

A STUDY ON THE SAFETY PROFILE OF PERMETHRIN 5% IN INFANTS LESS THAN 6 MONTHS

¹Dr. Sukhmani Kaur Brar, ²Dr. B. K. Brar and ³*Dr. Neerja Puri

¹Consultant Fortis Clinic, Mohali,

²Professor and Head,

³Assistant Professor,

Department of Dermatology, G G S Medical College, Faridkot and Fortis Clinic, Mohali.

Article Received on
08 Nov. 2020,

Revised on 28 Nov. 2020,
Accepted on 19 Dec. 2020

DOI: 10.20959/wjpr20211-19499

*Corresponding Author

Dr. Neerja Puri

Assistant Professor, G G S
Medical College, Faridkot.

ABSTRACT

Introduction: Scabies is an infectious disease seen commonly in infants and children. Various topical agents have been tried in infants, but safety is an important concern. **Aims:** To study the side effect profile of permethrin 5% cream in infants between 2-6 months of age.

Methods: 30 infants of 2-6 months of age having scabies were selected & were given single night application (6 – 8 hrs) of permethrin 5% cream. **Results:** Out of 30 cases, only 3 (10%) cases had mild to moderate irritation. no case was seen having any neurological or any other cutaneous side effects on six months of follow up. **Discussion:**

Topical permethrin (5% cream) is a safe and effective scabicide in children and is recommended as a first-line therapy for infants.

KEYWORDS: Scabies; infants; permethrin; topical; infection.

INTRODUCTION

Scabies is a now acquiring an epidemic picture, affecting persons of all ages, races, and socioeconomic groups. It is caused by an obligate parasite *sarcoptes scabiei* var. *hominis*.^[1] It causes a nocturnal itching with excoriation marks and papules in flexural folds, cubital margins of hands, anterior side of the wrists, anterior axillae, around nipples and navel, external male genital organs, and internal side of thighs. It affects over 300 million individuals per year worldwide.^[2] In developed countries, the incidence is much lower. High risk populations include persons living in overcrowded areas with relatively poor hygiene.

Though several treatment modalities are available but permethrin 5% cream is the drug of choice.

AIMS AND OBJECTIVES

To study the side effect profile of permethrin 5% cream in infants between 2-6 months of age.

MATERIAL AND METHODS

30 infants of 2-6 months of age having scabies were selected & were given single night application (6 – 8 hrs) of permethrin 5% cream. along with routine treatment with antihistaminics was given in all the patients. Permethrin course was repeated on 7th day after the 1st application. Side effects if any were recorded on follow up on 7th day, 15th day, 1 month, 3 months & 6 months. Written informed consent along with photographic consent was obtained from the parents of patients before the study.

RESULTS

The data was collected and the results were tabulated.

Table I – Table showing age distribution of patients.

Sr No	Age distribution	Number of patients	Percentage
1	Below 2 months	4	13.33%
2	Between 2 – 3 months	12	40%
3	Between 4 – 6 months	14	46.66%

Out of 30 cases, 24 cases were given permethrin 5% cream on 1st day (Fig 1&2) only. four cases having secondary infection were given permethrin on 4th day after antibiotic cover (Fig 3&4), while two cases having eczematization were given permethrin on the 7th day (Fig 5). 13.33% (4) infants were below 2 months of age, 40% (12) infants were between 2 – 3 months of age and 46.6% (12) infants were between 4 – 6 months of age.



Fig 1 - Three months old infant showing papulopustular lesions over palms.



Fig 2 - Papules and excoriations in a 6 months old infant.



Fig 3 - 5 months old infant showing eczematization of lesions over the feet.



Fig 4 - 6 months old infant with lesions on soles.

DISCUSSION

In 80% cases, the mothers were also suffering from scabies. but in 20% cases, there was no family history of scabies. Family treatment was also given. Out of 30 cases, only 3 (10%) cases had mild to moderate irritation. No case was seen having any neurological or any other cutaneous side effects on six months of follow up.

Scabies is a common parasitic skin infection and is highly prevalent in children. various agents can be used to treat scabies in infants and children like sulfur, gamma benzene hexachloride (lindane), crotamiton, benzyl benzoate, malathion and permethrin.^{[3],[4]} Topical permethrin (5% cream) is a safe and effective scabicide in children and is recommended as a first-line therapy for patients older than 2 months of age due to concerns regarding percutaneous absorption of permethrin in infants younger than 2 months of age. Treatment of scabies in infants poses many challenges as various drugs cant be used in children due to diverse safety profiles.^[5]

Permethrin is a synthetic pyrethroid used as a topical 5% cream for treatment of scabies.^[6] It is approved by the food and drug administration in patients older than 2 months of age. Permethrin acts by disrupting the sodium channel current, resulting in delayed repolarization, causing paralysis and death of the parasite in all stages.

In a study, it was seen that the extent of systemic exposure after administration was very low and elimination was complete after about a week.^[7] transient side effects like local skin irritation, pruritus, burning sensation have been reported. Permethrin is the gold standard in the treatment of scabies. A single application of permethrin is superior to a single dose of ivermectin. Though some are of the view that mass treatment of scabies with ivermectin in an endemic population is more efficacious as compared to topical permethrin application in reducing the baseline prevalence, decreasing the chain of transmission and chances of reinfection.^{[8][9][10][11][12]} We preferred permethrin because of its low side effect profile, infant can be treated simultaneously along with other family members & lastly less number of applications required & that too for a shorter duration.

CONCLUSION

Though literature says that permethrin can be safely given in infants less than 6 months but very few trials regarding this have been so far conducted.^[4] Our study also supports the

literature. It is also important to counsel the parents regarding side effects like irritation, burning and tingling, which though rare but are self limiting.

REFERENCES

1. Karthikeyan K. Scabies in children. *Arch Dis Child Educ Pract Ed*, 2007; 92: 65–66.
2. Hicks MI, Elston DM. Scabies. *Dermatol Ther.*, 2009; 22: 279–92.
3. Currie BJ, McCarthy JS. Permethrin and ivermectin for scabies. *N Engl J Med*, 2010; 362: 717–25.
4. Usha V, Gopalakrishnan Nair TV. A comparative study of oral ivermectin and topical permethrin cream in the treatment of scabies. *J Am Acad Dermatol*, 2001; 45: 637-8.
5. Abedin S, Narang M, Gandhi V, Narang S. Efficacy of permethrin cream and oral ivermectin in treatment of scabies. *Indian J Pediatr*, 2007; 74: 915-6.
6. Lina Albakri, Ran D Goldman. Permethrin for scabies in children. *Can Fam Physician*, 2010; 56: 1005–1006.
7. Tomalik Scharte D, Lazar A, Miens J, Bastian B, Ihrig M, Wachall B, et al. Dermal absorption of permethrin following topical administration. *Eur J Clin Pharmacol*, 2005; 61: 399–404.
8. Diamantis SA, Morrell DS, Burkhart CN. Pediatric infestations. *Pediatr Ann*, 2009; 38: 326–32.
9. Hamm H, Beiteke U, Höger PH, Seitz CS, Thaci D, Sunderkötter C. Treatment of scabies with 5% permethrin cream: results of a German multicenter study. *J Dtsch Dermatol Ges.*, 2006; 4(5): 407–13.
10. Paller AS. Scabies in infants and small children. *Semin Dermatol*, 1993; 12: 3-8.
11. Walton SF, Myerscough MR, Currie BJ. Studies in vitro on the relative efficacy of current acaricides for *Sarcoptes scabiei* var. *hominis*. *Trans R Soc Trop Med Hyg.*, 2000; 94: 92–94.
12. Andrews RM, McCarthy J, Carapetis JR, Currie BJ. Skin disorders, including pyoderma, scabies and tinea infections. *Pediatr Clin North Am*, 2009; 56: 1421–40.