

## ABSTRACT

### **Vulvovaginal Candidiasis in Barbados.**

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Findings on vulvovaginal candidiasis (VVC) and recurrent vulvovaginal candidiasis (RVVC) in Barbados are presented in this dissertation. Over an eight-year period average annual percent of *Candida* species isolated from vaginal swabs, was 39.2%, with an incidence of 1.5%. *Candida albicans* was the predominant isolate 85.5%, *Candida* species other than *Candida albicans* 13.3%, *Trichosporon cutaneum* 0.9% and *Geotrichum candidum* 0.2% in VVC. Species identification was by Candifast, Candichrom, and Polymerase Chain Reaction (PCR). In clinically diagnosed RVVC *C. albicans* was isolated in 77% of cases, *Candida* species other than *Candida albicans* *Candida* in 7% and bacteria in 13%. There was no growth from 3% of swabs received. *Candida* infection in Barbados is most prevalent in a young (<29 years) population. In 2000, 91.3% of *Candida* positive isolates were from women under the age of 40 years. Resistance patterns of *Candida* species from VVC (n=260) and RVVC (n=25) isolates, against seven antifungal agents were determined by Candifast. Resistance patterns showed that no *C. albicans* isolates from VVC were resistant to amphotericin B, 0.8% were resistant to nystatin, 27% to econazole, 29% to ketoconazole, 33% to flucytosine, 45% to miconazole, and 48% to fluconazole. For RVVC no *C. albicans* isolates were resistant to amphotericin B or nystatin, 8% percent were resistant to ketoconazole, 24% to flucytosine, 36% to econazole, 40% to miconazole and 56% to fluconazole. Increasing resistance to antifungal agents, especially fluconazole and flucytosine, indicates the need for testing for antifungal resistance in VVC and RVVC. PCR amplification of genomic DNA from RVVC *C. albicans* isolates, showed amplicons of ~2.1kbp that correspond in size to that of the *CDR 4* gene. The findings of this thesis should lead to a better understanding of this infection and provide a basis for further epidemiologic investigation of VVC and RVVC in Barbados.

Keywords: Barbados, vulvovaginal candidiasis, recurrent vulvovaginal candidiasis, polymerase chain reaction, antifungal resistance genes, *CDR 4* gene, resistance patterns, Candifast, Candichrom.