

Beneficial Effect and Safety of 5% Permethrin Cream in Scabies Patients

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ABSTRACT

Objective: To evaluate the efficacy and safety of 5% permethrin in scabies patients

Background: Scabies is a contagious, itchy ectoparasitic infection. It is a common public health problem with an estimated global prevalence of 300 to 400 million cases. They increases day by day. 5% permethrin is one of the effective treatment of scabies, it is highly effective, well tolerated, poorly absorbed and rapidly metabolized by skin.

Study Design: Open label clinical trial

Place and Duration of Study: This study conducted in Basic Medical Sciences Institute with collaboration of Dermatology Department from ____.

Materials and Methods: This study sample involved 65 clinically diagnosed scabies patients one was lost from follow up, the duration of study was 90 days. They were treated with 5% permethrin cream, clinical data was collected by using questionnaire. Patients were divided into three age groups and given two applications of permethrin cream on first and 15 day. Follow up was done on Day 3, Day 15, Day 30 and Day 90

Results: It was found that efficacy and safety of permethrin cream in scabies patients was highly significant which clinically improved the symptoms of patients.

Conclusion: Scabies patients should advised 5% Permethrin cream with conventional therapy which improves symptoms significantly following proper local.

Key Words: Scabies, 5% Permethrin Cream, Efficacy And Safety.

INTRODUCTION

Scabies is a common ectoparasitic infection caused by the mite *Sarcoptes scabiei* variety *hominis*, an arthropod of order *Acarina*.¹

The world wide prevalence has been estimated at about 300 million cases yearly, although it is common disease of children but occur in both sexes, in all ethnic groups and at all socioeconomic levels.² A scabies infestation symptom includes rash and intense pruritus that is often worse at night. The lesion begins as tiny erythematous papules.³ The diagnostic signs of scabies are the burrows.⁴

Permethrin is a synthetic pyrethroid and considered as a gold standard of topical scabiecid. It acts on voltage dependent sodium channels by extended channel opening causing increased sodium current, depolarization is prolonged leading repetitive filling of nerve.⁶ It is well tolerated, poorly absorbed through skin and rapidly metabolized by skin esterase. Local skin irritation, such as pruritus, burning sensation or tingling has occasionally been reported but all are short duration.^{7,8}

MATERIALS AND METHODS

This was open label clinical trial approved by ethical Committee of Jinnah Postgraduate Medical Centre, Karachi conducted in Basic Medical Sciences Institute with collaboration of Dermatology Department. Cases diagnosed by consultant dermatologist were enrolled to participate in trial. Detailed questionnaire was

completed and inform written consent was taken from patients and their relatives. Patients willing to participate were screened by applying the inclusion and exclusion criteria. Patients were divided into 3 groups according to age. Inclusion criteria are night itching, diagnosed cases of scabies either gender, age above 5 years and below 70 years, demonstration of burrows or presence of scabies lesion at the classical sites, history of similar illness in the family. Three or more criteria mentioned above made the patient eligible to include the study. Exclusion criteria are pregnant women, lactating women, crusted scabies, patient who had received treatment during last 1 month, diabetic and patients with hepatic impairment or with dermatological, cardiovascular and neurological diseases. Eligible subjects were assigned to apply 5% permethrin cream over night (over 14 hours) and then repeated the application on day 15. The duration of study was 90 days with 5 follow up visits. Total 65 scabies patients enrolled in this trial and divided into 2 groups which were further sub-divided according to age into 3 groups. Clinical efficacy assessed by appearance of new skin lesion and pruritus which was evaluate by visual analogue scales, it has both static and dynamic component. Dynamic component was scored on a scale 0-6.

Statistical Analysis: Data were analyzed using SPSS software Ver. 11.0, mean \pm SEM.

RESULTS

Table No.1: Visual Analogue Scale In Scabies Treated Patients on Day-0 to Day-90 of Permethrin Group

Follow up available		Permethrin Cream Group (n=65)
		(n=64)
Visual analogue scale (VAS)		Mean \pm SEM
Day – 0		6.00 \pm 0.00
Day – 30		3.67 \pm 0.08
Day – 15		2.33 \pm 0.10
Day – 30		0.94 \pm 0.15
Day – 60		0.48 \pm 0.18
Day – 90		0.87 \pm 0.26**
Visual analogue scale (VAS) according to age groups		
5-25 years	Day – 0	6.00 \pm 0.00
	Day – 3	3.46 \pm 0.15
	Day – 15	2.08 \pm 0.18
	Day – 30	0.71 \pm 0.24
	Day – 60	0.21 \pm 0.21
	Day – 90	1.00 \pm 0.47**
26-45 years	Day – 0	6.00 \pm 0.00
	Day – 3	3.75 \pm 0.09
	Day – 15	2.35 \pm 0.15
	Day – 30	1.00 \pm 0.24
	Day – 60	0.55 \pm 0.34
	Day – 90	0.75 \pm 0.41**
46-70 years	Day – 0	6.00 \pm 0.00
	Day – 3	3.85 \pm 0.15
	Day – 15	2.60 \pm 0.18
	Day – 30	1.15 \pm 0.30
	Day – 60	0.70 \pm 0.38
	Day – 90	0.80 \pm 0.44**

**=Highly significant.

Total mean VAS scoring for pruritus in all scabies patients at day 0 was 6.00 \pm 0.00, at day 3 the mean VAS scoring was decreased to 3.67 \pm 0.08, at day 15 the mean VAS scoring was improved to 2.33 \pm 0.10, at day 30 the mean VAS scoring was decreased to 0.94 \pm 0.15, at day 60 the mean VAS scoring was 0.48 \pm 0.18 and at day 90 the mean VAS scoring was increased to 0.84 \pm 0.26 this increased may be due to recurrence in patients. When day 0 compared with day 90 the outcome was highly significant. According to age groups in all ages the baseline mean VAS scoring of scabies patients compared with the outcome was highly significant, as depicted in table 1. The Total percentage of new lesion in scabies patients at day 15 was 1.6%(1), at day 30 the percentage of new lesion was 9.4%(6), at day 60 the percentage was changed to 10.9% (7) and at day 90 the percentage was increased to 15.6% (10) which was non

significant. In all age groups the appearance of new lesion was also non-significant. As depicted in table 2.

Table No.2: Appearance of new lesion in scabies treated patients permethrin group

		Permethrin Cream Group (n=65)	
Follow-up available		n = 64	P-value
Appearance of new lesion			
Day – 3		-	0.052
Day – 15		1 (1.6%)	
Day – 30		6 (9.4%)	
Day – 60		7 (10.9%)	
Day – 90		10 (15.6%)	
Appearance of new lesion according to age groups			
5-25 years (n=24)	Day – 3	-	0.265
	Day – 15	-	
	Day – 30	1 (1.6%)	
	Day – 60	1 (1.6%)	
	Day – 90	4 (6.2%)	
26-45 years (n=20)	Day – 3	-	0.741
	Day – 15	1 (1.6%)	
	Day – 30	3 (4.7%)	
	Day – 60	3 (4.7%)	
	Day – 90	3 (4.7%)	
46-70 years (n=20)	Day – 3	-	1.000
	Day – 15	-	
	Day – 30	2 (3.1%)	
	Day – 60	3 (4.7%)	
	Day – 90	3 (4.7%)	

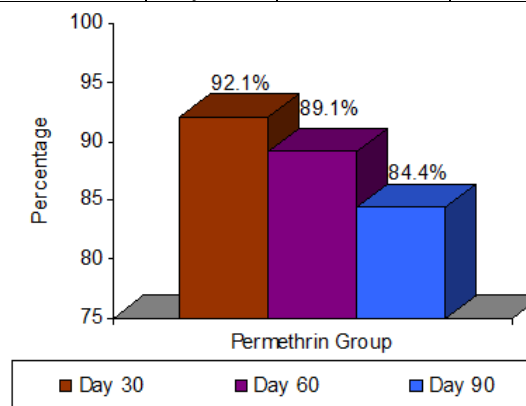


Figure No.1: Cure rate in scabies treated patients on day-30 to day-90 permethrin group

Cure rate of 64 (98.5%) Permethrin treated scabies patients at day 30 was 92.1% (59 patients), at day 60 the percentages was changed to 89.1% (57 patients) and at day 90 the percentage was decreased to 84.4% (54 patients). This reduction may be due to recurrence when day 0 compared to day 90 the cure rate was highly significant and same in all age groups. As depicted in fig 1. The safety profile clinically was

assessed by complaint of adverse effects in treated patients during the drug study period. The major adverse effects were not observed except mild burning, the percentage was 1.6 % (1), as depicted in figure 2.

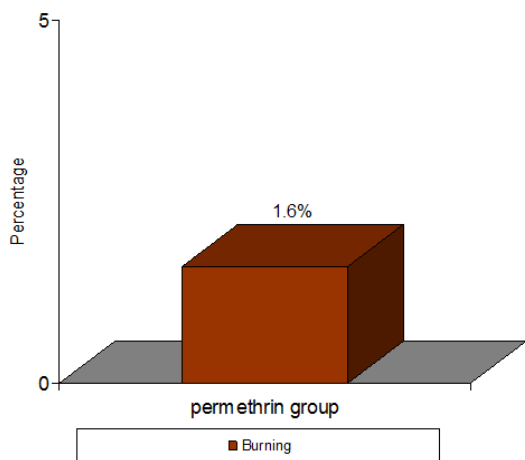


Figure No.2: Clinically safety profile assessed by adverse effects in scabies treated patients

DISCUSSION

Scabies is widely spread in our community and conventional scabiecidal therapies are difficult to instill and hard to implant. This often results in higher failure rates because of non-compliance or reinfestation.⁹ The reported incidence of scabies in Karachi is 22.7% which is more than other infection and shown alarming prevalence indicating a lack of awareness about this common skin problem.¹⁰ Absolute confirmation can be made by the discovery of burrows and microscopical examination.^{11,12} Treatment of scabies is as important as making a correct diagnosis. Patient should be properly instructed about the method of using scabicide.¹³

The cure rate in this study was 84.4% and only one patient gave complain of mild burning. The results of our study are in accordance with other study that compared the 5% Permethrin with Ivermectin and found better results with permethrin cream.¹⁴ In present study cure rate was assessed by the presence of new lesions. The participants who did not have any new lesion were considered as cured. Every participant was asked about pruritus which was quoted as 0/25/50/75/100% on visual analogue scale (VAS) at day 0, the pruritus was considered as 100%. Our results matched with other study who declared that permethrin act against all emerging stages of mites.¹⁵ In the present study these participants who showed new lesions and gave complain of pruritus that had developed resistance and recurrence because of poor compliance.¹⁶ Improper application of medicine may be the main factor of drug resistance in study, to decrease the drug resistance of scabies patients advised the repeated prescription of scabiecidal medicines. This highly contagious nature of

disease requires that all other household members be treated simultaneously whether they have no symptoms¹⁸. This study shows that permethrin was safe in adults, children and pregnant and lactating women¹⁹. For achieving good control, increased awareness and education, hygiene improvement and massive treatment campaign should be integrated²⁰.

CONCLUSION

5% Permethrin cream is effective and safe, but advice with conventional therapy.

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