

Distribution and antifungal susceptibility profile of four medically important *Candida* species isolated from blood cultures in a tertiary medical centre in Kuala Lumpur

Asiyah Nordin, Tzar Mohd Nizam Khaithir, Ding Chuan Hun, Wong Kon Ken

Department of Medical Microbiology and Immunology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

ABSTRACT

Objectives: To investigate the distribution and antifungal susceptibility patterns of major *Candida* species causing candidemia in HCTM. **Methods:** Sixty-six *Candida* isolates were obtained from blood cultures between March 2021 and January 2022. Identity of species were determined by VITEK 2 YST and confirmed by PCR amplification of the internal transcribed spacer regions 1 (ITS1) and 2 (ITS2), including the 5.8S rRNA. Antifungal susceptibility was determined by Sensititre YeastOne YO-10. **Results:** Out of 66 isolates, non-albicans *Candida* (NAC) species were the most prevalent (66.7%). However, as a single species, *C.albicans* was still the most common organism (n = 22, 33.3%), followed by *C.glabrata* (n = 17, 25.8%), *C.tropicalis* (n = 15, 22.7%) and *C.parapsilosis* (n = 12, 18.2%). In comparison with *C.albicans* which had only one isolate showing resistance (only to flucytosine), NACs were far more resistant. *C.glabrata* had only one isolate susceptible to itraconazole, none to fluconazole and 94.1% to echinocandins. *C.tropicalis* showed low susceptibility to azoles, with 33%, 20% and 60% to voriconazole, itraconazole and fluconazole, respectively. Azole susceptibility in *C.parapsilosis* isolates were 91.7% to voriconazole and itraconazole, and 83% to fluconazole. All isolates remained susceptible to amphotericin B with minimum inhibitory concentrations of 0.25-1 µg/ml. **Conclusions:** Majority of candidemia cases were caused by the more resistant NAC species. *C.albicans* remained susceptible to antifungal agents, while *C.glabrata* and *C.tropicalis* showed resistance to triazoles at a concerning rate. This may warrant the usage of echinocandins as empirical treatment for NACs before finalisation of antifungal susceptibility test result, especially in high-risk patients.

Keywords: candidemia, antifungal susceptibility, non-albicans *Candida* species