

Predictive factors for high-flow nasal cannula failure: Taking a closer look

Sir,

We have read with great interest the article by Lun *et al.*^[1] where the researchers evaluated the role of high-flow nasal cannula (HFNC) in adult patients with acute hypoxaemic respiratory failure (AHRF). The authors concluded that the respiratory rate-oxygenation (ROX) index at 12 h serves as a valuable tool to monitor the responsiveness to HFNC treatment.^[2] We consider that this article provides great information for clinical practice and the ability to detect situations of failure of the HFNC that avoid an increase in mortality. However, we consider that there are some aspects in this study that can be analysed to make a correct extrapolation of the results in clinical practice. These aspects deserve to be analysed.

1. Gas exchange- meaning of pH: In this model of factors associated with failure, it is interesting to know the value and meaning of higher pH on the day of HFNC commencement. As per recommendations from several societies, patients with a pH less than 7.30 should not be offered HFNC. Although the authors have provided a value of pH in the table (7.46 [7.42–7.49]), it does not appear to be the value at the time of commencement of HFNC.^[3] In the article, it is observed that the flow of HFNC at commencement in liters per minute (LPM) was 40 and this aspect could not be related to level of nasal high flow. We consider that it may be influenced by factors associated with an excess of hyperventilation or bicarbonate levels.
2. Non-invasive ventilation (NIV) versus oxygen therapy modalities before analysis. The authors considered the modality of O₂ delivery before HFNC. This is an important aspect that may impact the global results because we do not know if these elements can affect the value of ROX index in its predictive capacity in this study.^[4]
3. HFNC setting. Time from admission to HFNC in the intensive care unit (ICU). There was no difference in the time from admission to HFNC, that is, 1.01 (0.35–2.02) 0.68 (0.17–0.68) 0.422. This aspect is interesting because it is not addressed by previous studies, where the early use of HFNC is promoted. In this line, it is important to know that these results are analysed in patients in the ICU, and it is unknown what criteria were used by the authors for admission to the ICU and if they were applied outside the ICU as an equally predictive factor.^[5]

To conclude, the predictive factors mentioned by us in this letter also deserve attention because we believe it is important in arriving at a definitive conclusion.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Submitted: 21-Jan-2022 Revised: 23-Apr-2022

Accepted: 24-Apr-2022 Published: 01-Jul-2022

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Access this article online	
Quick Response Code: 	Website: www.lungindia.com
	DOI: 10.4103/lungindia.lungindia_51_22

How to cite this article: Nair AS, Esquinas AM. Predictive factors for high-flow nasal cannula failure: Taking a closer look. *Lung India* 2022;39:388.

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