

CLINICAL EVALUATION OF EFFICACY OF SERTACONAZOLE 2% CREAM IN TREATMENT OF PITYRIASIS VERSICOLOR AND A COMPARISON WITH THAT OF CLOTRIMAZOLE 1% CREAMN. B. Lakshmi Tatavarthi¹, B. V. Ramachandra², D. Subba Rao³, G. Srinivasulu⁴**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: BACKGROUND: Pityriasis versicolor is a mild superficial, chronic recurrent fungal infection. Many topical agents have been used with varying degree of success and high recurrence rate. The current study was conducted to clinically evaluate the efficacy of sertaconazole 2% in treating and preventing recurrences of pityriasis versicolor as compared to clotrimazole 1% cream. **AIMS:** Clinical evaluation of the efficacy of sertaconazole 2% cream in the treatment of pityriasis versicolor and its comparison with that of clotrimazole 1% cream. **MATERIALS & METHODS:** 110 patients who were diagnosed clinically and microscopically as pityriasis versicolor and fulfilling the criteria were enrolled, of which 55 were treated with 2% sertaconazole cream and 55 with 1% clotrimazole cream twice daily for 4 weeks. At the end of fourth week patients were examined both clinically and mycologically. Follow up was done at 6 weeks to note any relapse clinically and mycologically. **RESULTS:** Out of 110 patients 4 patients using sertaconazole, 6 patients using clotrimazole were lost for follow-up and excluded from the study. Global assessment was done at the end of treatment i.e., 4 weeks with clinical and mycological cure rate, revealed that 42(82.3%) of the sertaconazole group, 30(61.2%) of the clotrimazole group were improved clinically. Mycological examination at the same time was negative in 44(86.3%), 33(67.4%) respectively. 7(13.7%) of sertaconazole group, 12(24.48%) of clotrimazole group show no significant change. 4(8.16%) patients using clotrimazole complained of deterioration of symptoms but none using sertaconazole. **CONCLUSION:** Comparing the results obtained in this trial showed that sertaconazole was more efficacious than clotrimazole in the treatment of pityriasis versicolor because of its direct membrane damaging effect. But in terms of pigmentary resolution sertaconazole is not comparable to clotrimazole cream due to persistent effect of azelic acid.

INTRODUCTION: Pityriasis versicolor is a mild superficial, recurring fungal infection affecting all age groups, more commonly adolescents, both sexes especially in tropics.^[1] Though it is asymptomatic disease, it produces multiple hypo/hyperpigmented macular scaly lesions on the chest, back, neck or face which makes it cosmetically significant.^[2]

Multiple anti-fungals like 2.5% selenium sulphide, ciclopirox (ciclopirox olamine), 20% sodium hyposulphite, whitfield ointment (3% salicylic acid and 6% benzoic acid), zinc pyrithione, 1% terbinafine are used in the treatment of pityriasis versicolor with varying degree of success.

Presently many azoles are being used, the reason being their efficacy, broad spectrum, fungicidal nature at therapeutic doses, short duration of therapy for cure, nonirritating, availability in multiple formulations etc.

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Both Clotrimazole and sertaconazole^[3] act as fungistatic at low concentration and fungicidal at high concentration. At higher concentrations, sertaconazole binds directly to nonsterol lipids in the fungal cell wall, which leads to increased permeability and subsequent lysis of the mycelium. Henceforth sertaconazole out scores the clotrimazole because of its direct membrane damaging effect leading to persistent action. Sertaconazole also has antibacterial, antiinflammatory, antitrichomonal, antipruritic actions in addition.^[4] Sertaconazole achieves high epidermal concentrations following cutaneous application. This suggests a reservoir effect for possible once-daily dosing.^[5,6,7]

AIMS: Clinical evaluation of the efficacy of Sertaconazole 2% cream in the treatment of Pityriasis versicolor and a comparison with that of Clotrimazole 1% cream.

MATERIALS & METHODS: The present randomized study was conducted over a period of 24 months at Alluri Sita Rama Raju institute of medical sciences. 110 patients of clinically diagnosed pityriasis versicolor were enrolled after taking consent. Patients were excluded if they had received systemic antifungal therapy within 1 month or topical antifungal therapy within 1 week of the start of study. Also excluded were those who had systemic mycotic or serious concurrent disease.

All patients after a detailed history, examined clinically for scaling, change in colour, and assessed on a scale of 0-3 (3-severe, 2-moderate, 1-mild and 0-absent), examined with wood's lamp for fluorescence and were confirmed by microscopic KOH examination.

Wood's lamp examination shows golden yellow fluorescence on the scaly lesions. Fluorochromes, especially pityriolactone, is linked with fluorescence. Fluorescence becomes negative in cured cases.

Microscopic examination using KOH was done for each case before start of treatment, 4 week at the end of treatment, and at 6 weeks for any relapse. Scales from involved skin should be scrapped especially from the scaling edge, onto a glass slide and treated with 10% KOH and covered by a cover slip. For clear demonstration one can add a drop of Parker Quick stain to 2 drops of KOH placed over scrapings on the slide. The alkaline clearing solution, KOH, will digest the proteins, lipids and most of the other epithelial debris that are present, but fungal filaments resist this treatment as they have a chitinous wall.

Malassezia are present in large quantity as clusters of round yeast cells, with occasional budding and hyphae as blunt, short, stout, that may be curved and infrequently branched giving characteristic appearance of "spaghetti and meatballs" or "banana and grapes", "grapes on a vine". It is the presence of the mycelium that is the diagnostic feature.

Routine investigations including HB, RBS, HIV were done wherever necessary.

Among 110 patients that were fulfilling the criteria 55 were treated with 2% sertaconazole cream and 55 with 1% clotrimazole cream. They were instructed to apply cream twice a day for 4 weeks. Patients were advised to attend the clinic at 2, 4 weeks from the start of treatment and any time during the treatment phase if they encounter any adverse effects and advised to stop applying the cream. At every visit if any side effects present were noted. Follow up was done at 6 weeks to note any relapse clinically and mycologically.

Global assessment was done in terms of complete resolution, mild residual disease, and considerable residual disease, unchanged or deteriorated. Patients with assessment in the top two

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categories that is, resolved (Clinically and mycologically clear) and mild residual disease (Mycologically clear), were considered cured.

Results of clinical and microscopic examinations and demographic data were recorded.

Data analysis was done by means of Chi – square test.

RESULTS: Demographic characteristics of the two groups were similar.

Out of 110 patients, 100 (51 patients sertaconazole and 49 patients clotrimazole) completed treatment course. 10 patient's i.e 4 patients using sertaconazole, 6 patients using clotrimazole were lost for follow-up and excluded from the study.

Clinical assessment of the patients, after 4 weeks revealed that 42(82.3%) of the sertaconazole group, 30(61.2%) of the clotrimazole group were improved clinically, which was of statistical significance (P-value=0.02). Mycological examination at the same time was negative in 44(86.3%), 33(67.4%) respectively, which was statistically significant (P-value is 0.02). 7(13.7%) sertaconazole group, 12(24.48%) of clotrimazole group show no significant change. 4(8.16%) patients using clotrimazole complained of deterioration of symptoms but none using sertaconazole.

After 6weeks mycological cure rates were 44(86.3%), 29(13.7%) for sertaconazole and clotrimazole groups respectively. 6(12.24%) of clotrimazole group got deteriorated. Among cured patients of clotrimazole group, the recurrence rate was 4(8.15%) at 6 weeks. No recurrence was noticed among cured sertaconazole group which was statistically significant (p-value <0. 01).

Hematological and biochemical parameters, including liver function tests were within normal limits before and after the treatment.

Among sertaconazole group one patient complained of redness after applying the cream which subsided after subsequent applications, two patients of clotrimazole group complained of itching, one patient complained of burning sensation during treatment period which was treated accordingly.

Clinical cure rates after four and six weeks were lower than mycological cure rates at the same time periods. Occasionally in some patients of pityriasis versicolor the residual hypopigmentation was persisting long after the scaling and yeasts have gone and despite adequate treatment may be due to azelic acid. In such cases results of the direct smear of the hypopigmented lesions are negative and clinically these patients may be misdiagnosed as cases of unresponded pityriasis versicolor. Therefore sometimes clinical assessment and laboratory results may be incompatible and reliability on mycological examination is significant.

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TABLE: Comparison of therapeutic efficacy sertaconazole 2% cream with that of clotrimazole 1% cream based on clinical and microscopic examination after 4 weeks of the treatment regimens.

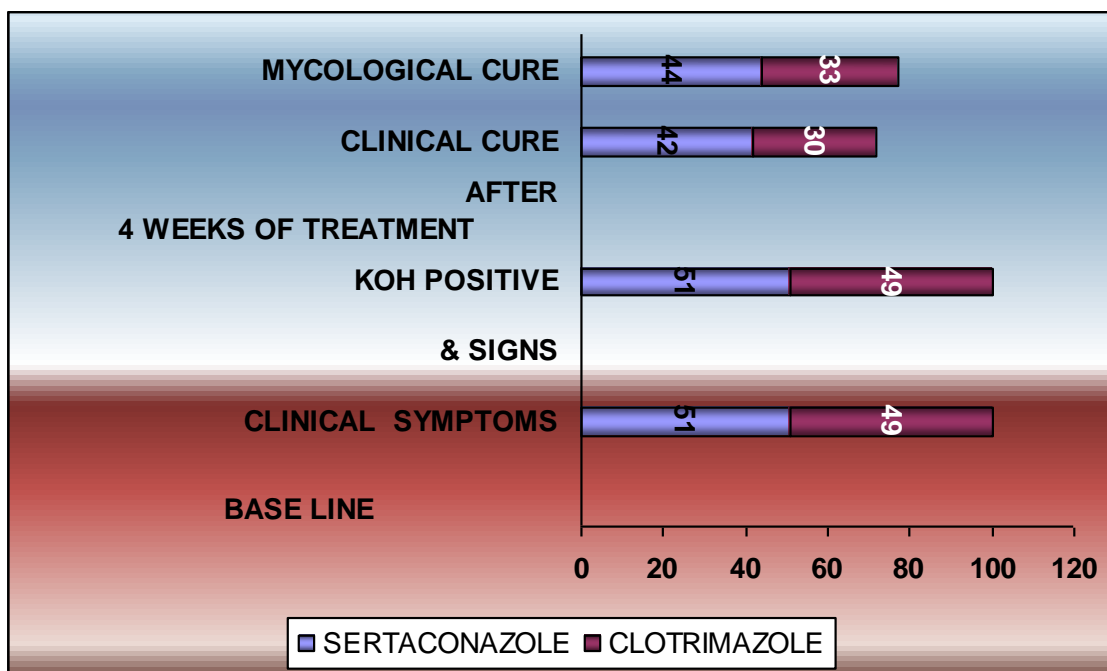
EVALUATION	SERTACONAZOLE	CLOTRIMAZOLE	CHI-SQUARE TEST	P-VALUE
Mycological				
Negative- KOH	44(86.3%)	33(67.4%)	5.05	0.02
Positive- KOH	7(13.7%)	16(32.6%)		
Clinical				
Resolved	33(64.7%)	22(44.9%)	5.53	0.02
Mild Residual	9(17.6%)	8(16.33%)		
Considerable residual disease	2(4%)	3(6.12%)		
No change	7(13.7%)	12(24.48%)		
Deteriorated	0	4(8.16%)		
Cured(clinical & mycological)	42(82.3%)	30(61.2%)		
Default	4	6		

TABLE: Comparison of therapeutic efficacy sertaconazole 2% cream with that of clotrimazole 1% cream based on clinical and microscopic examination after 6 weeks of the treatment regimens.

EVALUATION	SERTACONAZOLE	CLOTRIMAZOLE	CHI-SQUARE TEST	P-VALUE
Mycological				
Negative KOH	44(86.3%)	29(59.1%)	9.31	0.002
Positive KOH	7(13.7%)	20(39.9%)		
Clinical				
Resolved	38(74.5%)	20(40.8%)	11.7	0.001
Mild residual	6(11.7%)	7(14.28%)		
Considerable residual disease	0	2(4%)		
No change	7(13.8%)	10(20.4%)		
Deteriorated	0	6(12.24%)		
New lesions	0	4(8.16%)		

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CHART: Multiple bar chart showing results after 4 weeks of treatment.



DISCUSSION: Imidazoles are widely used for the treatment of pityriasis versicolor. In the present study the above results of clinical evaluation and microscopic examination showed that sertaconazole cream was superior to clotrimazole cream in the treatment of pityriasis versicolor. It is likely that sertaconazole persisted in the superficial layer of skin for a longer period than did clotrimazole and prevented early recurrence of pityriasis versicolor.

Comparative studies of efficacy sertaconazole with that clotrimazole in the treatment of pityriasis versicolor were sparse in literature. And separate studies of comparison of sertaconazole, clotrimazole with other antifungals are available.

In 1992 a study by Nasarre and colleagues compared sertaconazole 1% cream with sertaconazole 2% cream applied twice a day for 4 weeks. All the patients were cured (100% cure), showing excellent efficacy. A check-up performed after the end of the treatment showed no relapses of infection. The drug safety was optimum, since no local or general undesirable effects were recorded, nor were there any changes in the analytical parameters studied in the 21 patients. Both treatments resulted in quick, safe, and effective cures, with no difference between the treatment groups.^[7]

In a multi-centre double-blind trial on the efficacy and safety of sertaconazole 2% cream in comparison with miconazole 2% cream on patients suffering from cutaneous mycoses by Alomar C, Bassas S, Casas M, Crespo V, Ferrándiz C, Fonseca E, Hernández B, Noguera J, Pedragosa R, Peyrí J, et al., on 631 patients suffering from superficial cutaneous mycosis (sertaconazole n=317, miconazole n=314) showed clinical cure rates of 95.6% for sertaconazole and 88.1% for miconazole, mycological cure rates of 98.6% and 91.7% respectively at the end of follow up with the difference being statistically significant. Patients treated with sertaconazole were cured earlier and in a higher proportion than those treated with miconazole.^[8]

CONCLUSION: Most superficial fungal infections are effectively treated with topical antifungal therapy.

Sertaconazole nitrate is an imidazole topical antifungal agent that exhibits a unique profile of antifungal, antibacterial, and anti-inflammatory, anti-pruritic effects with broad spectrum activity for many fungal infections.

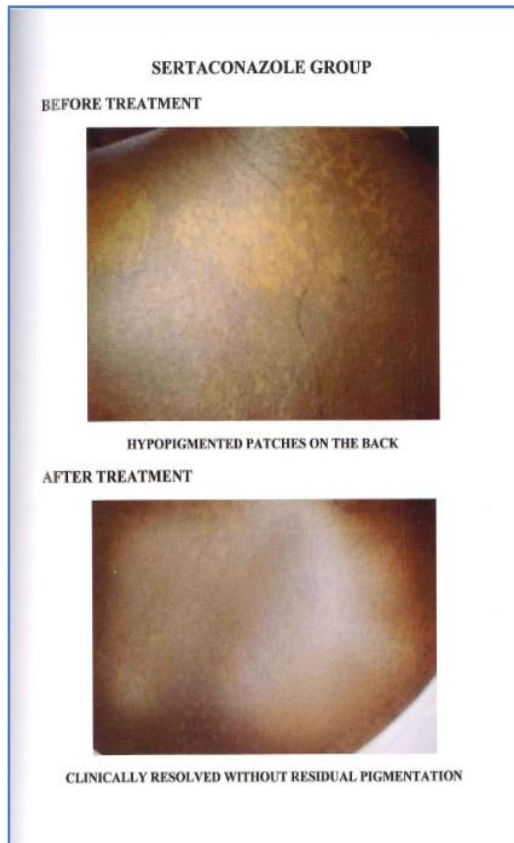
Sertaconazole presents with better therapeutic efficacy than clotrimazole and otherazole group of drugs, because of its high rate of clinical and mycological cure, few side effects, no recurrence and its better tolerance.

Comparing the results obtained in this trial on sertaconazole with those obtained for other antifungal products, sertaconazole has also proved to be more efficacious and safer in treatment of Pityriasis versicolor.

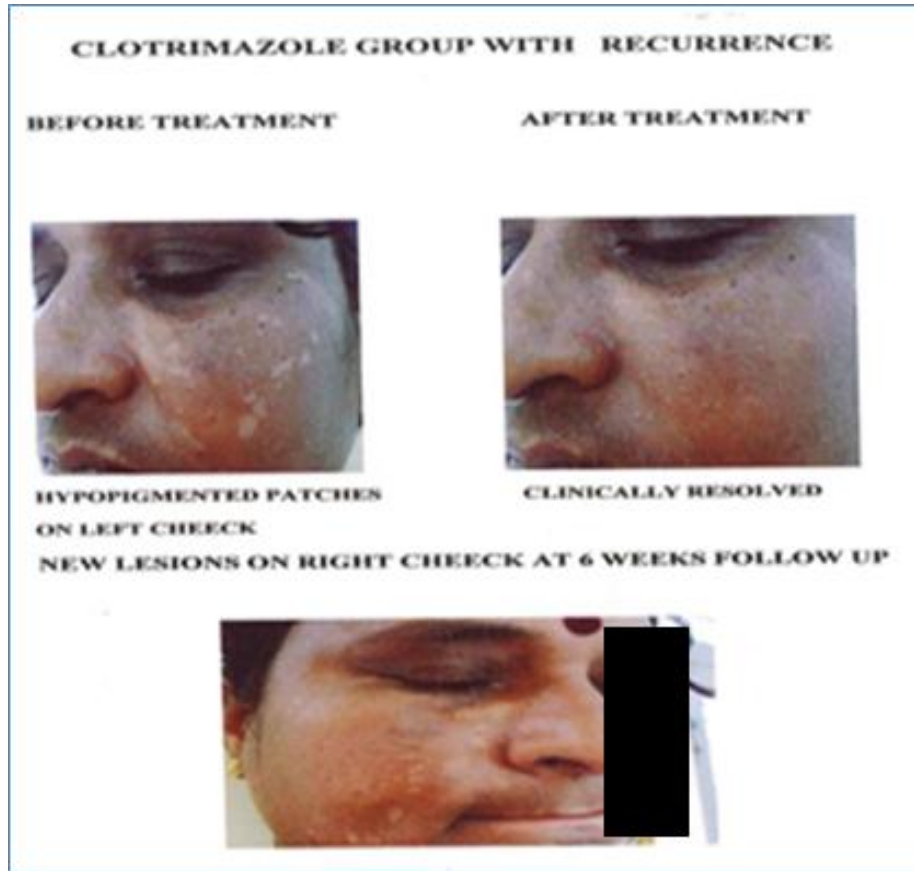
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