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PEER REVIEWED FEATURE
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Childhood atopic dermatitis

Overcoming parental topical corticosteroid phobia

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Topical corticosteroids are the mainstay of management of atopic dermatitis, the most common skin condition in children. When used appropriately under medical supervision, they are safe and have been shown not to cause cutaneous atrophy.

Atopic dermatitis, or eczema, is the most common paediatric dermatological condition worldwide. It is also one of the most treatable with the correct management, the criterion standard being topical corticosteroids (TCS). Although severe atopic dermatitis is disabling and highly disruptive for patients and their families, fear and anxiety regarding the use of TCS is a significant barrier to effective treatment.[1-7] This fear and anxiety relating to TCS use is often referred to as 'corticosteroid phobia'.

Corticosteroid phobia can be linked to a preference for 'natural therapies'.[7] Patients and their parents often have a poor understanding of the predominantly genetic basis of atopic dermatitis, which may lead to the pursuit of 'cures' that often focus on a search for offending allergens that can be eliminated.[7] The abandonment of evidence-based medical therapy can have potentially detrimental outcomes for the paediatric patient.[8-11] Parents frequently cite 'skin thinning' as the side effect they most fear.[7] This concern is entrenched in parents in Australia, and is also seen around the world.[4,5,12] Although cutaneous atrophy is a well-documented side effect of TCS, it is likely to occur only when potent products

Key points

- **Atopic dermatitis has significant biopsychosocial impacts on the patient and family unit, particularly when it is severe.**
- **Topical corticosteroids (TCS) are the mainstay of its management. Used appropriately, these preparations are safe and do not cause cutaneous atrophy.**
- **Topical corticosteroid phobia is a significant hurdle to effective treatment.**
- **Education and information regarding appropriate use and safety of TCS increases confidence in and adherence to such treatment.**
- **Key strategies are providing safety information on TCS, demonstrating the use of TCS and moisturisers, explaining the genetics and chronicity of atopic dermatitis, addressing allergy concerns and acknowledging the impact on the patient and the family unit.**

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POTENCIES OF TOPICAL CORTICOSTEROIDS USED IN CHILDHOOD ATOPIC DERMATITIS*

Mild potency
- Hydrocortisone 1%
- Hydrocortisone acetate 1%
- Desonide lotion 0.05%

Medium potency
- Betamethasone valerate 0.02% and 0.05%
- Triamcinolone acetonide 0.02%

Potent
- Methylprednisolone aceponate 0.1%
- Betamethasone valerate 0.1%
- Betamethasone dipropionate 0.05%
- Mometasone furoate 0.1%

Superpotent
- Betamethasone dipropionate 0.05% in optimised vehicle

* Preparations available in Australia.

are used inappropriately, such as under plastic occlusion or on macerated skin of the flexures for extended periods of time. The fear of atrophy in the medical and general communities has become so pronounced that many parents receive grossly exaggerated warnings and as a result find it difficult to treat their children appropriately.[8,9]

Education of parents whose children have atopic dermatitis helps to deconstruct this complex issue and dramatically increases treatment compliance. Clinicians play a critical role as 'health educators', but they themselves must have confidence in the safety and appropriateness of TCS before they can recommend these medications to patients.

HEALTH BURDEN OF ATOPIC DERMATITIS

The prevalence of symptoms of atopic dermatitis in children under 5 years of age in Australia is approximately 20%, a figure that has more than doubled over the past three decades.[13,14] A similar increase in prevalence has been found in the USA.[15] It is not well understood why this increase has occurred; however, environmental and socioeconomic factors appear to play an important role in disease prevalence.[16]

Atopic dermatitis can be managed and usually remits with age, but still places a significant burden on patients and their family unit. It has been shown that a child with atopic dermatitis has a significantly higher biopsychosocial impact on the family unit than a child with diabetes, owing to problems such as itching, sleep loss, problems at school and mood and behavioural changes.[2,3,5,17]

A 1997 Australian study calculated conservative estimates of the annual personal cost of managing mild, moderate and severe atopic dermatitis as $330, $818 and $1255, respectively.[17] Costs included doctor visits, hospitalisations, medicines, over-the-counter therapeutic preparations, time off work and transport. The study found that the personal financial cost of managing atopic dermatitis was greater than that for asthma. Other practical difficulties that occur when caring for a child with atopic dermatitis include skin care, feeding, shopping, washing and cleaning, psychological pressure, physical exhaustion and restriction of the family's lifestyle.[18]

TREATING ATOPIC DERMATITIS

Management of atopic dermatitis involves a combination of environmental modification, infection control, identification and management of triggers and, in some children, investigation of allergy.

A key component of the treatment of the condition is restoration of barrier function with emollients. Emollients are the basis of management and should be used even when the skin is clear (i.e. has no evidence of active atopic dermatitis).[19] They should be applied to the skin very liberally, and fears related to the reality that most of them are derived from 'petrochemicals' need to be allayed by facts about their excellent safety record and lack of evidence that they are in any way dangerous.

TCS are the mainstay of medical therapy for atopic dermatitis. Some of the TCS preparations available in Australia, and their relative potencies, are listed in the box on this page. The calcineurin inhibitor pimecrolimus is a useful adjunct to treatment when there is chronic eyelid involvement. However, it is of low potency as an anti-inflammatory agent and is not a substitute for TCS in the acute treatment of atopic dermatitis.

USING TOPICAL CORTICOSTEROIDS SAFELY

The type of corticosteroid used is usually tailored to the severity of the atopic dermatitis:
- for mild disease, use a mild potency TCS (e.g. 1% hydrocortisone acetate)
- for moderate atopic dermatitis, use a medium potency TCS (e.g. 0.02% betamethasone valerate)
- for severe atopic dermatitis, use a potent TCS (e.g. 0.05% betamethasone dipropionate).

The TCS used also varies depending on the part of the body involved (see the box on page 49). The principle behind selecting TCS based on anatomical site is to initially select weaker corticosteroids for skin where the epidermis is thinner or where maceration is common (for example, the axilla). If there is a clinical failure to respond, higher potency TCS should then be considered. Ointment-based preparations are preferred for two reasons: firstly, ointments are more moisturising to the skin, which optimises the delivery of TCS to the skin; and secondly, creams contain higher amounts of preservatives, which may cause stinging when applied to the broken skin of acute atopic dermatitis.

In general, the principle of using TCS is to treat early at maximum potency and reduce when improved. Most patients with moderate to severe atopic dermatitis should gain control of a flare after using a potent TCS once or twice daily for one week

Figure. A fingertip unit is a convenient measure of how much of a topical corticosteroid to prescribe a patient. The size of the fingertip unit, and hence the dose of active ingredient, varies with the age of the patient (infant, child, adult).

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(if applied properly), and can then change to a less potent TCS for maintenance.

When describing their experience of using TCS it is not unusual for parents to say they feel as if they are 'smothering' their child in these medications, which suggests a level of anxiety about using corticosteroids. Furthermore, it is commonplace for pharmacists to insert the term 'Use sparingly' on the labels of TCS tubes, even when the doctor has not written this on the prescription. This can be both alarming and confusing to parents, who as a result may apply minute amounts.

Parents require information on how much of a TCS to use, and it is helpful to demonstrate application of the products to parents. A useful rule of thumb is that a 'fingertip unit' (as measured using the patient's index finger) of a corticosteroid ointment or cream should be used to cover a skin area about twice the size of the palmar surface of the patient's hand (i.e. the palm and fingers; Figure). It is also useful to inform parents that the palmar surface of the hand represents 1% of body surface area, so they have a realistic appreciation of how much product they are actually using. In most cases this is much less than they had assumed.

A recent study has demonstrated the safety of TCS in a paediatric dermatology setting.[20] This cross-sectional observational study assessed 70 children with atopic dermatitis or overlapping atopic dermatitis and psoriasis who had used TCS regularly for at least three months. The researchers found that excellent disease control was achievable using TCS, without causing cutaneous atrophy: 93% of patients in the study group were using a combination of potent, moderate and weak TCS as appropriate to severity and site of application and did not show any evidence of cutaneous atrophy over the observation period. Their conclusion was that parents, medical practitioners and pharmacists should have a high degree of confidence in the use of TCS.

DEALING WITH TOPICAL CORTICOSTEROID PHOBIA

Corticosteroid phobia is expressed by between 40 and 73% of dermatology patients and/or their parents.[8,21-23] This phenomenon is also seen by pediatricians attempting to manage asthma with inhaled corticosteroids.[7-11]

A phobia is an irrational fear. However, calling the fear associated with using TCS a 'phobia' may well be a misnomer as there are some rational reasons for parents to fear TCS. Parents are often warned of the dangers of TCS not only by friends, relatives and the media but also by traditionally trusted sources, including their family doctor and pharmacists.[7] This often unsolicited advice offered by family and friends helps to create a negative cultural environment for parents of children with atopic dermatitis as they contend with the demands of managing their child's illness.

Parents in this country often believe that medical treatment for atopic dermatitis with TCS is dangerous and that 'natural' therapy is safe and therefore preferable.[7] A questionnaire-based study found that 72.5% of people worried about using TCS on their own or their child's skin.[8] Although skin thinning was the most prevalent fear (34.5%), 9.5% of patients were concerned about systemic absorption resulting in retardation of growth and development. The most commonly used TCS was 1% hydrocortisone, and one-third of the patients using this classified it as being either strong or very strong, or were unsure of its potency. This highlights the need for improved patient education regarding the safety, potency and appropriate use of TCS.

The website of the National Eczema Association in the USA is an excellent resource for patients and/or parents (http://www.nationaleczema.org). One of their many brochures, which can all be downloaded, discusses the myths associated with TCS and provides tips for using these preparations (although not all the TCS mentioned are available in Australia).

TOPICAL CORTICOSTEROID SELECTION FOR CHILDHOOD ATOPIC DERMATITIS*

Topical corticosteroids are selected for use based on the severity of the atopic dermatitis and the anatomical site affected.

Face and flexures

- Mild to moderate atopic dermatitis – use hydrocortisone 1%, hydrocortisone acetate 1% or desonide 0.05%
- Moderate to severe atopic dermatitis – use methylprednisolone aceponate 0.1% or mometasone furoate 0.1%

Limbs and trunk

- Mild atopic dermatitis – use hydrocortisone 1% or desonide lotion 0.05%
- Moderate atopic dermatitis – use betamethasone valerate 0.02% or triamcinolone acetonide 0.02%
- Severe atopic dermatitis – use betamethasone dipropionate 0.05% or mometasone furoate 0.1%

* Preparations available in Australia.

EDUCATING PARENTS IN THE USE OF TOPICAL CORTICOSTEROIDS[7]*

Recommendations from parents of children with atopic dermatitis regarding how medical practitioners can best engage and educate them about the use of topical corticosteroids include:

- Understand, respect and validate parental concerns
- Don’t dismiss the desire to investigate allergy as a cause of atopic dermatitis
- Alleviate guilt
- Emphasise the positives: outcome, safety, prognosis
- Encourage acceptance of ‘no cure’
- Realise parental trust in the GP is a major factor
- Empower parents to withstand negative forces
- Provide written and videotaped information that addresses parents’ fears
- Refer child to dermatologist if response to treatment is suboptimal
- Warn parents of the possible confusing information they may receive from pharmacists

* Adapted from Smith SD, et al. *Australas J Dermatol* 2010; 51: 168-174.[7]

IMPACT OF COMPLEMENTARY AND ALTERNATIVE MEDICINE

Complementary and alternative medicine (CAM) therapies are commonly used by parents to treat their children’s atopic dermatitis.[24,25] There are many reasons for this, ranging from a desire to find a lasting ‘cure’ for the illness to a fear of ‘unnatural’ TCS therapy and ‘petrochemical’ moisturisers.

Parents often experience guilt, feelings of failure and a sense that they should somehow have prevented the disease. They often find that the media focus on allergy as the primary cause of atopic dermatitis, promote ‘natural’ products and characterise Western medicine as dangerous. They thus feel under pressure from this and other sources (such as family, friends and school teachers) to avoid ‘dangerous and unnecessary’ medical treatments. It is not uncommon for parents to preferentially commence treatment with what they believe to be a ‘natural’ product, the effectiveness of which is based on simplistic theories, and only move to using TCS when the atopic dermatitis is ‘very severe’.[7] Furthermore, it is not unusual for parents to seek CAM therapies concurrently with conventional medical opinions. This results in an increased financial burden and conflicting advice, which can lead to treatment failure. Also, the use of ‘natural’ therapies may result in the withholding of effective treatment.[26]

Parents often find it difficult to accept the concept of ‘control rather than cure’ in the effective management of atopic dermatitis.[7] The inherent chronic relapsing and remitting nature of atopic dermatitis is frustrating and disappointing for parent and patient, and parents may view TCS as simply masking the underlying condition. However, when TCS are used effectively at the first sign of a flare, ongoing control is less of an issue.

THE GP AS HEALTH EDUCATOR AND DISPELLER OF MYTHS

It is important for GPs to have confidence in using TCS. Unfortunately a paucity of dermatology teaching time at university level often leaves medical graduates with less information than they require when practising in the community. Understanding the safety of these products if used correctly is vital if GPs are to be able to adequately reassure patients.

Targeted education of parents of children with atopic dermatitis to increase overall adherence has been shown to improve compliance and discourage the use of restricted diets (in cases where it is believed that allergy is the cause of the condition).[16,17,27]

INCREASING PARENTAL CONFIDENCE IN TOPICAL CORTICOSTEROID USE[7]*

Suggestions for increasing parental confidence about the use of topical corticosteroids in children with atopic dermatitis include:

- Provide safety data on topical corticosteroids
- Provide safety data on emollients
- Provide information on relative potencies of prescribed topical corticosteroids
- Demonstrate use of topical corticosteroids
- Explain the concept of scientific testing
- Explain the true role of allergy in atopic dermatitis
- Explain how topical corticosteroids work in atopic dermatitis
- Outline the possible outcomes of failure to treat
- Discuss the importance of improving the child’s quality of life

* Adapted from Smith SD, et al. *Australas J Dermatol* 2010; 51: 168-174.[7]

It has been demonstrated that multidisciplinary teams and support groups set up specifically around education and quality of life are successful in lowering anxiety in parents of children affected by atopic dermatitis and in adult patients.[27-30] However, parents have highlighted that it is the importance of the trusted relationship with their medical practitioner that forms the key platform for patient and parent education at the coal face of daily clinical practice.[7,24,30]

Parents of children with atopic dermatitis have suggested mechanisms by which medical practitioners can engage and educate them about the use of TCS (see the box on page 50).[7] It is important for medical practitioners to be cognisant of the sources of parental concern as well as to acknowledge that corticosteroid 'phobia' is ultimately a fear generated by misinformation. With the correct information, this belief can be positively modified and parental confidence about the use of TCS increased (see the box on page 50).[7]

It is also important that medical practitioners recognise the positive impact of providing appropriate educational support as this helps alleviate parental guilt and fosters understanding of the genetic and chronic nature of atopic dermatitis. It also empowers parents to withstand the many negative influences they encounter daily. Despite the fact that food allergy testing is positive in 35 to 40% of these children,[31] food allergy is often of limited clinical importance in patients with atopic dermatitis. However, a willingness to validate parental hopes by investigating food allergies will be seen as part of the support that parents seek from their child's medical practitioner. Should allergy assessment be sought, consultation with a clinical immunologist is recommended.

CONCLUSION

Atopic dermatitis is a chronic waxing and waning condition with a largely genetic pathogenesis. It has a substantial effect on the quality of life of affected children and their families. Children and parents often suffer needlessly because of inadequate disease control as a result of poor treatment compliance, particularly with TCS. Fear of treatment, particularly with TCS, is a common reaction to misinformation, which comes from a range of sources, including family, friends, doctors and pharmacists.

Understanding the difficulties faced by parents of children with atopic dermatitis, and their potential fears about TCS, helps GPs provide a framework of strategies to increase parents' confidence in and adherence to treatment with TCS, and ultimately to improve the quality of life of their children. The key strategies are to provide information about the safety of TCS, demonstrate the use of moisturisers and TCS, explain the genetics and chronicity of atopic dermatitis, address allergy concerns and acknowledge the impact on the patient and the family unit. MT

REFERENCES

References are included in the pdf version of this article available at www.medicinetoday.com.au.

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REFERENCES

1. Staab D, von Rueden U, Kehrt R, et al. Evaluation of a parental training program for the management of childhood atopic dermatitis. Pediatr Allergy Immunol 2002; 113: 84-89.
2. Balkrishnan R, Housman T, Grummer S, et al. The family impact of atopic dermatitis in children: the role of the parent caregiver. Pediatr Dermatol 2003; 20: 5-10.
3. Carroll C, Balkrishnan R, Feldman SR, Fleischer AB Jr, Manuel JC. The burden of atopic dermatitis: impact on the patient, family and society. Pediatr Dermatol 2005; 22: 192-199.
4. Cork M, Britton J, Butler L, Young S, Murphy R, Keohane SG. Comparison of parent knowledge, therapy utilization and severity of atopic eczema before and after explanation and demonstration of topical therapies by a specialist dermatology nurse. Br J Dermatol 2003; 149: 582-589.
5. Ben-Gashir M, Seed P, Hay R. Quality of life and disease severity are correlated in children with atopic dermatitis. Br J Dermatol 2004; 150: 284-290.
6. Chamlin SL. The psychosocial burden of childhood atopic dermatitis. Dermatol Ther 2006; 19: 104-107.
7. Smith SD, Hong E, Fearns S, Blaszczynski A, Fischer G. Corticosteroid phobia and other confounders in management of childhood atopic dermatitis explored using parent focus groups. Australas J Dermatol 2010; 51: 168-174.
8. Charman C, Morris A, Williams H. Topical corticosteroid phobia in patients with atopic eczema. Br J Dermatol 2000; 142: 931–936.
9. Fischer G. Compliance problems in paediatric atopic eczema. Australas J Dermatol 1996; 37: S10-S13.
10. Skoner J, Schaffner T, Schad C, Kwon AY, Skoner DP. Addressing steroid phobia: improving the risk-benefit ration with new agents. Allergy Asthma Proc 2008; 29: 358-364.
11. Brown K, Rehmus W, Kimball A. Determining the relative importance of patient motivations for nonadherence to topical corticosteroid therapy in psoriasis. J Am Acad Dermatol 2006; 55: 607-613.
12. Chamlin SL. The psychosocial burden of childhood atopic dermatitis. Dermatol Ther 2006; 19: 104-107.
13. Bieber T. Atopic dermatitis. N Engl J Med 2008; 358: 1483-1494.
14. Foley P, Zuo Y, Plunkett A, Marks R. The frequency of common skin conditions in preschool-age children in Australia: atopic dermatitis. Arch Dermatol 2001; 137: 293-300.
15. Stensen L, Thomsen SF, Backer V. Change in prevalence of atopic dermatitis between 1986 and 2001 among children. Allergy Asthma Proc 2008; 29: 392-396.
16. Lam J, Friedlander SF. Atopic dermatitis: a review of recent advances in the field. Pediatr Health 2008; 2: 733-747.
17. Su JC, Kemp AS, Varigos GA, Nolan TM. Atopic eczema: its impact on the family and financial cost. Arch Dis Child 1997; 76: 159-162.
18. Lewis-Jones S. Measuring the burden of atopic eczema in young children and the family unit. J Invest Dermatol 2005; 125: viii.
19. Lewis-Jones S, Mugglestone MA, Guideline Development Group. Management of atopic eczema in children aged up to 12 years: summary of NICE guidance. BMJ 2007; 335: 1263-1264.
20. Hong E, Smith SD, Fischer G. Evaluation of the atrophogenic potential of topical corticosteroids in pediatric dermatology patients. Pediatr Dermatol 2011; 28: 393-396.
21. Beattie PE, Lewis-Jones MS. A comparative study of impairment of quality of life in children with skin disease and children with other chronic childhood diseases. Br J Dermatol 2006; 155: 145-151.
22. Hon KL, Kam WY, Leung TF, et al. Steroid fears in children with eczema. Acta Paediatr 2006; 95: 1451-1455.
23. Ou HT, Feldman SR, Balkrishnan R. Understanding and improving treatment adherence in pediatric patients. Semin Cutan Med Surg 2010; 29: 137-140.
24. Hughes R, Ward D, Tobin A, Keegan K, Kirby B. The use of alternative medicine in pediatric patients with atopic dermatitis. Pediatr Dermatol 2007; 24: 118-120.
25. Johnston G, Bilabo RM, Graham-Brown RA. The use of complementary

medicine in children with atopic dermatitis in secondary care in Leicester. Br J Dermatol 2003; 149: 566-571.

26. Ruzicka T. Atopic eczema between rationality and irrationality. Arch Dermatol 1998; 134: 1462-1469.

27. Schafer T, Riehle A, Wichmann H, Ring J. Alternative medicine in allergies – prevalence, pattern of use, and costs. Allergy 2002; 57: 694-700.

28. Ricci G, Bendandi B, Aiazzi R, Patrizi A, Masi M. Three years of Italian experience of an education program for parents of young children affected by atopic dermatitis : improving knowledge produces lower anxiety levels in parents of children with atopic dermatitis. Pediatr Dermatol 2009; 26: 1-5.

29. Weber MB, Fontes Neto Pde T, Prati C, et al. Improvement of pruritus and quality of life of children with atopic dermatitis and their families after joining support groups. J Eur Acad Dermatol Venereol 2008; 22: 992-997.

30. Ohya Y, Williams H, Steptoe A, et al. Psychosocial factors and adherence to treatment advice in childhood atopic dermatitis. J Invest Dermatol 2001; 117: 852-857.

31. Katerlaris CH, Peake JE. 5. Allergy and the skin: eczema and chronic urticaria. Med J Aust 2006; 185: 517-522.