# Hospital Treatment Protocol for COVID-19

## A. Core Medication

### Methylprednisolone

**A. Upon oxygen requirement or abnormal chest X-ray**

- **Preferred:** 80 mg IV bolus, then 40 mg IV twice daily
- **Alternate:** 80 mg / 240 ml normal saline IV infusion at 10 ml/hr

Follow COVID-19 Respiratory Failure protocol: [www.flccc.net/respiratory-support-c19](http://www.flccc.net/respiratory-support-c19)

- A1. If no improvement in oxygenation in 1–3 days, double dose to 160 mg/daily.
- A2. Upon need for FIO\(_2\) > 0.6 or ICU, escalate to “Pulse Dose” below (B)
- A3. Once off IMV, NPPV, or High flow \(O_2\), decrease to 20 mg twice daily. Once off \(O_2\), then taper with 20 mg/day × 5 days then 10 mg/day × 5 days

### B. Refractory Illness/ Cytokine Storm

- “Pulse” dose with 1 gram daily × 3 days

Continue × 3 days then decrease to 160 mg IV/daily dose above, taper according to oxygen requirement (A). If no response or CRP/Ferritin high/rising, consider mega-dose IV ascorbic acid and/or “Therapeutic Plasma Exchange” below

## B. First Line Adjunctive Therapy (use in all hospitalized patients)

### Ivermectin

- **Hospitalized patients**
  - 0.6 mg/kg per dose — daily\(^1\) (take with or after a meal)
  - For 5 days or until recovered

### Nitazoxanide

- **Hospitalized patients**
  - 500 mg twice daily — (take with or after a meal)
  - For 5 days or until recovered

### Dual Anti-Androgen Therapy

- **Hospitalized patients**
  - 1. Spironolactone 100 mg twice daily
  - 2. Dutasteride 2 mg on day 1, followed by 1 mg daily — or Finasteride 10 mg daily
  - 14 days or until discharge from hospital

- **ICU Patients**
  - 1. Flutamide 250 mg TID — or Bicalutamide 150 mg daily
  - 2. Dutasteride 2 mg on day 1, followed by 1 mg daily — or Finasteride 10 mg daily
  - 14 days or until discharge from hospital

### Vitamin D

- **Hospitalized patients**
  - Calcitriol: 0.5 mcg on day 1, then 0.25 mcg daily
  - 7 days

### Melatonin

- **Hospitalized patients**
  - 6–12 mg PO at night
  - Until discharge

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For an overview of the developments in prevention and treatment of COVID-19, please visit [www.flccc.net/covid-19-protocols](http://www.flccc.net/covid-19-protocols)

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Please check our homepage regularly for updates of our COVID-19 Protocols! — New medications may be added and/or dose changes to existing medications may be made as further scientific studies emerge.
C. Second Line Adjunctive Therapy (use in addition to first line adjunctive therapies in all ICU patients)

<table>
<thead>
<tr>
<th>Medication</th>
<th>Indication/Initiation</th>
<th>Recommended Dosing</th>
<th>Titration/Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluvoxamine^3</td>
<td>Hospitalized patients</td>
<td>50 mg PO twice daily — consider fluoxetine 30 mg daily as an alternative</td>
<td>10–14 days</td>
</tr>
<tr>
<td></td>
<td>If any of: 1) on fluvoxamine, 2) hypoxemic, 3) tachypneic/respiratory distress, 4) oliguric/kidney injury</td>
<td>8 mg — 3 x daily until discharge, slow taper once sustained improvements noted</td>
<td></td>
</tr>
<tr>
<td>Cyproheptadine</td>
<td>Hospitalized patients</td>
<td>8 mg — 3 x daily until discharge, slow taper once sustained improvements noted</td>
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</tr>
<tr>
<td>Zinc</td>
<td>Hospitalized patients</td>
<td>75–100 mg PO daily</td>
<td>Until discharge</td>
</tr>
<tr>
<td>Famotidine</td>
<td>Hospitalized Patients</td>
<td>40–80 mg PO twice daily</td>
<td>Until discharge</td>
</tr>
<tr>
<td>Atorvastatin</td>
<td>ICU Patients</td>
<td>80 mg PO daily</td>
<td>Until discharge</td>
</tr>
<tr>
<td>Therapeutic Plasma Exchange</td>
<td>Patients refractory to pulse dose steroids</td>
<td>5 sessions, every other day</td>
<td>Completion of 5 exchanges</td>
</tr>
</tbody>
</table>

Legend
CRP = C-Reactive Protein, DOAC = direct oral anti-coagulant, FiO₂ = Fraction of inspired oxygen, ICU = Intensive Care Unit, IMV = Invasive Mechanical Ventilation, IU = International units, IV = Intravenous, NIPPV = Non-Invasive Positive Pressure Ventilation, O₂ = oxygen, PO (per os) = oral administration, TID = three times daily

Notes
1. The safety of ivermectin in pregnancy has not been established thus treatment decisions require an assessment of the risks vs. benefits in a given clinical situation.
2. Based on strong dose-dependent effects, high margin of safety around dosing, and accumulating clinical experience in Delta, doses up to 1.0 mg/kg can and should be used in the more severely ill. Information on the safety of high dose ivermectin can be found here: www.flccc.net/flccc-information-evidence-for-safety-of-ivermectin (PDF) / FAQ: www.flccc.net/ivermectin-in-covid-19/faq-on-ivermectin/#ivermectin-safety
3. Some individuals who are prescribed fluvoxamine experience acute anxiety which needs to be carefully monitored for and treated by the prescribing clinician to prevent rare escalation to suicidal or violent behavior.

TO CONTROL INFLAMMATION AND EXCESS CLOTTING

In all COVID-19 hospitalized patients, the therapeutic focus must be placed on early intervention utilizing powerful, evidence-based therapies to counteract:
— The overwhelming and damaging inflammatory response
— The systemic and severe hyper-coagulable state causing organ damage

By initiating the protocol soon after a patient meets criteria for oxygen supplementation, the need for mechanical ventilators and ICU beds will decrease dramatically.

TREATMENT OF LOW OXYGEN

— If patient has low oxygen saturation on nasal cannula, initiate heated high flow nasal cannula.
— Do not hesitate to increase flow limits as needed.
— Avoid early intubation that is based solely on oxygen requirements. Allow “permissive hypoxemia” as tolerated.
— Intubate only if patient demonstrates excessive work of breathing.
— Utilize “prone positioning” to help improve oxygen saturation.

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About the MATH+ Hospital Treatment Protocol for Covid-19

Our MATH+ protocol is designed for hospitalized patients, to counter the body’s overwhelming inflammatory response to the SARS-CoV-2 virus. The protocol is based on numerous medical journal publications over decades. It is the hyper-inflammation, not the virus itself, that damages the lungs and other organs and ultimately causes death in COVID-19. We have found the MATH+ protocol to be a highly effective combination therapy in controlling this extreme inflammatory response and we have now added ivermectin as a core component given the profound emerging efficacy data in hospitalized patients reviewed here (www.flccc.net/flccc-ivermectin-review-covid-19).

The steroid Methylprednisolone is a key component, increasing numbers of studies (see https://flccc.net/medical-evidence) show its profound effectiveness in COVID-19, which is made more potent when administered intravenously with high doses of the antioxidant Ascorbic acid given that the two medicines have multiple synergistic physiologic effects. Thiamine is given to optimize cellular oxygen utilization and energy consumption, protecting the heart, brain, and immune system. The anticoagulant Heparin is important for preventing and dissolving blood clots that appear with a very high frequency in patients not given blood thinners. The + sign indicates several important co-interventions that have strong physiologic rationale and an excellent safety profile. It also indicates that we plan to adapt the protocol as our insights and the published medical evidence evolve.

Timing is a critical factor in the successful treatment of COVID-19. Patients must go to the hospital as soon as they experience difficulty breathing or have a low oxygen level. The MATH+ protocol then should be administered soon after a patient meets criteria for oxygen supplementation (within the first hours after arrival in the hospital), in order to achieve maximal efficacy as delayed therapy has led to complications such as the need for mechanical ventilation.

If administered early, this formula of FDA-approved, safe, inexpensive, and readily available drugs can eliminate the need for ICU beds and mechanical ventilators and return patients to health.

Disclaimer
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