

## Summary

This study was designed to investigate, antifungal susceptibility and cross resistance of *C. albicans* isolates toward four antifungal drugs; Amphotericin B, nystatin, fluconazole and ketoconazole, in addition to the effect of some predisposing factors on oral and vaginal candidiasis infection. The study groups included 208 patients( 108 women and 100 children) who attended the Al-Suwayra Hospital/ Kut Province during the period from December 2008 to April 2009. Patients groups were represented by women who were complaining of vaginal discharge and itching and children who were complaining of oral thrush associated with different type of disease such as upper and lower respiratory tract infection, gastroenteritis, kala-azar and septicemia. The study showed that vaginal candidiasis was 35.1% while the infection percentage of oral thrush was 70%. The yeast isolates in two groups (infants and women) were *C. albicans* (76.8%), *C. krusei* (1.85%), *C. Tropicalis* (5.5%), *C. glabrata* (11.1%), *C. dublinances* (0.9%), *Trichosporon* (1.85%) and *Cryptococcus neoformans* (1.85%). Regarding the age factor, it was found that the age group (30-39) years showed a highest rate of vaginal infection 44.7%. whereas high rate of infection it was among pregnant women 52.6%. And it was found that the women who use contraceptive were highly infected (66.6%) when compared with those who do not use it (33.3%). The result revealed that a high incidence of oral thrush was found to be more common among males 60% than females (40%). In addition, it was found that the children who use pacifier were highly infected (81.4%) than the children who do not use pacifier (18.5%). Age, type of feeding and other disease had no effect on the infection of children with oral thrush in this study. The activity of certain antifungal agents were tested against *C. albicans* isolates by using two methods, the

disc diffusion methods and minimal inhibitory concentration (MIC). The results of disc diffusion methods showed that the amphotericin B is the most effective drug inhibited 100% of the isolates, ketoconazole (90%), fluconazole (25%), and nystatin (5%), while the results of MICs showed that amphotericin B inhibited (97.3%), ketoconazole (50%), fluconazole (31.5%) and nystatin (26.3%).

Development of resistance was observing after several subcultures in antifungal containing medium. The MICs of amphotericin B to the isolate that mutant to nystatin tended to raise in parallel from (0.5-1 $\mu$ g/ml) to (4-16 $\mu$ g/ml). There was no correlation between MICs of these strains with fluconazole and ketoconazole MICs. In addition, The MICs of ketoconazole to the isolate that mutant to fluconazole tended to rise in parallel from (0.5-2 $\mu$ g/ml) to (1-8 $\mu$ g/ml). There was no correlation between MICs of these strains with nystatin and amphotericin B MICs. All the MICs values of the mutant strain return to the original value after remove the drug effect except the nystatin. The MICs value for the isolates mutant to nystatin dropped from (600-1200 $\mu$ g/ml) to (200-800 $\mu$ g/ml) but not return to the original range (64-128 $\mu$ g/ml).