ORIGINAL RESEARCH

Evaluation of vulvovaginal candidiasis and effectiveness of different antifungal drugs at medical college and hospital

Ashok Roopchand Wadhwani

Associate Professor, Department of Dermatology, Venereology & Leprosy, National Institute of Medical Sciences & Research, Jaipur, Rajasthan, India

Corresponding author
Ashok Roopchand Wadhwani
Associate Professor, Department of Dermatology, Venereology & Leprosy, National Institute of Medical Sciences & Research, Jaipur, Rajasthan, India

Received: 22 February, 2021 Accepted: 28 March, 2021

ABSTRACT

Objective: Antifungal drugs are used frequently in the treatment of vulvovaginal candidiasis (VVC),buthave showncontroversialresults.Inthis study, weaimedtoevaluatetheeffectiveness of different antifungal drugs in the treatment of VVC. **Methods:**A total of 60 women with clinical and mycological evidence of vaginal candidiasis were randomized to receive daily a 200-mg dose of oral itraconazole for 3 days (20 women), a single oral 150 mg dose of fluconazole (20 women), or daily 100 mg dose of intravaginal clotrimazole for 6 days (20 women). They were assessed at 5-15 days (short-term assessment) and again at 30-60 days (long-term assessment) after discontinuation of the treatment. **Results:**At the short-term or long-term assessment, Candida species were completely eradicated from the vagina in 78% in the 3-day oral itraconazole group, 75% in the single oral fluconazole group, and 67% in the intravaginal clotrimazole group, respectively. The rates of clinical effectiveness were 90% in the 3-day oral itraconazole group, 74% in the single oral fluconazole group, and 55% in the intravaginal clotrimazole group, respectively. Treatment-related side effects were not found in any group. **Conclusion:**Our study suggests that the treatment of vaginal candidiasis with oral itraconazole or oral fluconazole would be effective and that an oral itraconazole or fluconazole therapy might be one choice in the treatment of vaginal candidiasis.

Keywords: Antifungal drugs candidiasis, Vulvovaginal.

INTRODUCTION

Issues with the vagina are frequent. Candidalvulvovaginitis is a result of an infection with the Candida species, most often Candida albicans, which causes inflammatory alterations in the vaginal and vulvar epithelium. Many women have candida as part of their regular flora, and it is frequently asymptomatic. Thus, in order to have candidalvulvovaginitis, there must be candida in the vulva or vagina in addition to irritation, itching, dysuria, or inflammation.1. Seventy percent of women report having experienced candidalvulvovaginitis at some point in their lives. It accounts for one-third of all instances of vulvovaginitis in reproductive-aged women. 8 percent of women experience repeated cases of candidalvulvovaginitis. About 90% of cases are caused by Candida albicans, whereas the majority of the remaining cases are caused by Candida glabrata. The use of oestrogen, increased endogenous oestrogens (from pregnancy or obesity), diabetes mellitus, immunosuppression (i.e., patients receiving chemotherapy or antimetabolite medications, HIV infection, or transplant patients), and the use of broad-spectrum antibiotics are known risk factors for acute candidalvulvovaginitis. Since AIDS has emerged and broad-spectrum antibiotics, immune suppressants, and corticosteroids have become so widely used, VVC has become more common in clinical practise.2, 3 and the management of VVC has grown in popularity. Antifungal medications work by altering the fungal cell membrane's permeability. Currently, polyene antifungal medications and pyrrole ring antifungal medications are the two main classes of antifungal medications used to treat VVC. Amphotericin B is the representative of the former group. Although amphotericin B is highly toxic, it possesses a broad spectrum of antibacterial activity and substantial antifungal activity. Azole compounds like ketoconazole, fluconazole, and itraconazole are included in the latter group. These offer a broad antibacterial range and are also the most commonly utilised.4.5

MATERIALS AND METHODS

The study subjects were selected from patients at the NIMS, Jaipur, Department of Dermatology. during a1 year period from January 2020 to December 2021. A total of 60 women with clinical and mycological evidence of vaginal candidiasis were randomized to receive daily a 200-mg dose of oral itraconazole for 3 days (20 women), a single oral 150 mg dose of fluconazole (20 women), or daily 100 mg dose of intravaginal clotrimazole for 6 days (20 women). They were assessed at 5-15 days (short-term assessment) and again at 30-60 days (long-term assessment) after discontinuation of the treatment.

RESULTS

Upon short- or long-term evaluation, 78% of the groups receiving 3-day oral itraconazole, 75% of the groups receiving single oral fluconazole, and 67% of the groups receiving intravaginal clotrimazole had totally eradicated Candida species from their vaginas. 90% of the 3-day oral itraconazole group, 74% of the single oral fluconazole group, and 55% of the intravaginal clotrimazole group experienced clinical efficacy, respectively. No group experienced side effects due to the treatment.

Table 1:- Short term assessment

Antifungal drug	Dose	Number of subjects	Duration	Percentage effective
Itraconazole	200 mg	20	3 days	78%
fluconazole	150 mg	20	1 day	75%
Intravaginal clotrimazole	100 mg	20	6 days	67%

Table 2:- Long term assessment

Antifungal Drug	Dose	Number Of Subjects	Duration	Percentage Effective
Itraconazole	200 mg	20	3 days	90%
fluconazole	150 mg	20	1 day	74%
Intravaginal clotrimazole	100 mg	20	6 days	55%

DISCUSSION

Despite having a high incidence and recurrence rate, the pathophysiology of VVC is still unknown.6 Currently, it is thought that a variety of variables, including the host's local immune response to Candida, the virulence factor of Candida changing, and the growing resistance of Candida, contribute to the pathogenesis and recurrence of VVC.7-8 The surface of the skin, digestive system, and genitourinary tract all contain the natural flora Candida; however, it is unknown how Candida colonises and becomes pathogenic. Candida krusei, C. albicans, C. tropicalis, C. parapsilosis, and C. glabrata are some of the infections associated with VVC.9. The primary cause of vaginal candidiasis (VVC) is Candida albicans, which makes up 73.8%–95.0% of all Candida spp. isolated from the vagina. C. glabrata is the most prevalent non-albicans species, accounting for 10%–20% of all VVC infections.10. There is little reason for confidence in the study's conclusions given the scant evidence of a dose-dependent relationship between antifungal medications and VVC treatment. Second, the lack of a documented standard procedure for VVC treatment causes variations in trial outcomes; as a result, these findings need to be cautiously interpreted. Thirdly, the short study periods in these randomised controlled trials may have resulted in a patient population that differs from that of real-world patients. Fourth, because randomised controlled trials have a tendency to reject people, these results could not apply to a particular set of patients. Our results support the idea that antifungal medications work well to treat vaginal candidiasis (VVC), and fluconazole or itraconazole oral therapy may be one option.

CONCLUSION

Our study suggests that the treatment of vaginal candidiasis with oral itraconazole or oral fluconazole would be effective and that an oral itraconazole or fluconazole therapy might be one choice in the treatment of vaginal candidiasis.

REFERENCES

1. Farhan MA, Moharram AM, Salah T, Shaaban OM. Types of yeasts that cause vulvovaginal candidiasis in chronic users of corticosteroids. Med. Mycol. 2018 Dec 12.
2. Rathod SD, BufflerPA. Highly-cited estimates of the cumulative incidenceandrecurrenceofvulvovaginalcandidiasisarein adequately documented. BMC WomensHealth.2014; 14(1):1472–6874.
3. GonçalvesB, Ferreira C, Alves CT, Henriques M, AzeredoJ, Silva S. Vulvovaginalcandidiasis:Epidemiology,microbiologyan driskfactors. Crit Rev Microbiol.2016; 42(6):905–927
4. Mikamo H, Kawazoe K, Sato Y, HayasakiY, TamayaT. Comparative study on the effectiveness of antifungal agents in different regimens against vaginal candidiasis. Chemotherapy.1998; 44(5):364–368.
5. DovnikA,GolleA,NovakD,ArkoD,TakačI.Treatmentofv ulvovaginal candidiasis: a review of the literature. ActaDermato-venerol Alp Pan- nonicaAdriat.2015; 24(1):5–7
6. Hong E, Dixit S, Fidel PL, Bradford J, Fischer G. Vulvovaginal can- didiasis as a chronic disease: diagnostic criteria and definition. J Low GenitTract Dis.2014; 18(1):31–38
7. Zhang JY, Liu JH, Liu FD, et al. Vulvovaginal candidiasis: species distribution, flucon-azole resistance and drug efflux pump gene over- expression.

Mycoses.2014; 57(10):584–591.
8. Foxman B, Muraglia R, Dietz JP, Sobel JD, Wagner J. Prevalence of recurrent vulvovaginal candidiasis in 5 European countries and the UnitedStates:resultsfromaninternetpanel survey.JLowGenitTract Dis. 2013; 17(3):340–345
9. GuzelAB,IlkitM,AkarT,BurgutR,DemirSC.Evaluation ofriskfac-torsinpatientswithvulvovaginalcandidiasisandthevalueofchromIDCandidaagarversusCHROMagarCandidaforrecoveryandpresumptive identificationofvaginalyeastspecies.MedMycol.2011; 49(1):16–25.
10. WorkowskiKA, Bolan GA, Centers for Disease Control and Preven-tion.Sexuallytransmitteddiseasestreatmentguidelines,2015.MMWR Recomm Rep. 2015; 64(RR-03):1–137.