COVID-19 pneumonia and ROX index: Time to set a new threshold for patients admitted outside the ICU. Author’s reply

We appreciate the interest of Gallardo et al. in our paper “COVID-19 Pneumonia and ROX index: Time to set a new threshold for patients admitted outside the ICU”.

Moreover, we used the same and therefore in the right context it should however, is not true in patients with COVID-19 regarding that the parameters that are evaluated can easily vary throughout the day or in different clinical situations (fever, mobilization, fatigue, pain, acidosis, hypotension). Nevertheless, our study assessed the ROX index 4 times in the first 24 hours, so that in this time frame it is very possible to detect any major clinical variation. Indeed, there are already on the market instruments able to monitor continuously this index, and therefore in the right context it should not be considered a static index.

Furthermore, we totally agree with the authors that a small effect may be observed in the ROX index using different flow in terms of the pressure effect in the airway and favour the lavage of the dead space or increased end-expiratory volume and decreased respiratory rate and work of breathing. Owing to the fact that the large majority of the studies have mainly used the setting at 50–60 L.min⁻¹ in patients with acute respiratory failure, we used the same flow rate in all patients so as not to bias the sample. Indeed, the index has been so far proposed only in hypoxic patients and some of these physiological mechanisms you are referring to are typical of hypercapnic patients (i.e. lavage of dead space). Also, the generation of airways pressure is never constant, despite the flow used. In other words, HFNC is not equivalent to CPAP in terms of pressure, as you stated. While HFNC controls the flow with a variable pressure, CPAP controls the pressure with a variable flow rate. Moreover, during HFNC, pressure is also strongly dependent on the closure of the mouth and on average quite small, not overpassing the limit of 4–5 cmH₂O.

In conclusion, above all, we would like to congratulate Gallardo et al who were able to clearly summarize in a few words which parameters to take into account when using the ROX index to monitor a patient with AHRF.

Conflicts of interest
The authors have no conflicts of interest to declare.

References


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Received 22 February 2022; Accepted 23 February 2022

Available online 4 March 2022