Clinico-Investigative Profile and Anti-Fungal Susceptibility of Fungemia Cases in Haematological Malignancy Patients

Isha Agarwal (3rd prof MBBS student), Malini R Capoor(Microbiology), Ahsaan Hamidi (Microbiology), Ritin Mohindera, D.K. Gupta (Hematology)

E-mail: isha.agarwal497@gmail.com

Abstract

The incidence of deep fungal infections in patients with malignancies has increased dramatically over the past decades. Majority of these infections occur in patients with hematologic malignancies due to a multitude of predisposing risk factors. However over the years due to antifungal prophylactic therapies in these patients there is an increase in anti-fungal resistance in various fungi like Candida spp. and Aspergillus spp. which is a matter of concern and needs to be dealt with. The present study was undertaken to determine the prevalence of fungemia, various risk factors predisposing to it and antifungal susceptibility of fungal isolates.

Materilas and methods

The research was conducted in the Departments of Microbiology & hematology in Vardhman Mahavir Medical College and Safdarjung Hospital. A total of 50 patients with hematological malignancies from oncology ward were screened for fungemia and those with Blood cultures showing growth of fungi (yeasts or moulds) were taken up for further study. Antifungal susceptibility was performed using E-test as per the CLSI guidelines. A brief history was taken from the patient and patient's clinical profile & epidemiology was obtained from records and a Proforma was filled.

Results

The prevalence of fungemia in patients with hematological malignancy was 40%. Risk factors observed were CVC (60%), corticosteroids (95%), chemotherapy (100%), neutropenia (60%), and broad-spectrum antimicrobials (100%)[most commonly magnex (cefperazone with sulbactum), amikacin, & vancomycin]. Among the fungal isolates 55% were non-albicans Candida spp. (C.tropicalis, C.parapsilosis, C.guillermondi) and 45% were Aspergillus spp. Anti fungal susceptibility tests showed that 36.37% of Non albicans Candida spp. were resistant to fluconazole. While 45.46% of Non albicans Candida spp. were resistant to itraconazole only 11.11% of Aspergillus spp. were resistant to it. Also all spp. of Aspergillus were sensitive to voriconazole. All fungal isolates were sensitive to amphotericin B.

Conclusion

This research has helped to have a better insight into the present situation of fungemia in severely immunocompromised patients like those of hematologic malignancies in this tertiary care hospital and has led to the better understanding of resistance patterns among opportunistic fungal pathogens towards the current anti-fungal therapy used.The epidemiology and choice of therapy for candidemia are rapidly changing. Fungemia continues to be prevalent in hematologic malignancy patients associated with substantial morbidity, and non-albicans Candida species closely followed by Aspergillus spp. are the most frequently isolated pathogen from hematologic malignancy patients in our tertiary care centre. Also a steep rise is noted in the anti fungal resistance among fungal isolates. Hence there is an urgent need for expedient diagnosis and correct management of these infections along with measures to improve hospital care practices.