

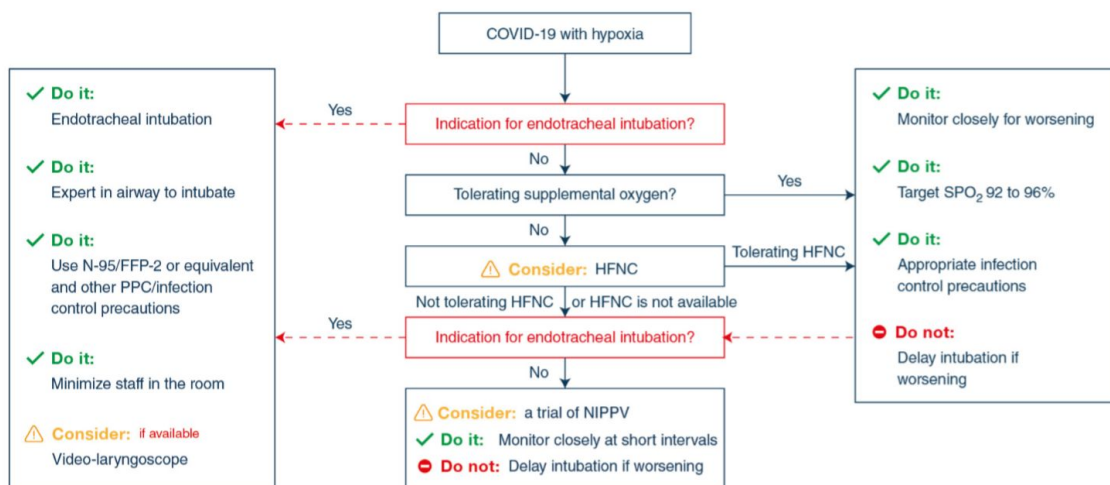
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This is a summary of the full published guidelines, which can be viewed at <https://www.esicm.org/journals>

Rationale, references and further discourse is available in the full guidelines.

- Pertains to SARS-CoV-2 which can result in an acute respiratory illness. This has led to a pandemic and affected more than 120,000 in more than 80 countries, causing more than 5000 deaths worldwide.
- The scope of the guidelines is to provide recommendations to support hospital clinicians managing critically ill adults with COVID-19 in the ICU.

This document is an outline of the recommendations:



COVID-19 with mild ARDS	COVID-19 with Mod to Severe ARDS	Rescue/Adjunctive therapy
<p>Do: Vt 4-8 ml/kg and P_{plat} < 30 cm H₂O</p>	<p>CONSIDER: Higher PEEP</p>	<p>Uncertain: Antivirals, chloroquine, anti-IL6</p>
<p>Do: Investigate for bacterial infection</p>	<p>CONSIDER: NMBA boluses to facilitate ventilation targets</p>	<p>CONSIDER: if proning, high P_{pl}, asynchrony NMBA infusion for 24 h</p>
<p>Do: Target SPO₂ 92% - 96%</p>	<p>CONSIDER: if PEEP responsive Traditional Recruitment maneuvers</p>	<p>CONSIDER: Prone ventilation 12-16 h</p>
<p>CONSIDER: Conservative fluid strategy</p>	<p>CONSIDER: Prone ventilation 12-16 h</p>	<p>CONSIDER: STOP if no quick response A trial of inhaled Nitric Oxide</p>
<p>CONSIDER: Empiric antibiotics</p>	<p>CONSIDER: if proning, high P_{pl}, asynchrony NMBA infusion for 24 h</p>	<p>CONSIDER: follow local criteria for ECMO V-V ECMO or referral to ECMO center</p>
<p>Uncertain: Systematic corticosteroids</p>	<p>Don't do: Staircase Recruitment maneuvers</p>	
	<p>CONSIDER: Short course of systemic corticosteroids</p>	
	<p>Uncertain: Antivirals, chloroquine, anti-IL6</p>	

'DO' - RECOMMENDATIONS/SUGGESTIONS - ADULTS WITH COVID19	STRENGTH
INFECTION CONTROL AND TESTING	
Aerosol generating procedures = use fitted respirator masks	Best Practice Statement
Aerosol generating procedures in ICU = in a negative pressure room	Best Practice Statement
Usual care for non-ventilated COVID patients = standard surgical masks and other PPE (gloves, gown, eye protection) **non aerosol generating**	Weak
Usual care for ventilated COVID patients = standard surgical masks and other PPE (gloves, gown, eye protection) **non aerosol generating**	Weak
Use video laryngoscopy for intubation, if available	Weak
Person with the most airway experience should intubate	Best Practice Statement
Intubated patients = lower respiratory tract samples vs nasal/oral swabs	Weak
Intubated patients = endotracheal aspirates rather than BAL or bronchial wash	Weak
HAEMODYNAMICS	
COVID19 + Shock = use dynamic parameters skin temperature, capillary refilling time, and/or serum lactate measurement over static parameters in order to assess fluid responsiveness.	Weak
In acute resuscitation - suggests using a conservative vs liberal fluid strategy (COVID19 + Shock)	Weak
Suggest: Crystalloids should be used over colloids in the acute resuscitation phase (COVID19 + Shock)	Weak
Suggest: Balanced Crystalloids should be used vs unbalanced in acute resus phase (COVID19 + Shock)	Weak
Recommend against hydroxyethyl starches in acute resuscitation (COVID19 + Shock)	Strong
Suggest against routine albumin use in initial resuscitation (COVID19 + Shock)	Weak
Suggest using noradrenaline/norepinephrine first line vasoactive agent (COVID19 + Shock)	Weak
If norad not available... suggest: Vasopressin or Adrenaline/Epinephrine (COVID19 + Shock)	Weak
If target mean MAP cannot be achieved by norad alone - suggest using vasopressin as second-line agent, over titrating noradrenaline dose. (COVID19 + Shock)	Weak
Suggest titrating vasoactive agents to a MAP of 60-65mmHg (COVID19 + Shock)	Weak
Suggest: in those with evidence of cardiac dysfunction and persistent hypotension despite fluid resus and noradrenaline - add dobutamine over increasing norad dose. (COVID19 + Shock)	Weak
Suggest: in refractory shock: low-dose corticosteroids. ie) 200mg per day in divided doses or infusion	Weak
VENTILATION	
Suggest starting supplemental oxygen if the peripheral oxygen saturation (SPO2) is < 92%,	Weak
Recommend starting supplemental oxygen if SPO2 is < 90%	Strong
In acute hypoxemic respiratory failure on oxygen, we recommend that SPO2 be maintained no higher than 96%	Strong
In COVID19 + acute hypoxaemic respiratory failure despite supplemental oxygen use HFNC vs conventional O ₂ therapy	Weak
In COVID19 + acute hypoxaemic respiratory failure despite supplemental oxygen, use HFNC vs NIPPV	Weak
In COVID19 + acute hypoxaemic respiratory failure despite supplemental oxygen = if HFNC not available, suggest a trial of NIPPV with close monitoring and short-interval assessment for worsening of respiratory failure	Weak
If on NIPPV or HFNC, recommend close monitoring for worsening of resp status, and early intubation in a controlled setting if worsening occurs.	Best practice statement

In mechanically ventilated (MV) adults + ARDS: recommend using low tidal volume (Vt) ventilation (Vt 4-8 mL/kg of predicted body weight), over higher tidal volumes (Vt>8 mL/kg).	Strong
MV + ARDS = recommend targeting plateau pressures (Pplat) of < 30 cm H2O	Strong
MV + moderate to severe ARDS, suggest using a higher PEEP strategy, over a lower PEEP strategy (if PEEP > 10 cm H2O), clinicians should monitor patients for barotrauma.	Strong
MV + ARDS = suggest using a conservative fluid strategy over a liberal fluid strategy.	Weak
MV + moderate to severe ARDS, we suggest prone ventilation for 12 to 16 hours vs no prone vent	Weak
MV + moderate to severe ARDS: suggest using, as needed, intermittent boluses of neuromuscular blocking agents (NMBA), over continuous NMBA infusion , to facilitate protective lung ventilation	Weak
In the event of persistent ventilator dyssynchrony, the need for ongoing deep sedation, prone ventilation, or persistently high plateau pressures, we suggest using a continuous NMBA infusion for up to 48 hours.	Weak
MV + severe ARDS and hypoxemia despite optimizing ventilation and other rescue strategies, we suggest a trial of inhaled pulmonary vasodilator as a rescue therapy; if no rapid improvement in oxygenation is observed, the treatment should be tapered off. (Should not be routine use)	Weak
MV + hypoxemia despite optimizing ventilation, we suggest using recruitment maneuvers, over not using recruitment maneuvers.	Weak
If recruitment maneuvers are used, we recommend against using staircase (incremental PEEP) recruitment maneuvers	Strong
MV + refractory hypoxemia despite optimizing ventilation, use of rescue therapies, and proning, suggest using venovenous (VV) ECMO if available, or referring the patient to an ECMO center.	Weak
THERAPY	
MV + ARDS, suggests using systemic corticosteroids, over not using corticosteroids.	Weak
MV + respiratory failure, suggests using empiric antimicrobials/antibacterial agents, over no antimicrobials.	Weak
In fever - acetaminophen/paracetamol for temperature control, over no treatment.	Weak

DON'T DO or CANNOT RECOMMEND - (RECOMMENDATIONS/SUGGESTIONS) - ADULTS COVID19	STRENGTH
Recommend against using dopamine if noradrenaline is available	Strong
Suggest against gelatins and dextrans in acute resuscitation (COVID19 + Shock)	Weak
Not able to make a recommendation regarding the use of helmet NIPPV compared with mask NIPP	No recommendation
MV + ARDS = recommend against the routine use of inhaled nitric oxide	Weak
In mechanically ventilated adults with COVID-19 and respiratory failure (without ARDS), we suggest against the routine use of systemic corticosteroids.	Weak
Suggest again the routine use of IV Immunoglobulins, convalescent plasma, lopinavir/ritonavir	Weak
There is insufficient evidence to issue a recommendation on the use of other antiviral agents in critically ill adults with COVID-19.	No recommendation
Insufficient evidence to issue a recommendation on the use of recombinant rIFNs, alone or in combination with antivirals	No recommendation
Insufficient evidence to issue a recommendation on the use of chloroquine or hydroxychloroquine	No recommendation
Insufficient evidence to issue a recommendation on the use of tocilizumab	No recommendation