

TBRHSC COVID-19 GUIDELINE FOR HOSPITALISED PATIENTS (Updated March 30, 2020)

- This guideline was developed by members of the ID, Antimicrobial Stewardship team & ICU department at TBRHSC with pharmacy department to provide guidance to frontline clinicians caring for patients with COVID-19.
- This guideline suggested laboratory work up and also the initial management of patients admitted to the hospital. It does NOT cover recommendations for infection control, PPE, management of hypoxemia or other complications in patients with COVID-19.
- Please note that these guidelines may change depending on new available data and also guidance from professional bodies and Government organizations.

Table 1: Investigations for diagnosis, prognosis /risk stratification, and or safety of potential therapies suggested for all hospitalized patients with confirmed or suspected COVID-19

<p>Recommended on admission:</p> <ul style="list-style-type: none"> • CBC with diff (trend total lymphocyte count) • Complete metabolic panel • CK (creatine kinase) • ALT, Bili • INR/PTT • BUN , Creatinine • Blood Cultures-2 sets as indicated • NP swab for viral PCR • NP swab for COVID-19 • CXR 	
<p>For risk stratification (may be repeated q2-3 days if abnormal) or with clinical deterioration):^{1,2}</p> <ul style="list-style-type: none"> • D-dimer • Ferritin / CRP / ESR • LDH • Troponin • Baseline ECG • INR/PTT • ALT, Bili, INR/PTT 	<p>Suggested daily labs:</p> <ul style="list-style-type: none"> • CBC with diff (trend total lymphocyte count) • Complete metabolic panel • CK (creatine kinase) • BUN, Creatinine <p>Blood Cultures x 2 (if new fever, suspicion of infection)</p>

¹Elevated troponin (> 2 times upper limit of normal) without hemodynamic compromise, can repeat troponin in 24 hours; echocardiogram not necessary unless otherwise indicated. Up-trending troponin with hemodynamic compromise or other concerning cardiovascular symptoms /signs should prompt consideration of obtaining an echocardiogram as fulminant myocarditis reported in China (Ref 1)

²If starting QTc prolonging drug, can repeat ECG in 24-48 hours to monitor QTc. If baseline QTc > 500, repeat within 24 hours and consider stopping other QTc prolonging drugs.

Table 2: Risk Factors for COVID-19(Ref 1,2,3)

<i>Epidemiological-</i>	<i>Vital Signs-</i>	<i>Labs-</i>
<i>Category A</i>	<i>Category B</i>	<i>Category C</i>
Age >55 yrs	Respiratory rate > 24 breaths/min	D-dimer > 1000 ng/mL
Coexisting Pulmonary Disease	Heart rate > 125 beats/min	CPK > twice upper limit of normal
Chronic Kidney Disease	SpO2 < 90% on ambient air	CRP > 100mg/L
History of Diabetes		LDH > 245 U/L
History of Hypertension		Elevated troponin
History of Cardiovascular Disease		Admission absolute lymphocyte count < 0.8
Patients with history of immunosuppression including steroids/biologics		Ferritin > 300 ug/L
History of HIV		

Initial Treatment Recommendations

- If influenza status unknown or positive, start oseltamivir 75 mg PO BID in all adult patients with normal renal function (may stop if Influenza A/B PCR negative *and* low suspicion)

Adjust for pediatric patients and those with renal insufficiency

- Considerations for empiric treatment for bacterial pneumonia:

Ceftriaxone 1 gram IV q 24 h +
Azithromycin 500 mg PO x1, then 250 mg PO daily x 4 days +
Vancomycin IV if risk factors for MRSA

Initially for 5 days or longer as guided by clinical status and microbiology

- Inhaled medications should be given by metered dose inhaler rather than nebulization as nebulization risks aerosolization of SARS-CoV-2. If nebulized medications given, use appropriate PPE.

Suggested Treatment Algorithm Based on Clinical Severity for suspected COVID--19 cases

Clinical Situation	Recommendation
For patients with mild disease with SpO ₂ >90%, no risk factors	<ul style="list-style-type: none"> • Supportive Care • Oseltamivir(Tamiflu) (stop if Influenza PCR negative) • Antibiotics for CAP
For patients with mild disease with SpO ₂ >90%, with at least one category A risk factor but no category B or C risk factor	<ul style="list-style-type: none"> • Supportive Care • Oseltamivir (Tamiflu) (stop if Influenza PCR negative) • Antibiotics for CAP • Close Monitoring • Repeat labs at regular intervals
For patients with moderate or severe disease patients with at least one Category A and one Category B ± one category C feature on floor	<ul style="list-style-type: none"> • Supportive Care • Oseltamivir (Tamiflu) (stop if Influenza PCR negative) • Antibiotics for CAP • Close Monitoring • Repeat labs at regular intervals • Discuss with ICU regarding need for admission.
For patients admitted to ICU with Respiratory Failure.	<ul style="list-style-type: none"> • Oseltamivir (Tamiflu) (stop if Influenza PCR negative) • Antibiotics for CAP • High Flow Oxygen as per ICU (aiming for O₂ sats > 92%). • BiPAP not recommended • Intubate if P/F ratio <150 • Ventilator management as per ICU.

Note1) Please refer to Table 2 for Category A, B & C risk factors.

2) ID Consult recommended for all confirmed cases of CoVID-19.

Treatments Not Indicated.

■Hydroxychloroquine

- We suggest against routine use of hydroxychloroquine or other immunotherapy for treatment of CoVID-19, as we believe that there is insufficient evidence to support its use in this patient population. Also, we are concerned about the ethical impact this unproven therapy (outside a clinical trial) that could jeopardize availability of the drug for patients already on this drug for other indications. This is a weak recommendation based on our impression of a low quality evidence and resource considerations.

■ACE-Inhibitors (ACEi) / Angiotensin Receptor Blockers (ARBs):

- Note there is interest in the potential role of ACE-inhibitors (ACEi) / angiotensin receptor blockers (ARBs) in the pathophysiology of this disease since the SARS-CoV-2 virus binds to the ACE2 receptor for cellular entry. There are theories these may either help or worsen COVID-19 disease.
- Currently there are no data to support either starting or stopping ACEi/ARBs on any patients with COVID-19. We do not currently routinely recommend stopping these agents for patients with COVID-19. However, if acute kidney injury, hypotension, severe septic shock or other contraindication develops, we recommend stopping them at that time. After a person is recovering from their viral syndrome, their home medications can be restarted, and, if indicated, new ACEi/ARBs can be started if they have a primary indication such as new persistently reduced ejection fraction.

■Corticosteroids

- Systemic steroids should in general be *AVOIDED* for these patients given potential harm. Steroids may be considered if indicated for another reason (e.g. refractory septic shock, patients with underlying COPD/asthma exacerbation or chronic exposure to steroids)
- **Consider discontinuation of inhaled steroids** as they may reduce local immunity and promote viral replication, unless necessary for acute indications

■NSAIDS

- There are reports of NSAID use preceding clinical deterioration in some patients with severe COVID-19 disease. The data supporting these concerns are still not clear. We recommend that frontline provider preferentially avoid prescribing NSAIDs while patients are admitted to the hospital with suspected COVID-19 because of the unfavourable safety profile of this drug. Acetaminophen is a reasonable first-line therapy for management of pain and fever related to COVID-19. It is important NOT to discontinue low dose ASA routinely.

REFERENCES

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