عنوان مقاله:

Investigation of bcr1 Gene Expression in Candida albicans Isolates by RTPCR Technique and its Impact on Biofilm Formation

محل انتشار:

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خلاصه مقاله:

Background: Adhesion and biofilm formation are two important steps in Candida pathogenesis. The aim of the current study was to investigate the presence of bcr1 gene in Candida albicans (C. albicans) isolates from women with vaginal candidiasis and its impact on biofilm formation. Methods: We used 50 clinical isolates which confirmed C. albicans by PCR-RFLP. Then total RNA was extracted from C. albicans isolatesby glass bead and lysis buffer, and cDNA was synthesized using reverse transcriptase enzyme. RT-PCR (Reverse Transcriptase PCR) wasused to evaluate the expression of bcr1 gene. Biofilm formation was evaluated in 96-well microplate and then tetrazolium reduction was assayed. All data were analyzed using t-test by SPSS software. Results: Fifty clinical isolates out of 150 were confirmed as C. albicans by using PCR-RFLP method. All the isolates were resistant to fluconazole, 47/50(94%) isolates had bcr1 gene by using PCR, and 45(95.7%) out of 47 isolates, showed BCR1 expression by the RT-PCR. Isolates which harbored bcr1 gene was succeed to form a dense biofilm on microplate. Comparison of the results of the tetrazolium reduction assay on the two isolates that had BCR1expression and two isolates that had no BCR1 expression showed significant differences (p=0.014). Conclusion: According to our result, all of the isolates that had bcr1 gene expression according to RT-PCR, were also resistant to fluconazole in disk diffusion test and additionally, their adherence was higher compared to the control group. These results indicate that there is a positive relation between expression of bcr1 gene and biofilm formation

کلمات کلیدی:

Candida albicans, bcr1 gene expression, RT-PCR