MANAGEMENT OF ADULTS WITH SEVERE TO CRITICAL COVID-19

Definition of disease severity

**Severe illness**

Adult patients meeting any of the following criteria:
- Respiratory rate ≥ 30 breaths/min
- Oxygen saturation ≤ 92% at a rest state
- Arterial partial pressure of oxygen (PaO₂) / inspired oxygen fraction (FiO₂) ≤ 300

**Critical illness**

Adult patients meeting any of the following criteria:
- Occurrence of severe respiratory failure (PaO₂/FiO₂ < 200), respiratory distress or acute respiratory distress syndrome (ARDS). This includes patients deteriorating despite advanced forms of respiratory support (NIV, HFNO) or patients requiring mechanical ventilation
- OR other signs of significant deterioration
- Hypotension or shock
- Impairment of consciousness
- Other organ failure

Increased-dose VTE prophylaxis

**ConsenSUS RECOMMENDATION**

Consider using increased prophylactic dosing of anticoagulants, preferably LMWH (e.g. enoxaparin 40 mg twice daily or dalteparin 5000 IU twice daily) in adults with severe or critical COVID-19 or other indications, unless there is a contraindication, such as risk for major bleeding or platelet count < 30 x 10^9/L. Where eGFR (see below) is less than 30 mL/min/1.73m², unfractionated heparin or clearance-adjusted doses of LMWH may be used (e.g. enoxaparin 40 mg once daily or dalteparin 5000 IU once daily). CBR [Taskforce]

For body weights outside 50-90 kg or heights outside 150-180 cm, calculate the BSA and multiply the eGFR by BSA/1.73. The Taskforce notes that in critical illness, creatinine-based estimation of eGFR can be unreliable. PP [Taskforce/AHPPC]

MANAGING RISK OF INFECTION

As per the current national guidance on the use of personal protective equipment (PPE) in hospitals during the COVID-19 outbreak:
- Follow contact and droplet precautions for routine patient care of people with suspected or confirmed COVID-19
- Add contact and airborne precautions when aerosol-generating procedures are required.

PP [Taskforce]

Monitoring

For people with COVID-19, monitor markers of clinical progression, such as rapidly progressive respiratory failure and sepsis, especially on days 5 to 10 after onset of symptoms.

CBR [Taskforce]

DISEASE-MODIFYING TREATMENTS

**Corticosteroids**

**RECOMMENDED**

Use dexamethasone 6 mg daily intravenously or orally for up to 10 days (or acceptable alternative regimen) in adults with COVID-19 who are receiving oxygen (including mechanically ventilated patients). EBR [Taskforce]

The suggested regimen of corticosteroid use is 6 mg of dexamethasone (oral or intravenous) daily for up to 10 days. In patients for whom dexamethasone is not available, acceptable alternative regimens include:
- EBR [Taskforce]
- Hydrocortisone: intravenous (50 mg), every 6 hours for up to 10 days
- Prednisolone: oral (50 mg), daily for up to 10 days

Remdesivir

**CONDITIONAL RECOMMENDATION FORWARDS**

Whenever possible remdesivir should be administered in the context of a randomised trial with appropriate ethical approval. Consider using remdesivir for adults hospitalised with COVID-19 who require oxygen but not ventilation. EBR [Taskforce]

Remdesivir may still be considered for other evidence-based indications in people who have COVID-19. PP [Taskforce]

Remdesivir should not start remdesivir in adults hospitalised with COVID-19 who require ventilation. However, remdesivir should be continued with the appropriate dose and duration, if it was started prior to requiring ventilation (invasive or non-invasive mechanical ventilation and extracorporeal membrane oxygenation [ECMO]). PP [Taskforce]

Hydroxochloroquine

**NOT RECOMMENDED**

Lopinavir-ritonavir

Interferon β-1a

Do not use for the treatment of COVID-19. EBR [Taskforce]

Disease-modifying treatments not recommended outside of clinical trials

For people with COVID-19 do not use the following disease-modifying treatments outside of randomised trials with appropriate ethical approval EBR [Taskforce]:
- Aprepitant
- Azithromycin
- Bezlzastine
- Bromhexine hydrochloride
- Chloroquine
- Colchicine
- Combined metabolic cofactor supplementation [CMCS]
- Convalescent plasma
- Darunavir-cobicistat
- Duteride
- Favipiravir
- Fluvoxamine
- Human umbilical cord mesenchymal stem cells
- Hydroxochloroquine plus azithromycin
- Immunoglobulin plus methylprednisolone
- Interferon-kappa + thf2
- Ivermectin
- Intravenous Immunoglobulin
- N-acetylcysteine
- Peginterferon lambda
- Recombinant human granulocyte colony-stimulating factor
- Ruxolitinib
- Sofosbuvir-localsavir
- Telsimaartan
- Tocilizumab
- Triazavirin
- Umifenovir
- Vitamin D (calcifediol/cholecalciferol)
- Other disease-modifying treatments

These disease-modifying treatments should still be considered for other evidence-based indications in people who have COVID-19. PP [Taskforce]
In adults with COVID-19 and shock, use dynamic parameters (skin temperature, capillary refilling time, and/or serum lactate measurement) rather than static parameters to assess fluid responsiveness. PP [Taskforce/SSC]

In all patients with severe to critical COVID-19, use a restrictive fluid management strategy, avoiding the use of ‘maintenance’ intravenous fluids, high-volume enteral nutrition, and fluid bolus for hypotension. PP [Taskforce/ANZICS]

For the acute resuscitation of adults with COVID-19 and shock, use buffered/balanced crystalloids rather than unbalanced crystalloids. PP [Taskforce/SSC]

For the acute resuscitation of adults with COVID-19 and shock, do not use synthetic colloids. PP [Taskforce/SSC]

In adults with COVID-19 and shock, use noradrenaline as the first-line vasoactive agent. If noradrenaline is not available, use either argipressin (vasopressin) or adrenaline as the first-line vasoactive agent. PP [Taskforce]

In adults with COVID-19 and shock, if a target mean arterial pressure (MAP) of 60-65 mmHg cannot be achieved by maximal doses of first-line monotherapy with a vasoactive agent, add a second vasoactive agent. PP [Taskforce]

Stop oral menopausal hormone therapy (MHT) in women with severe or critical COVID-19. Before restarting oral MHT, review the indication for this and consider transitioning to a transdermal preparation. PP [Taskforce]

In women who are receiving care in hospital for severe or critical COVID-19 and who are taking oestrogen-containing contraception, manage these medications as per usual care. PP [Taskforce]

In women who stop or suspend contraception when they have COVID-19, restart contraception at the time of discharge or when acute symptoms have resolved. PP [Taskforce]

In patients with severe COVID-19 offer appropriate rehabilitation to optimise recovery, including early hospital rehabilitation. Plan transition of care to the community, including handover to general practice. PP [Taskforce]

Sources

AHPPC – Australian Health Protection Principal Committee (AHPPC), Guidance on the use of personal protective equipment (PPE) in hospitals during the COVID-19 outbreak. Updated 19 June 2020

ANZICS - The Australian and New Zealand Intensive Care Society (ANZICS) COVID-19 Guidelines. V1.0, 16 March 2020


SSC – Surviving Sepsis Campaign: Guidelines on the Management of Critically Ill Adults with Coronavirus Disease 2019 (COVID-19)

Taskforce – Current guidance from the National COVID-19 Clinical Evidence Taskforce