

Hello Professor and Class,

Emiliano Aguilar Case Discussion: Aspergillosis in the Context of HIV

A 29-year-old man named Emiliano Aguilar has been experiencing symptoms such as fever, chills, hemoptysis (coughing up blood), shortness of breath, joint pain, and headache for a month since moving into a new apartment. He is especially worried that mold exposure in his new living space may be the cause of his illness. He has a medical history of HIV, for

which he is currently taking 300 mg of abacavir, 150 mg of lamivudine, and 300 mg of zidovudine (Trizivir) twice a day. The laboratory results indicate positive biomarkers for Aspergillosis, with both serum galactomannan and sputum testing confirming the presence of the infection; his most recent CD4 count is 350, placing him in a vulnerable group for opportunistic infections.

Assessment of the Clinical Practice Guideline (CPG)

Invasive Aspergillosis (IA) is a serious and potentially fatal infection that primarily affects people with compromised immune systems, such as those with HIV. Antifungal therapy is recommended by the clinical practice guideline (CPG) for the treatment of Aspergillosis in immunocompromised individuals, especially those with HIV.

Voriconazole, is frequently

less toxic and more effective than older alternative antifungals like amphotericin B (Clary et al., 2025).

The CPG would strongly advise beginning voriconazole as the preferred antifungal, with close monitoring of liver and renal function, especially since Emiliano recently moved to a new living environment that may have mold exposure, because his CD4 count of 350 puts him at heightened risk for opportunistic infections like Aspergillosis. Depending on the severity of the infection and the patient's immune response, additional treatment options might involve the use of immunomodulators or steroids (Gupta et al., 2021).

Pharmacological Treatment

Given the severity of Emiliano's symptoms, which include hemoptysis and shortness of breath, antifungal therapy should be started right away. The best course of treatment for Emiliano would be voriconazole, which inhibits the synthesis of ergosterol, an essential component of the fungal cell membrane that effectively inhibits fungal growth. Emiliano's liver and kidney function tests are also normal, but since voriconazole can have nephrotoxic and hepatotoxic effects, it is important to regularly monitor these functions

during treatment. The patient's response to treatment should be closely monitored through

clinical assessments and serial imaging, particularly since he has HIV, which may make it more difficult for him to respond to the infection and therapy (Pappas et al., 2020) .

Additional Considerations and Follow-up

To guarantee the best results for Emiliano's treatment, a number of extra inquiries and actions should be taken into consideration:

Follow-up Testing

Since Emiliano is exhibiting bilateral rales and shortness of breath, chest imaging, such as a CT scan, should be performed to determine the degree of pulmonary involvement.

Frequent measurements of his viral load and CD4 count will aid in tracking the course of his HIV infection and the efficacy of his antiretroviral treatment.

Environmental Factors

Although aspergillosis is usually contracted by inhaling airborne spores, more research into Emiliano's apartment's possible mold exposure is necessary. Knowing the level of mold contamination could help avoid infections in the future.

Patient Education

Emiliano needs to be informed about the side effects of voriconazole, possible drug interactions, and the significance of routine follow-up appointments. It is also critical to talk to him about the significance of adhering to his antifungal therapy and HIV medications.

Lifestyle Factors

Emiliano smokes one pack of cigarettes a day, which can make respiratory disorders worse. In order to lower his risk of developing more pulmonary complications, quitting smoking would be a crucial part of his treatment plan.

Conclusion

Because of his HIV-related immune system compromise, Emiliano is susceptible to opportunistic infections like Aspergillosis. The CPG for Aspergillosis in immunocompromised patients recommends voriconazole as the first-line treatment. His recovery will depend on ongoing monitoring of his immune status, response to therapy, and environmental factors.

References