Reviewer’s report

Title: Bench Experiments Comparing Simulated Inspiratory Effort when Breathing Helium-Oxygen Mixtures to that during Positive Pressure Support with Air

Version: 2 Date: 23 August 2012

Reviewer: Stefano Nava

Reviewer’s report:

I have a mixed feelings about this paper
Obviously it is a very difficult paper to read and understand by a "classical" clinician, and as a matter of fact the two reviewers are physiologists. Therefore I do not think that the paper will have a "strong" impact on our daily job
Having said that I mainly support the conclusions by the Authors about the concerns highlighted by rev.1. they are right about the important issue of flow limitation.
I guess the manuscript may be improved discussing that mechanical ventilation is used in circumstances where the mechanisms of airways obstruction is different from what postulated by rev.2, since there is an abrupt change in resistances that is mainly related to what the Authors claimed in their response. For the same reasons these patients respond very well to brochodilators, while in a stable phase they do not.
Conclusions: very difficult to read paper. Moderate interest in the daily practice. The response to the reviewers were good. I would NOT reject the manuscript based on rev.2 comments

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Declaration of competing interests:

I do not have a real conflict of interest, but I am part of the "external" jury for adjudication for a study sponsored by AirLiquide