

TITLE: GENTIAN VIOLET AS A NEW STRATEGY IN THE VULVOVAGINAL CANDIDIASIS TREATMENT

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ABSTRACT:

Vulvovaginal candidiasis (VVC) is the second most frequent genital infection in the world that affect 75% of women at least once in their lives, causing an expressive decreasing life quality of these women, if not treated. Considering the limited drug arsenal available and the increasing fungal resistance profile, the search for new therapeutic sources with low toxicity and easy administration should be motivated. In this context, gentian violet (GV) has been reported as a potential antifungal agent with low cost and high accessibility. The aim is to evaluate the response of GV treatment in an *in vivo* vulvovaginal candidiasis experimental model. Eight female BALB/c mice were inoculated with 1.0×10^6 CFU of *Candida albicans* (ATCC 90028) by inserting the pipette tip about 5 mm deep into the vaginal lumen. The animals were euthanized in two different times, seven and fourteen days post-infection, so the vaginal tissues were removed, homogenized in lysis buffer, plated on Sabouraud dextrose agar, and incubated for 24 h at 35 °C for fungal burden evaluation, presented in \log_{10} CFU/g of tissue. The animal experiments were approved by the Ethics Committee on Animal Use in Experimentation (CEUA) from the State University of Maringa (protocol number 4717180616 from 08/05/2016). The data were statistically analyzed in Prism 6.0 software using the Student t test for the comparison between groups. The results showed that GV was able to decrease significantly the fungal burden of *C. albicans* in both times evaluated. In seven days, the GV treatment reduced the fungal burden in 20-fold/CFU (p -value < 0.0001), whereas in 14 days this reduction was almost 15-fold/CFU (p -value = 0.0001), related to control group. In addition, it was possible to observe that in 14 days, the treatment with the GV had a significantly superior response in the reduction of fungal burden, compared to the group treated with nystatin (p -value = 0.0185). Gentian violet has shown to be a promising alternative in the treatment of vulvovaginal candidiasis, given its antifungal potential evidenced by the results of this study and associated with its low cost and easy access.

Keywords: *Candida albicans*, vulvovaginal candidiasis treatment, gentian violet

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