MODIFIED DITHRANOL THERAPY FOR PSORIASIS

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Graded concentrations of compound dithranol ointment were tried in 107 patients with plaque psoriasis. The lowest concentration used was 0.05% which was gradually increased, irrespective of the response, to the maximum tolerable concentration. The ointment was applied over the patches in the evening and the lesions were exposed to the sun the next day. This was followed by a soap and water bath. The process was repeated till 16 weeks or the disappearance of lesions whichever was earlier. A majority of the patients required a concentration of 0.25% for clearing and a few required 0.5% concentration. In 54% patients, there was complete clearing of the lesions and another 22% showed 75% clearance. Only in 2% cases, there was no appreciable change in the skin lesions. Resistant sites were legs, elbows, lower back etc. Mild local side effects such as folliculitis, irritation of the surrounding normal skin and local pruritus occurred in some patients. In seven patients, severe irritation required discontinuation of the therapy. Temporary staining of the finger tips, nails and hair occurred as also staining of the clothes. No systemic side effects were observed.

Key words : Psoriasis, Dithranol, Therapy.

Recent reports of liver damage associated with methotrexate, serious side effects associated with retinol and disillusionment with the long term results of corticosteroid therapy have prompted dermatologists to reconsider the use of previously prevalent topical therapies. The use of anthralin has again become popular as it has been found to be more effective than the modified Goeckerman's regime.[1,2] With anthralin, there is no systemic toxicity[3-5] and the local side effects are negligible,[2,6-10] despite disadvantages of hospitalisation, requirement of trained staff, and the assiduous procedure of application. Anthralin therapy has been in use for many years at various centres, confirming the efficacy and safety of the drug.[4,11-13] The progressive simplification of the dithranol therapy by omitting ultraviolet light exposures, talc dressings and substitution of ordinary instead of tar bath without compromising much on the therapeutic results,[5,6,13,14] has made treatment at home possible and acceptable. In this study, we have tried gradually increasing concentrations of compound dithranol paste made in yellow soft paraffin in patients having psoriasis. The regimen was used as a first-line topical treatment in suitable patients having moderately severe psoriasis.

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Materials and Methods

One hundred and seven patients; 76 males with ages varying from 8-80 years and 31 females with an age range of 6-65 years were included. All patients had stable, plaque type psoriasis, duration varying from 2 months to 20 years. The surface area involved varied from 10-70%.

As pure dithranol powder is not available, the commercial Derobin ointment (Dithranol 1.15%, salicylic acid 1.15%, coal tar solution 5.3%, in soft paraffin base) was used. Different concentrations of Derobin ointment were prepared in yellow soft paraffin to give 0.05%, 0.075%, 0.1%, 0.25%, 0.5%, 0.75% and 1% of dithranol. To start with, the lowest concentration of 0.05% was applied to all patches except a test patch selected on the limb or elsewhere to which the next higher concentration was applied. The ointment was applied pre-

cisely over the patches with finger tips in the evening, left overnight and after exposure to sun the following morning for half to one hour the ointment was thoroughly rubbed off with a soap and water bath. The process was repeated every day, and the patient was called for a check up after two weeks. Irrespective of the response and if there was no inflammation at the test patch site, the test patch concentration was given for the whole body and the next higher concentration was used for a different test patch site. The process was repeated till the lesions cleared or for a maximum of 16 weeks.

Results

Only clinical criteria were used to assess the improvement. Only well developed lesions were considered for assessment.

In fifty four (54%) patients there was complete clearing of the lesions starting at 4 weeks to the end of the study. Twenty two (22%) patients showed more than 75% clearance. Eleven (11%) patients each improved upto 75% and 50% respectively. In two (2%) patients there was no appreciable change in the skin lesions except for a little reduction in scaliness which was probably due to the ointment application only and was ignored (Table I).

Table I. Results of dithranol therapy in 100 cases.

Clinical improvement	Number of cases
1. Complete clearance	54
2. More than 75% improvement	22
3. 50-75% improvement	11
4. Upto 50% improvement	11
5. No change	2
Total	100

In 90% of the patients, psoriatic lesions healed with post-inflammatory hyperpigmentation, however, in some (10%) patients there was hypopigmentation. None had associated vitiligo.

Some sites namely legs (9%), elbows and lower back (2% each), paraumbilical area and lower abdomen in one patient each were comparatively resistant to treatment. In twelve (12%) patients, relapse occurred after stoppage of therapy after a mean period of 6.9 months.

Eight patients developed folliculitis on the legs which subsided in a week's time after stoppage of the treatment. Ten other patients developed irritation of the surrounding normal skin which improved after discontinuation of therapy and did not recur when a lower concentration was reapplied. Pruritus of a mild degree was experienced by twelve patients, it did not require discontinuation of the applications. Transient staining of surrounding skin was observed in ten patients, more so when the concentration was higher than 0.25%. One patient developed comedones over the chest.

Seven patients had a severe irritant reaction to varying concentrations of dithranol warranting stoppage of treatment. In four patients, the irritation was recorded with even 0.05% (the lowest concentration), whereas in the others it occurred with 0.25% concentration and more. None of the patients developed any systemic side effects.

Comments

Dithranol (anthralin, cignolin) is a synthetic compound that has been used effectively for the treatment of psoriasis since 1916.[15] It is believed that the British dermatologist, Balmanno Squire published the first monograph in 1878 on crude chrysarobin titled "On the treatment of psoriasis by an ointment of chrysophanic acid". Anthralin formed the basis of the Ingram regimen[11,12] which has been widely used. Despite proven efficacy, Ingram regimen has certain disadvantages.

Anthralin acts by inhibiting DNA replication and repair. Swanbeck and coworkers[16,17] found 33% depression in mitotic rate as early as 8 to 12 hours[5] after application in the usual concentrations.

Different kinds of treatment regimens are recommended. In some high concentrations of dithranol are reached rapidly,[11,12] while in others low concentrations are recommended avoiding irritation. Young[7] and Pearlman et al[10] found gradually rising concentration better than a fixed low strength. Stiff pastes[2,11,12] and soft consistency vehicles[4] are variously recommended for dispensing. There is controversy about the need for tar bath, UV exposure and the use of stockinettes.[7,14] Therapeutic response to simplified Ingram's regimens has been found to be as effective as the more arduous methods.[1,4,5,7,18]

In the present study, satisfactory therapeutic results were achieved with rising concentrations of dithranol as judged by clinical criteria. Our results of 75-100% clearing in more than 70.0% patients in an average period of 10.5 weeks (varying from 9-12 weeks) compares favourably with the clearance rates obtained by other authors.[3,5-7,14] However, the results are not as good as those of Comaish[4] who reported clearing in 95% patients in an average of 19.5 days. Ingram[11,12] and Maclennan and Hellier[1] reported exceedingly good results with the standard Ingram technique. Brody and Johanson[20] reported improvement in 88% patients in 4.5-14.5 months with low concentrations (0.01-0.05%), over-simplification may have taken away some of the therapeutic efficacy.

Most of the side effects have been reported in varying percentages depending upon the concentration used and the length of time it was used.[5-7] Severe irritation occurred in 25% patients when dithranol was used under paper tape occlusion.[10] Transient post-auricular lymphadenopathy following scalp application, urticaria and dryness of skin has been reported.[6] None of our patients developed systemic side effects reported earlier.[3-5,18,20] Ippen[19] treated 300 patients with anthralin in upto 4% concentration without any side effects.

Relapse in twelve patients (average period of 6.9 months) after stoppage of therapy will make us agree with the suggestion of Farber and Harris[5] that exacerbations can be minimised if the level of the agent is maintained at the psoriatic site by continued application. Majority of the patients reported by Pearlman et al[10] were lesion-free six months after clearing of lesions with dithranol.

We feel that topically applied anthralin (Ingram regimen) provides effective, useful and harmless alternative to potentially hazardous treatment.[4] Comparing PUVA and anthralin, convenience of application, duration of treatment and freedom from long term toxicity, anthralin regime would be the first choice for the treatment of psoriasis.

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