**CLINICAL COMMENTARY**

# A Case-Series of COVID-19 Among Fully Vaccinated Lung Transplant Recipients: Continued Vigilance Needed

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Vaccinations for COVID-19 are a scientific breakthrough, and they have been found to not only greatly reduce rates of hospitalization and death, but also prevent COVID-19 infection.[1] Countries with very high rates of vaccination are beginning to operate more normally with very few observed cases of COVID-19.[2] We present two fully vaccinated patients with orthotopic lung transplants who were hospitalized for COVID-19.

***Case 1***

A middle-aged female with history of pulmonary artery hypertension status-post bilateral orthotopic lung transplant (BOLT) who was fully vaccinated with an adenovirus-virus vaccine three months earlier presented with shortness of breath. She tested positive for COVID-19 on a PCR-based test. She had been taking mycophenolate 250mg twice a day and tacrolimus 1.5 mg daily. She was treated with dexamethasone and remdesivir three days after her symptoms started. She required intubation thirteen days after symptom onset for severe hypoxia despite high flow nasal cannula (Figure).

***Case 2***

A younger male with a history of cystic fibrosis status-post BOLT who was fully vaccinated with two doses of a mRNA vaccine four months earlier presented with fevers, fatigue, and weakness. He tested positive for COVID-19 on a PCR-based test. He had been taking mycophenolate 500mg twice a day, tacrolimus 2 mg twice a day, and prednisone 10mg daily. He was treated with dexamethasone, remdesivir, and convalescent plasma ten days after symptoms started. He was monitored in the medical intensive care unit and required 8L of supplemental oxygen. He was able to be weaned off oxygen after several days.

We present two patients s/p BOLT on immunosuppression who were hospitalized for severe COVID-19. Both patients were fully vaccinated, one with the Johnson & Johnson adenovirus vaccine for COVID-19 and the other with the mRNA COVID-19 vaccine. These cases highlight the importance of mass vaccination efforts and serve as a reminder that despite the availability of highly effective vaccines for COVID-19,[3] some populations will remain at elevated risk for severe disease.[4] By receiving vaccines, individuals not only protect themselves, but contribute to the collective safety of our communities.[5] Until circulating rates of COVID-19 decrease to extremely low levels, patients with varying levels of immunosuppression, especially those with solid organ transplantation, should continue using measures to reduce the risk of COVID-19 infection such as masking and social distancing. Further research is needed to better understand COVID-19 vaccine effectiveness among those with immunosuppression.

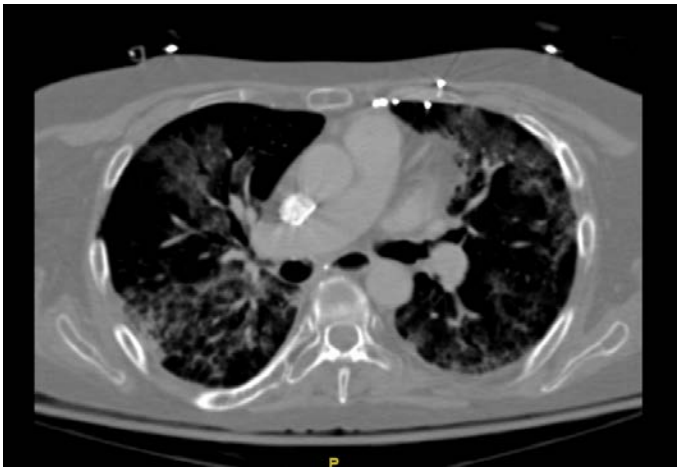

Figure. Radiographic evidence of COVID-19 penumonia among a fully vaccinated lung transplant recipient.

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