

ATS COVID-19 Critical Care Training Forum

Key Take-away Points

3/9/2021

2.5 M humans have died of COVID-19

Steroids as a treatment

Dr. Lin

- Subset of COVID patients progress to a hyperinflammatory syndrome
- Plasma IL-6 can predict course
- **Steroids can decrease inflammation** via inhibition of prostaglandin production plus additional anti-inflammatory effects
 - Steroids (DEXA-ARDS) have been beneficial in the past
 - In COVID the RECOVERY Trial, steroids decreased mortality in those on mechanical ventilation
 - REMAP-CAP COVID predicts that hydrocortisone is beneficial
 - IV methylprednisolone x3d led to decreased mortality (small n)
 - Metcovid had some subgroups whom benefit from steroids
 - Metanalysis: 32% mortality with steroids vs 40% without; demonstrated benefit in mechanically ventilated patients and without
- **Still unclear whether one steroid is better than another (primarily methylprednisolone vs dexamethasone)**
- **Optimal duration of steroid treatment remains unknown**
- **Recommendation: Use steroids in COVID patients with hypoxemia who require mechanical ventilation**

Proning

Dr. Husain

- **Physiologic benefits** are due to improved VQ matching
- Proning leads to increased O₂ saturation after 1 hour
- Awake proning:
 - Early study: 55 pts, proned on HiFlow – no difference in mortality or risk of intubation, but delayed intubation by ~2 days
 - Metanalysis of awake proning = a third will end up intubated
 - U of Utah RCT on awake proning – no difference in oxygenation (n = 30)
 - Does proning decrease the need for mechanical ventilation?
- **Use proning in intubated patients with severe ARDS, as this has been shown to decrease mortality**
- **In non-intubated patients – awake proning has not been proven to improve mortality and may lead to delayed intubation**

Anticoagulation

Dr. McGuire

- Early papers showed higher d-dimer levels in those who died of COVID-19 in Wuhan
- Meta-analysis of VTE in COVID-19 found total incidence to be 14%
- Autopsy series have shown high rates of PEs and microthromboses.
- Early studies showed a mortality benefit with anticoagulation, particularly in pts requiring mechanical ventilation
 - All of these factors contributed to high rates of anticoagulation by healthcare practitioners
- ATTACC + ACTIV + REMAPCAP
 - Moderately ill patients may benefit regardless of d-dimer level (organ support: 28 vs 25%; 13 and 19%), but anticoagulation in severely ill patients seemed harmful.
 - May have a mortality benefit (5.7% vs 7.7%) in moderately ill but not critically ill. Why does it work? **SARS-CoV-2 uses heparan sulfate to enter cells, such that treating with heparin (especially early in disease) may function as an anti-viral**
 - Lower thrombotic events and higher bleeding events in all anticoagulated groups
- **Consider some form of anticoagulation in moderately ill COVID-19 patients (*awaiting updated recommendations from professional societies*)**
- **Use VTE Prophylaxis in all critically ill patients**
- **Coming soon (hopefully) data on: anticoagulation in outpatients, duration of anticoagulation, and which anticoagulants to use**