

LETTER

# Mechanical insufflation-exsufflation in prevention of post-extubation acute respiratory failure: most welcome but must be used cautiously in critically ill patients

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See related research by Gonçalves *et al.*, <http://ccforum.com/content/16/2/R48>

In a study published in the previous issue of *Critical Care*, Gonçalves and colleagues [1] observed a 33% reduction in re-intubation rate in the study group, due to effective management of bronchial secretions. Current evidence favors early implementation of noninvasive mechanical ventilation (NIV) in the post-extubation period to reduce re-intubation, especially in patients with hypercapnic respiratory failure [2-4].

However, some important practical issues need to be considered before the use of mechanical insufflation-exsufflation (MI-E) in the post-extubation period can be generalized, especially in patients needing NIV: (a) MI-E application requires that the NIV mask be disconnected, resulting in positive pressure loss, alveolar collapse, and desaturation. (b) MI-E devices do not have entrained oxygen. Hence, any rapid desaturation episode will require immediate reconnection to NIV. (c) Assessment of the effective management of bronchial secretions can prove difficult because of the lack of an objective or specific scoring system. (d) In some situations requiring several MI-E sessions, frequent disconnection from NIV can lead to prolonged use of post-extubation NIV. (e) MI-E may be difficult to perform or may lead to poor compliance in cases of unplanned extubation, moderate to severe hypoxemic acute respiratory failure (ARF) after extubation, agitation/anxiety, and tachypnea. (f) The effectiveness of MI-E should be studied beyond 48 hours, as late-onset extubation failures and post-extubation NIV failures are due mostly to ineffective secretion clearance [5].

In conclusion, we believe that this original study could have an impact on the management and prevention of post-extubation ARF in a select group of patients. However, owing to the above-mentioned reasons, the use of MI-E cannot be generalized to all patient populations.

#### Abbreviations

ARF, acute respiratory failure; MI-E, mechanical insufflation-exsufflation; NIV, noninvasive mechanical ventilation.

#### Competing interests

The authors declare that they have no competing interests.

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