

TITLE: A 5-YEAR REVIEW OF INVASIVE CANDIDIASIS IN A PEDIATRIC TERTIARY HOSPITAL: THE CURRENT CHALLENGE OF *Candida parapsilosis* complex

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ABSTRACT:

Invasive candidiasis (IC) is the most prevalent fungal nosocomial infection, contributing to morbidity and mortality of hospitalized patients and a significant burden to the healthcare system. Species distributions and susceptibility patterns of *Candida* isolates diverge widely between children and adults. Although *C. albicans* is the major cause of IC worldwide, *Candida parapsilosis* complex is one of the most common non-albicans *Candida* species. The aim of this study was to perform a 5 years retrospective analysis of IC cases in a Brazilian tertiary pediatric hospital and conduct a microbiological investigation of *C. parapsilosis sensu stricto*. All isolates were identified by MALDI-TOF MS. The genotyping of all *C. parapsilosis sensu stricto* was performed by microsatellite analysis; antifungal susceptibility to amphotericin B and fluconazole, and biofilm formation were also evaluated. A total of 123 IC episodes were identified from August 2016 to August 2021. The IC incidence was 1.24 cases/1000 hospital admissions and mortality of 34%. The age of patients with IC ranged 0-17 years and 50.4% of them were male. The main species identified were *C. parapsilosis complex* (35.8%), followed by *C. albicans* (29.2%) and *C. tropicalis* (21.9%). All *C. parapsilosis sensu stricto* isolates were recovered from blood cultures and identified as biofilm producers, 82.5% of them, as strong producers. According to the microsatellite analysis, more than thirty different genotypes were assigned over the 5 years analyzed, one of them in more than one patient. All *C. parapsilosis sensu stricto* isolates were sensitive to amphotericin B and one was non-sensitive to fluconazole. During recent years, the number of *C. parapsilosis* infections increased. Continuous changes in pediatric IC epidemiology have been reported, therefore, epidemiological surveillance is essential for the control and prevention of infections and hospital outbreaks.

Keywords: invasive candidiasis, *Candida parapsilosis* complex, pediatric, biofilm, epidemiology

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