

Prevalence and Antimicrobial Susceptibility Profiles of *Candida* and *Trichomonas vaginalis* in South African Women

Ntombizethu Nokuphiwa Msomi*

University of Kwazulu Natal, South Africa.

Published April 17, 2024

ABSTRACT

Background: Vaginal infections, or inflammation of the vulva and vagina, are associated with symptoms of vaginal discharge, odor, irritation, or burning, and most commonly occur secondary to infectious agents. This study aimed to investigate the prevalence of *Trichomonas vaginalis* and *Candida* infections in women from Durban, South Africa, and to investigate antimicrobial susceptibility profiles of these pathogens.

Methods: The identity of the *Candida* isolates was confirmed using the Applied Biosystems TaqMan® Assay. Susceptibility testing of the *Candida* isolates was performed using the Sensititre™ YeastOne™ YO10 AST Plate (to determine the minimal inhibitory concentrations (MICs) for *C. albicans* isolates to fluconazole, anidulafungin, micafungin, voriconazole, and caspofungin. *T. vaginalis* was detected using the Applied Biosystems TaqMan® Assay. Nitroreductase genes (*ntr4* and *ntr6*) associated with resistance to metronidazole in *T. vaginalis* were amplified by quantitative PCR.

Results: From the 150 vaginal swabs which were cultured, *Candida* was recovered from 72 swabs, estimating a prevalence of 48%. Women who were pregnant were 4.49 times more likely to test positive for *Candida* [(odds ratio [OR]: 4.49; 95% CI 1.37-14.71; $p = 0.013$). Women who were HIV positive were 2.93 times more likely to test positive for *Candida* (OR: 2.93; 95% CI 1.07–8.03; $p = 0.036$). The highest number of resistant isolates were obtained for Fluconazole, (14%) when compared to 86% which were susceptible. A total of 8% (12/150) of the women tested positive for *T. vaginalis* infection from uncultured vaginal swabs. The *ntr4* gene carrying the C213G mutation associated with metronidazole resistance was present in 33.33% (4/12) of the *T. vaginalis* samples. The *ntr6* gene with the A238T mutation associated with metronidazole resistance was present in 33.33% (4/12) of the samples.

Conclusion: This study observed a high prevalence of *Candida* and *T. vaginalis* in women attending the King Edward Hospital. Thus, routine testing for vaginal infections is needed for the proper management of these infections.

Keywords: *Candida*, *T. vaginalis*, Real-time PCR

Corresponding author: Ntombizethu Nokuphiwa Msomi, University of Kwazulu Natal, South Africa, E-mail: msomizethu085@gmail.com

Citation: Msomi NN. (2024) Prevalence and Antimicrobial Susceptibility Profiles of *Candida* and *Trichomonas vaginalis* in South African Women. J Infect Dis Res, 7(S1): 08.

Copyright: ©2024 Msomi NN. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.