Original Article
Pak Armed Forces Med J 2021; 71 (Suppl-1): S273-76

COMPARATIVE EFFICACY OF ORAL FLUCONAZOLE AND ORAL ITRACONAZOLE IN PITYRIASIS VERSICOLOR

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ABSTRACT

Objective: To compare the efficacy of oral fluconazole and oral itraconazole in the treatment of Pityriasis versicolor.

Study Design: Comparative prospective study.

Methodology: Total 72 patients of both genders with Pityriasis versicolor were included. Patients were randomly allocated into two treatment groups with 36 patients in each group: group A and group B by lottery method. Patients in group A received Cap Fluconazole 150 mg bi-weekly for two consecutive weeks while those in group B received two doses of 400 mg of itraconazole once weekly for two weeks. Patients were asked to follow-up after 4 weeks skin scrapings for microscopy using 10% KOH mount was done at follow-up. Efficacy was assessed in terms of negative fungal hyphae on microscopy.

Results: In this study, age ranged from 18 to 40 years with mean age of 33.52 ± 4.12 years in group A, whereas 35.055 ± 4.18 years in group B. Mean duration of disease was 4.66 ± 1.51 months in group A and 5.27 ± 1.70 months in group B. Efficacy was seen in 77.8% of group A patients as compared to 50% in group B patients (p=0.014).

Conclusion: Oral Fluconazole two doses of 150 mg/week (total 300mg/week) for two consecutive weeks was found more effective than oral itraconazole.

Keywords: Efficacy, Fluconazole, Itraconazole, Pityriasis versicolor.

INTRODUCTION

Pityriasis versicolor (PV) is a chronic cutaneous fungal infection caused by proliferation of lipophilic yeast species (Malassezia species) in the stratum corneum[1]. There are many species of Malassezia but M globosa, M sympodialis and M furfur are predominantly implicated in PV[2]. In humid tropical zone, prevalence is estimated to be quite high. Relationship with androgen induced sebaceous activity is suggested by the fact that it is more common in adolescence and young adulthood, though it can occur at any age[3]. On sunlight exposure yeast produces azelaic acid which in turn inhibits tyrosine kinase that leads to formation of hypopigmented spots[4]. History and clinical examination are usually enough to diagnose PV. However, microscopic examination of skin scrapings is required for confirmation of diagnosis which shows fungal hyphae giving spaghetti and meatball appearance[5]. Lesional Woods lamp examination shows yellow fluorescence. Available treatment options of PV can be divided into topical and systemic groups. Ketoconazole shampoo, selenium sulfide (2.5% to 5%) shampoo, clotrimazole, allylamine cream and lotion, propylene glycol 50% in water, nystatin, salicylic acid, ciclopiroxolamine, tretinoin, lactic acid lotion and 1% diclofenac gel are included in topical agents whereas fluconazole, itraconazole and terbinafin are included in systemic agents and usually reserved for extensive disease cases[6].

Previous studies have showed variability in results[7,8] on this subject therefore these results cannot be generalized on all populations. There is no standard therapy with complete cure despite the fact that many treatment options are available and topical therapy is still considered first line treatment. Therefore, this study was conducted to compare the efficacy of oral fluconazole and oral

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Received: 17 Jun 2020; revised received: 13 Aug 2020; accepted: 21 Aug 2020

itraconazole in the treatment of Pityriasis versicolor in our local population. Outcome of this study will help to select the optimum treatment for Pityriasis versicolor.

METHODOLOGY

This comparative prospective study was conducted at department of Dermatology, Pak Emirates Military Hospital, Rawalpindi, from April 2018 to October 2018 in which seventy two patients were included after informed consent and approval of hospital ethical committee. Sample size was calculated by using WHO sample size calculator. Sample size was calculated with 95% confidence level and alpha = 5% (two-sided) with power = 80%. While p1= 83.3% and p2 = 52.6% where p1 is the expected proportion (efficacy) in population 1 and p2 is the expected proportion (efficacy) in population 2 in reference study[7]. Sampling technique used was non-probability consecutive sampling. Patients of both genders, aged 18 to 40 years with Pityriaisis Versicolor as per operational definition were included in this study. Patients who received any topical or systemic antifungal therapy during last 1 month, with pregnancy by medical record, any history of renal disease, hepatic disease, malignancy or undergoing any kind of radiotherapy orchemotherapy were excluded. Case of Pityriasis versicolor was defined as typical skin lesions in the form of well defined scaly lesions in typical distribution appearing yellowish green in color when observed under Wood's lamp. Confirmation of PV was done with the help of skin scraping test by scraping the affected area with glass slide and collected scraping on slide and then dissolving the scales in 10% KOH solution and observed under the microscope ("spaghetti and meatballs" appearance under the microscope). Efficacy was defined in terms of skin scraping KOH mount showing absence of fungal hyphae and spores after 4 weeks of treatment.

Base line demographic information of patients like age, gender and duration of complaints was taken. The subjects were divided into two equal groups by lottery method with 36 patients in each group. 'Group A' patients were asked to take oral fluconazole in two doses of 150 mg each (total 300 mg per week) for two consecutive weeks. In group B, patients were asked to take itraconazole two doses of 400 mg once weekly for two weeks.

Patients were asked for follow-up after 4 weeks to assess the efficacy as described above and data was recorded on proforma. Suggested data was analyzed using SPSS version 22. The quantitative variables like age and duration of illness were calculated by taking means and standard deviation. The qualitative variables like gender and the outcome or efficacy were calculated by taking frequency and percentages. Comparison of efficacy in two groups was done by chi-square test. A *p*-value of ≤0.05 was considered as significant.

RESULTS

Mean age was 33.52 ± 4.12 years in 'group A' and 35.05 ± 4.18 years in 'group B' with age ranged from 18 to 40 years in this study. Mean duration of complaint was 4.666 ± 1.51 months in 'group A' and 5.277 ± 1.70 months in 'group B'. There were 24 (66.7%) males and 12 (33.3%) females in 'group A' while 28 (77.8%) males and 8 (22.2%) females in 'group B'.

Efficacy was seen in 77.8% patients in Group A as compared to 50% in group B (*p*=0.014) as shown in belo table.

Table: Comparison of efficacy in both groups.

Efficacy	Fluconazole Group (A) (n=36)	Itraconazole Group (B) (n=36)	*p*-value
Yes	28 (77.8%)	18 (50%)	0.014
No	8 (22.2%)	18 (50%)	

DISCUSSION

Pityriasis Versicolor, commonly caused by Malassezia furfur, is a superficial fungal infection. According to some studies, Malassezia globosa and Malassezia sympodialis were the most common isolates from patients with PV[9,10]. Topical medication can effectively treat patients of Pityraisisvesicolor, but recurrence rate is quite

high. In such cases systemic therapy can have effective role[11]. For the treatment of extensive and recurrent PV, Itraconazole and fluconazole have been used successfully. These drugs have been tried in different dosages for varying period of time in different dosages. In different studies, itraconazole is recommended at a dose of 200 mg/day for 7 days[12] and two doses of 300 mg of fluconazole with one week interval for two weeks has been used also[13,14], and found to be as efficacious as other treatments given for longer period of time. Itraconazole is alsofound in higher concentration in the stratum corneum and persists for 3-4 weeks even after discontinuation of drug. Several studies were conducted in which fluconazole was given in various durations and dosages for the treatment of pityriasis versicolor (450 mg/single dose, 400mg/single dose, 300 mg with a 1-week interval, 300 mg a week for 2 weeks, 150 mg a week for 4 weeks). Mycological cure varied between 44%-100%[15] in these studies. Other distressing symptom that were observed in patients with PV were cosmetically unacceptable pigmentation, scaling and itching. First symptom that disappeared with treatment in most patients was itching followed by scaling which cleared earlier and in a higher number of patients after fluconazole than itraconazole. After successful treatment, residual dyschromia appeared to be a well-known problem[16-18]. Complete normalization of the color was not observed, in our study, because it takes few months for resolution of skin color alterations after treatment. Fluconazole has proved to be significantly better than itraconazole regarding the mycological cure in the treated patients.

In a study by El-Reyani *et al* has showed the efficacy of oral fluconazole was 83.3% as compare to 52.6% with oral itraconazolein Pityriasis versicolor patients[7]. Another study conducted by Ravindranath, *et al* has also showed the efficacy of oral fluco-nazole was 73% in the treatment of Pityriasis ver-sicolor[8].

In another study by Kausar *et al* has showed the efficacy of oral itraconazole was 76.6% in the treatment of Pityriasis versicolor[2].

The findings of our study coincide with others studies that showed mycological cure in patients treated for two weeks with fluconazole[13,15]. Both of these drugs are safe, as documented in the literature[18,19]. In addition to that, mycological cure and scaling disappearance has placed fluconazole on the list of top promising agents in controlling early and late symptoms of PV. Mild gastrointestinal disturbances were the most common side effects noted with these drugs[18-20]. On the other hand, early cure of the symptoms was mainly contributed by patients compliance with short term treatment compared with long one. This was true with fluconazole but not with itraconazole. Although one week of single dose itraconazole has reached significant cure, it has also been showed that one dose fluconazole therapy for two weeks resulted in significant mycological cure[18]. However, different studies have varied results on short and long-term efficacy of both drugs. In our study, higher efficacy was observed with two doses of fluconazole produced than itraconazole. Our results proved the effectiveness of fluconazole in single short term treatment of PV.

CONCLUSION

Fluconazole two doses of 300 mg/week for consecutive two weeks was found more efficacious to patients as compared to two doses of 400 mg once weekly for two weeks, of itraconazole.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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