Epidemiology Maps for Histoplasmosis According to Statehood of Authors

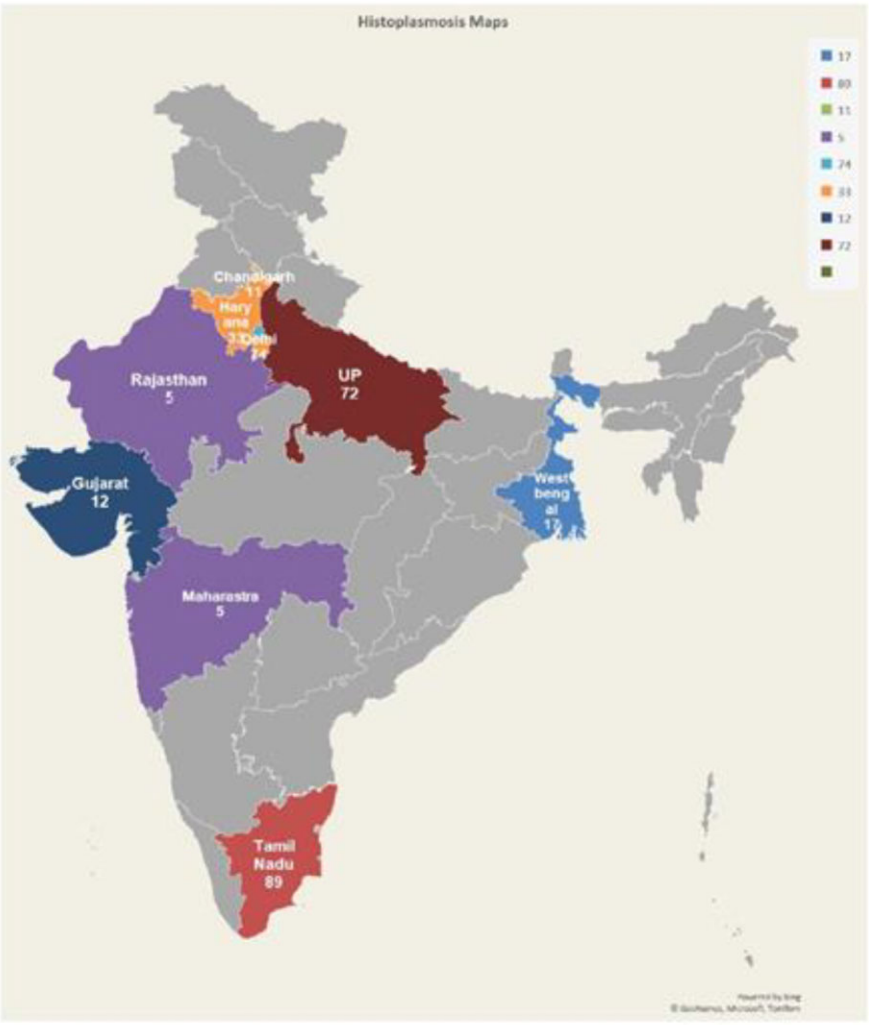


Figure 2 B

P483

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

Abdul Ghafur, Bikram Das, Radhika Karthik, Benjamin M Easaw, Ramanan T Raja, Jose Easaw
Apollo Specialty Hospital and Cancer Research Center, Chennai, India

Poster session 1, September 21, 2022, 12:30 PM - 1:30 PM

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, 56 (44.4%) had Allo HSCT, 64 (50.8%) had auto HSCT and 6 (4.8%) had haplo-identical HSCT. A total of 83 (63%) were males and 43 (34%) females, 113 (83.9%) Asians, and 13 (10.3%) Africans. Total 111 (88%) patients received myeloablative conditioning and 24 (19%) 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%), Hodgkins lymphoma (HL) $n = 17$ (13.4%), non-Hodgkins lymphoma (NHL) $n = 11$ (8.73%), Myeloma $n = 35$ (27.7%), sickle cell disease $n = 13$ (10.31%), etc. Most patients received fluconazole 78 (61.9%) followed by micafungin 23 (18.25%), posaconazole 20 (15.87%), voriconazole 4 (3.17%), and liposomal amphoterin B 1 (0.79%) as antifungal prophylaxis. The overall rate of IFI (possible cases included) was auto-HSCT $n = 5$ (7.81%), and Allo-HSCT $n = 5$ (8.92%). Among auto-HSCT, the IFI was Proven = 0, Probable $n = 1$ (1.5%), and Possible $n = 4$ (6.25%), and among Allo-HSCT Proven = 0, Probable n = 2 (3.57%), and Possible $n = 3$ (5.35%). These cases had IFI lung 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 8/10 (80%). As the number of patients with IFI was very low, a meaningful comparison of the risk factors, and the impact of prophylactic regimens were difficult.

Conclusions: The overall rate of IFI in HSCT patients in our setting was low compared to global data.

P484

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

David Engelthaler[1], Juan Monroy-Nieto[1], DVM Jane Sykes[2], Ken Komatsu[3], Wieland Meyer[4,5]
[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]Curtain Medical School, Curtain University, Perth, AUS
[5]University of Sydney, Sydney, AUS

Poster session 1, September 21, 2022, 12:30 PM - 1:30 PM

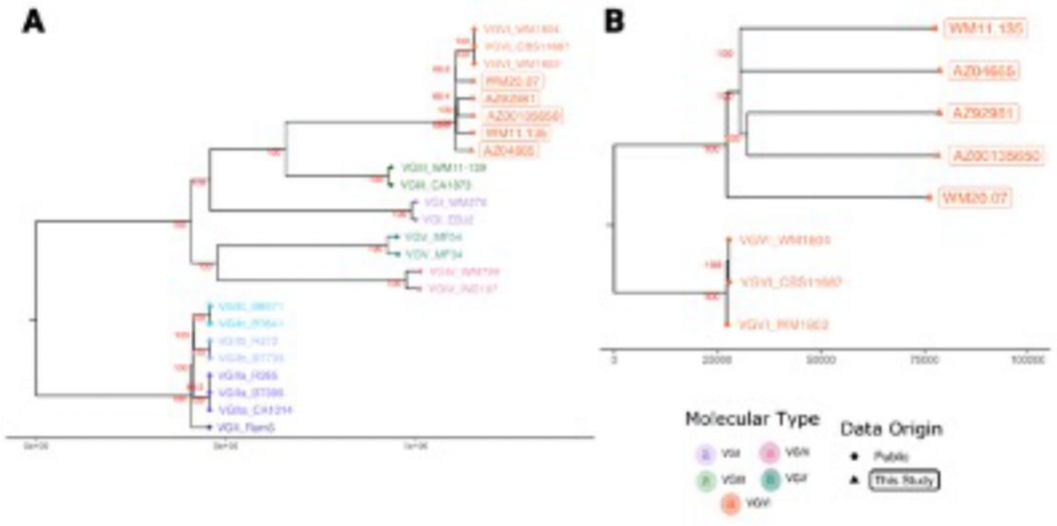
Objectives: We aimed to understand the nature of autochthonous *Cryptococcus gattii* clinical and veterinary cases identified in Arizona, a state in the American Southwest, a locale well outside of the known endemic regions.

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

Results: Phylogenomic analysis grouped the Arizona genomes with a previously known set of Mexican isolate genomes, labelled as VGVI or *C. decagattii*. These genomes are clearly delineated from the nearest major molecular type (VGIII), but show no recombination with other molecular types or species of *C. gattii*.

See Figures below.

Conclusion: 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 unrecognized endemic area, typified by extreme heat and aridity.



P485

Hiv-positive, solid organ transplant (SOT), and non-Hiv-positive/non-transplant (NHNT) associated with cryptococcosis in Brazil: First national multicenter cohort study

Francelise Bridi Cavassin[1,8], Jose Ernesto Vidal[2], Cássia Silva Miranda Godoy[3], Renata Bastos Ascenço Soares[3], Marcello Mihailenko Chaves Magri[4], Diego Rodrigues Falci[5], Carla Sakuma De Oliveira[6], Ana Verena Almeida Mendes[7], João Luís Baú-Carneiro[8], Flávio Queiroz-Telles[1,9]

[1]Universidade Federal do Paraná (UFPR), Curitiba, Brazil [2]Instituto de Infectologia Emílio Ribas (IIER), São Paulo, Brazil [3]Hospital de Doenças Tropicais Dr. Anuar Auad (HDT), Goiânia, Brazil [4]Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HC/FAMUSP), São Paulo, Brazil [5]Hospital de Clínicas de Porto Alegre (HCPA), Porto Alegre, Brazil [6]Hospital Universitário do Oeste do Paraná (HUOP), Cascavel, Brazil [7]Hospital São Rafael (HSR), Salvador, Brazil [8]Faculdades Pequeno Príncipe (FPP), Curitiba, Brazil [9]Hospital de Clínicas da Universidade Federal do Paraná (HC/UFPR), Curitiba, Brazil

Poster session 1, September 21, 2022, 12:30 PM - 1:30 PM

Objectives. To describe the characteristics, mortality, and therapeutic response among hospitalized patients with cryptococcosis in Brazil.

Methods. This is a multicenter retrospective cohort study of seven Brazilian public tertiary hospitals (Figure 1). Medical records of patients admitted from January 2014 to December 2019 were evaluated. Confirmed cases of the first episode of cryptococcosis were included. Hosts were classified as HIV-positive, solid organ transplant (SOT), and non-HIV-positive/non-transplant (NHNT). Mortality was defined as the time of patient admission to in-hospital death from any cause. Statistical analysis was performed using the software R and JAMOVI.

Results. A total of 384 patients were included; the median (25th-75th) age was 39 (31-48) years and 283 (73.7%) were men. Hosts were 304 (79.2%) HIV-positive, 16 (4.2%) SOT, and 64 (16.7%) NHNT. More frequent diagnosis tools were culture, direct microscopic examination of infected body fluids using India ink, histological examination of tissue samples, and detection of cryptococcal polysaccharide antigen in body fluids (CrAg) using latex. Central nervous system (CNS) cryptococcosis had a significantly higher counting level across disease categories, with 313 cases or 81.5%. NHNT were more likely to have CNS cryptococcosis than people HIV-positive (84.4% vs. 81.9%, respectively). SOT patients had more pulmonary form infections (31.2%) as compared with HIV-positive (3.3%) and NHNT (1.6%). Other extrapulmonary sites category had HIV-positive and NHNT basically the same percentage of disease involvement (14%) compared with SOT (6.2%) ($P < .001$, Figure 2). Among cases with identification of specie, 56% were *Cryptococcus neoformans* and 4.4% were *C. gattii*. A total of 271 (70.6%) patients were discharged home with total or partial improvement and 113 (29.4%) patients died during hospitalization. In-hospital mortality among HIV-positive, SOT, and NHNT patients was 30.3% (92/304), 12.5% (2/16), and 29.7% (19/64), respectively. Induction therapy with AMB had the conventional deoxycholate mainly in combination with fluconazole (234, 84.2%). Only 80 (22.3%) patients received an AMB lipid formulation (liposomal AMB, $n = 35$ and AMB lipid complex, $n = 45$). The median (25th-75th) length of AMB therapy was 20 (14–32) days. Death patients had more age when compared with discharged-to-home cases (43 vs. 38 years, $P < .002$). Patients with CNS cryptococcosis had lower mortality (83/313, 26.5%) when compared with the other categories [pulmonary, 5/16 (31.2%) and other extrapulmonary sites, 25/55 (45.4%)] ($P = .017$). Survival benefits were seen for patients who received monotherapy or combination therapy. However, D-AMB alone showed a higher mortality rate, although not statistically significant ($P = .537$).

Conclusion. HIV infection is the most important condition among patients with cryptococcosis in Brazil and CNS involvement is the commonest manifestation in all hosts, mainly HIV-positive and NHNT. The proportion of pulmonary cryptococcosis is relevant in SOT patients. Mortality was high in all categories of hosts. Understanding the epidemiology and characteristic of patients admitted to our hospitals will help to understand the burden and causes of mortality and identify strategies to improve this scenario. Optimized diagnosis (i.e., lateral flow assay) and treatment (i.e., AMB lipid formulation plus flucytosine) are urgently necessary for our setting.

Region	n of centers	n of patients	Classification group (n)
South	3	96	HIV+ (72); SOT (5); NHNT (19)
Southeast	2	90	HIV+ (68); SOT (8); NHNT (14)
Central-West	1	188	HIV+ (162); SOT (0); NHNT (26)
Northeast	1	10	HIV+ (2); SOT (3); NHNT (5)
Total	7	384	HIV+ (304); SOT (16); NHNT (64)

Figure 1. Geographic location of study centers and general data information.
Legend: Each dot represents a public-private tertiary hospital located in four of the five regions of Brazil. There were no study centers located in the North region. HIV+, positive human immunodeficiency virus; SOT, solid organ transplant; NHNT, non-HIV-positive, non-transplant; n, number. Created from https://www.mapchart.org.