

nating airway secretions via an oronasal interface once the tube is out.⁴ Thus, the distinction between unassisted and assisted CPF is important. The fact is that in a recent report, many patients (e.g. babies with spinal muscular atrophy type 1) could generate no measurable flows via the upper airway, but were almost invariably successfully extubated anyway because following extubation, MIE generated effective flows to clear the airways.⁴

Decannulation protocols begin by transitioning from cuffed to cuffless fenestrated tracheostomy tubes or tracheostomy buttons so that the patient can practice CNVS and MIE and speak without the tube obstructing the upper airways. Failure to permit verbal communication almost invariably results in severe reactive depression.⁷ The first step in the process of decannulation to noninvasive management is cuff deflation. We have seen numerous other tragic examples of failure to deflate the cuff, and this has been reported.⁷ Switching patients to cuffless fenestrated tubes does not always clear the upper airway sufficiently to use NVS comfortably because the fenestration can abut against the back wall of the trachea rather than be in the airway. When there is obstruction to the tube, the NVS backs up into the patient's cheeks. Tracheostomy buttons can eliminate this problem by clearing the airway of the tube so that air can leak up through the vocal cords for speech, and the leak is compensated by increasing ventilator settings to maintain normal alveolar ventilation.

Conflicts of interest

The authors have no conflicts of interest to declare.

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Reply to “Misconceptions in the assessment of cough peak flow measurements for extubation or decannulation protocols”



We thank very much the comments of Chiou M et al. about our paper entitled “The value of cough peak flow measurements in the assessment of extubation or decannulation readiness” recently published in the Portuguese Journal of Pulmonology.¹

We agree with the authors that intubated patients cannot reproduce a true cough maneuver because they cannot close their glottises; so we explain that in our article saying that the “Cough PEF measured in intubated patients may be considered a “huff” or, perhaps, a peak expiratory flow maneuver and not a true peak cough flow”, so we clearly differentiate a Cough Peak Expiratory Flow (PEF) to a true Peak Cough Flow (CPF). In the conclusions we also state that: “Only when the measurement is obtained

with an active glottis should we call it cough peak flow, otherwise it should be termed cough PEF”. So we believe that in our paper we contributed to the clarification of the concept and to the standardization of the measurements. Moreover in Table I we summarized the papers designed to evaluate cough strength in the extubation or decannulation phases, differentiating each setting and the population is predominantly of critically ill. The context of neuromuscular patients is somewhat different and the measurements should also include CPF's obtained with enhancing maneuvers.

We agree with Chiou M et al. that the distinction between unassisted and assisted CPF is important and in fact Dr Bach's group was one of the first to propose in this setting the measurement of assisted CPF with an abdominal thrust timed to glottic opening.² In our review paper we also acknowledge this by saying that “if a spontaneous CPF of more than 160L/min is not achieved a manually assisted CPF or lung volume recruitment CPF should be evaluated”.¹ Unfortunately, only 4 papers published so far refer to this manually assisted coughing maneuver, and not all systematically report the values of assisted versus unassisted CPF.^{2–5} The fact that in these papers values are measured normally through the mouth and within 3 h of

extubation/decannulation, render comparisons more difficult.

However we would like to emphasize that measuring CPF should be seen as an important topic in this setting and all the professionals should follow the guidelines as they do it when evaluating a patient in a lung function lab. In our review we aimed to propose some recommendations for set-up and measurement of this parameter which is lacking in the current respiratory function manuals.

What Chiou M et al. state about decannulation protocols and cuffless tubes was really beyond our revision. However as we state in our article when measuring CPF, professionals should acknowledge the status of the tube, as the measurement can be different depending on if the tube is cuffed or uncuffed. Definitely, in tracheostomized patients the measurement of Cough PEF should be done with the cuff deflated.

With our paper, the final goal was to draw the attention of the pulmonologists as well as the intensivists to the importance of including cough strength measurements in the evaluation of extubation or decannulation readiness following a more homogeneous and standardized manner. New data is absolutely welcomed.

Conflicts of interest

The authors have no conflicts of interest to declare.

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