

ORIGINAL ARTICLE

Physicians' perceptions of an eczema action plan for atopic dermatitis

EDIDIONG NTUEN¹, SARAH L. TAYLOR¹, MEGAN KINNEY¹, JENNA L. O'NEILL¹,
DANIEL P. KROWCHUK^{1,4} & STEVEN R. FELDMAN^{1,2,3}

Center for Dermatology Research, Departments of ¹Dermatology, ²Pathology, ³Public Health Sciences, and ⁴Pediatrics, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA

Abstract

Background: Poor adherence to topical medications in atopic dermatitis may lead to exposure to more costly and potentially toxic systemic agents. Written action plans (WAPs) improve adherence and treatment outcomes in asthma patients and may be useful for children with atopic dermatitis. **Objective:** To assess physicians' perceptions of a WAP for atopic dermatitis and their openness to using it. **Methods:** An Eczema Action Plan (EAP) was modeled from those used in pediatric asthma. A brief survey to assess the perceived practicality and usefulness of the EAP was sent to 48 pediatricians in our local area and to 17 pediatric dermatologists nationally. Survey items included layout, graphics, readability, accuracy, and utility. Qualitative analyses were performed due to small sample sizes. **Results:** Seventeen pediatricians from five community practices and eight pediatric dermatologists responded (response rates of 35% and 41%, respectively). Layout was rated as excellent by 59% of pediatricians and 43% of pediatric dermatologists, the graphics were rated good (60% and 70%), the readability as good to excellent (100% and 86%), the accuracy as excellent or good (83% and 86%), and usefulness as good to excellent (100% of both groups). Most (71%) of the pediatric dermatologists reported already having their own patient education materials for atopic dermatitis, but none of the pediatricians did. All pediatricians and 60% of pediatric dermatologists reported they were likely to use the EAP in their clinical practices. Limitations included the sample size being small, but it still provided for qualitative assessment of generalists and sub-specialists. We did not assess how the EAP would be perceived by patients or their families. The practice settings of the community and academic physicians are not identical, which may make for weakened comparisons. **Conclusions:** Pediatricians are open to using an EAP for atopic dermatitis. If an EAP were effective at improving adherence and outcomes in atopic dermatitis, widespread implementation should be feasible.

Key words: action plan, atopic dermatitis, eczema, management, outcomes, pediatric dermatologists, pediatricians, questionnaire, survey, treatments

Introduction

Topical corticosteroids, with or without topical calcineurin inhibitors, are the mainstay of treatment for atopic dermatitis and highly effective when given in a sufficient dosage and correctly applied (1–3). Although there are good topical atopic dermatitis treatments, patients do not always improve. One reason for lack of improvement is poor adherence to the treatment regimen (4,5). Often, prescriptions are not even filled (6). Even when patients are given the medication, adherence to it is very poor. In a clinic

population of children with atopic dermatitis the mean adherence was 32% (5). When topical treatments are not used or are ineffective, patients may require phototherapy or systemic treatments, which are inconvenient and have long-term toxicities, respectively. If adherence to topical treatment can be improved, exposure to more costly and potentially toxic systemic agents may be avoidable (5). Measures to improve adherence may be a good strategy for improving atopic dermatitis treatment outcomes.

One strategy for improving adherence and treatment outcomes in pediatric and adult asthma patients

Correspondence: Steven R. Feldman, Department of Dermatology, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157-1071, USA. Fax: 1 336 716 7732. E-mail: sfeldman@wfubmc.edu

(Received 22 July 2009; accepted 24 September 2009)

ISSN 0954-6634 print/ISSN 1471-1753 online © 2010 Informa UK Ltd.
DOI: 10.3109/09546630903386598

is a WAP (7,8). A written action or self-management plan is a set of written instructions to assist the patient (or the patient's caregiver) in managing a condition (9,10). WAPs, come in various forms, but serve the common purpose of providing parents with a written communiqué to guide them through the management of their child's chronic illness between health-care visits (9–11). Generally, patients have positive perceptions of WAPs (8). Given the similarities between atopic dermatitis and asthma as chronic illnesses requiring a step-wise approach to treatment, the use of WAPs in the treatment of atopic dermatitis may be a good way to improve treatment outcomes.

One of the hurdles to implementation of a WAP for atopic dermatitis is physician acceptance. Physicians may not be interested in incorporating WAPs into their practice, they may not consider them helpful, or they may already have WAPs that they are happy with. To assess the feasibility of implementing a WAP for atopic dermatitis, we assessed pediatricians' and pediatric dermatologists' perceptions of a WAP for atopic dermatitis, and their openness to using it for their atopic dermatitis patients. We have termed this WAP an Eczema Action Plan (EAP).

Methods

The EAP was developed and modeled after those used in pediatric asthma (Figure 1). The EAP is a one-page handout that specifically defines eczema and provides instruction for the management and control of atopic dermatitis. A plan with treatment options for flares based on severity was also described in the EAP. We had input from two physicians in developing our prototype EAP: a pediatric dermatologist and one of our faculty, a pediatrician, who sees many children with atopic dermatitis. Features of the EAP included four color-coded steps with a relatively similar control zone description and write-in-the-blank sections for medications as per previously described models (Figure 1) (9). To assess physicians' impressions of the EAP, a brief survey concerning the practicality and usefulness of the EAP was used. Each item was scored as: excellent/very likely – 1; good/somewhat likely – 2; fair/not likely – 3; poor/not sure – 4; and no response/NA – 5. Space was also provided for suggestions for each category and globally at the end of the survey.

The EAP and questionnaire were sent to participating physicians via e-mail, fax, or regular mail. Surveys were sent to pediatric dermatologists in the Society For Pediatric Dermatology database

who had adequate contact information (17 total) and to pediatricians found using an Internet and phone book search for our local area of Forsyth County, North Carolina (48 total). Participating pediatric dermatologists received \$50 compensation for completing the survey. The first 10 pediatricians who completed the survey received \$50 compensation. Research approval for Human Subjects was obtained prior to the distribution of survey materials.

Data analysis

Qualitative analyses were done, including reporting the frequencies of specific items and physicians' open comments about the EAP. Feedback on the EAP was divided into two broad categories: design versus content/utility. Specifically, design attributes included comments on the layout, graphics, and readability; content/utility attributes included comments on the accuracy, usefulness, likeliness to use in practice, and general suggestions for improvement. Responding pediatricians ($n = 17$) and pediatric dermatologists ($n = 8$) were reported separately.

Results

Survey response rates

Surveys were sent to 17 pediatric dermatologists in different academic practices nationwide, and eight responded (41% response rate). Surveys were sent to 48 pediatricians and 17 from five different community practices responded (response rate of 35%; Table I).

Design

Layout. The layout of the EAP was modeled after previous pediatric templates described in the 'Methods'. Generally, both pediatricians and pediatric dermatologists found the layout to be good or excellent (Figure 2). The layout was reported as excellent by 59% of pediatricians and 43% of pediatric dermatologists. Pediatrician comments included: "easy to read", "I like that it is one page", and "reminds me of the asthma action plan layout". Pediatric dermatologists provided specific corrections such as: "like font and colors; layout confusing"; "'other' instruction box too small"; "'what to do in a flare' section confusing since it's right next to instructions for

Your Child's Eczema Action Plan

What is eczema?

Eczema, also called atopic dermatitis, is a chronic disease of the skin—meaning it is an ongoing problem. It causes dry, itchy, irritated skin and can be stressful for kids and families. **It is not contagious.** It sometimes runs in families, but not everyone in the family will have eczema.

Even though there is no cure, there are lots of good ways to control eczema. The BEST thing you can do for eczema is to keep skin moisturized! Kids with eczema have dry skin, and the drier the skin, the more itchy and irritated the skin will be.

Here are some tips:

- Bathe daily. Use lukewarm water, 10 minutes or less.
- Use a small amount of mild soap. Choose one that is fragrance free. A liquid or bar is fine. Some that are specially made to be milder include: *Dove, Cetaphil, Purpose, Cerave*
- Pat skin dry—don't rub. Be gentle; rough rubbing can irritate skin.
- Moisturize. This is best done right after bathing, when the skin is still a little wet. Moisturize as needed throughout the rest of the day.
- Choose a moisturizer without fragrance. Here are some examples: *Eucerin cream, Cetaphil cream, Cerave cream, Aquaphor ointment, Vaseline petroleum jelly ointment*
- Choose fragrance-free soaps, moisturizers, & laundry detergent. Don't use dryer sheets; they are too irritating.

Other instructions from your doctor:

What to do in a flare:

Despite good routine care, your child's eczema may still flare. The plan below will tell you what medicines to use to get the flare under control.

Don't forget—keep using good routine skin care even during a flare!

What to use during a flare:

USE THESE MEDICINES FOR:

If your child is not better by then, is getting worse at any time, or shows signs of infection (fever, chills, pus, or crusting), call your doctor at _____.

CALL US at _____ on: **M–T–W–T–H–F**

Let us know how your child is doing overall.

Next appointment: _____

1. NORMAL/DRY:

Normal skin, a little dry, not itching much if at all.

PLAN:

- Regular skin care routine; moisturize twice daily

2. MILD: Itchy skin with light redness.

PLAN:

- Regular skin care routine, but moisturize a little extra
- HYDROCORTISONE Cream: use once a day until the itching is gone (Use HYDROCORTISONE 2.5% Cream to the face and genitals.)

3. MODERATE: Bad itching that keeps you and/or your child awake at night or causes scratching that leaves marks.

PLAN:

- Regular skin care routine, but moisturize a little extra
- TRIAMCINOLONE 0.1% OINTMENT: use twice a day until the itching is gone (Use HYDROCORTISONE 2.5% Cream to the face and genitals.)

4. SEVERE: Skin that is PAINFUL, RED, CRUSTED, or has PUS. Your child may have a FEVER or CHILLS.

PLAN:

- CALL YOUR DOCTOR TO SCHEDULE AN APPOINTMENT! Your child may have an infection requiring antibiotics.

Figure 1. Eczema action plan (EAP). Often patients and caregivers do not retain all information provided at physicians' office appointments, which can lead to non-adherence with prescribed treatments. Written action plans (WAP) have been used to assist patients and caregivers in the management of chronic childhood diseases. This EAP was developed and modeled after the WAP for asthma.

mild–mod–severe”; and “like breakdown of info on top, plan on bottom. The box ‘other instructions’ seems out of place (top right); breakdown of bottom section into right and left columns is

confusing”. Overall, the layout was described positively and general suggestions for the layout were to allow more room for customization of individual plans.

Table I. Number of responders per category.

Category	Pediatricians	Pediatric dermatologists
Layout	<i>n</i> = 17	<i>n</i> = 7
Graphics	<i>n</i> = 9	<i>n</i> = 4
Readability	<i>n</i> = 16	<i>n</i> = 7
Accuracy	<i>n</i> = 17	<i>n</i> = 7
Usefulness	<i>n</i> = 16	<i>n</i> = 7
Likelihood to use	<i>n</i> = 17	<i>n</i> = 5

Graphics. There were fewer responders for this category, possibly due to the lack of atopic dermatitis images (Table I). The perception of the graphics was described by the majority as good; 60% and 70% respectively for pediatricians and pediatric dermatologists. The most frequently recommended change was to add an illustration or image of atopic dermatitis: “a couple of illustrations of mild vs severe would be helpful”, “need some pictures”, and “document could use some visuals to break up the text”. Some of the comments on the color coding scheme were: “like the use of colors to break up plans based on severity of skin disease”, and “Action Plan (red, yellow, green) is a nice visual”.

Readability. The EAP is written at a fourth grade reading level. A total of 96% of pediatricians and pediatric dermatologists evaluated the readability of the EAP as good to excellent. Specifically, readability was reported as excellent by 69% of pediatricians and

by 57% of pediatric dermatologists. Positive remarks such as, “very simple language”, “like the ‘tips’ section”, and “very readable” were used to describe the readability. The pediatric dermatologists provided detailed criticism such as “the phrase ‘moisturize a little extra’ is vague” or “section on using hydrocortisone needs clarification”.

Content and utility

Accuracy. The content accuracy was judged as good by 86% of the pediatric dermatologists and as excellent by 83% of the pediatricians. In the open comments, survey respondents often described specific atopic dermatitis treatment recommendations that they use that were different from those included in the EAP.

Usefulness and likelihood to use. Both pediatricians and pediatric dermatologists found the EAP useful; 100% of both groups responded that the EAP was good or excellent. Suggestions to make it more useful were to have a personalized care plan section and have parents read and evaluate the EAP. Regarding the likelihood to use the EAP in clinical practice, 60% of pediatric dermatologists thought that it was somewhat likely to very likely, and 40% were not likely to use the EAP (Figure 3). A total of 71% of pediatric dermatologists wrote that they have their own handouts which cover eczema. Two stated, “[we] have our own handout which is

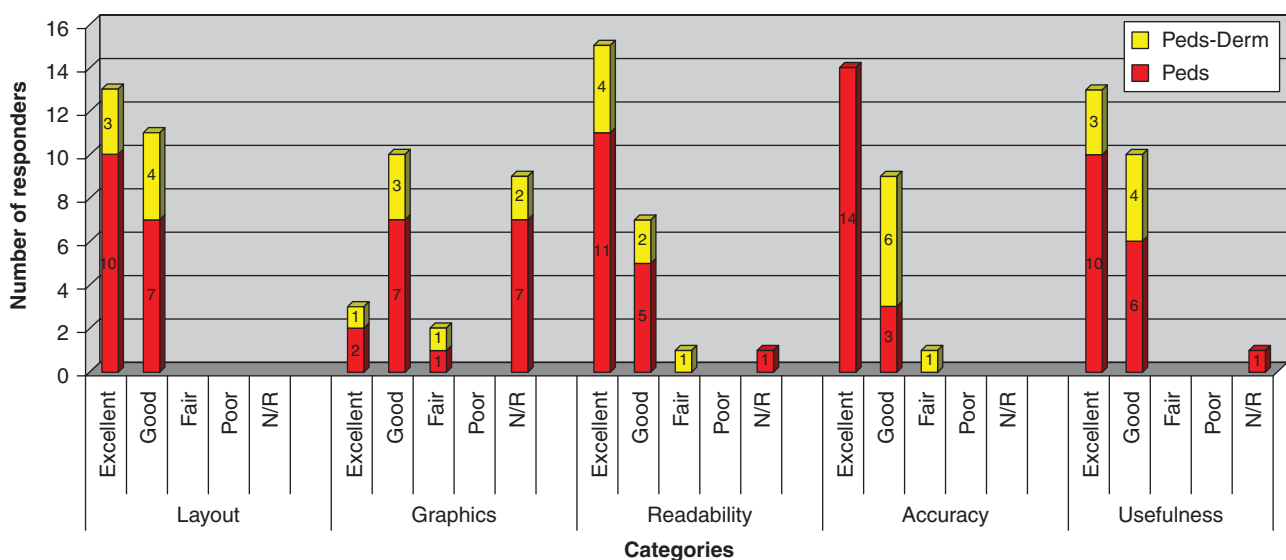


Figure 2. Design, content and utility of the eczema action plan (EAP). Participating physicians were asked to complete a brief survey pertaining to the utility and practicality of the EAP. Physicians were asked to rate the EAP in five categories (layout, graphics, readability, accuracy, and usefulness) on a qualitative scale ranging from excellent to poor. Pediatricians (*n* = 17) and pediatric dermatologists (*n* = 8) were reported separately. The EAP received ratings in the good to excellent range in all categories.

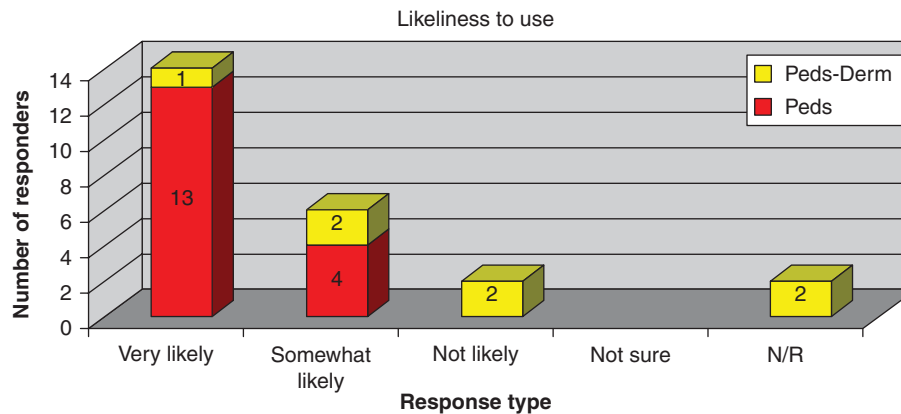


Figure 3. Likeliness to use this EAP. Pediatricians were uniformly willing to incorporate the EAP into their clinical practices. Pediatric dermatologists were less likely to use the EAP; many reported having their own handouts to provide to patients and caregivers.

extensive and answers other questions such as side effects of steroids, food allergies, etc” and “already have similar information sheet that we give families”. No pediatricians claimed to have their own handouts, and 100% of pediatricians responded that they were somewhat to very likely to use the EAP in clinical practice; two pediatricians stated “an ‘asthma action plan’ for eczema is a great idea”, and “let us know when this is available to use as I believe this will be a fabulous resource”.

Improvement and suggestions. General comments for improvements and other suggestions were solicited. Response categories included: confusion, detail, handout, and no response. A total of 57% of pediatric dermatologists used the word ‘confusing’ in the improvements section to describe a specific aspect of the WAP (e.g. “layout confusing” or “formatting is confusing”), whereas 12% of pediatricians described the EAP as confusing. Specific details on how to change the EAP were provided by 100% of pediatric dermatologists; the predominant suggestion was to allow more room to formulate an individualized plan. A total of 65% of pediatricians provided details on how to improve the EAP; they frequently mentioned emphasizing information already on the EAP versus creating a specific individualized plan.

Discussion

Adherence in atopic dermatitis is a critical factor affecting treatment outcomes. Adherence behavior is a complex phenomenon, affected by multiple patient, disease, and system factors. Some of the factors that affect adherence include intrinsic factors that cannot be changed, such as patient demographics and the quality of the disease. Other factors that

impact adherence to treatment and that can be modified include patient motivation, their understanding of treatment, their sense of empowerment and control, and trust in the regimen. The EAP will provide a quick and easy reference to patients and their families, empowering them to follow their treatment regimen. Naturally, if adherence is enhanced, outcomes should improve and the patient will be motivated to continue and trust the treatment.

Beyond addressing the theoretical factors affecting adherence, to be useful the EAP must be acceptable to physicians. The objective of this study was to assess the receptiveness of an EAP by physicians. In order to get broad representation across physician groups, we included generalists (pediatricians in community practices) and sub-specialists (pediatric dermatologists in academic practice settings). Given the similarities between asthma and atopic dermatitis (i.e. the chronicity of the disease and degrees of flares, and the success of the asthma WAP), we modeled our EAP after the previously described asthma WAPs (10). Many of the physicians found the EAP format familiar based on their familiarity with asthma WAPs. Although our sample size was small, the design and content elements of the EAP – the layout, graphics, readability, accuracy and usefulness – were rated as good to excellent across the spectrum of generalists and sub-specialists that we surveyed.

Pediatricians uniformly reported willingness, if not excitement, to incorporate use of the EAP in their practices. Pediatric dermatologists were not as enthusiastic, as many had their own educational handouts to provide to patients and their families already. Nevertheless, pediatric dermatologists’ current use of written atopic dermatitis education materials suggests that the use of EAPs is feasible in pediatric dermatology practice. If a specific EAP was rigorously tested and proven to be effective, we suspect that

many pediatric dermatologists might switch to it or at least incorporate some of its elements.

In addition to the small sample size, a limitation to EAPs that we identified is physicians', particularly sub-specialists', desire to individualize treatment plans. Patients are likely to have already tried and failed one or more treatments by the time they see a pediatric dermatology specialist. This may explain in part why pediatric dermatologists frequently commented on the need for the EAP to include a section allowing individualization of treatment plans. The desire to individualize treatment, however, may be based in part on a paradigm that patients fail treatment because the treatment was wrong for the particular patient. If the previous treatment failure was due to poor adherence and if the EAP is effective at improving adherence, having a fixed treatment plan within the EAP may still be effective, perhaps even preferable, for most patients. In support of this concept, low- to mid-potency topical corticosteroids are highly effective for atopic dermatitis when used in clinical trials that promote good adherence (12). Moreover, in the inpatient setting, low- to mid-potency topical corticosteroids are effective even for atopic dermatitis that is highly resistant to outpatient treatment measures (13).

Another limitation of this study is that of different practice characteristics of the two physician groups compared. The pediatric dermatologists surveyed who practice in an academic environment see patients mostly in clinics that have different support services to community pediatricians who practice general pediatrics.

Although there are conflicting data regarding the ability of WAPs to improve outcomes such as hospitalizations and emergency room use (14–16), WAPs are effective tools to facilitate self-management of chronic diseases (10). Based on the currently available evidence, there may not be one best way to manage atopic dermatitis. Physicians may have different preferences based on their own training and experience, which may make it hard to develop a fixed EAP. However, if an EAP with a specific treatment plan does provide better outcomes in clinical trials, that particular protocol may become the evidenced-based standard of care and would be a welcome addition for physicians who treat atopic dermatitis in children.

Figures 4 and 5 Missing → **Acknowledgement**

The Center for Dermatology Research is supported by an educational grant from Galderma Laboratories, L.P.

Conflicts of interest: There are no conflicts of interest to report.

References

1. Darsow U, Lübke J, Taïeb A, Seidenari S, Wollenberg A, Calza AM, et al. Position paper on diagnosis and treatment of atopic dermatitis. *J Eur Acad Dermatol Venereol*. 2005;19:286–295.
2. Raimer SS. Managing pediatric atopic dermatitis. *Clin Pediatr (Phila)*. 2000;39:1–14.
3. Torok HM, Maas-Irslinger R, Slayton RM. Clocortolone pivalate cream 0.1% used concomitantly with tacrolimus ointment 0.1% in atopic dermatitis. *Cutis*. 2003;72:161–166.
4. Beattie PE, Lewis-Jones MS. Parental knowledge of topical therapies in the treatment of childhood atopic dermatitis. *Clin Exp Dermatol*. 2003;28(5):549–553.
5. Krejci-Manwaring J, Tusa MG, Carroll C, Camacho F, Kaur M, Carr D, et al. Stealth monitoring of adherence to topical medication: Adherence is very poor in children with atopic dermatitis. *J Am Acad Dermatol*. 2007;56: 211–216.
6. Storm A, Andersen SE, Benfeldt E, Serup J. One in 3 prescriptions are never redeemed: Primary nonadherence in an outpatient clinic. *J Am Acad Dermatol*. 2008;59 (1):27–33.
7. Gibson PG, Ram FS, Powell H. Asthma education. *Respir Med*. 2003;97:1036–1044.
8. Douglass J, Aroni R, Goeman D, Stewart K, Sawyer S, Thien F, et al. A qualitative study of action plans for asthma. *BMJ*. 2002;324:1003–1005.
9. Chisolm SS, Taylor SL, Balkrishnan R, Feldman SR. Written action plans: Potential for improving outcomes in children with atopic dermatitis. *J Am Acad Dermatol*. 2008;59(4):677–683. [Epub 2008 May 29].
10. Ducharme FM, Bhogal SK. The role of written action plans in childhood asthma. *Curr Opin Allergy Clin Immunol*. 2008;2:177–188.
11. Bhogal S, Zemek R, Ducharme FM. Written action plans for asthma in children. *Cochrane Database Syst Rev*. 2006;3: CD005306.
12. Yentzer BA, Camacho FT, Young T, Fountain TM, Feldman SR. Good adherence and early efficacy using desonide hydrogel for atopic dermatitis: Results from a program addressing patient compliance. *J Drugs Dermatol* (In press, 2009).
13. Ali SM, Brodell RT, Balkrishnan R, Feldman SR. Poor adherence to treatments: A fundamental principle of dermatology. *Arch Dermatol*. 2007;143(7):912–915.
14. Lefevre F, Piper MT, Weiss K, Mark D, Clark N, Aronson N. Do written action plans improve patient outcomes in asthma? An evidence-based analysis. *J Fam Pract*. 2002;51:842–848.
15. Lieu TA, Quesenberry CP Jr, Capra AM, Sorel ME, Martin KE, Mendoza GR. Outpatient management practices associated with reduced risk of pediatric asthma hospitalization and emergency department visits. *Pediatrics*. 1997;100(3 Pt 1):334–341.
16. Gibson PG, Powell H. Written action plans for asthma: An evidence-based review of the key components. *Thorax*. 2004;59:94–99.

Copyright of Journal of Dermatological Treatment is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Copyright of Journal of Dermatological Treatment is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.