

3rd International Conference on

Diagnostic Microbiology and Infectious Diseases

September 24-25, 2018 | Montreal, Canada

Detection of *ERG11* gene expression by triazole resistant *Candida albicans* isolated from apparently healthy women in Abakaliki metropolis, Ebonyi state, Nigeria

Agumah Nnabuife B¹, Orji MU², Opara John-Kennedy^{1,3}, Onwuliri FC⁴ and Onwuliri EA

¹Ebonyi State University, Nigeria

²Nnamdi Azikiwe University, Nigeria

³University of Jos, Nigeria

⁴African Centre for Excellence in Phyto-medicine Research and Development, Nigeria

Statement of Problem: *ERG11* gene has been reported to be one of the genes whose expression is responsible for resistance of *Candida* to various triazole drugs which are the first-line treatment for Candidiasis. This study was carried out to detect the expression of *ERG11* gene by Triazole resistant *Candida albicans* isolated from women in Abakaliki.

Methodology: Urine and vaginal swab samples were randomly collected from volunteers after obtaining their consent to participate in the study. The study covered a period of Ten months from March to 2016-January 2017. 565 women participated in the study. A total of 340 Urine specimens and 288 vaginal swab specimens were collected. *Trichomonas* broth was used and it is selective for both *T. vaginalis* and *C. albicans*. Hence various broths that yielded positive to the presence of budding yeast cells after Microscopy were subcultured on to Sabourauds dextrose agar after which Germ tube test was carried out to confirm the presence of *C. albicans*. Biochemical tests including Carbohydrate fermentation and Urease utilization were also employed. Antibigram of *C. albicans* isolates obtained from this study was carried out using commercially available azole drugs. Fluconazole and Voriconazole were selected as Triazole drugs used for this study. Nystatin was used as a tangential control. A total of 12 isolates that resisted all the azole drugs were selected and screened for the presence of *ERG11* gene using Real-time polymerase chain reaction technique. Four pairs of primers were used for this study. The amplified DNA products were further subjected to Restriction digestion to check for point mutations.

Findings: Findings from this study showed that *Trichomonas vaginalis* had a prevalence of 0%. The total prevalence recorded for *C. albicans* was 13.0%. Incidence was higher in pregnant (60.9%) than nonpregnant (39.02%) volunteers. With respect to clinical samples, Incidence was higher in vaginal swabs samples (60.90%) than Urine samples (39.02%). Volunteers within the age group 26-30 recorded the highest incidence (34.15%) while those within the age group 36-40 recorded the lowest at 9.76%. In pregnant participants, the highest incidence was recorded with those in their 3rd trimester (52%) while the lowest incidence was recorded for those in their first trimester (10%). Antibigram results from this study showed that *C. albicans* isolates obtained from this study resisted Fluconazole (72%) more than Voriconazole (57%). *ERG11* was detected in all 12 resistant *C. albicans* selected. The molecular weight of the *ERG11* region amplified was 94bp. The same result was obtained after restriction digestion. Hence no point mutation was observed. It was suggested that this could be a result of homologous nucleotide orientation.

agumahbuife@ebsu.edu.ng