

Clinical Characteristics and Antifungal Susceptibility of *Candida nivariensis* from Vulvovaginal Candidiasis.

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ABSTRACT

OBJECTIVES: The aim of this work is to evaluate the susceptibility profile of the isolates against antifungal drugs and the level of virulent genes and resistant genes mRNA expression of *Candida nivariensis*.

METHODS: We analyzed a collection of 9 *C. nivariensis* isolates from clinical isolates of *Candida glabrata* complex isolated from patients with vulvovaginal candidiasis (VVC). Antifungal susceptibilities of the isolates were assayed by using the broth microdilution method. The level of virulent genes and resistant genes mRNA expression was determined by using real-time PCR.

RESULTS: At day 7-14 and day 30-35 follow-up, mycological cure of VVC caused by *C. nivariensis* was 5 in 9 and 4 in 9 cases. The minimum inhibitory concentration geometric means of caspofungin, fluconazole, itraconazole, and amphotericin B in *C. nivariensis* isolates were higher than those in *Candida albicans* ATCC90028 (0.340, 1.852, 0.367, and 1.587 vs. 0.124, 0.140, 0.030, and 0.891 µg/mL; $p < 0.05$). The level of resistant genes *ERG11*, *CDR1*, and *CDR2* and virulent genes *YPS1*, *AWP3*, and *EPA1* mRNA expression was higher in *C. nivariensis* isolates than that of *C. glabrata* (2.58 ± 0.78 , 9.31 ± 5.19 , 11.10 ± 0.76 , 13.57 ± 0.54 , 11.96 ± 2.93 , and 14.40 ± 0.61 vs. 1.05 ± 1.19 , 2.22 ± 0.27 , 0.85 ± 0.48 , 0.30 ± 0.37 , 1.90 ± 0.43 , and 2.40 ± 0.65).

CONCLUSION: We conclude that patients infected with *C. nivariensis* were symptomatic and with a low mycological cure rate when treated with commonly used antifungal agents. Compared with *C. albicans*, *C. nivariensis* is more antifungal resistant and virulent.