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	Patient 1	Patient 2
Age	69	63
Sex	Male	Male
Comorbidities	HTN, NIDDM, HLD	HTN, HLD
Smoking status	Never smoked	Ex-smoker
Occupational history	Dust Exposure / Construction worker	None
ARDS Diagnosis (Day from PCR result)	0	6
PFR	71	52
Negative PCR - Day	41	34
COVID 19 IgG Positive Day	55	41
Ventilator support on day of transplant	Intermittent NIV/HFNC	Intermittent NIV/HFNC
Day of Lung Transplant	57	68
Donor Age	39	40
Donor Sex	Female	Female
LAS	78.43	67.22
Ischemic Times	R lung 232 minutes L lung 157min	L lung 136 minutes R lung 233 minutes
CPB Times	192 minutes	188 minutes
Intra-operative PRBC transfusion	2 units	1 unit
30-day status	Discharged	Hospitalized
X-ray at POD#30		
Last ABG	PO2 105mmHg	PO2 122mmHg
PF Ratio at POD#30	300 <	245
CMV Status (Donor/Recipient)	+/+	+/-
PGD	0	3

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Rapid Clinical Recovery from Critical COVID-19 Pneumonia with Vasoactive Intestinal Peptide Treatment





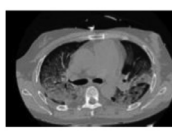
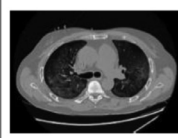
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Introduction: RLF-100 (Aviptadil), a synthetic form of human Vasoactive Intestinal Peptide (VIP), is in clinical trials for treatment of critical COVID-19 pneumonia with respiratory failure. VIP was shown to protect the lung against a broad array of injuries by binding to the VPAC₁ receptor of alveolar type II (ATII) cells, the cells that SARS-CoV-2 binds to. The role of RLF-100 in treating lung transplant patients with COVID-19 pneumonia is unknown.

Case Report: A 54 year old man with double lung transplant presented with headache, fever and productive cough. COVID-19 infection was confirmed by positive RT-PCR of nasopharyngeal swab. The patient required only supportive care for three days and was discharged home. Two weeks later he presented with worsening dyspnea, fever and severe hypoxemia requiring high flow O₂ and ICU admission. Chest CT showed diffuse bilateral consolidations. He had markedly elevated inflammatory markers. He was treated with dexamethasone and tocilizumab without improvement. He was not a candidate for Remdesivir due to chronic kidney disease. Convalescent plasma was not available. Pro-BNP level was normal; echocardiogram showed preserved biventricular function. He received Aviptadil, a total of three doses, per an open label access under an emergency use approved by US FDA. Rapid improvement in oxygenation and radiologic findings were noticed. No adverse effects were recorded. The patient was transferred out of the ICU 24 hours following the third dose and discharged home on room air 15 days later.

Summary: We report a case of lung transplant recipient with critical COVID-19 pneumonia treated with RLF-100 achieving rapid clinical and radiologic improvement. This is consistent with that VIP protects ATII cells, ameliorating the inflammation and improving oxygenation in critical COVID-19 pneumonia. A randomized prospective trial is underway to

evaluate the efficacy of RLF-100 in reducing mortality and improving oxygenation in patients with critical COVID-19 pneumonia.

	Before Infusion	24- hours post 3rd infusion
Portable Chest X-Ray		
Scout CT		
Chest CT		
PaO ₂ :FIO ₂	146	285.19
SaO ₂	98	95
FIO ₂	HFLNC 30 L/min, FIO ₂ 50%	2 L/min

(1269)

SARS-CoV-2 Re-Infection in a Lung Transplant Recipient

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Introduction: Since the onset of the SARS-CoV-2 pandemic, increasing evidence has shown waning immunity after initial SARS-CoV-2 infection, and re-infection in patients with a prior history of COVID-19 has been reported. We report a case of SARS-CoV-2 re-infection in a lung transplant recipient 3 months after initial illness.

Case Report: The patient is a 56-year-old man with a history of bilateral lung transplant in August 2018 for idiopathic pulmonary fibrosis. His post-transplant course was complicated by insulin-dependent diabetes mellitus (HbA1c 5.8%), chronic renal insufficiency (eGFR nadir 48 mL/min/1.73m²), and peripheral arterial disease requiring bilateral below-knee amputations. At the time of transplant, he was induced with basiliximab and remained on standard 3-drug immunosuppression with mycophenolate mofetil (500 mg BID), prednisone (5 mg daily), and tacrolimus. He contracted SARS-CoV-2 from his wife and tested positive for the virus on July 2, 2020 after presenting to the emergency department (ED) with headache, chills, nausea, body aches, shortness of breath, and generalized weakness. His oxygen saturation and chest X-ray were normal, and he was therefore discharged from the ED to recover at home. His symptoms resolved 17 days after diagnosis and serial SARS-CoV-2 testing via nasal washing were positive on July 16, 2020 and negative on July 30, 2020 and August 11, 2020. In addition, on October 21, 2020, he tested positive for SARS-CoV-2 antibodies (3.41, positive: index ≥1.4). On October 23, 2020, he presented to the ED with generalized chest pain, low-grade fever (100.1F), dyspnea, and weakness. His nasal swab was positive for SARS-CoV-2 and CT of the chest showed bibasilar ground-glass opacities consistent with atypical infection vs. atelectasis. His labs were notable for a CRP of 132 mg/L, ferritin of 2,307 ng/mL, LDH 304 units/L, D-dimer 240 ng/mL, and procalcitonin of 0.05 ng/mL. He was admitted for monitoring and treated with remdesivir, corticosteroids, and anticoagulation.

Summary: We present a case of SARS-CoV-2 re-infection 3 months after initial illness in a lung transplant recipient living in a high-incidence area. Unexpectedly, recurrent infection occurred despite development of SARS-CoV-2 antibodies. This case speaks to the vulnerability of this patient population to COVID-19 and the need for ongoing precautions to prevent infection even among patients who have seroconverted.