

* Corresponding author.
E-mail address: a.estebanmolina@hotmail.com
(A. Esteban Molina).

2173-5727/ © 2020 Elsevier España, S.L.U. and SEMICYUC. All rights reserved.

Indication of high-flow oxygen therapy in patients with SARS-CoV-2 pneumonia[☆]



Indicación de la oxigenoterapia de alto flujo en pacientes afectados de neumonía por SARS-CoV-2

To the Editor,

The SARS-CoV-2 pandemic, and the corresponding hypoxic acute respiratory failure (ARF) sustained by a high percentage of hospitalized patients have changed the recommendations established on the management of respiratory therapy.¹ High-flow oxygen therapy (HFOT) has been widely used as supplemental respiratory support therapy because it is easy to use, tolerate, and quickly improves both the clinical and gasometric situation of the patient.

Recommendations suggest the use of HFOT as a first-line therapy of non-invasive respiratory support even before non-invasive ventilation (NIV).¹ Such recommendation is based on the results of a French multicenter study that compared oxygen therapy, HFOT, and NIV.² Results showed a clear benefit towards HFOT vs NIV and oxygen therapy by reducing the 28-day rate of intubation, and the 90-day mortality rate at the intensive care unit (ICU) setting. In the methodology of NIV, there is a series of aspects that may have favored HFOT vs NIV: first, the interruption of NIV was established (8 hours [4–12] during the first day, and 8 hours [4–13] during the second) alternating with periods on HFOT. The transient weaning from NIV can lead to the alveolar derecruitment obtained with NIV, and consequently to the early stage of the disease, which is why several authors recommend keeping it going non-stop from the beginning.³ Secondly, the levels of PEEP used were 5 ± 1 cmH₂O that are somehow lower to those that have proven capable of improving oxygenation (10 cmH₂O).³

Yet despite these satisfactory results,² and the recommendation established,¹ the series published in the ICU setting of hypoxemic patients due to SARS-CoV-2 show a high rate of use (> 60%) followed by high rates of failure (85%).⁴ Probably the use of HFOT during the early stages of the respiratory process (especially at the hospitalization ward) is highly recommended. However, in patients who progress into acute respiratory distress syndrome (ARDS), and who require ICU admission and high PEEP levels, HFOT does not seem to be effective. In our series, HFOT was used to support weaning from NIV and only after stabilizing the patient,

not as the early therapy (except in one case) since most patients came from the hospitalization ward and had already been treated with NIV or HFOT, which is why NIV in mode of continuous positive airway pressure (CPAP) therapy was used.⁵

After studying the recommendation of use of HFOT we believe that a) the study that supported it has some deficiencies, which means that in the current clinical practice, its wide use has translated into a high rate of failure; b) the role of HFOT in the early stages of hypoxemia would be advisable (especially outside the ICU setting); however, beyond these early stages, its utility vs NIV has not been studied, which is why maybe a clinical trial that compared HFOT to NIV based on the aforementioned criteria would be necessary, and, finally, c) HFOT could play an essential role supporting the process of weaning from NIV.

References

1. Cinesi C, Peñuelas O, Luján M, Egea C, Masa JF, García J, et al. Recomendaciones de consenso respecto al soporte respiratorio no invasivo en el paciente adulto con insuficiencia respiratoria aguda secundaria a infección por SARS-CoV-2. *Med Intensiva*. 2020, <http://dx.doi.org/10.1016/j.medin.2020.03.005>.
2. Frat JP, Thille AW, Mercat A, Girault C, Ragot S, Perbet S, et al., for the FLORALI Study Group and the REVA Network. High-Flow Oxygen through Nasal Cannula in Acute Hypoxemic Respiratory Failure. *NEJM*. 2015;372:2185–96.
3. Brochard L, Lefebvre JC, Cordioli RL, Akoumianaki E, Richard JC. Noninvasive ventilation for patients with hypoxemic respiratory failure. *Semin Respir Crit Care Med*. 2014;35:492–500.
4. Rodríguez A, Moreno G, Gómez J, Carbonell R, Picó-Plana E, Benavent Bofill C, et al. Infección grave por coronavirus SARS-CoV-2: experiencia en un hospital de tercer nivel con pacientes afectados por COVID-19 durante la pandemia 2020. *Med Intensiva*. 2020, <http://dx.doi.org/10.1016/j.medin.2020.05.018>.
5. Belenguer-Muncharaz A, Hernández-Garcés H, López-Chicote C, Ribes-García S, Ochagavía-Barbarín J, Zaragoza-Crespo R. Eficacia de la ventilación no invasiva en pacientes ingresados por neumonía por SARS-CoV-2 en una unidad de cuidados intensivos. *Med Intensiva*. 2020, <http://dx.doi.org/10.1016/j.medin.2020.08.011>.

A. Belenguer-Muncharaz^{a,b,*}, H. Hernández-Garcés^a

^a Servicio de Medicina Intensiva, Hospital Universitario Dr. Peset, Valencia, Spain

^b Unidad Predepartamental Medicina, Facultad de Ciencias de la Salud, Universitat Jaume I (UJI), Castelló de la Plana, Spain

* Corresponding author.

E-mail address: belengueralberto8@gmail.com
(A. Belenguer-Muncharaz).

2173-5727/ © 2021 Published by Elsevier España, S.L.U.

[☆] Please cite this article as: Belenguer-Muncharaz A, Hernández-Garcés H. Indicación de la oxigenoterapia de alto flujo en pacientes afectados de neumonía por SARS-CoV-2. *Med Intensiva*. 2022;46:111–111.