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LETTER TO THE EDITOR

Escalation to high-flow nasal cannula oxygen in hematological malignancy: the right choice at the right moment?

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Dear editor,

We read with great interest the article of Tetlow et al. about the use of high-flow nasal cannula oxygen (HFNCO) in patients affected by hematological malignancy (1). The authors highlighted the effectiveness of HFNCO in these patients with a reduced admission in ICU. Notably, 20 out of the 87 patients admitted in ICU after a HFNCO trial needed noninvasive ventilation (NIV), which is, according to ERS/ATS guidelines, the first-line treatment in immunocompromised patients with acute respiratory failure (ARF) of different origins (2).

Some considerations have to be made to properly manage the ventilatory strategy in such a fragile population.

First, the presence of a critical care outreach service (CCOS) may allow a strict and professional monitoring of critical patients in the ward and the escalation from HFNCO to NIV could be performed in the ward itself. The feasibility of NIV in the wards has been largely demonstrated and SARS-CoV-2 pandemic, with the shortage of ICU beds, pushed many clinicians to get more confident with this type of ventilatory support. In this line, we consider that the escalation to ward-based NIV in immunocompromised patients should be assessed not only to avoid ICU bed occupancy but also because ICU admission increases the risk of infection, an aspect which should be of particular concern in this kind of population (3).

Furthermore, it is not clear in this study which evaluations guided the choice between HFNCO and NIV. We consider that it should not be based only on patient's tolerability of the device but on the evidence-based effectiveness of the two types of ventilatory support: in fact, while NIV has not so far proved to be superior to HFNCO in the management of hypoxemic respiratory failure, NIV should be preferred in respiratory failure due to cardiogenic pulmonary edema or in hypercapnic respiratory failure such as chronic obstructive pulmonary disease (2–4). Have authors considered these conditions in the analysis of patients' outcomes?

Additionally, it is important to know what was the correlation between the reasons for CCOS referral and HFNCO initiation: in fact, many conditions reported by Tetlow et al. seemed to cause dyspnea and increased work of breathing without an underlying respiratory disease, so ventilatory support cannot be supposed to substantially improve patient's outcome (5). Consequently, HFNCO and NIV failure should be analyzed on the basis of initial indication and the impact of a delayed intubation caused by HFNCO should be better addressed by authors.

Declarations

Ethics approval and consent to participate This article does not contain any studies with human participants or animals performed by any of the authors. Consent is not applicable as no humans are involved.

Conflict of interest The authors declare no competing interests.

References

1. Tetlow S et al (2022) High-flow nasal cannula oxygen in patients with haematological malignancy: a retrospective observational study. Ann Hematol 101(6):1191–1199. https://doi.org/10.1007/s00277-022-04824-9
2. Rochwerg B, Brochard L, Elliott MW, Hess D, Hill NS, Nava S, Navalesi P, Antonelli M, Brozek J, Conti G, Ferrer M, Guntupalli K, Jaber S, Keenan S, Mancebo J, Mehta S, Raoof S, Members Of The Steering Committee (2017) Official ERS/ATS clinical practice guidelines: noninvasive ventilation for acute respiratory failure. Eur Respir J 50(2):1602426. https://doi.org/10.1183/13993003.02426-2016

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3. European Centre for Disease Prevention and Control. *Surveillance report- annual epidemiological report for 2016 - healthcare-associated infections in intensive care units. Available at* https://ecdc.europa.eu/sites/portal/files/documents/AER_for_2016-HAI_0.pdf.
4. Frat JP, Thille AW, Mercat A, Girault C, Ragot S, Perbet S, Prat G, Boulain T, Morawiec E, Cottereau A, Devaquet J, Nseir S, Razazi K, Mira JP, Argaud L, Chakarian JC, Ricard JD, Wittebole X, Chevalier S, Herbland A, Fartoukh M, Constantin JM, Tonnelier JM, Pierrot M, Mathonnet A, Béduneau G, Delétage-Métreau C, Richard JC, Brochard L, Robert R, FLORALI Study Group; REVA Network (2015) High-flow oxygen through nasal cannula in acute hypoxemic respiratory failure. N Engl J Med 372(23):2185–96. https://doi.org/10.1056/NEJMoa1503326
5. Apostolo A, Giusti G, Gargiulo P, Bussotti M, Agostoni P (2012) Lungs in heart failure. Pulm Med. 952741. https://doi.org/10.1155/2012/952741