Covid 19: Intubation, Ventilation & Extubation in OR/ICU Checklist & Protocol

Dept of Anaesthesiology, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Trivandrum, Dept of Science & Technology, Govt of India

Drug cart for Intubation

Propofol: 2 mg/kg IV or Ketamine: 2 mg/Kg IV
Rocuronium: 1mg/Kg IV or Scoline: 1.5-2 mg/Kg IV for RSI
Glycopyrrolate:0.004 mg/Kg IV
Phenylephrine: 1-2 mcg/Kg IV boluses
Morphine: 0.1-0.2 mg/Kg Iv boluses (for maintenance)
Fentanyl: 1-2 microg/ Kg IV boluses (for intubation)
Dexmeditomedine 0.3-0.5 mcg/Kg/Hr
Noradrenaline / Adrenaline: 0.02 mcg/Kg/min

Pre intubation/induction preparation

Anaesthesia/ Intubating personnel in full PPE (well fitting N95 mask, goggles+ face shield, splash resistant gown, boot covers, double gloves)
Patient should wear a mask
When intubated patient being transferred to ICU or transfer from one circuit / ventilator to other, avoid disconnections in patient's breathing circuit & precautions to be observed whenever the ETT is disconnected:

- Put the ventilator on stand by to turn off flows
- Clamp ETT with forceps to prevent aerosolization

Extubation

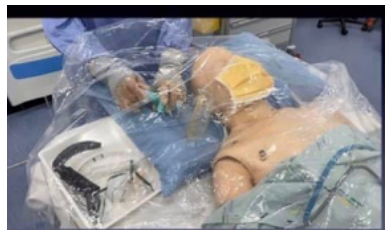
Prophylactic anti emetic
Adequate Pain management: Morphine/ Fentanyl boluses
All efforts to prevent coughing
Aerosol generation should be prevented: Extubation under transparent sheet
O2 by Nasal cannula / face mask
NIV or High flow O2 can cause aerosol generation
Proper doffing and Hand hygiene after each step

Airway Trolley

Video laryngoscope
Sterile plastic covers: protecting monitors, ventilator or anaesthesia machine and cable covering the laryngoscope handle
One Stylet
Appropriate size cuffed tube
10 ml syringe for cuff inflation
Oral Suction catheter
HEPA shield antiviral filter (to connect to ETT)

Induction & Intubation

- Minimize number of people in the OR/ intubation area: Technician/assistant to keep a distance of 2m from patient
- Monitor vitals: HR, SpO2, NIBP
- Pre oxygenation with O2 (5l/min) for 5 minutes
- Rapid sequence induction/intubation
- No bag mask manual ventilation (ventilator mode can be used with small tidal volume)
- Intubating dose of Rocuronium or Suxa should be given along with propofol or ketamine: Intubate after 90 seconds (prevent coughing)
- Indirect laryngoscopy with video laryngoscope & intubation under the transparent plastic sheet on the patient
- Inflate the ETT cuff immediately after tube placement
- HEPA shield antiviral filter connected to ETT & then connect ventilator breathing circuit, ETCO2 to confirm ETT placement

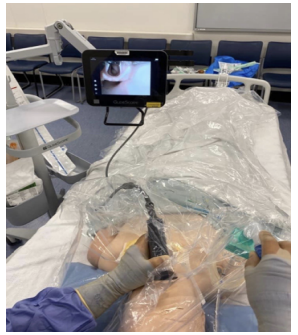


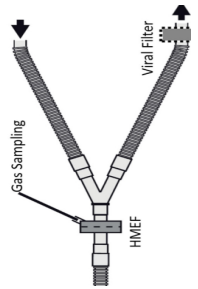
Don'ts

Bag-Mask ventilation, NIV
Open suctioning
FOB, Supraglottic airway devices
Circuit disconnection
Nebulization

Ventilator / Anaesthesia machine

Self test passed ventilator with breathing circuit
Viral filter at the end of expiratory limb
Humidifier
Face mask
Airways





Courtesy Draeger Medical

Ventilation strategy

- Lung protective ventilation strategies (prevent volu-baro lung injury)
- Small tidal volume:6 ml/Kg (Predicted body wt= Ht in cm- 100 in males & Ht- 110 in females) / Low flow anesthesia in OR
- Plateau pressure </= 30 cm H2O
- PEEP= 10-15 mm Hg, Adjust FiO2 accordingly to achieve reasonable PaO2 (>60 mm Hg)
- Target SaO2 88-95%
- pH >/= 7.25 (Permissive Hypercapnia)
- Closed suction system
- Ventilator alarm trouble shooting (Breathing circuit leaks or disconnection, airway pressures etc)
- Rule out pneumothorax if there is difficulty in ventilation

Images courtesy Web

Approved by Covid Cell, SCTIMST 30-03-2020