

TITLE: CRYPTOCOCCOSIS IN A UNIVERSITY HOSPITAL LOCATED IN THE MIDWESTERN REGION OF BRAZIL: ETIOLOGIC AGENTS AND ANTIFUNGAL SUSCEPTIBILITY

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ABSTRACT:

Cryptococcosis agents are encapsulated yeasts belonging to the *Cryptococcus neoformans* complex, serotypes A, D and AD, and *C. gattii* complex, serotypes B and C. The infection occurs in humans and animals by inhalation of propagules that may cause primary respiratory disease and spread by hematogenic route with predilection for the Central Nervous System. *Cryptococcus neoformans* causes opportunistic infection in immunocompromised individuals, such as in AIDS. The aim of this study was to identify and to determine the antifungal susceptibility of *Cryptococcus* isolated from patients assisted at Maria Aparecida Pedrossian University Hospital of the Federal University of Mato Grosso do Sul, Campo Grande City, from December 2014 to December 2015. Demographic and exams microbiological were collected from the hospital's computerized system. The broth microdilution technique was used to determine antifungal susceptibility to amphotericin B (AMB), fluconazole (FLC), itraconazole (ITC) and voriconazole (VRC). A total of 18 *Cryptococcus* were recovered during one-year study period. Of the total cases, 10 (55.5%) samples were obtained from AIDS patients. Fourteen (77.7%) patients were male and the patients' mean age was 39.44 years (range: 21–59 years). The clinical forms of cryptococcosis observed were meningoencephalitis (61.1%), pulmonary (16.7%), disseminated (11.1%) and bloodstream infection (11.1%) with no other site of infection detected. The agents identified were of the *C. neoformans* (16; 88.9%) and *C. gattii* (2; 11.1%). The molecular types found were *C. neoformans* VNI (11/18; 61.1%) and VNII (4/18; 22.2%), and *C. gattii* VGII (3/18; 16.7%). These, were isolated from different clinical specimens such as cerebrospinal fluid (66.7%), blood (44.4%), tracheal aspirate (16.7%), urine (11.1%), sputum and bone marrow (5.6%). The minimum inhibitory concentration in µg/mL ranged from 1 to 4 for FLC, 0.03 to 0.125 for ITC, 0.015 to 0.125 for VRC and 0.25 to 1 for AMB. Species of the *C. neoformans* complex are responsible for most cases of cryptococcosis in HUMAP and,

meningoencephalitis, the most prevalent clinical form. Although resistance to the antifungal agents tested has not been observed, surveillance studies are necessary in view of the emergence of fluconazole and amphotericin-resistant *Cryptococcus* described in other regions of Brazil.

Keywords: antifungal susceptibility, *Cryptococcus neoformans*, *Cryptococcus gattii*.

Development Agency: Fundação de Apoio ao Desenvolvimento do Ensino, Ciência e Tecnologia do Estado de Mato Grosso do Sul (FUNDECT)