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## Topical Permethrin 5% cream versus topical benzyl benzoate 25% lotion for scabies: A comparative study

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### Abstract

**Background:** The present study was conducted to compare topical permethrin and benzyl benzoate in the treatment of scabies.

**Materials & Methods:** 58 patients diagnosed with scabies of both genders were divided into 2 groups of 29 each. Group I patients were prescribed topical Permethrin 5% cream and group II patients were given topical benzyl benzoate 25% lotion. Visual Analogues Scale (VAS) was utilized for its assessment.

**Results:** Group I had 13 males and 16 females and group II had 14 males and 15 females. At the end of 1 week, there were 25 patients in group I and 16 in group II had lesions. 14 patients in group I and 10 in group II had in 2 weeks and 6 patients in group I and 4 in group II had lesions at 6 weeks. The difference was significant ( $P < 0.05$ ).

**Conclusion:** Better improvement in the lesions of scabies was observed with benzyl benzoate 25% lotion as compared to Permethrin 5% cream.

**Keywords:** Benzyl benzoate, permethrin, scabies

### Introduction

Scabies is a skin infestation and clinical condition frequently encountered by health care providers in India. It is caused by a mite i.e. ecto-parasite of skin namely *Sarcoptes scabiei* var. *hominis* [1]. Characteristic feature of scabies is intense itching reported by the infected patients as it burrows under the subject's skin [2]. Scabies affects more than three million people in India. Condition is characterized by papular or vesicular eruption with pruritis which is aggravated by warmth and more intense at nighttime. Acropustulosis or blisters and pustules on palms and soles of feet are characteristically seen in infants affected with scabies [3].

In developed countries, scabies outbreaks are common in residential and nursing care homes where they cause significant morbidity and distress. Diagnosis is challenging and often delayed, and management of outbreaks is costly. Globally, more than 200 million people are affected, with a particularly high prevalence in resource-poor tropical regions [4]. In developed, high-income settings, health institution and residential home outbreaks challenge health and social care services. In resource-poor settings, it is the downstream sequelae of staphylococcal and streptococcal bacteraemia, induced by scratching, which have a significant impact on the long-term health of communities [5].

Various treatment options for scabies consist of topical anti-scabietics such as benzyl benzoate, crotamiton, lindane, and permethrin. Topical treatment for community management of endemic scabies is not warranted due to a variety of reasons [6]. The present study was conducted to compare topical permethrin and benzyl benzoate in the treatment of scabies.

### Materials & Methods

The present study comprised of 58 patients diagnosed with scabies of both genders. All patients were informed regarding the study and their written consent was obtained.

Demographic data of all enrolled patients such as name, age, gender etc. was recorded. Patients were clinically examined for presence of burrows underneath the skin. Classical lesions seen in scabies patients viz nodules, papule or vesicles were also searched for.

Pruritis was managed symptomatically by oral hydroxyzine 10 mg or 25 mg twice daily to affected persons. Patients were divided into 2 groups of 29 each. Group I patients were prescribed topical Permethrin 5% cream and group II patients were given topical benzyl benzoate 25% lotion. Visual Analogues Scale (VAS) was utilized for its assessment. Scale was graded from 0 to 10. Point 0 (zero) signifies no pruritus and point 10 signifies the most severe form of pruritis. Grading of the lesions was done in the following manner: Mild: <10 lesions, moderate 11-49 lesions and severe >50 lesions. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

**Results**

**Table 1:** Distribution of patients

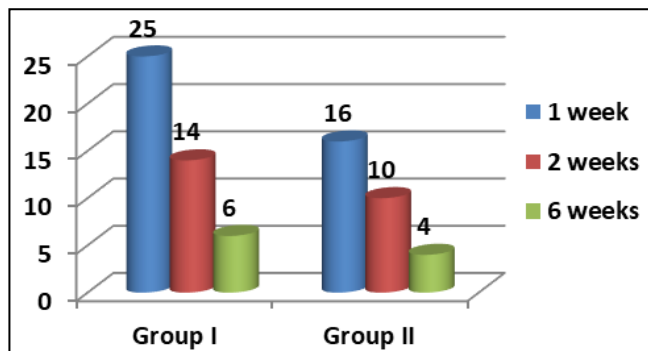
Groups	Group I	Group II
Drug	Permethrin 5% cream	benzyl benzoate 25% lotion
M:F	13:16	14:15

Table I shows that group I had 13 males and 16 females and group II had 14 males and 15 females.

**Table 2:** Assessment of clinical improvement of lesions

Groups	1 week	2 weeks	6 weeks	P value
Group I	25	14	6	0.02
Group II	16	10	4	

Table II, graph I shows that at the end of 1 week, there were 25 patients in group I and 16 in group II had lesions. 14 patients in group I and 10 in group II had in 2 weeks and 6 patients in group I and 4 in group II had lesions at 6 weeks. The difference was significant ( $P < 0.05$ ).



**Graph 1:** Assessment of clinical improvement of lesions

**Discussion**

Over the past decade scabies has been recognized as a “neglected tropical disease” (NTD) by the World Health Organisation, has an accepted practical system of global diagnostic criteria and is being adopted into integrated programmes of mass drug administration for NTDs in field settings [7]. Infestation with the scabies mite results in an intensely itchy skin eruption consisting of papules, nodules and vesicles. Mostly this is the result of host hypersensitivity although the direct effect of mite invasion contributes [8]. For this reason, the incubation period before symptoms occur is 3–6 weeks in cases of primary infestation, but as little as 1–2 days in cases of re-infestation [9]. Sensitisation to mite antigens has been demonstrated up to 1 month after primary infestation, and indeed it can take

up to 6 weeks for signs and symptoms of hypersensitivity to resolve. Symptoms that persist beyond this should be reinvestigated. Burrows are formed as the adult female mites consume their way through the epidermis; detection of even one burrow is pathognomonic; however, they are often unidentifiable due to scratching, crusting or secondary infection, and may be observed only in a minority of cases [10]. The present study was conducted to compare topical permethrin and benzyl benzoate in the treatment of scabies. In present study, group I had 13 males and 16 females and group II had 14 males and 15 females. Babu et al. [11] compared the efficacy of oral ivermectin, topical permethrin and benzyl benzoate in the treatment of uncomplicated scabies in 195 patients. Efficacy of three groups [oral ivermectin (Group A), topical permethrin (Group B) and benzyl benzoate (Group C)] of drugs was compared in terms of improvement in clinical grading of disease (%) and improvement in clinical grading of pruritus (%) during follow up visits. Those subjects receiving topical permethrin, at 1st follow up 56.9% showed cure rate which increased to 89.2% at 2nd follow up with respect to clinical improvement in pruritus. Maximum relief in severity of pruritus at the end of 6th week was reported by 58 (89.2%) patients receiving group B treatment modality followed by 52 patients (80%) in arm A. Regarding efficacy of three treatment groups in terms of improvement in severity of lesion at the end of 6 weeks, maximum number of patients 57 (87.7%), receiving group B treatment reported improvement which is better than other two treatment groups.

We found that at the end of 1 week, there were 25 patients in group I and 16 in group II had lesions. 14 patients in group I and 10 in group II had in 2 weeks and 6 patients in group I and 4 in group II had lesions at 6 weeks. Davis et al. [12]. Developed a clinical grading scale for crusted scabies, which is useful for assessing disease severity and guiding treatment. The score is based on the clinical assessment of four domains: distribution and extent of disease (body surface area), severity/depth of skin crusting, the number of previous episodes (hospitalisations) for crusted scabies, and the degree of skin cracking and pyoderma. Each domain is scored between 1 (mild) and 3 (severe) and combined to produce an overall score: grade 1 (score 4–6), grade 2 (7–9), grade 3 (10–12).

The limitation of the study is small sample size and short follow up.

**Conclusion**

Authors found that better improvement in the lesions of scabies was observed with benzyl benzoate 25% lotion as compared to Permethrin 5% cream.

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