

Weaning, Extubation, Tracheostomy

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ABSTRACT

The novel corona virus disease 2019 (COVID-19) pandemic has spread rapidly to all continents around the globe and became a serious health problem for most of the countries. Most of the people develop mild or moderate disease but approximately 5% of all COVID-19 patients have critical disease needing intubation and ventilatory support. Proper weaning and extubation of these patients are crucial steps in order to prevent secondary infections and mortality. In this section weaning, extubation and tracheostomy of COVID-19 patients are reviewed.

Keywords: COVID-19, Intensive Care, Weaning, Extubation

Introduction

The novel corona virus disease 2019 patients who are in need of invasive ventilatory support can remain intubated approximately around 10-12 days (1). Extubation and tracheostomy procedures are evaluated within the scope of procedures that create high-risk aerosol formation. Therefore, it is recommended that these procedures be carried out using maximum personal protective equipment (N95 or equivalent mask, gloves, goggles / face protective equipment, bonnet, apron) in negative pressure rooms (2,3). Currently, no specific weaning protocol has been defined for COVID-19 patients. When the clinical and laboratory parameters of the patients are appropriate, standard weaning procedure should be applied (4,5). Due to the limited benefit of non invasive ventilation (NIV) treatment in hypoxemic respiratory failure, extubation decision should be carefully made in terms of re-intubation risk. Since tracheostomy procedure is risky in terms of aerosol formation, it should be considered if the patient's clinical condition completely resolves, viral contamination disappears and only the need for ventilatory support continues (3). Below are some recommendations according to the current literature for the weaning of these patients:

Standard weaning procedures should be applied during weaning. Patient's readiness to extubation should be evaluated with daily sedation interruptions and spontaneous breathing trials (SBT). Instead of T-piece, closed system circuits (5-8 cm H₂O of pressure support) should be used for SBT. Since high flow oxygen and NIV treatments may be risky in terms of virus aerosolization, these patients should be closely monitored for extubation failure. The cuff leak test can be routinely performed in high-risk patients (intubation >6 days, age >80, wide endotracheal tube, traumatic intubation), if possible, in a negative pressure room. Extubation should be performed in a negative pressure isolated room if possible. intensive care unit staff should wear personal protective equipment (N 95 or equivalent mask, gloves, goggles / face protective equipment, bonnet, apron) in accordance with the risk of aerosol-forming processes. After extubation, oxygen should be applied to the patient with a nasal cannula under a surgical mask. As tracheostomy is a high risk aerosol-forming procedure, it should not be planned so early and should be evaluated on a patient-by-patient basis. It is recommended to perform after the patient becomes noninfectious.

Conclusion

Standard weaning and extubation procedures should be used for COVID-19 patients. Tracheostomy should be performed after the patient becomes noninfectious if possible. All these procedure should be done with personal protective equipments because of their aerosol- forming features.

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