Adherence to Topical Treatment Can Improve Treatment-Resistant Moderate Psoriasis

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PRACTICE **POINTS**

- Most patients with psoriasis are good candidates for topical treatment.
- Topical treatment of psoriasis often is ineffective.
- Topical treatment of psoriasis can be rapidly effective, even in patients who reported disease that was resistant to topical treatment.

Most patients with psoriasis have limited disease that should be manageable with topical treatment. However, psoriasis often is resistant to topical treatment. The aim of our study was to determine if patients using psoriasis-resistant topical treatments can be effectively treated with topicals under conditions promoting adherence. During this open-label, randomized, single-center clinical study, 12 patients with moderate psoriasis that previously failed topical treatment were selected and treated with desoximetasone spray 0.25% for 2 weeks. Six patients were randomized to receive twice-daily telephone call reminders to further encourage good adherence. Disease severity was assessed by the visual analog scale for pruritus, psoriasis area and severity index (PASI), total lesion severity score (TLSS), and investigator global assessment (IGA). At the end of the study, most patients improved in most scores. Therefore, apparent resistance to topical treatment often is due to poor adherence and can be overcome, at least over the short term.

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High-potency topical corticosteroids are first-line treatments for psoriasis, but many patients report that they are ineffective or lose effectiveness over time.[1-5] The mechanism underlying the lack or loss of activity is not well characterized but may be due to poor adherence to treatment. Adherence to topical treatment is poor in the short run and even worse in the long run.[6,7] We evaluated 12 patients with psoriasis resistant to topical corticosteroids to determine if they would respond to topical corticosteroids under conditions designed to promote adherence to treatment.

Methods

This open-label, randomized, single-center clinical study recruited 12 patients with plaque psoriasis that previously failed treatment with topical corticosteroids and other therapies (Table). We stratified disease by body surface area: mild (<3%), moderate (3%–10%), and severe (>10%). Inclusion criteria included adult patients with plaque psoriasis amenable to topical corticosteroid therapy, ability to comply with requirements of the study, and a history of failed topical corticosteroid treatment (Figure). Patients were excluded if they were pregnant, breastfeeding, had conditions that would affect adherence or potentially bias results (eg, dementia, Alzheimer disease), had a history of allergy or sensitivity to corticosteroids, and had a history of drug hypersensitivity.

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The eTables are available in the Appendix online at www.mdedge.com/dermatology.

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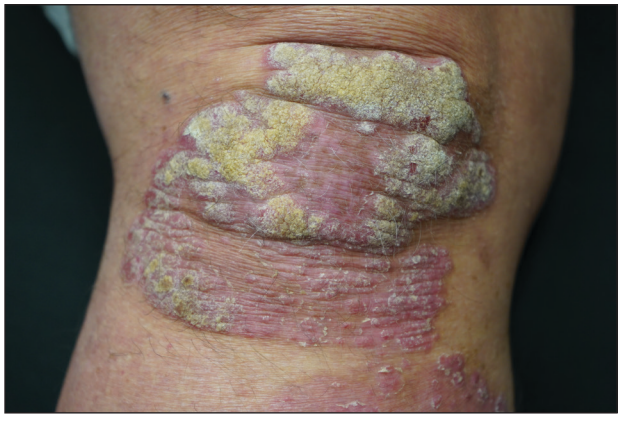
Patients' Prior Psoriasis Treatments

Patient No.	Age, y/Race/Gender	Prior Treatment(s)
PS-01	54/W/M	Clobetasol, desoximetasone, calcipotriene, calcipotriene–betamethasone dipropionate, etanercept, UV phototherapy
PS-02	69/W/F	Clobetasol, triamcinolone, calcipotriene, calcipotriene–betamethasone dipropionate, flurandrenolide tape, etanercept, UV phototherapy
PS-03	65/W/F	Clobetasol, desonide, hydrocortisone, fluocinolone, tacrolimus, adalimumab, etanercept, methotrexate, UV phototherapy
PS-04	51/W/M	Clobetasol
PS-05	73/W/M	Hydrocortisone
PS-06	48/W/M	Clobetasol
PS-07	68/W/F	Triamcinolone, hydrocortisone, fludrocortisone
PS-08	59/W/M	Clobetasol
PS-09	40/W/F	Clobetasol, triamcinolone, calcipotriene, UV phototherapy
PS-10	63/W/F	Clobetasol, etanercept, ixekizumab, ustekinumab
PS-11	68/B/F	Clobetasol
PS-12	67/W/F	Clobetasol, calcipotriene, methotrexate

Abbreviations: W, white; M, male; F, female; B. black.



Psoriasis recalcitrant to topical treatment may be a treatment adherence problem. This patient was enrolled in the study and treated with desoximetasone spray 0.25% twice daily for 14 days.

All patients received desoximetasone spray 0.25% twice daily for 14 days. At the baseline visit, 6 patients were randomly selected to also receive a twice-daily reminder telephone call. Study visits occurred frequently—at baseline and on days 3, 7, and 14—to further assure good adherence to the treatment regimen.

During visits, disease severity was scored using the visual analog scale for pruritus, psoriasis area and severity index (PASI), total lesion severity score (TLSS), and investigator global assessment (IGA). Descriptive statistics were used to report the outcomes for each patient.

The study was designed to assess the number of topical treatment–resistant patients who would improve with topical treatment but was not designed or powered to test if the telephone call reminders increased adherence.

Results

All patients completed the study; 10 of 12 patients (83.3%) had previously used topical clobetasol and it failed (Table). At the 2-week end-of-study visit, most patients improved on all measures. Patients who received telephone call reminders improved more than patients who did not. All 12 patients (100%) reported relief of itching; 11 of 12 (91.7%) had an improved PASI; 10 of 12 (83.3%) had an improved TLSS; and 7 of 12 (58.3%) had an improved IGA (eTables 1 and 2).

The percentage reduction in pruritus ranged from 66.7% to 100% and 50.0% to 85.7% with and without telephone call reminders, respectively. Improvement in PASI ranged from 18.0% to 62.8% and 0% to 54.5% with and without telephone call reminders, respectively. Improvement in TLSS and IGA was of lower magnitude but showed a similar pattern, with numerically greater improvement in the telephone call reminders group compared to the group that was not called (eTable 2). No patients showed a worse score for pruritus on the visual analog scale, PASI, TLSS, or IGA.

Discussion

Topical corticosteroids are highly effective for psoriasis in clinical trials, with clearance in 2 to 4 weeks in 60% to 80% of patients, a rapidity of response not matched by even the most potent biologic treatments.[8,9] However, topical corticosteroids are not always effective in clinical practice. There may be primary inefficacy (they do not work at first) or secondary inefficacy (a previously effective treatment loses efficacy over time).[10] Poor adherence can explain both phenomena. Primary adherence occurs when patients fill their prescription; secondary adherence occurs when patients follow the medication recommendations.[11] Primary nonadherence is common in patients with psoriasis; in one study, 50% of psoriasis prescriptions were not filled.[12] Secondary adherence also is poor and declines over time; electronic monitoring revealed adherence to topical treatments in psoriasis patients decreased from 85% initially to 51% at the end of 8 weeks.[7] Given the high efficacy of topical corticosteroids in clinical trials and the poor adherence to topical treatment in patients with psoriasis, we anticipated that psoriasis that is resistant to topical corticosteroids would improve rapidly under conditions designed to promote adherence.

As expected, disease improved in almost every patient in this small cohort when they were given a potent topical corticosteroid, even though they previously reported that their psoriasis was resistant to potent topical corticosteroids. Although this study enrolled only a small cohort, it appears that the majority of patients with limited psoriasis that was reported to be resistant to topical treatment can see a response to topical treatment under conditions designed to encourage good adherence.

We believe that the good outcomes seen in our study were a result of good adherence. Although the desoximetasone spray 0.25% used in this study is a superpotent topical corticosteroid,[8] the response to treatment was unlikely due to changing corticosteroid potency because 10 of 12 patients had tried another superpotent topical corticosteroid (clobetasol) and it failed. We chose a spray product for this study rather than an ointment to promote adherence; however, this choice limited the ability to assess adherence directly, as adherence-monitoring devices for spray delivery systems are not readily available.

Our study was limited by the small sample size and brief duration of treatment. However, the effect size is so large (ie, the topical treatment was so effective) that only a small sample size and brief treatment duration were needed to show that a high percentage of patients with psoriasis that had previously failed treatment with topical corticosteroids can in fact respond to this treatment.

We used telephone calls as reminders in 50% of patients to further encourage adherence. The study was not designed or powered to assess the effect of the telephone call reminders, but patients receiving those calls appeared to have slightly greater reduction in disease severity. Nonetheless, twice-daily telephone call reminders are unlikely to be a wanted or practical intervention; other approaches to encourage adherence are needed.

Frequent follow-up visits were incorporated in our study design to maximize adherence. Although it might not be feasible for clinical practices to schedule follow-up visits as often as in our study, other approaches such as virtual visits and electronic interaction might provide a practical alternative. Multifaceted approaches to increasing adherence include encouraging patients to participate in the treatment plan, prescribing therapy consistent with a patient's preferred vehicle, and extensive patient education.[13] If patients do not respond as expected, poor adherence can be considered. Other potential causes of poor outcomes include error in diagnosis; resistance to the prescribed treatment; concomitant infection; irritant exposure; and, in the case of biologics, antidrug antibody formation.[14,15]

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APPENDIX

eTABLE 1. Disease Severity Data (VAS and PASI) From Day 0 to Day 14 of Intervention and Control Groups

Patient No.	Baseline	Day 3	Day 7	Day 14	Improvement From Baseline, %
VAS					
Intervention Group[a]					
PS-01	2.0	1.5	0	0	100
PS-02	7.5	3.5	1.5	2.5	66.7
PS-05	7.5	1.5	0.5	2.5	66.7
PS-06	4.5	2.5	0.5	0.5	88.9
PS-07	8.0	2	0	0	100
PS-10	7.5	5.5	3.5	2.5	66.7
Control Group[b]					
PS-03	6.5	6.0	2.5	1.0	84.6
PS-04	4.5	2.5	1.0	1.5	66.7
PS-08	3.5	1.5	0.5	0.5	85.7
PS-09	6.0	5.5	5.5	2.5	58.3
PS-11	5.0	3.0	2.5	2.5	50.0
PS-12	2.0	1.0	0.5	0.5	75.0
PASI					
Intervention Group[a]					
PS-01	14.9	13.1	11.5	8.3	44.3
PS-02	7.1	7.1	3.6	3.0	57.7
PS-05	12.8	10.4	8.4	7.2	43.8
PS-06	10.0	10.0	8.2	8.2	18.0
PS-07	4.3	3.9	1.8	1.6	62.8
PS-10	2.8	2.4	2.0	2.0	28.6
Control Group[b]					
PS-03	4.4	3.2	2.8	2.0	54.5
PS-04	27.3	24.5	20.1	15.4	43.6
PS-08	10.0	10	9.2	6.2	38.0
PS-09	8.4	8.4	8.4	8.4	0
PS-11	10.6	NC	8.4	9.2	13.2
PS-12	2.8	2.0	2.0	1.6	42.9

Abbreviations: VAS, visual analog scale; PASI, psoriasis area and severity index; NC, not captured.
[a]Received telephone call reminders.
[b]Did not receive telephone call reminders.

eTABLE 2. Disease Severity Data (TLSS and IGA) From Day 0 to Day 14 of Intervention and Control Groups

Patient No.	Baseline	Day 3	Day 7	Day 14	Improvement From Baseline, %
TLSS					
Intervention Group[a]					
PS-01	9	8	8	6	33.3
PS-02	7	7	4	4	42.9
PS-05	10	8	7	6	40.0
PS-06	10	10	8	8	20.0
PS-07	9	8	5	5	44.4
PS-10	8	7	6	6	25.0
Control Group[b]					
PS-03	6	4	4	3	50.0
PS-04	12	12	9	9	25.0
PS-08	10	10	10	9	10.0
PS-09	8	8	8	8	0
PS-11	8	NC	8	8	0
PS-12	6	5	5	2	66.7
IGA					
Intervention Group[a]					
PS-01	3	3	3	2	33.3
PS-02	3	3	2	2	33.3
PS-05	3	3	3	3	0
PS-06	3	3	3	3	0
PS-07	3	3	2	2	33.3
PS-10	3	3	2	2	33.3
Control Group[b]					
PS-03	3	2	2	2	33.3
PS-04	4	4	3	3	25.0
PS-08	3	3	3	3	0
PS-09	3	3	3	3	0
PS-11	3	NC	3	3	0
PS-12	2	2	1	1	50.0

Abbreviations: TLSS, total lesion severity score; IGA, investigator global assessment; NC, not captured.
[a]Received telephone call reminders.
[b]Did not receive telephone call reminders.