Reviewers report

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

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Reviewer: Masaji Nishimura

Reviewers report:

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A meta-analysis of NIV use in selected subgroups of such patients suggests that judicious use of NIV may shorten ICU and hospital length of stay, reduce incidence of pneumonia, and improve hospital survival. As yet, for patients who undergoing major abdominal surgery, evidence is inadequate to confirm the benefit or harm of NIV during the postoperative period. HFNC has become more and more widely adopted for patients with different kinds of respiratory failure. While HFNC is better tolerated by patients, it was considered to be less effective than NIV via face mask. HFNC was considered superior to conventional oxygen therapy. Recently some clinical trials of HFNC for postextubation respiratory failure performed, although results were variable. Ni Y-N performed meta-analysis and evaluated if HFNC reduced the rate of reintubation in adults after extubation. Methodology was fine. Six RCTs were selected and meta-analysis was performed. The authors concluded HFNC reduced rate of reintubation compared with conventional oxygen therapy.

Basic profiles of patients in 6 RCTs varied. Corley included patients with BMI >30 and MV duration < 36 hours. Maggiore compared venturi mask and HFNC in patients of MV > 24 hours. Parke recruited patients after elective cardiac surgery who were extubated before 10:00 am next day. Conventional oxygen therapies also varied among the studies.

Meta-analysis is a strong strategy. However, same to NIPPV, HFNC does not necessarily work for all kinds of respiratory failure. Hernandez separately reported effect of HFNC between low and high-risk of reintubation, and the results were different. Kang reported HFNC unnecessarily prolonged worsened outcomes. It is more important to know kind of respiratory failure HFNC reduces mortality.

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

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