Summary of Recommendations for Respiratory/Intensive critical care

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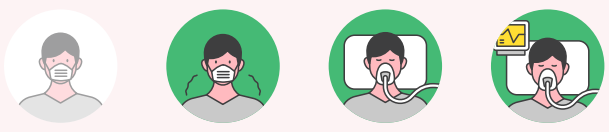
NECA National Evidence-based Healthcare Collaborating Agency

Korean Academy of Medical Sciences

Therapeutic dose of anticoagulant

Revision Dec 2022



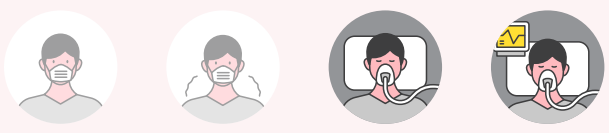
D Strongly against | C Conditionally against | I Inconclusive | **B Conditionally Recommend** | A Strongly recommended

For severe patients with COVID-19 who require intensive care, we suggest the use of prophylactic-dose heparin (unfractionated or low molecular weight heparin). For patients who do not require intensive care, we suggest the use of therapeutic-dose heparin (unfractionated or low molecular weight heparin) unless a contraindication to such therapy exists.

Clinical considerations:
The anticoagulant dose should be determined based on the individual patient's risk of clot formation and bleeding.

Early intubation

Revision Apr 2022

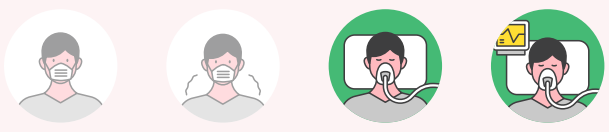


D Strongly against | C Conditionally against | **I Inconclusive** | B Conditionally Recommend | A Strongly recommended

We are unable to make a recommendation for or against the early intubation in patients with COVID-19 who are admitted to the intensive care unit due to insufficient evidence on its efficacy and safety.

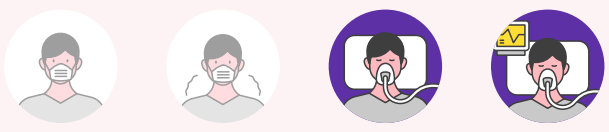
Extracorporeal membrane oxygenation (ECMO)

Revision Apr 2023



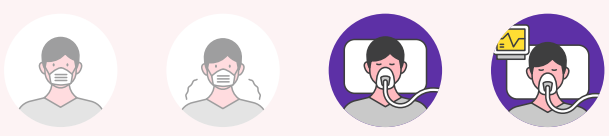
D Strongly against | C Conditionally against | I Inconclusive | **B Conditionally Recommend** | A Strongly recommended

1. For patients with severe acute respiratory distress syndrome caused by COVID-19, we suggest veno-venous ECMO (vv-ECMO) if severe hypoxemia fails to improve despite appropriate lung-protective ventilation strategies and prone positioning*.
   * The decision to place a patient in a prone position before ECMO should be based on a consideration of the patient's benefits and harms of the procedure, as well as the intensive care unit resources.



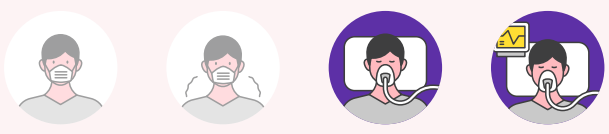
Expert consensus

2. For patients with COVID-19, we recommend vv-ECMO if the PaO_2/FiO_2 (P/F ratio) is < 50 mmHg for more than 3 hours or < 80 mmHg for more than 6 hours.



Expert consensus

3. For patients with COVID-19, we recommend transfer to a hospital capable of performing ECMO when hypoxemia (criteria: P/F ratio 150mmHg) is likely to deteriorate after appropriate treatments and ECMO is not available in the current center.

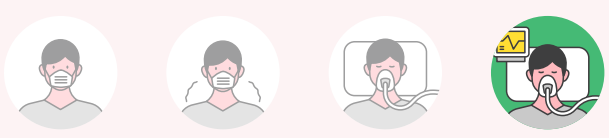


Expert consensus

4. For patients with COVID-19, age of 70 years or older, especially advanced frailty and comorbidities, are risk factors for death after ECMO. Therefore, we recommend to carefully consider the benefits and harms of ECMO application before deciding to apply ECMO.

Positive end expiratory pressure (PEEP)

Revision Oct 2022



D Strongly against | C Conditionally against | I Inconclusive | **B Conditionally Recommend** | A Strongly recommended

For patients with severe acute respiratory distress syndrome caused by COVID-19, we suggest a high-PEEP strategy rather than low-PEEP strategy.

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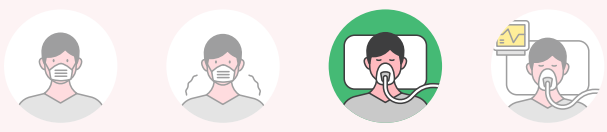
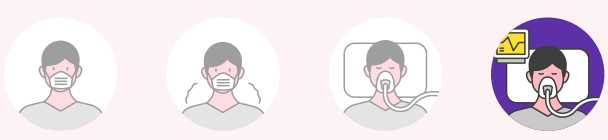
Prone position

Revision Jan 2023



D Strongly against | C Conditionally against | I Inconclusive | **B Conditionally Recommend** | A Strongly recommended

1. For patients with COVID-19 receiving high flow nasal cannula (without mechanical ventilation) or non-invasive ventilation, we suggest awake prone positioning.

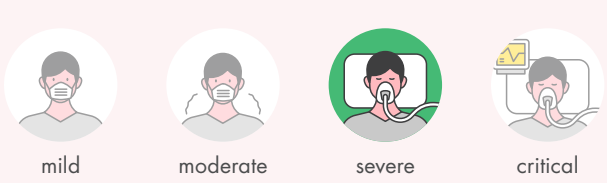


Expert consensus

2. For patients with moderate-to-severe acute respiratory distress syndrome by COVID-19 who are receiving invasive mechanical ventilation, we recommend the application of prone positioning.

High-flow nasal cannula (HFNC)

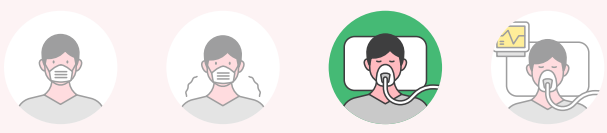
New Dec 2022



D Strongly against | C Conditionally against | I Inconclusive | **B Conditionally Recommend** | A Strongly recommended

1. For patients with acute hypoxemic respiratory failure by COVID-19, we suggest the use of HFNC therapy, rather than conventional oxygen therapy.

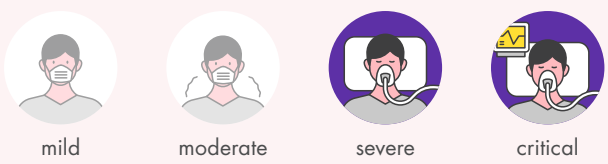
   Clinical considerations:
   The selection of an appropriate oxygen therapy modality for patients with acute hypoxemic respiratory failure by COVID-19, should be based on factors such as equipment availability, medical staff expertise, patient-specific considerations, and patient's convenience.



D Strongly against | C Conditionally against | I Inconclusive | **B Conditionally Recommend** | A Strongly recommended

2. For patients with acute hypoxemic respiratory failure by COVID-19, we suggest the use of HFNC therapy or non-invasive mechanical ventilation as determined by medical staff, depending on the patient's condition.

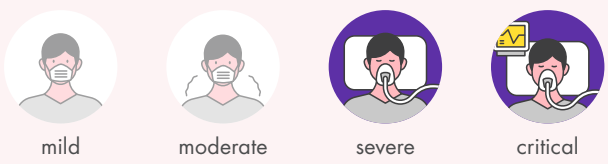
   Clinical considerations:
   In South Korea, HFNC may be the preferred treatment option for patients with acute hypoxemic respiratory failure due to greater medical staff experience with this modality, compared to Europe or China. However, non-invasive mechanical ventilation may be more appropriate for patients with respiratory failure accompanied by hypercapnia or pulmonary edema. The selection of an appropriate oxygen therapy modality should consider the experience of the medical staff, patient adaptability, and patient-specific considerations, such as the presence of claustrophobia.



Expert consensus

3-1. We recommend prompt initiation of invasive mechanical ventilation in patients with COVID-19 and progressive acute hypoxemic respiratory failure if their respiratory failure worsens despite HFNC therapy

   Clinical considerations:
   HFNC therapy is not a replacement for endotracheal intubation and mechanical ventilation in patients who require these procedures. Delaying endotracheal intubation due to HFNC use may increase mortality risk. If acute hypoxemia worsens with PaO_2/FiO_2 less than 150 mmHg despite HFNC therapy, prompt endotracheal intubation should be performed. Predictors such as the respiratory rate-oxygenation (ROX) index or modified ROX index can guide the decision to switch from HFNC to invasive mechanical ventilation, but continuous monitoring of the patient's condition is necessary due to the difficulty of predicting patient prognosis based on these predictors alone.



Expert consensus

3-2. We suggest HFNC therapy as an alternative to invasive mechanical ventilation in patients with acute hypoxemic respiratory failure by COVID-19 when a decision has been made to discontinue life-sustaining treatments and there are no indications for invasive mechanical ventilation.