

## Dexamethasone/voriconazole

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**Invasive pulmonary aspergillosis secondary to *Aspergillus terreus* and treatment failure: case report**

A 66-year-old woman developed invasive pulmonary aspergillosis secondary to *Aspergillus terreus* at Taleghani hospital, Iran during treatment with dexamethasone for COVID-19 pneumonia. Additionally, she exhibited treatment failure while being treated with voriconazole for invasive pulmonary aspergillosis secondary to *Aspergillus terreus*.

The woman, who was admitted due to COVID-19 pneumonia, started receiving IV dexamethasone 8mg daily and off-label SC interferon- $\beta$ 1a 12 million units once in alternate day for five doses from the first day of admission (day 0). Additionally, she received supportive oxygen therapy. On day 9, interferon- $\beta$ 1a was discontinued, and dexamethasone was continued until day 11 and then was stopped. Her supportive oxygen therapy was continued. On day 15, she became tachypneic and SpO<sub>2</sub> was 89%. On day 17, her SpO<sub>2</sub> decreased to 77% with respiratory distress, and she was intubated due to respiratory failure and progressive hypoxemia. A portable chest x-ray showed new progressive infiltration. She was then started on empirical antibiotic therapy consisting meropenem and vancomycin. Serum galactomannan antigen (GM) test with the *Platelia Aspergillus* ELISA kit was requested and was 4.15. According to the high level of serum GM, voriconazole 6 mg/kg every 12 hours, and then, 4 mg/kg every 12 hours was added to the empiric antimicrobial regimen. Thereafter, bronchoalveolar lavage (BAL) sample evaluated for both bacterial and fungal smear and culture. Bacterial smear and culture reported negative, but the sample was cultured with colonies grew within 4 days that phenotypically was consistent with *Aspergillus terreus*. Microscopy features classified as *Aspergillus terreus*.

The woman was additionally treated with caspofungin. Subsequently, DNA was extracted from 4 day old culture and stored. The DNA sequence matched that of *Aspergillus terreus*. Based on the findings, a diagnosis of pulmonary aspergillosis secondary to *Aspergillus terreus* was made. During antifungal susceptibility test, amphotericin B and caspofungin were resistant, while itraconazole and voriconazole were sensitive to *Aspergillus terreus*. However, despite voriconazole therapy, and in vitro susceptibility to voriconazole, she died due to respiratory failure on day 29.