

Cipla

Autobiography of **Oxiconazole**

ISSUE 1



Rx In Superficial Fungal Infections
Auxerg
Oxiconazole 1% w/w Cream

ONE & DONE



Fungistatic as well as fungicidal¹



Up to 99.5% improvement of symptoms in patients with Tinea cruris/Tinea corporis²



Once daily application¹



QR code / Patient education leaflet in 10 different languages





Tropical and subtropical countries like India are more susceptible to incidences of fungal infections as the heat and humidity is high for most part of the year



OVERVIEW

Dermatomycoses are prevalent mycotic infections throughout the globe. Though such infections are not lethal, they produce significant symptoms which interfere with the quality of life.¹ According to World Health Organization (WHO), the prevalence rate of superficial mycotic infection worldwide has been found to be 20-25%.² Nearly a billion people are estimated to have skin, nail and hair fungal infections (Table 1). Socio-economic, geo-ecological characteristics and the increasing number of at-risk populations are the main determinants of variations on incidence and prevalence of fungal disease across the world.³

Table 1: Burden of fungal diseases

Fungal disease	Global Burden	Comments
Superficial		
Skin, hair, nail	~1,000,000,000	
Fungal keratitis	~1,000,000	
Mucosal		HIV only, 90% of those not on ARVs HIV only, 20% on those with CD4 counts <200 and 5% of those on ARVs 70% affected in their lifetime
Oral candidiasis		
Oesophageal candidiasis		
Vulvovaginal candidiasis episode		
Recurrent vulvovaginal candidiasis	~134,000,000	Annual prevalence. Nearly 500 million lifetime experience
Allergic		
Allergic bronchopulmonary aspergillosis in asthma	~4,800,000	Adults only, rare in children
Allergic bronchopulmonary aspergillosis in cystic fibrosis	~6675	Adults only, starts from age 4
Severe asthma with fungal sensitisation	~6,500,000	Adults only, probably uncommon in children
Fungal rhinosinusitis	~12,000,000	
Chronic severe		
Chronic pulmonary aspergillosis	~3,000,000	1950–2013 case reports, NTD
Mycetoma	~9000	Limited data and uncommon, NTD
Chromoblastomycosis	>10,000	
Coccidioidomycosis	~25,000	
Paracoccidioidomycosis	~4000	
	~3000	
Acute invasive		
Invasive candidiasis		Includes 60,000–100,000 cases of
Invasive aspergillosis		intra-abdominal candidiasis
Pneumocystis jirovecii pneumonia in AIDS and non-AIDS		From about 10 million at risk annually
Cryptococcosis in AIDS		
		HIV-related, up to another 10% non-HIV
		Based on French data = 4200

My potential benefits over other antifungal agents

- I am rapidly absorbed into the stratum corneum
- I attain maximum concentrations in the body within 100 minutes
- I maintain fungicidal concentrations in the epidermis, upper corium, and deeper corium for at least 5 hours
- I maintain minimum inhibitory concentrations for susceptible fungi for over 16 hours
- I do not cause any detectable systemic side effect since I am absorbed from the skin only in negligible amounts
- I prove to be extremely valuable for patients with a history of non compliance with multiple daily regimen of other antifungals



In India, inspite of therapeutic advances in the last decades, the pervasiveness of cutaneous mycoses continues to increase. Hot and humid climate, poor hygienic practices, previous family history, livestock contact, prolonged work hours and immunocompromised status are identified as important risk factors. Apart from above mentioned factors, poor diagnosis, improper treatment and administrative negligence contribute to the rise in prevalence of dermatophytosis in India.⁴

OXICONAZOLE: THE RESCUE FROM FUNGAL INFECTIONS

I, Oxiconazole, function as an antifungal imidazole and therefore, marketed for treatment of dermatomycoses and vaginal candidiasis. I display broad spectrum of fungicidal activity against infections caused by dermatophytes, yeast like fungi, moulds and mixed infections due to fungi and Gram-positive bacteria. I exhibit fungicidal activity against isolates of *Aspergillus fumigatus*, *Cryptococcus neoformans*, *Candida albicans* and *T. mentagrophytes*.⁵

I exist along with nitrate in salt form as Oxiconazole nitrate.⁶ In 1% Oxiconazole nitrate formulation, I have already been proved valuable for the treatment of tinea pedis, tinea cruris, tinea corporis and tinea (pityriasis) versicolor.⁷

My main mechanism of action is through inhibition of ergosterol biosynthesis, which is required for cytoplasmic membrane integrity of fungi. I act by destabilizing the fungal cytochrome P450 enzyme (also known as Lanosterol 14-alpha demethylase). The inhibition of this vital structure leads to cell lysis. I also inhibit DNA synthesis and suppress intracellular concentrations of ATP. I can also be cytotoxic by increasing membrane permeability to zinc.⁸

After application to the skin, I am rapidly absorbed into the stratum corneum, maximum concentrations often being attained within 100 minutes. I maintain

fungicidal concentrations in the epidermis, upper corium, and deeper corium for at least five hours; and levels exceeding the minimum inhibitory concentrations of susceptible fungi for over 16 hours.⁷

I do not exhibit any detectable systemic effect as I am absorbed from the skin only in negligible amounts. Since I am required only in once daily dosage, patients with a history of noncompliance with multiple-daily regimens of other topical antifungal agents find me extremely useful.⁷

CLINICAL RATIONALE FOR THE USE OF OXICONAZOLE IN TOPICAL ANTIFUNGAL THERAPY

In a study comparing me with ketoconazole, when applied topically once-daily for 3 weeks, in the treatment of tinea cruris, I was found to be more rapidly efficient and better tolerated than ketoconazole.⁹

Furthermore, in another clinical trial conducted to assess my clinical efficacy and tolerability, I have shown statistically significant decline in the symptom scores of erythema, pruritus, scaling and burning in patients treated for tinea cruris/tinea corporis and tinea pedis. Additionally, when applied once daily, I displayed a cure rate of 81% in this trial, which was comparable to twice daily application. The compliance of once daily application was also found to be good. There were no concerns with my tolerance as no side effects were reported during the conduct of the trial.¹

When applied once daily for four weeks in the treatment of tinea pedis or for two weeks in the treatment of tinea corporis, tinea cruris, and tinea versicolor, I have produced mycological and clinical cures in at least 80% of patients. In plantar-type tinea pedis caused primarily by *Trichophyton rubrum*, I, when applied once-daily cured 76% of patients.⁷

Affirming the above mentioned standpoint, another study was conducted to evaluate my efficacy, safety and relapse rate in comparison with systemic ketoconazole, and systemic Itraconazole in the treatment of pityriasis versicolor. Maximum clinical cures were observed in the patients treated by me (76.67%) as compared to itraconazole (58.82%) and ketoconazole group (46.66%). No side effects were detected in the patients treated by me while cases treated with ketoconazole and itraconazole displayed side effects like nausea and urticaria. During the fourth visit, I showed mycological cure rate of 88.7% as compared to 88.2% in itraconazole group and 88.7% in ketoconazole group. Thus, this study concluded that I was more effective as compared to systemic itraconazole and ketoconazole therapy in early improvement of scaling, pigmentation and pruritus secondary to pityriasis versicolor with no significant side effects.¹⁰

In patients suffering with pityriasis versicolor infection, I result in early improvement of scaling, pigmentation and pruritus, with no significant side effects



CONCLUSION

As superficial fungal infections continue to impose an unnecessary financial healthcare burden, I, oxiconazole can be of great value in the current treatment scenario for alleviation of fungal disorders. Various clinical trials have continuously stressed on my efficacy, safety and tolerability, thus proving my stance as an important drug in anti-fungal therapy.

ADAPTED FROM

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Rx In Tinea Cruris, Tinea Corporis and Tinea Pedis

Itralase

Itraconazole Capsules 100/200 mg

Erase Tinea Infection



MUPS* technology
maximises drug absorption¹



99.5% Itralase contains
active itraconazole²



Patient compliant pack



QR code / Patient education
leaflet in 10 different languages



*Multiple Unit Particulate System

1. Jawahar N and Anilbhai PH. Multi Unit Particulates Systems (MUPS): A Novel Pellets for Oral Dosage Forms. *J. Pharm. Sci. & Res.* 2012; 4(9): 1915-1923.
2. Data on file. Cipla Ltd. (for 100 mg)



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