

# GUIDANCE SUPPORTING AEROGEN/CLOSED CIRCUIT

## GOLD Science Committee Report<sup>1</sup>

"Nebulizers may be needed in critically ill patients with COVID-19 receiving ventilatory support. In this case, it is **vital to keep the circuit intact** and prevent the transmission of the virus. **Using a mesh nebulizer** in ventilated patients allows adding medication without requiring the circuit to be broken for aerosol drug delivery."



## Chinese Respiratory Care Committee<sup>2</sup>

For mechanically ventilated patients COVID-19 patients, it is recommended to use a **vibrating mesh nebulizer**.

## ISAM Interim Guidance<sup>3</sup>

Aerosol delivery guidance: **Vibrating mesh nebulizers sit above the circuit**.  
Vibrating mesh nebulizers maintain pressure **without breaking the circuit**.  
No use of external gas flow.



## Spanish Expert Clinical Consensus<sup>4</sup>

"If aerosol therapy is used, **vibrating mesh nebulizers** with adaptation to the elbow of the interface is the option of choice. As a second option we can use a **vibrating mesh nebulizer** with a T-piece fitted to the NIMV\* circuit. Since this is a 'closed system', there is no dispersion into the environment provided leakage at the mask periphery is well controlled."

\*non-invasive mechanical ventilation which includes NIV + HFNC

## AARC Guidance<sup>5</sup>

"If a nebulizer must be used during mechanical ventilation, a **closed system that does not break the circuit** is desirable."



## Indian Chest Society Guidance<sup>6</sup>

"**Avoid the use of jet nebulizer of pMDIs** for aerosol delivery to ventilator-dependent patients with COVID-19 due to the breakage of the circuits for the placement of the device before aerosol therapy."

## Indian Position Statement<sup>7</sup>

"In a ventilated patient, use of pMDI or a jet nebulizer will require disruption of closed circuit and therefore cannot be recommended."

**Mesh nebulizers should be used** whenever an aerosolized drug is to be delivered.



1. Halpin DMG et al. Global Initiative for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease: The 2020 GOLD Science Committee Report on COVID-19 & COPD. Am J Respir Crit Care Med. 2020 Nov 4. doi: 10.1164/rccm.202009-3533SO. Epub ahead of print. PMID: 33146552 2. Chinese Respiratory Therapy Group, Chinese Medical Association Respiratory Branch. Chinese J Tuberc Respir Med 2020; 17: 1–12. 3. Fink, J. B. et al.Reducing Aerosol-Related Risk of Transmission in the Era of COVID-19: An Interim Guidance Endorsed by the International Society of Aerosols in Medicine. J. Aerosol Med. Pulm. Drug Deliv.33, 2020 4. Cinesi Gómez C, Peñuelas Rodríguez Ó, Luján Torné M, Egea Santaolalla C, Masa Jiménez JF, García Fernández J et al. Clinical consensus recommendations regarding non-invasive respiratory support in the adult patient with acute respiratory failure secondary to SARS-CoV-2 infection. Med Intensiva 2020. doi:10.1016/j.medin.2020.03.005. 5. American Association for Respiratory Care SARS CoV-2 Guidance Document. <https://www.aarc.org/wp-content/uploads/2020/03/guidance-document-SARS-COVID19.pdf> (accessed 13 Jul2020). 6. Swarnakar R, Gupta N, Halder I, Khilnani G. ICS guidance for nebulization during the COVID-19 pandemic. Lung India 2020; 7. Kumar GP, Kulkarni AP, Govil D, Dixit SB, Chaudhry D, Samavedam S et al. Airway Management and Related Procedures in Critically Ill COVID-19 Patients: Position Statement of the Indian Society of Critical Care Medicine. Indian J Crit Care Med 2020; 24: 630–642.

# PUBLICATIONS SUPPORTING AEROGEN/CLOSED CIRCUIT

Ari A, 2020<sup>1</sup>

Respiratory Medicine Journal

“Do not use a jet nebulizer or pMDIs for aerosol delivery to ventilator-dependent patients with COVID-19 due to the breakage of the circuits for the placement of the device before aerosol therapy.”

No break in vent circuit.



Miller A, 2020<sup>2</sup>

Journal Critical Care Medicine

Letter to the editor Journal of Critical Care.

“[Aerogen] closed system requires minimal staff handling and no circuit opening, thereby reducing workload and increasing safety.”



Kumar S, et al. 2020<sup>3</sup>

Expert Review Respiratory Medicine

Use of jet nebulizers or pMDIs should be avoided due to the breakage of the circuit required for the placement of the devices.

Mesh nebulizers must be used as their design allows medication to be added without breakage of the circuit.



Kaur R, et al. 2020<sup>4</sup>

Critical Care

Mesh nebulizers can reduce the need to break the ventilator circuit when nebulization is provided during invasive ventilation.



For more information visit:

[www.aerogen.com/covid-19](http://www.aerogen.com/covid-19)

1. Ari A. Practical strategies for a safe and effective delivery of aerosolized medications to patients with COVID-19. *Respir Med* 2020; 167: 105987. 2. Miller A, Epstein D. Safe bronchodilator treatment in mechanically ventilated COVID-19 patients: A single center experience. *J. Crit. Care*. 2020; 58: 56–57. 3. Kumar S, Mehta S, Sarangdhar N, Ray A, Sinha S, Wig N. Management of COVID-19 from the pulmonologist's perspective: a narrative review. *Expert Rev Respir Med* 2020; : 17476348.20211853529. 4. Kaur R, Weiss TT, Perez A, Fink JB, Chen R, Luo F et al. Practical strategies to reduce nosocomial transmission to healthcare professionals providing respiratory care to patients with COVID-19. *Crit. Care*. 2020; 24: 571.

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