

**Prevalence and Molecular Identification of *Candida* oral Infections in HIV Patients  
attending treatment centres, Vhembe District, Limpopo Province**

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## ABSTRACT

This study was aimed at determining the prevalence of the most common *Candida species* from oral cavity among HIV patients on ARV treatment and to relate the occurrence of these infections/colonisations with host/life style factors, CD4+ cell count and virological characteristics of the participants in the Vhembe District, Limpopo Province of South Africa and to conduct antifungal susceptibility tests. Mouth wash samples were collected from 597 participants composed of 62(10.4%) HIV negative and 535(89.6%) HIV positive patients. Among 568 of these participants 173 (29.0%) were males and 395 (66.3%) were females. Out of 544 participants, a total of 308 (51.6%) participants were from the ages between 26-45 years old, 165 (27.6%) were from the ages above 45 years old and 53 (8.9%) participants were of unknown age group. The majority of the 567 participants who gave their marital status were single 260 (45.9%), followed by married 205 (36.2%), widow 69 (12.2%) and divorced 33 (5.8%).

CHROM agar was used for presumptive identification of *Candida* species and the activity of amphotericin B, fluconazole, miconazole, tioconazole, clotrimazole and ketoconazole was tested using the disc diffusion method against the fungal isoates. Polymerase chain reaction was used for confirmation using species specific primers. The isolates were further sequenced to determine their genomic variations. Six species of *Candida* were isolated from mouth wash samples namely: *C. krusei* 144(71.6%), *C. albicans* 104(51.7%), *C. parapsilosis* 69(34.2%), *C. lusitaniae* 51(25.2%), *C. tropicalis* 39(19.3%) and *C. glabrata* 7(3.5%) respectively. The isolates showed susceptibility to fluconazole 73(65.8%), miconazole 73(65.2%) and ketoconazole 71(63.4%). A distinctive resistance pattern was identified with highest resistance seen in clotrimazole 52(46.4%). Genetic characterisation of the isolates showed that *Saccharomyces cerevisiae* might have a role to play in the pathogenesis of mouth thrush among

HIV and AIDS patients in this community. This study further established that the type of ARV regimen which the patients were taking has an influence on the occurrence of mouth thrush. Our findings indicate a need for regular monitoring on antifungal drug susceptibility of those living with HIV in resource poor settings like Vhembe district in order to supply patients with relevant treatment which will contribute in improving their quality of life.