SHAREABLE PDF

High-flow nasal cannula for COVID-19 patients: low risk of bio-aerosol dispersion

Jie Li [1], James B. Fink[1] and Stephan Ehrmann[2]

Affiliations: [1]Dept of Cardiopulmonary Sciences, Division of Respiratory Care, Rush University Medical Center, Chicago, IL, USA. [2]CHRU Tours, Médecine Intensive Réanimation, CIC INSERM 1415, CRICS-TriggerSep network, Tours France; and INSERM, Centre d'étude des pathologies respiratoires, U1100, Université de Tours, Tours, France.

Correspondence: Jie Li, 1620 W Harrison St, Tower LL1202, Chicago, IL 60612, USA. E-mail: Jie_Li@rush.edu

@ERSpublications
Bio-aerosol dispersion *via* high-flow nasal cannula shows a similar risk to standard oxygen masks. High-flow nasal prongs with a surgical mask on the patient's face might benefit hypoxaemic COVID-19 patients without added risk for the environment. https://bit.ly/34p7Fyy

Cite this article as: Li J, Fink JB, Ehrmann S. High-flow nasal cannula for COVID-19 patients: low risk of bio-aerosol dispersion. *Eur Respir J* 2020; 55: 2000892 [https://doi.org/10.1183/13993003.00892-2020].

To the Editor:

Human-to-human severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission has been established, with >3300 clinicians reported to be infected in China and >1116 clinicians infected in Italy, where 13 882 cases were confirmed by 13 March 2020. Room surfaces in the vicinity of coronavirus disease 2019 (COVID-19) symptomatic patients and clinicians' protective equipment were found to be contaminated [1]. The primary strategy for COVID-19 patients is supportive care, including oxygen therapy for hypoxaemic patients, in which high-flow nasal cannula (HFNC) has been reported to be effective in improving oxygenation. Among patients with acute hypoxaemic respiratory failure, HFNC was proven to avoid intubation compared to conventional oxygen devices [2, 3]. However, there is an important concern that HFNC may increase bio-aerosol dispersion in the environment due to the high gas flow used. The increased dispersion might favour transmission of infectious agents (such as SARS-CoV-2) carried in aerosol droplets generated by the infected patient. This concern is reflected in the limited use of HFNC in the first clinical study reporting 21 patients with COVID-19 in Washington State (USA), where only one patient used HFNC [4]. In contrast, a broad utilisation was observed in the study by Yang *et al.* [5] from Wuhan, China, where 33 out of 52 intensive care unit (ICU) patients were treated with HFNC.