

Severe Covid-19

Symptoms:

- Fever greater than 39 C, SOB, RR > 30. O₂ sat less than 90% on room air, PaO₂/Fio₂ less than 300, may deteriorate quickly
- 50% develop hypoxia by day 5
- Cytokine storm mostly 5-10 days on symptoms onset, markers of inflammation are elevated

Treatment

- Manage Hypoxia with O₂ via nasal canula
- If greater than 4-6 lit of O₂, consider High Flow Nasal Canula (HFNC) If unavailable can use NIV/BIPAP (consider applying surgical mask over Nasal canula of HFNC)
- If patient on HFNC/ NIV consider placing patient in negative pressure isolation room
- **Consider Remdesvir, Decadron and Convalescent Plasma (please see COVID-19 therapeutic management slide for detailed inclusion and exclusion criteria)**
- If secondary Bacterial infection suspected add Antibiotics
- Fluid conservative strategy to maintain net negative fluid balance. Treat with Diamox 250 mg q 6hours or Lasix -20 or 40 mg daily PRN
- If D-Dimer greater than 2-3 times normal reference range consider full dose anticoagulation (weak recommendation) if no contraindications to full dose anticoagulation.
- Prophylactic dose of Lovenox 40 mg or unfractionated Heparin for DVT prophylaxis
- Consider ASA 325 mg daily for 30 days for DVT and Stroke prophylaxis, if no contraindications
- Vit D 5000 units daily if levels 30- 100 and 50,000 units once a week if level < 25
- Vitamin C, Thiamine and Zinc supplements not recommended due to lack of evidence
- High ferritin is an indicator of bad prognostic sign of cytokine storm and possibility of having a stroke

* IL-6 receptor inhibitors (Tocilizumab) used during cytokine storm with elevated inflammatory markers was associated decreased risk of invasive ventilation but it was also associated with increased risk of secondary infections.

Laboratory features associated with severe COVID-19:

- D-dimer >1000 ng/mL (normal range: < 500 ng/mL)
- CRP >100 mg/L (normal range: < 8.0 mg/L)
- LDH > 245 units/L (normal range: 110 to 210 units/L)
- Troponin > 2x the upper limit of normal (normal range for troponin T high sensitivity:
- Ferritin > 500 mcg/L (normal range: females 10 to 200 mcg/L; males 30 to 300 mcg/L)
- CPK > 2x the upper limit of normal (normal range: 40 to 150 units/L)