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Anti-Granclovica-macrophage colony stimulating factor (Anti-GM-CSF) autoantibodies – the underrecognized cause of Cryptococcosis in non-HIV individuals in Thailand: Case series from a single tertiary care hospital

Tawonpong Pongdomboon1, Pornpit Tresuphapatvanakul1, Pirklow Umroa2, Waleet Thambidiyabang2, Mathit Chayakulkern1
1Buddhabhandy Hospital, Phitsanulok, Thailand
2Department of Immunology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

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Background: Cryptococcosis is an opportunistic fungal infection in immunocompromised patients. Granulocyte-macrophage colony-stimulating factor (GM-CSF) regulates the functions of phagocytes and some macrophages, which are crucial in cryptococcal control. Anti-granulocyte-macrophage colony-stimulating factor (Anti-GM-CSF) autoantibodies have been found to be associated with cryptococcosis in non-HIV individuals, but this syndrome has never been described in Thai population.

Methods: We report here the case series of patients hospitalized in a tertiary care hospital in Northern Thailand. Results: Three apparently immunocompetent patients, 54, 58, and 65 years old, were presented with neurological manifestations. Brain computed tomography scans and lumbar punctures were performed and the results showed evidence of cryptococcal meningitis. Two of the patients also had pulmonary cryptococcosis. We performed Anti-GM-CSF autoantibody ELISA assays in the patient's sera and all of these sera samples revealed a high titer of anti-GM-CSF autoantibodies. The patients were treated with amphotericin B deoxycholate with or without fluconazole for induction antifungal therapy, followed by fluconazole consolidation treatment. All patients were cured and had favorable outcomes.

Conclusion: Anti-GM-CSF autoantibodies syndrome is underrecognized in Thai patients and is a new entity of immunodeficiency associated with cryptococcal meningitis and disseminated cryptococcosis in Thai patients.

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Fetal secondary fungemia due to Trichosporon asahii onychomycosis in a diabetic patient

Saeed Taj-Aliabadi1,2, Elamine Franchi1,2, Mina Al-Matamans1,2, Bert Theelen1,2, Dong Vo4, Youn Boekhout4, Ferry Hagen1,2
1Mycology Laboratory, Department of Medicine and Pathology, Hamad Medical Corporation, Doha, Qatar
2University of Babylon, Hilla, Iraq
3Faculty Of Medical Sciences, School Of Medicine-Universidade Federal De São Paulo, São Paulo, Brazil
4Westerdijk Fungal Biodiversity Institute, Utrecht, The Netherlands

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Objectives: We describe a fetal case of trichosporoniasis caused by Trichosporon asahii. The aim was to molecularly characterize the T. asahii strains from blood and tissue samples to investigate its genetic relatedness.

Methods: An 85-year-old methode obese female with a prior cardiovascular accident, hypertension, and diabetes mellitus was admitted to a peripheral hospital with type II respiratory failure, metabolic acidosis, and chronic anemia. Three weeks posthospitalization the patient remained febrile, physical examination showed that the patient had paronychia, nail pigmentation, subungual onychomycosis, and a diabetic foot ulcer. Blood cultures, as well as nail and ulcer samples, became positive for Trichosporon asahii.

Results: Three clinical strains were found to belong to the rare 18S-ssrRNA gene 7 and had similar MICs for amphotericin B (4 μg/mL), 5-flucytosine and fluconazole (2 μg/mL), voriconazole (≥ 0.0625 μg/mL), micafungin (0.0625 μg/mL), and caspofungin (0.125 μg/mL). 39 SNPs, with 38 base changes, in the tRNA amino acid insertion sequences of T. asahii were sequenced using the Nanopore technology. The strains CBS7632, CBS8274, and CBS8275 were identified as species T. asahii.

Conclusion: The three clinical strains were found to belong to the rare 18S-ssrRNA gene 7 and had similar MICs for amphotericin B (4 μg/mL), 5-flucytosine and fluconazole (2 μg/mL), voriconazole (≥ 0.0625 μg/mL), micafungin (0.0625 μg/mL), and caspofungin (0.125 μg/mL). These results indicate that T. asahii is a distinct species within the T. asahii complex. The genetic relatedness of the three clinical strains indicates that they are most likely derived from a single source.