Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Correspondance

Letter to the Editor in response to the article: "Nebulization: a potential source of SARS-CoV-2 transmission"

Dear Editor:

A recent editorial in Respiratory Medicine and Research entitled "Nebulization: a potential source of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission" by G Reychler et al. [1] itemized a series of concerns using nebulizers for drug delivery, to which we feel some additional perspective is needed. Current use of nebulized therapy must be placed within the context of treatments used early during the current pandemic and how a patient's condition and setting should dictate the manner in which nebulized therapy should be prioritized.

In the early stages of the pandemic, some cases of SARS-CoV-2 transmission in healthcare facilities occurred because healthcare providers (HCPs) were not properly protected at the time of patient admission [2]. First and foremost, when an individual enters a hospital or clinic for treatment, HCPs should strictly adhere to measures that prevent the transmission of the virus to themselves and others.

The SARS-CoV-2 pandemic has upended how HCPs approach the treatment of patients with respiratory diseases. Although the risk of exposure to SARS-CoV-2 by HCPs is a primary concern, it is also important to keep in mind that there is a need to provide appropriate therapy for patients with a respiratory disease. In some patients, nebulized therapy is the only option available for their inhaled medications. In the current situation, patients with coronavirus disease 2019 (COVID-19) and comorbid with respiratory disease may be provided hand-held devices, such as metered-dose inhalers (MDIs), for the delivery of their respiratory medications, as an alternative to nebulized therapy. Patients unaccustomed to MDIs or those unable to appropriately use MDIs may not receive appropriate pharmacological therapy from their hand-held inhalers [3]. Patients with poor inhalation-actuation coordination, insufficient inspiratory strength, or other physical or mental impediments may also not derive the full benefits of MDIs. Therefore, nebulized therapy is another option for these patients.

The use of nebulized therapy must be placed within the patient's treatment setting and the potential risk of virus transmission. For a patient in the home setting known to be uninfected with SARS-CoV-2, there are no known risks of SARS-CoV-2 infection or transmission that prevent the routine use of nebulizer medications. From the standpoint of a patient at home with COVID-19 on nebulized therapy, there are no known additive hazards from the nebulizer to that patient. However, to prevent transmission of SARS-CoV-2 to others, this patient must adhere to quarantine guidelines and take extra precautions, such as avoiding the use of a nebulizer in the presence of other people and undergoing their treatments in well-ventilated areas outside the living quarters. The nebulizers should also be cleaned and disinfected or sterilized according to the manufacturer's instructions after each use [4]. The use of a filter with the nebulizer may limit the risk of virus transmission, although this matter has not been settled [3]. The most current recommendation by the National Institute for Health and Care Excellence [5], the United Kingdom public health guidance [6], and the International Society of Aerosols in Medicine [4] is that patients can continue the use of their nebulized therapies because the aerosol produced by the nebulizers originates from the fluid in the nebulizer chamber and will not carry virus particles, and thus would not pose a significant risk of SARS-CoV-2 transmission. For all patients at home, it is imperative that they keep their symptoms under control with maintenance medications. Loss of disease control can provoke exacerbations that can adversely impact a patient's health status and lead to disease progression. These can increase the rate of hospitalization [7], thus taxing an already burdened healthcare system. In addition, hospitalization puts the uninfected patient at increased risk of nosocomial SARS-CoV-2 infection, while infected patients could pose additional COVID-19 risk to hospital staff.

In a healthcare facility setting, until a patient is proven to be free of any SARS-CoV-2 infection, HCPs should maintain strict measures that protect themselves from potential viral infection, including the use of personal protective equipment in the presence of all patients. Barring the use of any other treatment alternatives, if the patient does require nebulized treatment, the individual should be placed in a negative pressure room before nebulized therapy is initiated. All HCPs in the vicinity also must continue using their personal protective equipment and observe sanitization protocols.

It is imperative that people with respiratory disease be able to maintain their therapy to prevent exacerbations, thereby reducing the risk of hospitalization and nosocomial SARS-CoV-2 infection. Although we agree that all measures should be undertaken to prevent the spread of SARS-CoV-2 to HCPs, it is also important to keep in mind that there is still a critical role for nebulized therapy. Overly broad and sweeping guidelines that could lead to inadequate treatment for many patients with respiratory disease should not supplant the patient-centric care that we have highlighted.

Disclosure of interest

Antonio Anzueto has served as a consultant to Theravance Biopharma US, Inc., Mylan, AstraZeneca, Pfizer, GlaxoSmithKline, Novartis, Boehringer-Ingelheim.

Hugh Smyth holds stock in, serves on an advisory board for, or is a consultant for Respira Therapeutics, Nob Hill Therapeutics, and Via Therapeutics. The terms of this arrangement have been reviewed and approved by the University of Texas at Austin in accordance with its policy on objectivity in research. He has also received research funding, reimbursement, research gifts, or other support from: Amgen, ACG, Genentech, Xeris, Septum, Teva, Mylan, RCI Pharma, Elite Ambulatory, State Farm, Brickell Biotech, Meda Pharmaceuticals.

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