
Treatment of Scabies by Sulphur Ointment Mixed with Clobetasol Dipropionate Ointment

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ABSTRACT

Back ground: Scabies is one of the common skin diseases all over the world including Iraq, which is caused by the mite *Sarcoptes scabiei*, many remedies have been used for the treatment e.g. sulphur.

Objectives: The aim of the study is to compare the effectiveness and the adverse effects of topical sulphur ointment (5, 7.5 and 10%), mixed with clobetasol dipropionate ointment (0.05%) and sulphur ointment alone, in patients with human scabies.

Patients & Methods: Five hundred patients were involved in this study, which was done in a private clinic in Baquba City, Diyala governorate, Iraq, during the period Jan. 2004 to May 2008. They were 350 males and 150 females, their ages ranged from 2 months to 80 years, with a mean age of 30 years. They were fully interrogated and examined regarding their complain and diagnosed clinically as scabitic patients. The patients were divided randomly into 2 groups: group one consisted of 300 patients, was treated by topical sulphur ointment, mixed with clobetasol dipropionate ointment and the second group consisted of 200 patients, was treated by topical sulphur ointment alone. Both groups were followed up for 3 weeks.

Results: The study showed that the cure rate of both types of treatment was nearly similar (group one 95% and group two 96%). None of the patients in group one developed irritant contact dermatitis as a result of treatment, but 2% developed steroid acne, and 10% of the patients in group two developed irritant contact dermatitis. The relapsing rate was 10% in the group one and 7% in the group two.

Conclusion: In conclusion the topical sulphur ointment when mixed with clobetasol dipropionate ointment gave good therapeutic results in the treatment of human scabies, without adverse effect of contact dermatitis.

Key words: Scabies, *Sarcoptes*, Sulphur, Clobetasol dipropionate, Malathion.

Introduction:-

Scabies is one of the common skin diseases all over the world including Iraq. It is a parasitic disease, which affects the humans and other animals, caused by the mites of the family Sarcoptidae, which include *Sarcoptes scabiei* (human scabies mite) and *Notodres cati* (a mange mite of cats) [1-4].

Evidence suggests that both immediate and delayed types of hypersensitivity reaction are involved in the development of skin lesions, other than burrows, including pruritus [4,5].

Clinically, itching is the most obvious manifestation of the scabies, which is generally worse at night and when the patient is warm, after an incubation period of 2-4 weeks, the pathognomonic primary lesion (burrows) of the disease is manifested, which appears as slightly brownish, tortuous, slightly scaly and at its distal end there may be a tiny vesicle adjacent to which the female mite lye, the burrows are seen predominantly on the wrist, borders of the hands, sides of the fingers, finger webs, instep of the feet, the male's genitalia, palms and soles in the infants and young children [1-3,5,6].

The other lesions are papules and nodules which are intensely pruritic and seen predominantly around the axilla, periareolar region, periumbilical region, buttocks, thighs and the male's genitalia [1,2,7-9].

Scabies is diagnosed clinically and absolute confirmation of diagnosis can only be made by the

finding of the burrows and isolation of the mite, its parts, eggs, fragments of eggshells and sybilla, by microscopical examination of gently scraped burrow's skin material, placed in a drop of 10% KOH or mineral oil, and in a difficult diagnostic situations and a typical cases, PCR has been employed as a diagnostic tool [1,2,10-14].

Many therapies have been used for the treatment of scabies, sulphur (5-10%) in yellow soft paraffin, once daily application for 3 to 5 days, benzyl benzoate as 25% emulsion, monosulfiram as 25% solution, malathion as 0.5% aqueous base, permethrin as 5% cream, gamma benzene hexachloride as 1% cream and recently ivermectin which is structurally similar to the macrolide antibiotics, gave a higher cure rate and was given as a single oral dose of 200 ug/kg body weight and repeated once or twice at one or two weeks interval [1-3,11,12].

Because the scabies was a common disease and in Iraq the sulphur ointment (5-10%) was frequently used therapy [15], so this study was done to compare the effectiveness and the adverse effects of sulphur ointment, mixed with clobetasol dipropionate ointment with sulphur ointment alone, in patients with human scabies.

Patients & Methods:-

Five hundred patients were involved in this study, which was done in a private clinic in Baquba

City, during the period Jan. 2004 to May 2008. They were three hundred fifty males and one hundred fifty females, their ages ranged from two months to eighty years, with a mean age of thirty years. They were complained of skin rash on different skin areas.

All patients were fully interrogated regarding their names, ages, sex, occupation, address, present complain, previous similar complain, family and group history of the same complain, previous and present history of other skin and systemic diseases, history of illegal sexual contact and prison life. They were fully examined regarding the skin rash and general medical state.

The rash was diagnosed clinically as scabies and in most of the cases the diagnosis was confirmed by isolation of the mites, its parts and or the eggs, by microscopical examination of scraping material from the burrows in 10% KOH.

The patients were divided into two groups according to the types of treatment which are used:-

- Group one:** Consisted of three hundred patients (60% of all patients), they were two hundred male (40%) and one hundred female (20%). They were treated by sulphur ointment (of 5% for children, 7.5% for adult females and 10% concentration for adult males patients), mixed with Clobetasol dipropionate ointment (0.05%). The ointment was applied once daily after showering to the whole body except the head and remain on skin for 24 hours before washing and reapplied again for 5 consecutive days (30g for each application).
- Group two:** Consisted of two hundred patients (40% of all patients), they were one hundred fifty male (30%) and fifty female (10%). They were treated by sulphur ointment alone (5% for children and 10% for adult). The ointment was applied in similar way as in group one.

All patients in both groups were followed up for 3 weeks, to assess the response to therapy, the adverse effects and the relapses of the disease. By history and examination 10% (50 patients) of the patients were hypertensive and 5% (25 patients) were diabetic.

Formulation of therapy: Sulphur with Clobetasol ointment consisted of: 10g Sulphur powder, 5ml liquid paraffin, 25g Clobetasol dipropionate ointment 0.05% (Dermovate) and 65g Petrolatum (Vaseline). 7.5% sulphur ointment consisted of: 7.5g Sulphur powder 5ml liquid paraffin, 25g Clobetasol dipropionate ointment 0.05% (Dermovate) and 62.5g petrolatum (Vaseline). 5% sulphur ointment consisted of: 5g Sulphur powder, 5ml liquid paraffin, 25g Clobetasol dipropionate ointment (0.05%) (Dermovate) and 65g petrolatum (Vaseline) (in all preparations the sulphur was dissolved in 5ml of liquid paraffin before mixing with Vaseline and prepared by Pharmacists).

Sulphur ointment alone consisted of: 5g and 10g sulphur powder and 5ml liquid paraffin in 90g and 85g of petrolatum (Vaseline) respectively.

Chi-square was done as a test of significancy $P < 0.05$.

Results:

The study showed that:

- The cure rate of the scabies in the patients of group one was 95% (285 patients, who were treated by sulphur and Clobetasol dipropionate), 10% (30 patients) of those patients showed relapses of the disease, which may be due to reinfestation from other sources or relapses of the disease (Table-1). None of the patients in this group developed irritant contact dermatitis and 2% (6 patients) developing steroid acne (Table-2).
- The cure rate of the disease in the patients of group two was 96% (192 patients, who were treated by sulphur alone), 7% (14 patients) of those patients showed relapses of the disease after 2-3 weeks, which also may be due to reinfestation or relapses of the disease (Table- 1). Ten percent (20 patients) of the patients in this group developed irritant contact dermatitis, due to the sulphur, especially in the females and children and none of them developing acne (Table-2).
- All patients who failed to response to treatment in both group were treated by other antiscabietic therapy like benzyl benzoate solution 25% or permethrin cream 5% and all of them were cured.

Table-1: Distribution of patients according to sex, response to therapy and relapses rate.

Group	No of patients	No Males%	No Female%	No Cure %	No Relapses%
Group one	300	200 (40)	100 (20)	285 (95)	30 (10)
Group two	200	150 (30)	50 (10)	192 (96)	14 (7)
Total	500	350 (70)	150 (30)	477 (95.5)	44 (8.8)

Table-2: Adverse effects of therapy in both groups.

Group	No. of patients	Irritant contact dermatitis		Steroid acne	
		No.	%	No.	%
Group one	300	Zero	Zero	6	2
Group two	200	20	10	Zero	Zero
Total	500	20	10	6	2

Discussion:-

As the scabies is one of the common skin problems all over the world including Iraq, especially in the prisoners and camps population, unfortunately in Iraq the sulphur ointment represented the commonest useful therapy for scabies, which is associated with high risk of development of irritant contact dermatitis and chemical burn, especially in higher concentrations^[1,2,4,14].

This study showed that the mixture of sulphur ointment and topical corticosteroid (Clobetasol dipropionate), in the treatment of scabies, had a curative rate nearly similar to or better than that of other types of therapy including sulphur alone and superior to its by avoidance of development of dermatitis, which was occurred in more than 10% of those using other therapies, specially the sulphur ointment, benzyl benzoate and Malathion^[1,2,4,11,12,14].

The relapses of the scabies in patients treated by sulphur ointment mixed with corticosteroid ointment and those treated by other therapies was similar and most probably due to reinfestation from untreated family or group members, or relapses of the infestation which was settled done temporary by the specific therapy or by the corticosteroid^[1,2,4,11,12,14].

In conclusion that sulphur ointment, when mixed with corticosteroid ointment gave curative results similar to that of using other types of therapies in the treatment of human scabies, with avoidance of development of contact dermatitis and chemical burns.

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