COVID-19 Inpatient Adult Treatment Guidelines
Revised April 7, 2020

Note: Because COVID-19 is a novel virus, there is very limited evidence to support effective treatments. This guideline outlines currently available information and is authorized by the CommonSpirit Health System P&T Committee. Information is changing rapidly, please check for updates frequently. Revisions for this version are "underlined". Distributed by Karen McConnell, PharmD (karenmcconnell@catholichealth.net).

SARS-CoV-2 (COVID-19) infection based on positive PCR*

→ Evaluate for clinical trial enrollment, depending on site availability and patient qualifications.

Lower respiratory infection not requiring supplemental oxygen

Consider treatment only if risk factors present if patient not clinically improving:

- Age ≥ 65
- Significant history of heart, lung, kidney disease
- Immunosuppression (current active therapy for transplant, HIV, chemotherapy, corticosteroids, biologic therapy, infliximab, etc.)
- Radiographic evidence of moderate to severe PNA.

If no risk factors above, symptomatic treatment only.

If risk factors exist, consider treatment if patient not clinically improving

Prior to starting therapy, obtain input from ID and/or the ASP Team and/or other specialties (if available). Utilize local policy/ procedures in place.

Consider **hydroxychloroquine 400mg PO bid x 1 day, then 200mg PO bid x 4 days**[2,3] (5 days total) OR **chloroquine 500mg BID x 5 days** (based on site availability of agent). No renal or hepatic dosing adjustments needed.

Recommend monitoring

- LFT / CBC / electrolytes (including Mg) abnormalities
- ECG for QT interval, consider telemetry

If rapidly increasing oxygen needs/high flow consider adding **azithromycin 500mg PO x1, followed by 250mg daily x4 days.**[2]

Note: Adding azithromycin to hydroxychloroquine or chloroquine may increase the risk of Torsades de Points (TdP).[4,5,6] Appropriate patient selection and monitoring is recommended.**

Lower respiratory infection requiring supplemental oxygen and patient not clinically improving

Lower respiratory infection requiring mechanical ventilation or BiPAP

When available, evaluate for expanded access use remdesivir: https://rdvcu.gilead.com/ [1]

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Recommend monitoring

- LFT / CBC / electrolytes (including Mg) abnormalities
- ECG for QT interval, consider telemetry

Consider **Azithromycin 500mg IV q 24 hour x5 days or azithromycin 500mg PO x1, followed by 250mg daily x4 days**[2] (May convert IV to PO as appropriate.)
Note: Adding azithromycin to hydroxychloroquine or chloroquine may increase the risk of Torsades de Points (TdP).[4,5,6] Appropriate patient selection and monitoring is recommended.**

Pregnancy Considerations:
Follow above recommendations, **hydroxychloroquine +/- azithromycin** considered safe for pregnancy.

*Clinical diagnosis may be considered if test result not available and high levels of positive COVID 19 patients are present in the area.
**Define patients at high risk for TdP and monitoring[4,6]

- Patients at high risk for TdP: Prolonged QT interval (>500 msec) or QT prolongation is combined with other risk factors (female sex, Congenital Long QT Syndrome, bradycardia, hypokalemia, hypomagnesemia, hypocalcemia, use of drugs that prolong the QT interval and/or drugs that block the elimination of QT-prolonging drugs
- Recommended monitoring for patients at risk for TdP: Screening ECG with QTc evaluation, avoidance of any non-essential QT-prolonging drugs, correction of any electrolyte imbalance before administration and QTc monitoring during therapy.

Adjunctive Therapies

- Systemic corticosteroids. These should be avoided, if possible, for COVID-19, because of the potential for prolonging viral replication as observed in MERS-CoV patients, unless indicated for other reasons. This does not preclude use of steroid for other indications, such as COPD, refractory septic shock, etc.[7] Nasal steroids should be avoided in patients with COVID-19 to minimize staff exposure.
- NSAIDs. Per the FDA, there is not enough scientific evidence to link the use of NSAIDs to worsening symptoms of COVID-19. However, until further information is available, utilize acetaminophen first line for fevers, if no contraindications are present. Please note, that not all fevers need to be brought to normothermia.[8]

Other Medication Related Guidance

- Follow IDSA guidelines for community-acquired pneumonia (CAP) treatment
- Inhaled steroids may be used for other indications, such as COPD and asthma.
- Do not withhold chloroquine/hydroxychloroquine therapy waiting for G6PD testing.
- Kaletra (lopinavir-ritonavir). In a recent in vivo study, it did not show benefit compared to standard of care.[9] Additional studies are ongoing, including those with combination therapy.
- Ribavirin. There is no evidence to support ribavirin monotherapy as a treatment for COVID-19 at this time.
- IL-6 inhibitors. Routine use is not recommended at this time outside of a clinical trial. Published data to support use for COVID-19-related ARDS is limited. However, there are several clinical trials underway to evaluate their efficacy.
- ACE inhibitors/ARBS. The HFSA, ACC, and AHA **recommend continuation of RAAS** (renin-angiotensin-aldosterone system) **antagonists** for those patients who are currently prescribed such agents for indications for which these agents are known to be beneficial, such as heart failure, hypertension, or ischemic heart disease. Currently there are no experimental or clinical data demonstrating beneficial or adverse outcomes with background use of ACE inhibitors, ARBs or other RAAS antagonists in COVID-19 or among COVID-19 patients with a history of cardiovascular disease treated with such agents.[10]
- Statins. Continue statins if already prescribed.
- A small study was published evaluating the efficacy of convalescent plasma for COVID-19 (n=5).[11] Refer to guidance issued by CommonSpirit IRBs for additional information.
- Consider consulting pharmacy to mitigate drug-drug interactions.
- Additional medication-related information, please refer to the ASHP website: https://www.ashp.org/Pharmacy-Practice/Resource-Centers/Coronavirus
- If patients are well enough to discharge, it is not necessary to continue COVID-19 directed therapy (unless patients are enrolled in a clinical trial)

Medications Without Sufficient Evidence to Recommend

Many medications are being trialed anecdotally for treatment of COVID-19. There are continued claims without substantiated clinical efficacy. The below of medications do not have sufficient evidence to recommend.

- Melatonin
- Pioglitazone
- Zinc
- Thiamine
- Ascorbic acid. Do not use IV ascorbic acid.
- Inhaled epoprostenol – additional review currently ongoing.
- Ivermectin
- IVIG. Do not use.

References

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