

COVID and Corticosteroids: Do They Be-Lung Together?

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Patient Information

- CS is a 55 year old female with history of:
 - ESRD secondary to DMII
 - Renal transplant complicated by drug-resistant CMV
 - Hypertension
 - Legal blindness



COVID-19 History of Present Illness

- CS was admitted to EUH ARICU on (Day 1)
 - She reported receiving COVID vaccine 2 weeks prior to presentation on Day 1
 - She reported feeling generally unwell during the 2 weeks since vaccination
 - On the day of arrival, CS developed shortness of breath and respiratory distress
 - CS was found to be hypoxic in ED requiring NIPPV, higher oxygen requirements necessitated ICU admission
- COVID-19 + on Day 1



Clinical Hospital Course, ICU Stay (Days 1-10)

- CS required nighttime NIPPV and daytime HFNC (Airvo) in the ICU
 - HFNC settings grossly unchanged during first few days of admission (Days 1-4) with frequent desaturation
- Imaging
 - Chest Xray with bilateral opacification
- Laboratory
 - D-dimer: 13,293 ng/mL (admission), 15,374 ng/ml (peak)
 - Fibrinogen: 711 mg/dl (admission), 732 mg/dl (peak)
 - CRP: 26.5 mg/L



Clinical Hospital Course, Medication Therapy

- Remdesivir- Days 1-5
- Dexamethasone- Days 1-10
- Diuresis, goal negative daily fluid balance
- High standard heparin infusion
- Community acquired pneumonia treatment x 5 days
 - Azithromycin
 - Ceftriaxone



Treatment with Corticosteroids

- The team felt that CS was high risk for intubation given her work of breathing and inability to wean oxygen despite optimizing medical therapy and pulmonary hygiene
- Decision was made to implement short course of “pulse” steroids for empiric management of acute organizing pneumonia
 - Methylprednisolone 125 mg (~1.5 mg/kg) IV qDay x 3 days (Days 5-8)
 - Dexamethasone held during pulse



Results

- Oxygen requirements stabilized throughout the three day course of pulse steroids, CS required fewer Airvo titrations, she had fewer resting desaturation events, and she reported feeling much improved
- Two days after end of pulse, CS was transitioned off Airvo and onto nasal cannula
- Three days after pulse she was on 2L nasal cannula and transferred to the floor



Conclusions

- Short course of high dose corticosteroids may be considered for use in COVID-19 for suspected organizing pneumonia
- Considerations for use:
 - Imaging
 - Inflammatory markers
 - Timeline from symptom onset
 - Patient-specific factors that might warrant caution
 - Immunocompromised
 - Ongoing bacterial infection
- Areas for further review
 - Dose
 - Duration
 - Taper

