



How are Thermoregulation and Ventilatory Modes Linked? Some Methodological Views

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Dear Editor,

We have read with interest this original study, which analyzes two ventilatory modes and the regulatory effect on body temperature mediated by the levels of positive end expiratory pressure (PEEP) presented by the authors (1). The direct effect of PEEP in this relationship might be questionable since it is shown as the only responsible mechanism in this complex scenario (2). The authors also could not find this, and we believe that it has a significant impact on the prognosis of patients. Yet, there are some data, which are essential to be considered for better interpretation of the results.

The authors did not determine the type of humidification system that they have used during the study. We know that they can be either heated humidifiers in the breathing circuit or conventional filter humidification systems, and their ability to influence the body temperature is different (3).

Moreover, the system of control/analysis of the hemodynamic response in relation to the temperature used by the authors has limitations because it does not inform us about the essential parameters such as cardiac output and vascular resistance/peripheral constriction, which has an association with temperature (4). This would help us to understand the effects that the authors analyze in the study better.

Furthermore, the authors did not state the position of the operation table. In addition, the position of the patients and changes, if any, done during the surgeries need to be mentioned, as they can influence the thermoregulation, thus affecting the results (5).

We consider this study very interesting because of the impact of body temperature and its association with the ventilatory mode, but we believe that future studies should include a more direct method and other measurement elements of this association.

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Authors' Reply

RE: How Are Thermoregulation and Ventilatory Modes Linked? Some Methodological Views

Dear Editor,

We are very pleased that our study examining the relationship between thermoregulation and mechanical ventilation methods has been read and interpreted with such interest in the academic field (1). Perioperative heat loss is often overlooked but has significant negative effects (2).

The main basis of our study is that higher PEEP levels, which have been tested in previous studies, trigger earlier peripheral vascular vasoconstriction owing to the effects on peripheral return and, thus, lead to less heat loss through less thermal distribution in the periphery (3, 4). Our hypothesis also raised the question that lower tidal volume and lower total minute ventilation may affect the temperature loss via airways. However, in the study results, peripheral vasoconstriction time and heat loss were found to be similar in both ventilation methods.

As a criticism of our study, limitations of the research can be stated as follows: no humidification type was specified, the relationship between hemodynamic values and temperature was not taken into consideration, and no patient position was specified. However, we believe that these points did not affect the results as they were adjusted to be the same in both groups, thereby providing standardization of the study.

Although it was not mentioned in the criticisms of our study, the mainstay of the study was that the PEEP level could not

trigger the peripheral vascular response adequately in this patient group. The fact that there was no difference between the two groups indicates that higher PEEP values should be used instead of the PEEP level set to 5 mmH₂O, especially in overweight patients.

The subject of thermoregulatory changes owing to mechanical ventilation mode has not yet been adequately studied. Similar studies can be conducted with different PEEP levels or through different hypotheses.

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