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A Short Note on Invasive Fungal Diseases in Patients

Yijun Zhu*

Department of Pathology, Ankara University School of Medicine, Ankara, Turkey

***Corresponding author:** Zhu Y, Department of Pathology, Ankara University School of Medicine, Ankara, Turkey, E-mail: zhuyun@hotmail.com

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Description

Invasive fungal disease is a major concern for patients with hematologic malignancies and Hematopoietic Cell Transplant recipients (HCT). Due to various drug–drug interactions with novel targeted therapies, the practice of antifungal prophylaxis utilizing mold-active azoles has subsequently been challenged. This is a retrospective, single-center cohort study of confirmed or suspected IFD in adult hematologic patients and HCT recipients treated with fluconazole prophylaxis and an antifungal diagnostic-driven strategy for mould infection diagnosed between 2009 and 2019. 94 incidences of IFD were reported among 664 hematologic patients and 316 HCT recipients during the study period. Patients with allogeneic HCT, autologous HCT, acute leukaemia, and other hematologic malignancies had a frequency of 8.9%, 1.6 percent, 17.3 percent, and 6.4 percent, respectively, of allogeneic HCT, autologous HCT, acute leukaemia, and other hematologic malignancies.

Aspergillosis was the most common IFD (53.2%), followed by fusariosis (18.1%), candidiasis (10.6%), and cryptococcosis (10.6%). (8.5 percent). The total 6-week death rate was 37.2 percent, ranging from 28 percent in aspergillosis to 52.9 percent in fusariosis, depending on the host and aetiology of IFD. Despite the fact that IFD was common in our group of patients treated with an antifungal diagnostic-driven approach, fatality rates were equivalent to those found in previous trials. Despite the difficulties associated with anti-mold prophylaxis, this technique remains a viable option. Invasive fungal illness is a significant danger for patients with hematologic malignancies. The highest rates have been recorded in allogeneic Hematopoietic Cell Transplant (HCT) recipients and patients receiving induction remission treatment for Acute Myeloid Leukaemia (AML).

Furthermore, recent investigations have revealed a significant frequency of IFD in patients with Acute Lymphoid Leukaemia (ALL) and the introduction of a new group at risk: individuals receiving ibrutinib for chronic lymphoproliferative disorders. IFD is more common in some parts of the world than others, and the etiologic factors are different. These regional variances could be due to differences in the demographic of patients at risk, antifungal prophylactic regimens, and environmental exposure. A considerable number of patients receiving antifungal prophylaxis with a mold-active drug, particularly posaconazole and voriconazole, were included in recent studies addressing the landscape of IFD in hematologic patients. Several novel medications have been added to the treatment of AML and graft *vs* host disease in recent years.

While the emergence of these targeted medicines marks a significant advancement in the field, because of drug–drug interactions, the use of mold-active azoles as prophylactic may be challenging. Posaconazole and voriconazole are both potent inhibitors of cytochrome P450 3A4, which is the key metabolic route involved in these targeted medicines. Furthermore, both azoles may raise the risk of side effects by prolonging the QT interval. As a result, if one of these targeted medications is utilised, a return to fluconazole prophylaxis is likely. The epidemiology of IFD in patients with hematologic illnesses treated at a single facility in Brazil, controlled with fluconazole prophylaxis and a diagnostic-driven antifungal strategy for mould infections, is described in this study.

Except for HCT recipients, who have been cared for in rooms with a HEPA filter and positive pressure since 2012, patients were treated in rooms without a HEPA filter. During neutropenia, patients with acute leukaemia and HCT recipients were given fluconazole as a main antifungal prophylactic. In the case of chronic or recurring fever during neutropenia, or if patients presented with respiratory symptoms, chest and Sinus Computed Tomography (CT) was conducted.

In addition, if the patient had clinical or radiological signs suggestive of IFD, serum galactomannan was measured for 2–3 days. Throughout the trial, this galactomannan-based diagnostic-driven method was used. Bronchoscopy with Broncho Alveolar Lavage (BAL), sputum culture, and skin biopsy were among the other tests conducted based on the clinical indication.