Comparison of Proportional Assist Ventilation plus, T-Tube Ventilation, and Pressure Support Ventilation as Spontaneous Breathing Trials for Extubation: A Randomized Study–Reply

In reply:

We appreciated the comments from Mathews et al regarding our article in RESPIRATORY CARE.[1] We would like to add some comments and clarify some issues about their opinions.

The study was randomized (as described in the methods section), and because of its characteristics, it could not be blinded. Therefore, the small differences between the groups were a result of randomization. However, the number of subjects included was enough to answer the main question and achieve our conclusions.

In the cited article, table 1[1] shows that the distribution of the subjects was broad, including neurological (trauma or non-trauma), medical, and surgical patients. The proposed classification by Mathews et al for "neurologic and non-neurologic" diseases sounds artificial, since it does not consider important clinical situations (such as COPD) and the fact that the neurological population can include young patients with traumatic brain injury and elderly patients with stroke.

According to the study protocol (see methods section), all subjects with COPD were placed on noninvasive ventilation immediately after extubation. This approach is reasonably well described in the literature.[2–4] The 15% extubation rate is in line with the international literature.[5] We should not compare oranges with apples: In Esteban et al[6] the failure rate was 25% of the total number of subjects, which is comparable with that found in our study.

The statistical analysis shows that all methods had comparable abilities to predict extubation success or failure, with values comparable with those in the literature.[7,8] The fact that the incidence of tracheostomy was larger in a group does not mean greater efficiency in predicting extubation failure or success: The decision to perform tracheotomy includes several issues, like consciousness level, underlying medical conditions, and etiology of respiratory failure.[9]

Therefore, Mathews et al share our conclusions, that proportional assist ventilation plus is a safe method and is efficient to perform a spontaneous breathing trial, comparable with other existing methods (T-tube and pressure support ventilation), and a clinical option for clinicians and respiratory practitioners in the ICU.

Erica F Osaku PT PhD
Intensive Care Unit
Western Paraná State University Hospital
Cascavel, Paraná, Brazil

Cláudia RLM Costa PT PhD
Intensive Care Unit
Western Paraná State University Hospital
Cascavel, Paraná, Brazil

Sandy N Teixeira PT
Intensive Care Unit
Western Paraná State University Hospital
Cascavel, Paraná, Brazil

Péricles AD Duarte MD PhD
Intensive Care Unit
Western Paraná State University Hospital
Cascavel, Paraná, Brazil

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FEV_1/FEV_6 May Misdiagnose Patients With COPD

To the Editor:

We read with great interest the paper by Wang et al[1] proposing the use of FEV_1/FEV_6 as a reliable index for diagnosing COPD. Although the utility of FEV_6 has been demonstrated in some clinical scenarios,[2,3] we are concerned that the current study reaches conclusions that may result in the misclassification of patients as having COPD.

Our main cause for concern is the authors' use of the fixed ratio of $FEV_1/FVC < 0.70$ as the standard against which the FEV_1/FEV_6 was compared. The authors recognize the potential problem of using the fixed cutoff to diagnose COPD, but this is of extreme importance in preventing misdiagnosis of COPD in older adults. Although there has been ongoing debate regarding the use of the fixed ratio, numerous studies have identified the problem of misclassification of older adults when the natural history of the decline in FEV_1 and FVC are not taken into account.[4-6] In addition, this paper used an $FEV_1 < 80\%$ predicted in conjunction with the faulty fixed ratio to define subjects who had COPD. For this purpose, the study used a predicted set derived from whites rather than from the local population. Defining the presence of moderate airway obstruction as an $FEV_1 < 80\%$ has been shown to misclassify subjects because of age, sex, and ethnicity biases, depending on the reference equations chosen.[7] Kim et al[8] showed that applying the third National Health and Nutrition Examination Survey (NHANES III) FEV_1 reference