Letter to the Editor

Oxygen Concentration's Effects on Respiratory Mechanics During Recruitment Manoeuvre

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(Received 4 July 2019; accepted 6 August 2019; published online 13 August 2019)

Associate Editor Stefan M. Duma oversaw the review of this article.

To the editor,

We read with great interest the recent work by Morton *et al.*¹ We would like to draw attention to the oxygen concentration used during the recruitment maneuver and its possible detrimental effects on respiratory mechanics. While the pressure values and times that were applied during the recruitment maneuver were given in detail, no information is provided on the gas concentrations used.

It is well known that if the gas mixture used in mechanical ventilation enters the blood faster than it is inspired in the lungs, absorption atelectasis forms. This mechanism could occur in the recruitment maneuver if high levels of oxygen are used, which would worsen respiratory mechanics in contradiction to the model predictions. However, lower oxygen concentrations are often not possible in critically ill patients who are often receiving higher oxygen concentrations out of necessity.

In order to prevent this problem, we suggest the following: monitor the pressure values and times, as well as concentrations of the gas mixtures that are used during the recruitment maneuver to hold the oxygen concentration at lower levels.

REFERENCE

¹Morton, S. E., J. L. Knopp, J. G. Chase, K. Möller, P. Docherty, G. M. Shaw, and M. Tawhai. Predictive virtual patient modeling of mechanical ventilation: impact of recruitment function. *Ann. Biomed. Eng.* 47:1626–1641, 2019.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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This comment refers to the article available at <https://doi.org/10.1007/s10439-019-02253-w>.