COVID-19 pneumonia in a lung transplant recipient

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Vignette

• 63 YO M s/p bilateral lung transplant in 2014 for Idiopathic pulmonary fibrosis

• Day 0 - Calls transplant coordinator with nasal congestion and headache which he normally experiences with humidity and changes in the weather - A nasal decongestant is prescribed

• Day 1 - Son calls and reports that patient is now dyspneic and saturations are 70-80% on room air – He is advised to call EMS and bring patient to the ER.
Vignette

• ROS: + back pain, no fever, other systems negative.

• PMH: CKD III, HTN, CAD

• Surgical history: VATS decortication in 2015 of the left side.

• Social History: no known sick contacts
Transplant History

• CMV (-/+), BLTx 2014, complications were recurrent L pleural effusions and R hemi-diaphragm palsy

• Home meds:
  • Tacrolimus 1 mg BID
  • Mycophenolate mofetil 1000 mg BID
  • Prednisone 5 mg daily
  • Prophylactic Azithromycin and Trimethoprim-Sulfamethoxazole
Hospital course – Initial evaluation

- Patient presents to the ER with the following vital signs:
  - Temp 98.7 °F (37.1 °C)
  - BP 138/82
  - Pulse 98
  - Resp 18
  - SpO₂ 91-95% on 3 LPM nasal cannula

- Physical exam remarkable for mildly increased work of breathing, clear breath sounds, no wheezing, other systems normal
On admission

Baseline

10/20/20
Labs

- CBC: WBC: 12.7, Hemoglobin: 9.5, Platelets: 269, ALC: 0.78
- BMP: Na:130, K:4.3 Cl: 94, CO₂: 27, BUN: 26, Cr: 1.88, Glu: 122 Ca 9.2
- Troponin: <0.01

- COVID-19 labs:
  - CRP: 23 (ULN 0.5mg/dL)
  - D-dimer: 0.78
  - LDH: 505
  - Ferritin: not checked

- Tacrolimus level: 5.3

10/20/20
Hospital course – Initial Management

• Empiric treatment for community-acquired pneumonia with MDRO risk factors with Vancomycin and Cefepime

• SARS-CoV2 – RT PCR : POSITIVE

• Started on Dexamethasone 6 mg daily, given one dose of convalescent plasma, and Remdesivir (EUA) 200 mg followed by 100 mg daily
Other studies

• Blood cultures: negative
• Sputum culture: normal flora.
• Rapid Flu: negative
• Respiratory Viral Panel: negative
• Echo: LVEF>60% , RV size and function normal
• LE duplex: no thrombus
Poll

• Would you continue all immunosuppression medications?
Hospital course – Subsequent management

• Tacrolimus continued, MMF held, Prednisone held while on Dexamethasone
• Enoxaparin 0.5mg/kg BID started
• Patient required 3 LPM supplemental O₂, self-proned for 2 nights
• On hospital day 5, he completed course of remdesivir, was down to 1.5 LPM oxygen and subjectively better
• Discharged on 2 LPM, asked to finish Dexamethasone course PO at home
Hospital Follow-up

• Calls coordinator after completing dexamethasone course, prednisone is resumed, saturations are 98% on room air.

• Virtual visit in 2 weeks, symptomatically better, some fatigue, had thrush with dexamethasone use. Advised to resume MMF but had to start at a lower dose because of GI side effects.
Hospital Follow-up (Continued)

• Face-to-face visit at 4 weeks: Clinically stable, had around 100 mL loss of FEV₁ attributed to viral infection.

• Face-to-face visit 8 weeks: FEV₁ back to baseline and CT chest done showing no residual scarring. Plan to get herniated disk repaired.

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>FVC (L)</th>
<th>FEV₁(L)</th>
<th>6MWD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year prior</td>
<td>1.75</td>
<td>1.14</td>
<td>335 m, 89% nadir RA</td>
</tr>
<tr>
<td>2 months prior</td>
<td>1.83</td>
<td>1.14</td>
<td>331m, 88%</td>
</tr>
<tr>
<td>4 weeks post – COVID-19</td>
<td>1.55</td>
<td>1.03</td>
<td>Refused 6MWT 2/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>back pain</td>
</tr>
<tr>
<td>8 weeks post – COVID-19</td>
<td>1.74</td>
<td>1.14</td>
<td>280 m, 87% nadir, 2 LPM</td>
</tr>
</tbody>
</table>
Thank you!

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