The Use of Bilateral Orthotopic Lung Transplantation in the Management of Acute Severe Drug-induced Interstitial Lung Disease – A Case Report

This abstract encapsulates a rare and severe case of drug-induced interstitial lung disease (DIILD) resulting from sulfonamide therapy, focusing on trimethoprim-sulfamethoxazole (Bactrim), in an 18-year-old male with recent coronavirus disease 2019 (COVID-19) infection. The patient’s condition rapidly progressed, necessitating lung transplantation. The temporal relationship between Bactrim initiation and the severity of the pulmonary reaction, confirmed by genetic testing, underscores the unique aspects of this case.

The patient, treated with Bactrim for acne post-COVID-19 recovery, experienced a swift decline in pulmonary function. Despite initial stabilization efforts, the patient’s clinical condition worsened, leading to intubation, mechanical ventilation, and extracorporeal membrane oxygenation (ECMO) support. Radiographic assessments revealed extensive bilateral bronchiectasis, ground-glass opacities, fibrotic changes, and honeycombing, particularly prominent in the upper lobes.

Genetic testing identified a heterozygous allelic mutation predisposing to Bactrim allergy. Despite optimal supportive care, including mechanical ventilation and ECMO, the patient’s respiratory parameters continued to deteriorate, prompting transfer and listing for lung transplantation. The subsequent transplantation, successful in this case, revealed significant pathology, including diffuse interstitial inflammation, patchy fibrosis, septal thickening, and vascular thrombosis.

This case is exceptional due to its rarity, severity, and the interplay of factors such as COVID-19 infection and genetic susceptibility. The accelerated pulmonary fibrosis observed highlights the potential life-threatening consequences of Bactrim use. This case emphasizes the importance of early recognition, aggressive management, and the consideration of lung transplantation in refractory cases of DIILD-associated lung failure.

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