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Physiologically variable ventilation and severe asthma. Comment on *Br J Anaesth* 2020; 125: 1107–16

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Editor—I read with interest the article by Dos Santos Rocha and colleagues[1] on the use of physiologically variable ventilation to improve gas exchange in an experimental model of severe asthma compared with pressure-controlled ventilation. We thank the authors for citing a series of prior articles on variable ventilation, which we named biologically variable ventilation, as we described.[2] They showed improved gas exchange, ventilatory pressures, lung tissue mechanics, and reduced lung injury with physiologically variable ventilation when compared with pressure-controlled ventilation. They state that '…the benefits of physiologically variable ventilation in the context of acute asthma exacerbations have not been characterised'. This latter statement is not entirely correct. We examined this question in a porcine model of severe bronchospasm, work that Dos Santos Rocha and colleagues cite, and came to the conclusion that there are advantages with biologically variable ventilation very similar to those described in their publication on physiologically variable ventilation.[2]

Apart from a difference in nomenclature to describe variable ventilation, the first experimental use of this mode of ventilation in a model of severe asthma was much earlier than they suggest. The work by Dos Santos Rocha and colleagues provides an important contribution to this area. Their development of an immunologic model based on ovalbumin sensitisation combined with methacholine nebulisation to induce bronchospasm is an important next step as a translational confirmation for this ventilatory approach that supports our prior work.

Declarations of interest

The author declares that they have no conflicts of interest.

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