

## Original Article

# Single dose fluconazole in the treatment of pityriasis versicolor

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**Abstract** *Objectives* To evaluate the efficacy and safety of single dose (450mg) of fluconazole in the treatment of pityriasis versicolor.

*Patients and methods* Patients suffering from pityriasis versicolor presenting to department of dermatology, Hayatabad Medical Complex, Peshawar were enrolled in the study. Diagnosis of PV was made by Wood's lamp and confirmed by examination of scales in KOH preparation. 30 patients were included in the study.

*Results* 30 patients completed the study including 24 males and 6 females. Their age ranged from 14 years to 45 years (mean 25.3 years). Eighteen patients (60%) had complete cure and their clinical and laboratory parameters remained negative at 3 weeks and 6 weeks after completion of treatment. Twelve (40%) had no response to treatment. Treatment was well-tolerated and there were no adverse affects reported with single 450mg of fluconazole.

*Conclusion* Fluconazole 450mg as a single dose was effective in the treatment of pityriasis versicolor and well tolerated. However, long term comparative studies should be done to establish the efficacy of fluconazole as a single dose treatment in PV.

### **Key words**

Single dose, fluconazole, pityriasis versicolor.

## **Introduction**

Pityriasis versicolor (PV) is a chronic infection of the skin caused by fungi variously known as *Malassezia* or *Pityrosporum* and characterized by discrete or conrescent scaly discolored or hypopigmented areas mainly on the upper trunk.<sup>1</sup> It is an anthropophilic fungus belonging to the physiological skin flora, growing in yeast form on non-affected skin and in mycelial form causing clinical disease.<sup>2</sup> Although PV is prevalent

throughout the world it is more common in warm and humid climate. PV usually presents during the summer season particularly affecting the young adults.<sup>3</sup> It is occasionally seen in children and people over the age of 50 years. Factors responsible for mycelial transition include a warm, humid environment, profuse sweating, an inherited predisposition, endogenous or exogenous Cushing's disease, immunosuppression, or a malnourished state.<sup>4</sup>

The topical antifungals work well in pityriasis versicolor. The main problem with the use of topical antifungals is the difficulty of applying creams and lotions to a wide body surface area. While topical therapy is

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ideal for this condition, which involves the stratum corneum, patients often prefer the convenience of oral therapy.<sup>5</sup> An oral drug able to eradicate the fungus with good safety profile and tolerability should be selected.

Ketoconazole administered systemically is widely used in the treatment of PV. Hepatotoxicity, the major side effect of ketoconazole, limits its use in the management of PV.<sup>6</sup> Fluconazole is absorbed rapidly after oral administration and penetrates the skin yielding concentrations greater than plasma concentrations.<sup>7</sup> It is eliminated slowly from the body tissues and maintains steady state level due to its longer half-life thus enabling single dose administration. Fluconazole was selected for the treatment of PV due to its unique pharmacokinetics and convenience of single dose administration.

### **Patients and methods**

This open labelled clinical trial was conducted in the department of dermatology, Postgraduate Medical Institute/Hayatabad Medical Complex, Peshawar from June, 2006 to October, 2006. Thirty patients suffering from PV were enrolled in the study. The diagnosis of PV was made on clinical and Wood's lamp examination and confirmed by demonstration of hyphae in KOH preparation. Patients with known sensitivity to azoles antifungals, pregnant and lactating mothers, patients suffering from chronic liver or renal disease and underlying immune-mediated disease, as well as those who had taken systemic antifungals in the previous four weeks were excluded from the study. Detailed history

and clinical examination was performed and all the relevant clinical details were recorded on a specially designed pro forma. All patients were given single dose 450 mg (three capsules of 150mg) of fluconazole.

At the start of treatment Wood's lamp examination, microscopic examination of KOH mount prepared from scraping of the lesion and biochemical tests for liver and renal functions were performed. Patients were assessed clinically and microscopy was done after 3 weeks and 6 weeks later for clinical and mycological cure. Wood's lamp examination, microscopy and biochemical tests to monitor the side effects of disease were carried out on each visit.

Efficacy of antifungal treatment was assessed by absence of fluorescence on Wood's light examination of the affected areas and disappearance of fungal hyphae from scraping examined in a KOH mount.

### **Results**

A total of 36 patients were enrolled in the study; 30 patients completed the study, while 6 patients were lost to follow up. Of thirty patients 24 were males and 6 females. Their age ranged from 14 years to 45 years (mean 25.34). Eighteen (60%) patients had complete cure i.e. Wood's lamp examination remained negative at 3 weeks and 6 weeks after completion of treatment. Patients also reported subjective improvement i.e. decrease in itching and stinging sensation. However, two patients had relapse two weeks later, after 8 weeks of completion of treatment and necessitated alternative therapy. Twelve (40%) patients had no response to treatment, although 4 patients

reported subjective improvement on the second visit but their Wood's lamp examination and scraping for fungus were positive, they were re-evaluated at 6 weeks for any improvement but their disease parameters remained unchanged.

Patients who had no response to treatment and who had a relapse were put on alternative treatment as the maximum period for fluconazole to be effective in body tissues is 7 days. Fluconazole was well-tolerated and no adverse effects were reported by the patients. Renal and liver functions remained normal after completion of treatment.

### **Discussion**

PV though harmless tends to recur especially in hot and humid climate. While treating PV, the efficacy, safety and tolerability of a drug and patient compliance should be taken into consideration. Topical therapy usually suffices for localized lesions but has its drawbacks like short-term efficacy with relapses due to the fact that large body areas cannot be treated adequately leading to recurrences. The ideal treatment would be a short course of an oral antifungal drug producing high clinical and mycological cure rates and low relapse rates. Fluconazole was selected for the treatment of PV due to its unique pharmacokinetics. Fluconazole attains high concentration in plasma, stratum corneum and sweat. It is present in sweat at a mean value of 5.55 ng/g as early as 3 hours after a single dose and detectable levels have been found in the skin for upto 10 days after the therapy.

In our study majority of patients were males (80%) and of younger age. Almost all the patients presented in outpatient department during the summer season. These findings are in accordance with earlier studies conducted in this region. 96% of patients were under 35 years of age in a study conducted by Shahid *et al.*<sup>8</sup> Our results with single dose fluconazole are consistent with findings in a previous open label study evaluating a single dose 400mg dose of fluconazole in patients with extensive or recurrent pityriasis versicolor.<sup>9</sup> Twelve of 23 (74%) patients were free of lesions after 3 weeks of single dose of fluconazole.<sup>4</sup> Faergemmen reported 79% improvement with a single oral dose of 400mg fluconazole and patients were free of lesions after 3 weeks and no recurrence was observed after 6 weeks.<sup>10</sup> In the present study eighteen patients were cured with a single oral dose of 450mg of fluconazole, clinical and laboratory parameters. Wood's lamp examination remained negative after 3 weeks and no relapse of symptoms was noted after 6 weeks of completion of treatment.

### **Conclusion**

Fluconazole 450mg as a single dose therapy was effective in the treatment of pityriasis versicolor and no adverse effects were reported with this form of therapy. However, long term comparative studies involving a much higher number of patients are necessitated to establish the efficacy of fluconazole in the treatment of PV.

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