Invasive fungal infection in hematopoietic stem cell transplant recipient from an Indian oncology setting

Abdul Ghafer, Bikram Das, Raddhika Karthik, Benjamin M Easow, Ramanan T Raja, Jose Easow
Apotri Specialty Hospital and Cancer Research Center, Chennai, India
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Objectives: Invasive fungal infections (IFI) are one of the major causes of morbidity and mortality in post-hematopoietic stem cell transplant (HSCT) recipients. Data from India are limited. The objective was to analyze the incidence, risk factors, and outcomes associated with IFI in our center.

Methods: Adult patients who underwent marrow/stem cell transplantation between 2014-2018, in an oncology center in India, were included in this retrospective observational study. The revised consensus definition of IFI by the European Organization for Research and Treatment of Cancer/Invasive Fungal Infections Cooperative Group and the National Institute of Allergy and Infectious Diseases Mycoses Study Group (EORTC/MSG) in 2008, was considered to define cases. Incidence, risk factors, and outcomes associated with IFI were analyzed.

Results: Out of the 126 patients who underwent HSCT between 2014-2018, 16 (44.4%) had allo-HSCT, 64 (10.4%) had auto-HSCT and 6 (4.8%) had haplo-identical HSCT. A total of 85 (65.9%) were males and 41 (34.1%) females, 115 (85.9%) Asians, and 11 (10.3%) Afro-Asians. Total 111 (88%) patients received myeloablative conditioning and 24 (18%) received total body irradiation. The hematological conditions were acute myeloid leukemia (AML) n = 23 (18.25%), acute lymphoblastic leukemia (ALL) n = 16 (12.69%), chronic myeloid leukemia (CML) n = 4 (3.17%), Hodgkin lymphoma (HL) n = 17 (13.4%), non-Hodgkin lymphoma (NHL) n = 11 (8.73%), Myeloma n = 3 (2.77%), acute disease n = 11 (10.31%), etc. Most patients received fluconazole 78 (63.9%) followed by itraconazole 23 (18.25%), posaconazole 20 (15.87%), voriconazole 4 (3.17%), and liposomal amphotericin B 1 (0.79%) as antifungal prophylaxis. The overall rate of IFI (possible cases included) was 50-HSCT n = 3 (7.81%), and allo-HSCT n = 5 (8.02%). Among allo-HSCT, the IFI was Proven n = 3, Probable n = 1 (1.71%), and Possible n = 6 (6.25%), and among allo-HSCT Proven = 0, Probable n = 2 (5.57%), and Possible n = 3 (5.57%). These cases had IFI long-based on imaging and serological tests. None of the cases had a lung biopsy. There were no incidents of candidemia. No patients in haplo-HSCT had IFI. The 1-year survival rate among the IFI cases was 810 (80%). As the number

P483
Expanding VGVI—evidence for distinct Cryptococcus gattii (decagattii) endemic to the American Southwest

David Engelthaler1, Juan Moreno-Niost1, DVM Jane Sykes2, Ken Komatsu3, Wieland Meyer4,5
1 Translational Genomics Research Institute, Flagstaff, United States
2 Department of Medicine & Epidemiology, School of Veterinary Medicine, University of California-Davis, Davis, USA
3 Arizona Department of Health Services, Phoenix, USA
4 Curtin Medical School, Curtin University, Perth, AUS
5 University of Sydney, Sydney, AUS
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Objectives: We aimed to understand the nature of non-BCregional Cryptococcus gattii clinical and molecular cases identified in Arizona, a state in the American Southwest, a locale well outside of the known endemic regions.

Methods: Whole-genome sequencing and phylogenomic comparative analyses were conducted on 40 unrelated isolates collected from recent cases along with other relevant C. gattii genomes.

Results: Phylogenomic analyses grouped the Arizona genomes with a previously known set of Mexican isolate genomes, labeled as VGVI or C. decagattii. These genomes are clearly delineated from the nearest major molecular type (VGII), but share no recombination with other molecular types or species of C. gattii. See Figures below.

Conclusions: These findings expand VGVI into a definitive clade and establish this molecular type as a clinically important and distinct population. These findings also expand the known Cryptococcus ecological range into a previously unacknowledged endemic area, typified by extreme heat and aridity.