

# Critical Care COVID-19 Management Protocol

Please refer to the full protocol for optional treatments and explanations.

(updated 11-30-2020)

## Prophylaxis

- Vitamin C 500 mg BID (twice daily) and Quercetin 250 mg daily
- Vitamin D3 1000-4000 u/day
- B complex vitamins
- Zinc 30-50 mg/day
- Melatonin (slow release): Begin with 0.3mg and increase as tolerated to 2 mg at night
- Ivermectin for postexposure prophylaxis (200 ug/kg immediately, then repeat on day 3) and prophylaxis in high-risk groups (200 ug/kg day 1, then day 3 and then every 4 weeks)

## Mildly Symptomatic patients (at home):

- Ivermectin 150-200 ug/kg daily for two doses
- Vitamin C 500mg BID and Quercetin 250-500 mg BID
- Vitamin D3 2000 - 4000 u/day
- B Complex vitamins
- Zinc 75-100 mg/day
- Melatonin 6-10 mg at night (the optimal dose is unknown)
- ASA aspirin 81-325 mg/day (unless contraindicated)

In symptomatic patients, monitoring with home pulse oximetry is recommended.

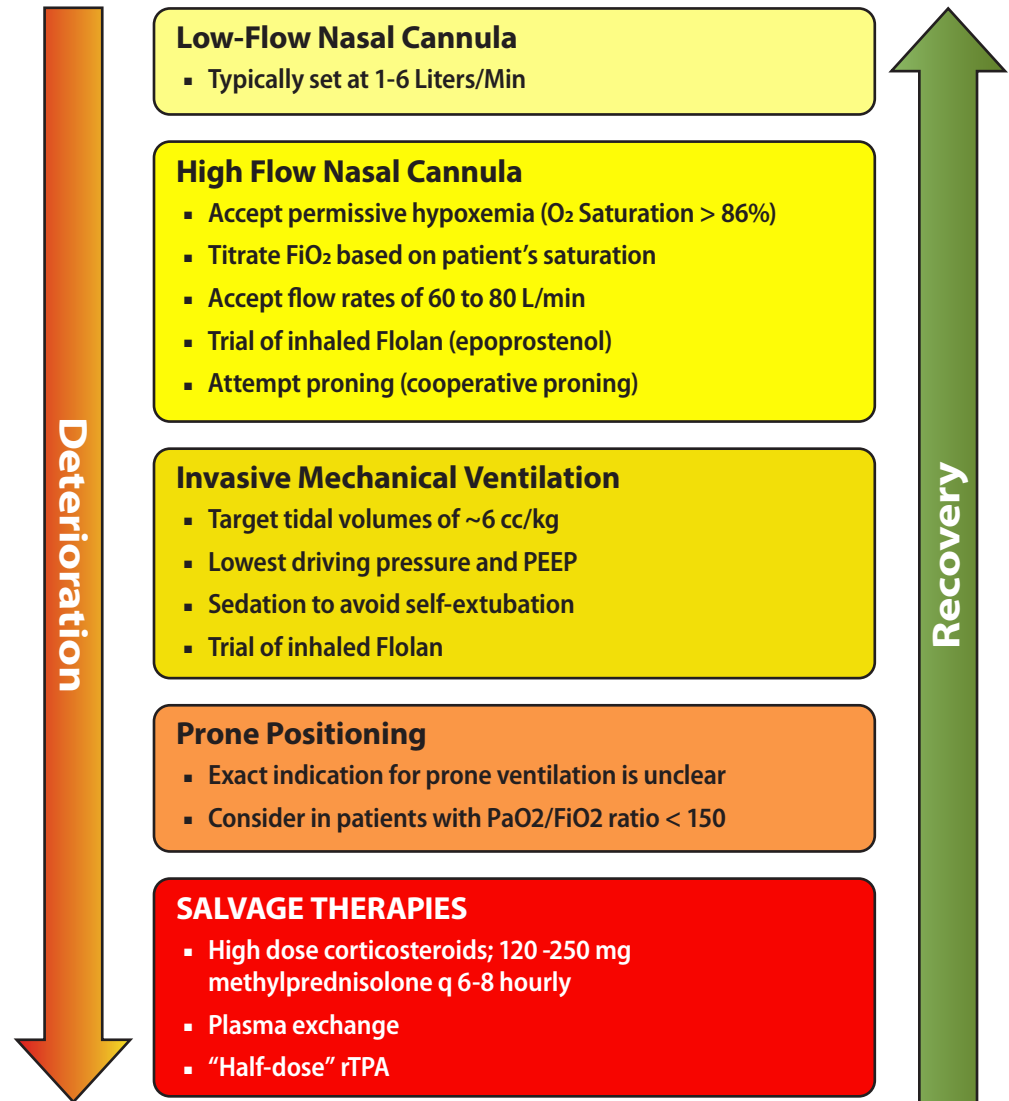
Ambulatory desaturation below 94% should prompt hospital admission

## Mildly Symptomatic patients (on floor):

- Ivermectin 150-200 ug/kg daily for two doses
- Vitamin C 500 mg PO q 6 hourly and Quercetin 250-500 mg BID (if available)
- Vitamin D3 20 000 – 60 000 iu single oral dose. Calcifediol 200 -500 ug is an alternative. Then 20 000 iu D3 (or 200 ug calcifediol) weekly until discharged from hospital.
- B complex vitamins
- Zinc 75-100 mg/day
- Melatonin 10 mg at night (the optimal dose is unknown)
- Enoxaparin 60 mg daily

## General schema for respiratory support in patients with COVID-19

**TRY TO AVOID INTUBATION IF POSSIBLE**



- Methylprednisolone 40 mg q 12 hourly; increase to 80 mg q 12 if poor response
- T/f EARLY to the ICU for increasing respiratory signs/symptoms and arterial desaturations.

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## Respiratory symptoms (SOB; hypoxia- requiring N/C $\geq$ 4 L min: admit to ICU):

### Essential Treatment (dampening the STORM)

1. Methylprednisolone 80 mg loading dose then 40 mg q 12 hourly for at least 7 days and until transferred out of ICU. In patients with poor response, increase to 80-125 mg q 12 hourly.
2. Ascorbic acid (Vitamin C) 3g IV q 6 hourly for at least 7 days and/or until transferred out of ICU. Note caution with POC glucose testing.
3. Full anticoagulation: Unless contraindicated we suggest FULL anticoagulation (on admission to the ICU) with enoxaparin, i.e 1 mg kg s/c q 12 hourly (dose adjust with Cr Cl < 30mls/min). Heparin is suggested with CrCl < 15 ml/min.

*Note: Early termination of ascorbic acid and corticosteroids will likely result in a rebound effect.*

### Additional Treatment Components (the Full Monty)

4. Ivermectin 150-200 ug/kg daily for two doses
5. Vitamin D3 20 000 – 60 000 iu single oral dose. Calcifediol 200 -500  $\mu$ g is an alternative. Then 20 000 iu D3 (or 200  $\mu$ g calcifediol) weekly until discharged from hospital.
6. Thiamine 200 mg IV q 12 hourly
7. B complex vitamins
8. Zinc 75-100 mg/day
9. Melatonin 10 mg at night (the optimal dose is unknown).
10. Atorvastatin 80mg/day
11. Escalation of respiratory support; See General Schema for Respiratory Support in Patients with COVID-19.

## Salvage Treatments

- Plasma exchange. Should be considered in patients with progressive oxygenation failure despite corticosteroid therapy. Patients may require up to 5 exchanges.
- High dose corticosteroids; Bolus 250- 500mg/ day methylprednisolone
- Half-dose rTPA
- ECMO

## Monitoring:

- On admission: PCT, CRP, BNP, Troponins, Ferritin, Neutrophil-Lymphocyte ratio, D-dimer and Mg.
- Daily: CRP, Ferritin, D-Dimer and PCT. CRP and Ferritin track disease severity closely (although ferritin tends to lag behind CRP).
- In patients receiving IV vitamin C, the Accu-Chek™ POC glucose monitor will result in spuriously high blood glucose values. Therefore, a laboratory glucose is recommended to confirm the blood glucose levels

## Post ICU management

- Enoxaparin 40-60 mg s/c daily
- Methylprednisone 40 mg day, then wean slowly
- Vitamin C 500 mg PO BID
- Melatonin 3-6 mg at night

## Post hospital discharge

1. Extended thromboprophylaxis in high risk patients
2. Post-COVID-19 syndrome
  - Consider tapering course of corticosteroids (guided by CRP)
  - Omega-3 fatty acids
  - Atorvastatin 40mg daily Melatonin
  - Multivitamins including B complex and Vitamin D