TITLE: MOLECULAR IDENTIFICATION AND ANTIFUNGAL SUSCEPTIBILITY OF *CRYPTOCOCCUS GATTII* CLINICAL ISOLATES

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ABSTRACT:

Cryptococcus spp. are encapsulated yeast in which two species are pathogenic to humans, *C. neoformans* and *C. gattii*. These yeasts are the main cause of cryptococcosis, a fungal infection which affects mainly immunocompromised individuals, but can also affect healthy people. The main infectious propagule responsible for the onset of infection, that may have a sub acute or chronic features, are the basidiospores or the desiccated yeasts. This infection primarily involves the host lungs due to the inhalation of the propagules, and can spread to the central nervous system (CNS), where this fungus has a tropism by the CNS perivascular cells. Due to the increase of the immunocompromised patients (AIDS, leukemy, transplant, and prolonged use of corticosteroids or antibiotics), the cases of fungal infections such as cryptococcosis have increased. The commonly antifungals used for cryptococcosis treatments are fluconazole and amphotericin B. Although the significant differences between the species of *Cryptococcus*, the antifungals choices are the same. *C. gattii* is considered a causative agent of primary infection, responsible for a high mortality rate in healthy individuals due to its delayed response to antifungal therapies. Therefore, the isolation and correct identification of these fungal isolates are essential for the analysis and evaluation of this pathogenesis. We analyzed 18 clinical isolates from the Clinical Hospital of the Medical School of Ribeirão Preto - USP previously identified as *Cryptococcus* spp. and molecularly identified as *C. gattii.* For this, the conventional Polymerase Chain Reaction (PCR) was performed by using specific primers (CNb-49-S and CNb-49-A) for *C. gatti* molecular identification, which amplify 448 bp from the fungal DNA. After the molecular identification, the clinical isolates were submitted to the antifungal susceptibility evaluation by broth microdilution method based on the MS27-A3 protocol indicated by Clinical and Laboratory Standards Institute (CLSI). The results of the minimum inhibitory concentrations (MIC) were presented through geometric mean (GM) and MIC-range, respectively, for amphotericin B 0,65 mg/mL (0,50 – 1,0 mg/mL), fluconazole 1,27 mg/mL (0,06 – 4,0 mg/mL), and voriconazole 0,29 mg/mL (0,06 – 1,0 mg/mL). Thus, all *C. gattii* isolated from cryptococcocal cases treated at the Clinical Hospital of the Medical School of Ribeirão Preto - USP were sensitive to amphotericin B, fluconazole and voriconazole.

Keywords: *Cryptococcus gattii*, molecular identification, antifungal susceptibility.

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