Premier Health COVID-19 Treatment Guidelines

Note: No specific therapy has proven safety and efficacy in the treatment of COVID-19. The following therapies are being investigated for use in SARS-CoV-2 and may be considered in individual cases.

Agent	Criteria	Comments
Ceftriaxone + Doxycycline Note: coinfection with bacteria is uncommon	Only if concern for bacterial pneumonia Avoid antibiotics that can increase the QTc	No indication to routinely treat for >5 days if there is concern for a bacterial process
Hydroxychloroquine 400 mg po bid x 2 doses then 200 mg po bid for 8 additional doses	Routine use is not recommended due to uncertainty regarding risks and benefits No indication to be given routinely for severe infection	Must ensure QTc is <500 prior to initiating Extreme caution should be employed if administered with other agents that prolong the QTc Outpatient prescriptions required ICD10 U07.1
Azithromycin	No data exist to support the use of azithromycin in COVID-19. Use of this agent originates from a case series of six patients. Use is discouraged.	Should not be given with hydroxychloroquine due to toxicity and QTc prolongation
Tocilizumab 400 mg IV x 1 or Sarilumab 200 mg IV x 1 There are no data to inform risk vs benefit of a second dose 48-72 hours later. Admistration of a second dose is should not be routine practice. *Patients receiving tocilizumab often do not show an immediate response. Improvement generally BEGINS 48-72 hours after administration with cessation of fevers and stabilization or improvement in oxygenation. In the absence of fevers, worsening oxygenation alone is not an indication for redosing	Indicated for patients experiencing cytokine storm* associated with CoVID-19 Consider for patient meeting all criteria (#1-#5) 1. COVID-19 positive 2. All of the following respiratory findings: a. Abnormal chest imaging consistent with COVID-19 b. Rapidly worsening gas exchange/respiratory status over 24-48 hours and requiring > 4- 6 L/min O2 3. Absence of systemic bacterial or fungal co-infection 4. High clinical suspicion for cytokine release syndrome	Treatment must be approved by CCM, ID and the CMO. Consent for off label treatment must be obtained from the family Need to evaluate for latent TB (via T-spot or QFT) and clinically assess for concern for fungal infection MFM has approved these agents for pregnant patients if indicated at Miami Valley Hospital Serious adverse events: • Gastrointestinal perforation • Anemia • Hepatitis • Infusion reaction

tocilizumab. It is also important to exclude concomitant bacterial infection when patients do not improve or worsen.	supported by elevated inflammatory markers (e.g. ferritin >600 ug/mL; D-dimer >1.0 mg/L) and clinical decline. 5. Does not have a poor prognosis where they are unlikely to survive >48 hours	• Neutropenia
Corticosteroids	Not indicated for CoVID-19 patients NOT in ARDS Consider at the treating providers discretion a 3-day course in patients with ARDS from CoVID-19 Low dose steroids for select pregnant patients is preferred, treatment decision to be made by MFM	
Convalescent serum	Consider for patients with progressive infection from CoVID-19 Hospitalized patients are eligible to receive convalescent plasma if: • They are 18+ • Laboratory-confirmed diagnosis of infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) • They are admitted to an acute care facility for the treatment of COVID-19 • Severe or life-threatening COVID-19, or judged by the treating provider to be at high risk of progression to severe or life-threatening disease • There is informed consent provided by the patient or healthcare proxy Severe COVID-19 is defined by one or more of the following:	Available through the FDA / Mayo Clinic Expanded Access Program (http://uscovidplasma.org)

	• Shortness of breath • Respiratory frequency ≥ 30/min • Blood oxygen saturation ≤ 93% • Partial pressure of arterial oxygen to fraction of inspired oxygen ratio < 300 • Lung infiltrates > 50% within 24 to 48 hours Life-threatening COVID-19 is defined as one or more of the following: • Respiratory failure • Septic shock • Multiple organ dysfunction or failure	
Remdesivir 200 mg IV x 1 then 100 mg IV daily for up to 10 days	Must be acquired through an eIND through Gilead Unlikely to obtain outside of pregnant and pediatric patients as of 4/10/2020	Extensive amount of paperwork required to complete an eIND

* Cytokine storm syndrome is a hyperinflammatory state characterized by fulminant multi-organ failure and elevation of cytokine levels. A recent study from China showed that COVID-19 is associated with a cytokine elevation profile that is reminiscent of secondary hemophagocytic lymphohistiocytosis.

Laboratory Parameters also supportive of cytokine storm:

- Ferritin >300 ug/L (or surrogate) with doubling within 24 hours
- Ferritin >600 ug/L at presentation and LDH >250 U/L
- Elevated D-dimer (>1 mg/L)