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Response of patients of scabies to Topical Permethrin 5% and Treatment Failure

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ABSTRACT

Objective: This research was conducted to know response of patients of scabies to Topical permethrin and reasons for its treatment failure.

Design: This was observational type of study.

Duration and Time: This study was conducted at Dermatology department Lahore General Hospital from 1st July 2017 to 31 december 2017.

Method: Every patient having persistent pruritic rash, aggravated at night and significant family history was included in our study. Written consent from each patient was obtained. Topical Permethrin lotion (5%) was provided to the patient and patients were asked to follow up 2 week after application of Permethrin lotion. On followup Patients were asked about improvement of prior symptoms and response to treatment was assessed. Factors leading to treatment failure were found out in non-respondents.

Results: A total of 97 patients were included in our study. In 60(61.85%) patients symptoms had resolved and in 37(38.15%) patients symptoms did not resolve after application of Permethrin lotion.

Out of 37 patients, 17(45.94%) patients told that their close family contacts did not use the lotion, 12(32.43%) patients did not follow environmental control measures, 5(13.51%) patients did not follow guidelines of applying topical permethrin , 3(8.10%) patients showed no improvement in symptoms of scabies despite following all measures.

Conclusion: Topical Permethrin (5%) is an excellent treatment option for scabies. However treatment of close contacts, environmental measures and Proper technique of Permethrin application is very important for the best results.

Keywords: Permethrin , Scabies, Pruritis

INTRODUCTION:

The causative agent of scabies is *Sarcoptes Scabiei* , an ectoparasite. The female parasite burrows the epidermis and lays egg inside the epidermis. As a result human natural immune response ensues and it leads to symptoms of scabies.

The most common symptom of scabies is persistent pruritic rash¹. The pruritis is aggravated at night

and patients of scabies have a strong family history as well. This parasite often burrows in finger webs, Armpits, External genitalias , ventral elbows and buttocks. Persistent itching by the patients allows for secondary bacterial infection and can cause impetigo. Symptoms typically develop four to six weeks after infestation by *Sarcoptes scabiei*.

Scabies is highly contagious disease². Prolonged skin to skin contact lasting more than ten minutes can cause infestation of other person. Thus skin contact during sexual intercourse and close family contacts are typical risk factors for spread of scabies. Other factors include poor socioeconomic status, Congested housing, lack of cleanliness, poor body washing habits. The highest rates of scabies are in those countries having hot tropical climate due where it is endemic.

A confirmed case of scabies is the one whose skin scrapings from the affected area or burrows show mites or their eggs³. Whereas a probable case is any patient having persistent pruritic rash, aggravated at night and having strong family history. Because of low cost treatment, probable cases are usually treated by some physicians even without confirming the diagnosis.

Management of scabies include treatment of patient and close contacts with Topical permethrin(5%) or Topical and oral ivermectin. Benzyl benzoate and Sulphur ointment (3%) are also effective. First of all patient is advised to clip nails and the take bath. Permethrin lotion is applied before sleep all over body from neck to toes, especially in sites of burrows. Next day patient is asked to take bath to remove lotion and wear washed clothes. This method has to be followed by all family members simultaneously.

Environmental measures include machine washing of all the clothes and bedding of patient with warm water. Items which cannot be washed or cleaned should be placed in sealed plastic bags for 7 days.



If all such measures are adequately done then patients of scabies show excellent response to topical permethrin.

MATERIALS AND METHODS:

This was a Observational type of study conducted at Dermatology department Lahore General Hospital from 1st July 2017 to 31st December 2017. Every patient having persistent pruritic rash, aggravated at night and having significant family history was included in our study after written consent. Patients were provided Topical Permethrin 5% lotion free of cost. Every patient was advised to apply Permethrin lotion in a 3 step process: Nail clipping & bath, application of lotion all over body for minimum 12 hours and then take bath to remove cream. Patients were asked to apply permethrin again at one week interval. Treatment of close contacts and washing of bedding and clothing of patients with warm water was also advised.

Mobile numbers of patients were written on consent form and every patient was asked to follow up 2 weeks after application of Lotion. Results were recorded on another questionnaire.

RESULTS:

A total of 97 patients were included in our study. Response of these patients to topical Permethrin is as shown in figure-1

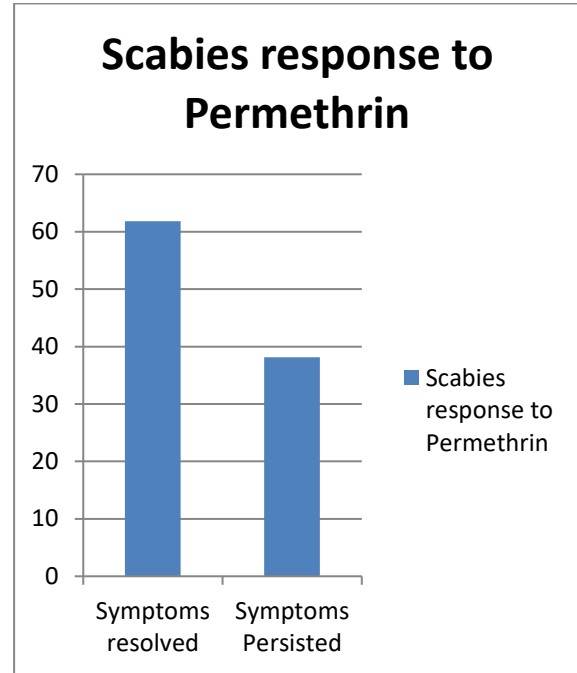


Figure-1 Percentage of patients who showed response to topical Permethrin treatment versus those who did not show any response.

Out of 37 patients who did not show response to treatment, 17(45.94%) patients told that their close family contacts did not use the lotion, 12(32.43%) patients did not follow environmental control measures, 5(13.51%) patients did not follow guidelines of applying topical permethrin , 3(8.10%) patients showed no improvement in symptoms of scabies despite following all measures.

These results are depicted in figure-2

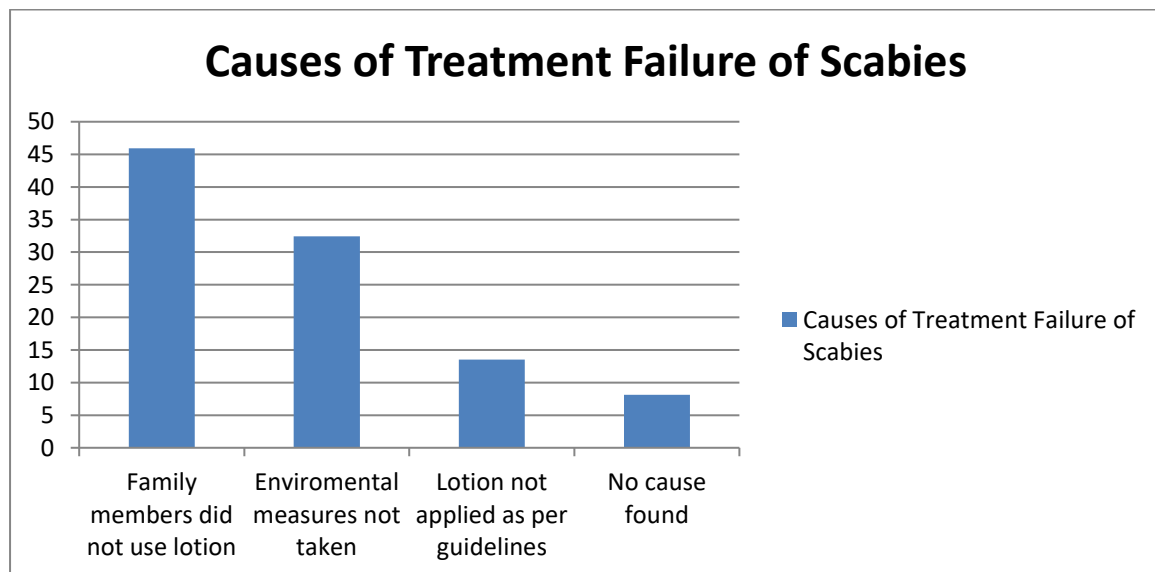


Figure 2- Showing causes of treatment failure of scabies





DISCUSSION:

61.85% patients showed complete resolution of symptoms after application of Topical permethrin lotion. A study conducted by Goldust M showed that response rate of twice application of permethrin with 1 week interval is 94.2%⁵. Our study however shows a much lower response rates. Thus causes of treatment failure were found out.

Scabies is highly contagious disease so treatment of close family contacts simultaneously is important since failure to do so can cause reinfection. Thus it is an important cause of treatment failure. These results are in consistent with another observational study⁶.

Our study showed that Environmental Control measures i.e washing of bedding and clothing with warm water is necessary to prevent reinfection otherwise significant number of patients can show failure of treatment with permethrin. These recommendations are listed in another study⁷.

However, only few patients showed failure of treatment by permethrin despite following all environmental measures and proper application of lotion. This can be due to intrinsic resistance of *Sarcoptes scabiei* to permethrin⁸ or due to patients not giving true history.

CONCLUSIONS:

Topical Permethrin is very effective treatment of Scabies. But we must educate the patients to follow all the guidelines of application of lotion, Environmental control measures and treatment of close contacts. Written handouts can be given to patients in this regard for proper compliance. Patients close contacts should be advised in person that they need treatment even if they do not have symptoms. Proper counseling sessions of patients along with their family members should be conducted.

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