

# **Tracheostomy in the intensive care unit:** guidelines during COVID-19 pandemic

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## Background

About 3.2% of COVID-19 patients require intubation ventilation invasive and

Tracheostomy:

- Useful weaning method in critically ill patients
- Associated with increased production of aerosols
- High risk of virus transmission to health care

# **Methods**

A multidisciplinary consensus group was created to update previous knowledge on performing tracheostomy in critically ill adult patients amidst the SARS-CoV-2 pandemic.

Published evidence was collected using a narrative search and review of published studies. The MeSH terms used in both Spanish and English were coronavirus, COVID-19, SARS-CoV-2, SARS, severe acute respiratory syndrome, tracheostomy technique, virus transmission, aerosolization, and personal protection equipment (PPE).

#### personnel

This study aimed to describe indications and techniques for tracheostomy recommended in COVID-19 patients, emphasizing patient safety, but also, medical team security.

The evidence was reviewed, and recommendations formulated.

### Results

A guideline comprising indications, surgical technique, ventilator settings, PPE and timing of tracheostomy in COVID-19 patients was developed.

### Main recommendations

- The decision to perform a tracheostomy ought to be agreed between the surgical team and the critical care medical team and/or anesthesiologists
- Tracheostomy should be considered in patients with respiratory and ventilatory stability, and preferably with negative COVID-19 tests
- Strictly adhere to the procedures for placement and removal of PPE based on institutional protocols
- Tracheostomy should be considered in patients with COVID-19 in who are expected to obtain a substantial benefit, assessing the high infectious risk to which the acting team is exposed
- Avoid tracheostomy in SARS-CoV-2 positive patients or suspected COVID-19 during periods of respiratory instability or increased dependency on the ventilator
- Limit the number of health workers participating in the procedure (2) and in post-procedure airway management
- A percutaneous technique ought to be used to avoid unnecessary transfers outside ICU
- Mechanical ventilation settings:
  - VCV mode
  - Tidal volume: 6-8 ml/kg IBW Ο
  - FiO2 100% PEEP tiritation Ο
  - Target deep sedation + neuromuscular blockade: RASS -5 Ο
  - Induced apnea cycles (with necessary pre-oxygenation) Ο
- Single-use video bronchoscope is recommended to reduce the risk of inadverted injuries to the posterior wall of the trachea, and also to avoid cross-contamination
- Bronchoscopy:
  - Mount catheter to maintain ventilation while performing bronchoscopy
  - Both operators (surgeon and bronchoscopist) should have a Ο clear view of the bronchoscope screen
  - Preliminary bronchial toilet is recommended to further Ο optimize bronchoscopic vision
  - Post-procedure bronchoscopic control Ο
- Keep the tracheostomy cannula cuff properly inflated after the procedure to avoid leakage
- Avoid circuit disconnections and minimize secretions aspiration through the closed circuit
- Fit a heat and moisture exchange filter when the tracheostomy tube is disconnected from mechanical ventilation
- Delay routine changes to the tracheostomy cannula until the COVID-19 test is negative



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