Success During COVID-19

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Lung Transplant Pulmonologist
February 10, 2021
Recipient History

• Self-Referral
• 63 y/o Caucasian male
• First noticed symptoms in 2016
• February 2020 patient was hospitalized with bilateral pneumonia
• CT Chest and Chest X-ray showed diagnosis of Idiopathic Pulmonary Fibrosis (IPF); probable Usual Interstitial Pneumonitis (UIP)
• Discharged on oxygen, and underwent transplant evaluation at a transplant center in his home state
Recipient History

- Consult visit July 2020
  - 3lpm oxygen at rest and 6lpm oxygen with activity
  - Still able to perform ADL’s, but much more slowly
  - Difficulty climbing stairs in his home
  - Work History: Retired Marine (flight engineer); significant for exposure to oil, oil fume leaks, chemicals, wood dust and mold
  - Past Medical History: GERD, NIDDM
  - Past Surgical History: knee surgery
  - Social History: Never a smoker, ETOH 1x/month, never used drugs
International Society for Heart and Lung Transplant Criteria for Listing for IPF

- Decline in FVC >10% during 6 months follow-up
- Decline in DLCO >15% during 6 months follow-up
- Desaturation to 88% or distance < 250 meters on 6 minute walk test OR >50 meter decline in 6 minute walk distance over a 6-month period
- Pulmonary hypertension on right heart catheterization
- Hospitalization because of respiratory decline, pneumothorax, or acute exacerbation
Recipient History—Chest X-Ray
## Recipient History-Pulmonary Function Tests

<table>
<thead>
<tr>
<th>Date</th>
<th>FVC</th>
<th>FEV1</th>
<th>DLCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/31/2016</td>
<td>3.98 L (77%)</td>
<td>3.55 L (90%)</td>
<td>14.3 (49%)</td>
</tr>
<tr>
<td>08/01/2019</td>
<td>3.53 L (70%)</td>
<td>3.05 L (80%)</td>
<td>20.7 (57%)</td>
</tr>
<tr>
<td>02/18/2020</td>
<td>2.55 L (51%)</td>
<td>2.27 L (60%)</td>
<td>4.6 (13%)</td>
</tr>
<tr>
<td>07/07/2020</td>
<td>2.08 L (43%)</td>
<td>1.98 (54%)</td>
<td>8.48 (24%)</td>
</tr>
</tbody>
</table>
Recipient History

• 6 Minute Walk Study: Walked 330 meters on 6lpm nasal cannula and desaturated to 85 %

• ABG: pH 7.47; pCO2 35; PO2 128 (on 3lpm)

• Criteria met for transplant evaluation:
  – Dx. UIP via chest CT
  – Desaturation on 6MWS
  – Decline in FVC >10%
  – Change in DLCO > 15%
Transplant Evaluation

• Completed 07/28/2020
  – Now required 15lpm oxygen via nasal cannula
  – Evaluation did not reveal any significant medical or surgical concerns
  – Counselling on high risk donors

• Presented at Multidisciplinary Review Board on 07/31/2020 and approved to list

• Insurance Authorization received 08/06/2020, listed same day

• LAS 65.1
Donor Offer

- Donor Offer received from CAOP on 08/18/20 at 10:32AM
  - 20 year old male
  - Brain death
    - Trauma/MVA
  - No smoking history
  - Chest imaging clear
  - Bronchoscopy normal
  - PF Ratio: 417
Uh-Oh!

- Donor history was notable for COVID infection 3 months prior to brain death
  - No lingering affect of illness noted
- COVID diagnosis could not be confirmed with documentation of COVID test, or COVID Ab at time of organ offer
- Donor OR could not be delayed to confirm prior h/o COVID dx
  - COVID-PCR testing x 2 were negative
  - COVID Ab testing was performed on donor blood post donation and confirmed prior infection
Donor Evaluation

• Imaging and ABG were within acceptable parameters for our center

• No evidence of ground glass opacities or post-COVID fibrotic changes noted on imaging

• Multidisciplinary review of donor

  – Donor accepted for our recipient on 08/18/20 @12:07
Recipient Considerations

• Recipient consent prior to listing includes verbiage to allow physicians to accept or decline based on clinical judgment
• COVID-19 is not considered PHS criteria, therefore no high risk consent required
• Extended criteria donor, no specific consent required
• Recipient LAS was 65
  – recipient had significant increase in oxygen requirement
  – Recipient had decline in lung function
  – Donor activity had slowed due to COVID-19
  – Excellent donor for sick recipient
Patient Outcome

• Transplanted 08/19/2020
• Early PGD Grade 3, resolved by POD 3
• Extubated on POD 1
• Otherwise unremarkable post-transplant course
Day of Discharge

- Discharged on POD 8
- Liberated from Oxygen
Chest X-ray--6 Month Post Lung Transplant
Patient Outcome

- No episodes of rejection
- Lung function continues to improve
  - FVC 3.85 L (81%)
  - FEV1 3.60L (90%)
  - Liberated from oxygen
Thank You