmonary toilet?).

I also found it intriguing that tracheostomy was associated with increased duration of mechanical ventilation but higher successful weaning rates (this seems counterintuitive and could use a better explanation). The longer ICU and hospital stays in the tracheostomy group is also unexpected and is explained in the article as possibly relating to the higher mortality rate of the translaryngeal intubation group. Maybe only patients who were expected to survive were offered tracheostomies?

Several other studies have not shown a mortality benefit to early tracheostomy, but apparently none have looked at this particular group of prolonged mechanical ventilation. In order to eliminate many of the biases listed above, a prospective randomized control study would be subsequently needed to confirm these results.

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

Yes

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