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A Comparative Evaluation of Topical Sertaconazole and Topical Terbinafine in Management of Dematophytoses

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ABSTRACT

Background: The two varieties of tinea most commonly encountered are tinea corporis affecting trunk and limbs and tinea cruris which affects the inguinal region. The present study compared topical sertaconazole and topical terbinafine in management of dematophytoses. **Methods:** The two varieties of tinea most commonly encountered are tinea corporis affecting trunk and limbs and tinea cruris which affects the inguinal region. The present study compared topical sertaconazole and topical terbinafine in management of dematophytoses. **Results:** Tinea corporis was seen in 18 in group I and 12 in group II and Tinea cruris 14 in group I and 20 in group II. Complete cure was seen in 28 in group I and 26 in group II, failure was seen in 4 in group I and 6 in group II. Erythema grade 1 was seen in 9 in group I and 8 in group II, scaling grade 0 was seen in 6 in group I and 5 in group II, pruritis grade 1 in 5 in group I and 4 in group II. The difference was non- significant (P> 0.05). **Conclusion:** Authors found that both drugs found to be equally effective in management of cases of Tinea corporis and Tinea cruris.

Keywords: Sertoconazole, Terbinafine, Tinea corporis.

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INTRODUCTION

"Tinea" refers to scaly fungal infections of the epidermis and skin appendages caused by a group of keratinophilic fungi known as "dermatophytes" which includes three genera, namely, Epidermophyton, Microsporum, and Trichophyton. Trichophyton rubrum is implicated as the most common causative agent of dermatophytosis in India.[1] The two varieties of tinea most commonly encountered are tinea corporis affecting trunk and limbs and tinea cruris which affects the inguinal region. The former presents as radially advancing, flat, scaly, pruritic macules with a raised border and a characteristic central clearing which earns the sobriquet "ringworm" for these lesions. The latter begins in the inguinal folds and presents usually as bilateral, scaly, dull red, pruritic plaques whose leading edge advances in a sharply demarcated, raised, scaly border.[2]

Topical antifungals are routinely used for the treatment of mild dermatophyte infections. Extensive dermatophytic infections and infections of hair and nails which affect the quality of life of people are treated with systemic anti fungals.[3] The most commonly used topical antifungal agents are Allylamines, Imidazole, Morpholines and Polyenes. Older medications like whitfield ointment, castellani or paint of magenta, gentian violet and undecyclic acid are now replaced by specific agents. Most of the specific anti fungals act on the various steps involved in the synthesis of fungal cell membrane.[4]

Sertaconazole is an imidazole antifungal agent. Mode of action is inhibition of the synthesis of ergosterol, an essential cell wall component of fungi. Terbinafine exhibits fungicidal action against dermatophytes, Aspergillus species and dimorphic fungi. In vitro activity against yeasts has been weaker and varied. Terbinafine is fungicidal against C. parapsilosis but fungistatic against C. albicans.[5] The present study compared topical Sertaconazole and topical terbinafine in management of dematophytoses.

MATERIALS & METHODS

The present study was conducted in the department of Pharmacology. It comprised of 64 patients of dematophytoses of both genders. All were informed regarding the study and written consent was obtained. Ethical clearance was taken before starting the study.

General information such as name, age, etc. was recorded. Patients were divided into 2 groups of 32 each. Group I patients were given topical sertoconazole twice daily and group II patients were treated with topical terbinafine twice daily. Each patient was assessed on three parameters, namely, erythema, scaling, and pruritus, which were graded on a 4-point scale (0 = absent, 1 = mild, 2 = moderate and 3 = severe). Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

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RESULTS

Table 1: Distribution of patients

Parameters	Group I	Group II
Drug	Topical 2% sertoconazole	Topical 1% terbinafine
Male	20	17
Female	12	15

[Table 1] shows that group I patients were given topical 2% sertoconazole daily and group II patients were treated with topical 1% terbinafine. There were 20 males and 12 females in group I patients, and 17 males and 15 females in group II.

Table 2: Type of lesions

Lesions	Group I	Group II
Tinea corporis	18	12
Tinea cruris	14	20

[Table 2] shows Tinea corporis was seen in 18 in group I and 12 in group II and Tinea cruris 14 in group I and 20 in group II.

Table 3: Clinical outcome of treatment

Outcome	Group I	Group II	P value
Complete cure	28	26	0.71
Failure	4	6	0.06
Erythema grade 1	9	8	0.92
Scaling grade 0	6	5	0.87
Pruritus grade 1	5	4	0.84

[Table 3 & Figure 1] shows that complete cure was seen in 28 in group I and 26 in group II, failure was seen in 4 in group I and 6 in group II. Erythema grade 1 was seen in 9 in group I and 8 in group II, scaling grade 0 was seen in 6 in group I and 5 in group II, pruritis grade 1 in 5 in group I and 4 in group II. The difference was non- significant (P> 0.05).

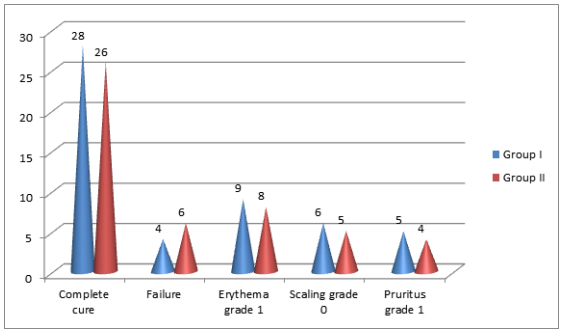

Figure 1: Clinical outcome of treatment

DISCUSSION

Dermatophytes are group of taxonomically related fungi that invade the keratinized tissue (skin, hair, nails) of humans or other animals resulting in an infection called dermatophytosis. Tinea corporis refers to all dermatophytosis of glabrous skin except the palms, soles and groin. The incidence of topical fungal infections has progressively increased in recent years primarily because of an increased number of immunocompromized patients and the increased use of health clubs and community swimming pools, which favour the spread of infections.[6]

Terbinafine is well absorbed and highly lipophilic and keratophilic, and is distributed throughout adipose tissue, dermis, epidermis, and nails where it persists for weeks. It is delivered to the stratum corneum via the sebum and, to a lesser extent, through incorporation into the basal keratinocytes and diffusion through the dermis-epidermis. Terbinafine is not found in eccrine sweat. Terbinafine is metabolized in the liver. In patients with renal disease, the elimination half-life can become prolonged.[7]

Sertaconazole is an antifungal agent. Indications are treatment of superficial skin mycoses such as dermatophytosis (including tinea corporis, tinea cruris, tinea mannum, tinea barbae and tinea pedis), cutaneous candidiasis, pityriasis versicolor and seborrhoeic dermatitis of the scalp. Sertaconazole has broad-spectrum antifungal activity against Trichophyton, Epidermophyton and Microsporum genera, and yeasts of the genera Candida and Cryptococcus and also it is effective against opportunistic infection.[8] The present study compared topical Sertaconazole and topical terbinafine in management of dematophytoses.

In present study, Tinea corporis was seen in 18 in group I and 12 in group II and Tinea cruris 14 in group I and 20 in group II. Chatterjee et al,[9] conducted a study in which 88 patients on sertaconazole and 91 on terbinafine were analyzed. At 2 weeks, the clinical cure rates were comparable at 77.27% for sertaconazole and 73.63% for terbinafine. Fourteen patients in either group improved and on further treatment showed complete healing by another 2 weeks. The final cure rate at 4 weeks was also comparable at 93.18% and 89.01%, respectively. At 2 weeks, 6 (6.82%) sertaconazole and 10 (10.99%) terbinafine recipients were considered as “clinical failure.” Tolerability of both preparations was excellent.

We found that complete cure was seen in 28 in group I and 26 in group II, failure was seen in 4 in group I and 6 in group II. Erythema grade 1 was seen in 9 in group I and 8 in group II, scaling grade 0 was seen in 6 in group I and 5 in group II, pruritis grade 1 in 5 in group I and 4 in group II. Shivamurthy et al,[10] included 60 patients which were divided into two groups of 30 patients. First group included patients treated with topical sertaconazole as test drug whereas the second group constituted patients treated with topical clotrimazole as standard drug. The total score included all grades in erythema, itching, scaling, margins and size of lesion and KOH mount. There was significant reduction in erythema and highly significant

reduction in scaling, itching and margins of lesion among sertaconazole group. The mean difference and the standard deviation of total scores for clotrimazole were 7.20 and 1.69 and for sertaconazole group 8.80 and 1.52 respectively.
The limitation of the study is small sample size. Only comparison of two drugs was done.

CONCLUSION

Authors found that both drugs found to be equally effective in management of cases of Tinea corporis and Tinea cruris.

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