



Invasive Mechanical Ventilation

DL-46940-2021

COVID-19

There has been extensive discussion on what the right approach to mechanical ventilation in patients with COVID-19 related ARDS would be. Currently it seems to be consensus that type L and type H phenotypes should not be used to guide clinical practice¹. As large randomized studies on the invasive ventilation for COVID-19 patients are still missing, most recommendations for ventilation therapy are derived from the known recommendations on the ventilation for non-COVID-19 ARDS from published guidelines. The following measures are recommended from at least one of the reviewed guidelines.



TIDAL VOLUME:

6ml/kg IBW, slight differences exist between the reviewed guidelines¹

ENDINSPIRATORY AIRWAY PRESSURE:

<30cmH₂O^{1,2}

PEEP:

- High PEEP/FiO₂ table in moderate to severe ARDS¹
- Low PEEP/FiO₂ table might be reasonable in early phase without consolidation¹

RECRUITMENT MANEUVERS:

Only as rescue maneuver in severe cases if hypoxemia persists despite optimized ventilation.^{1, 2, 3*}

- Maintain SaO₂ ≤96%
- Suggested for patients with SaO₂ <92%
- Recommended for patients with SaO₂ <90%

Prone



PRONE POSITION

Generally recommended by all reviewed guidelines.

- PaO₂/FiO₂ <150 as threshold for consequent proning¹
- Guidelines recommend duration of proning 12-16 hours/day^{1, 2, 3*}



NEUROMUSCULAR RELAXATION

Inconsistent across reviewed guidelines.

The Surviving Sepsis Campaign guidelines recommends continuous infusion for up 48h as rescue maneuver in patients with persistent ventilator dyssynchrony, need for ongoing sedation, prone ventilation or persistently high plateau pressures.² The Australian National COVID-19 Clinical Evidence Taskforce recommends against continuous infusion, except for patients in which protective ventilation cannot be achieved.³

NITRIC OXIDE

Inconsistent across reviewed guidelines.

- German S3 guideline: Consider NO as rescue therapy in severe cases¹
- The Surviving Sepsis Campaign guidelines recommends against the use of NO².

In our article on ventilating patients with COVID-19-associated ARDS, we review the relevant literature and four current guidelines to provide a practical overview. For details, please visit our website:

www.draeger.com/covid-ventilation





Disclaimer: The information on this document is based on a series of articles that can be found on the website indicated in this document. This series of articles has been prepared in good faith based on current literature and opinions of clinical experts. It is not a summary of all available literature and therefore does not claim to be complete. The information in this article series should not be used as the basis for clinical decisions. Clinicians should consider the original references and must adhere to national/local guidelines and standards of care, as well as consider relevant literature.

REFERENCES

1. Surviving Sepsis Guidelines on the Management of Adults with Coronavirus Disease 2019 (COVID-19) in the ICU: First Update; March 2021; doi: 10.1097/CCM.0000000000004899. Reference in main article: 35

3. Australian guideline for clinical care of people with COVID-19, National COVID-19 Clinical Evidence Taskforce (Link). Reference in main article: 37

2. German S3 Guideline – Recommendations for the therapy of hospitalised patients with COVID-19, Version 4.1, February 2021. Reference in main article: 34

Editing status: 2021-08-12