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Managing eczema in children

Patients with eczema are best considered as not all having the same disease of differing severity. Each patient has a different predisposition and different triggers for his or her eczema, and management should be tailored to suit the individual.

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Eczema and dermatitis are synonymous terms that are used to describe a particular reaction pattern in the skin for which the hallmark histological change is spongiosis (oedema within the epidermis). Atopic dermatitis is used to describe eczema in the setting of an individual with an atopic predisposition. The distinction between atopic and nonatopic eczema is blurred as the tendency toward atopy from patient to patient is on a continuum rather than being clearly present or absent.

Patients with eczema do not all have the same disease of differing severity. Each patient has a different predisposition and different triggers for their eczema, and management should be tailored to the individual.

The philosophy of management for eczema is as follows:

- to eliminate or reduce the triggers of eczema
- to settle the eczema with immunosuppressive therapy.

Common triggers

The common triggers of eczema are listed in Table 1. Clinical clues as to which triggers may play a greater role in certain patients with eczema are discussed below.

Dryness

When to suspect

Dryness is likely to play a role in most patients with eczema. It is likely to play a greater role in patients whose skin feels particularly xerotic and when eczema predominates in exposed dry areas such as the lower legs and the faces of children. If dryness is a significant issue, winter tends to be the worst time of year for the condition because of low humidity and the use of central heating.

Management

Patients with suspected dryness as the trigger of their eczema should avoid drying agents and use bath oils (e.g. Q.V. Bath Oil, Hamilton Dry Skin

IN SUMMARY

- **Eczema is best thought of as a multifactorial disease with many possible triggers.**
- **The age of the child and the presentation and distribution of the eczema help to determine the relative relevance of various eczema triggers.**
- **There should be a high suspicion for food allergy in babies with widespread eczema.**
- **Corticosteroid ointments are safe to use in children and play an important role in the management of eczema.**
- **The life impact of severe eczema is extreme and it is important to gain control of the disease.**

Table 1. Eczema triggers

Dryness
Heat
Irritants
Contact allergy
Infection
Environmental allergy
Food allergy
Food intolerance
Other stimuli of the immune system

Treatment Oil and DermaVeen Shower and Bath Oil) and/or soap substitutes (e.g. Q.V. Wash, Q.V. Bar, DermaVeen Soap Free Cleansing Bar, Cetaphil Gentle Cleansing Bar, Hamilton Dry Skin Treatment Wash). Most bath oils are primarily liquid paraffin with an emulsifier enabling them to disperse in the bath, and aid in preventing dryness after evaporation of water from the skin. Bath oils with added antiseptics should be avoided (e.g. Q.V. Flare Up Bath Oil and Oilatum Plus) as these can be very irritating to the skin.

The thickness and frequency of applications of an emollient should be tailored to the individual's requirements and lifestyle. Ideally, a thicker, greasier preparation is a better emollient, but these can be occlusive and not very user-friendly. For most patients with eczema, aqueous or sorbolene-based creams are a good balance between adequacy of emollient and user-friendliness (examples include Q.V. Cream, Hydraderm, Cetaphil Moisturising Cream and DermaVeen Eczema Cream).

Heat

When to suspect

Heat is likely to be a greater factor in patients with eczema when the eczema predominates in the hotter skin regions such as the flexures, occiput and trunk. It is often a more important factor in babies due to the tendency to over-wrap them. These patients may present with multiple pinpoint erythema over the trunk (Figure 1).

Management

Patients with heat as the suspected trigger of their eczema should:

- dress in layers and remove clothing when necessary, particularly if they are recurrently sweating and/or flushed
- have their bath temperature tepid – a 'warm heated swimming pool' temperature rather than 'hot spa bath' temperature is appropriate
- avoid multiple and/or heavy layers of bedding and/or night clothes at night.

Irritants

When to suspect

Irritants may be contributing to any localised patch of eczema. The more sensitive areas of skin, including the face, flexures and groin, are more likely to be irritated. Irritants include physical irritants such as carpets, harsh fabrics, clothing seams and sand, as well as chemical irritants such as soaps, detergents, antiseptics, chlorine, shampoos, urine, faeces and saliva (Figure 2). Water can even be a mild irritant for sensitive skin.

Management

Patients with irritants suspected of contributing to their eczema should be educated about the various different irritants, and their exposure to them should be minimised. Any creams applied to the skin of such patients should be kept bland because the more additional 'unnecessary' ingredients a cream has (such as fragrance, essential oils and plant extracts), the more likely they are to cause irritation.

A child's hair does not require regular shampooing because children have inactive oil glands in the scalp. Shampooing should only be undertaken in the shower. For children with sensitive skin, a soap alternative 'wash' is adequate as a shampoo.

Contact allergy

When to suspect

Allergic contact dermatitis should be suspected when there is a persistent and severe localised reaction, particularly if it is symmetrical. Common contact allergens include nickel in metals, rubber products and topical medicaments.

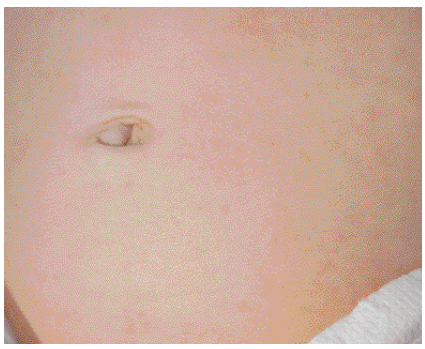

Figure 1. Overheating may produce pinpoint erythematous eczema over the trunk.

Figure 2. Eczema produced primarily from the irritating effects of saliva.

Figure 3. Eczema with secondary bacterial infection (impetigo).

Figure 4. Eczema presentation in which an environmental allergy should be considered.

Figure 5. Food allergy should be suspected in babies with severe widespread eczema.

Figure 6. Food intolerance may contribute to stubborn perioral eczema.

Management

Patients with suspected contact allergies should undergo patch testing for suspicious allergens. The offending allergen can then be identified and removed from the patient's environment.

Infection

Infection is a complication of eczema because of the disturbed epidermal barrier and also the mildly impaired immune function of the atopic patient. However, once an infection is present, it tends to flare the eczema creating a vicious cycle. Infection is most commonly due to a bacterial infection (impetigo; see Figure 3). However, other infections and infestations can at times flare the eczema – these include herpes simplex virus (eczema herpeticum), molluscum contagiosum virus (molluscum), *Malassezia* yeast (seborrhoeic dermatitis) and scabies infestation.

When to suspect

Infection should be suspected in patients with eczema when thick scabs, multiple open excoriations or significant pain are present.

Management

Management of patients with eczema in whom infection is suspected should include:

- gentle debridement of crusting – this can be carried out with wet compresses or in the bath
- a swab for culture and use of an appropriate antimicrobial therapy – oral antibiotics are indicated, unless the infection is very localised
- antiseptic washes – these should be used with caution because of their potential for irritation.

Environmental allergy

When to suspect

Allergies to environmental agents such as house dust mite, grasses and animal dander can contribute to eczema in the older child or adult, particularly eczema with an 'exposed' area distribution. Such eczema almost always includes eyelid involvement as well as involvement of the upper face, scalp, elbows, knees and lower legs (Figure 4). Hayfever and asthma may also be present; however, allergies to environmental agents are common and a positive test does not necessarily indicate relevance.

Management

Management of patients with suspected environmental allergies includes:

- a radioallergosorbent test (RAST) or skin prick testing of suspicious allergens – if performing a RAST test, an IgE level is a useful quantitative assessment of the allergy relevance; grass mix, house dust mite mix and animal dander mix are the most common environmental RAST tests that are relevant
- minimisation of exposure to these allergens
- use of oral antihistamines prior to anticipated exposure to the allergen.

Food allergy

When to suspect

Food allergy should be suspected in babies with severe widespread eczema (Figure 5). If the allergy is severe, there may also be associated colic, positing, diarrhoea and failure to thrive. It is possible for exclusively breast-fed babies to have a food allergy through the maternal diet.

Management

Management of patients with suspected food allergies includes RAST or skin prick testing of suspicious allergens and avoidance of the allergen and/or change of infant formula. Significant dietary manipulation should always be managed in conjunction with a dietician or paediatric allergist.

Food intolerance

Food intolerance refers to any nonimmunological reaction to food and may play a role in a small proportion of patients with eczema. The relevant foods that can contribute to eczema include tomatoes, strawberries, citrus fruits and artificial colours, flavours and preservatives.

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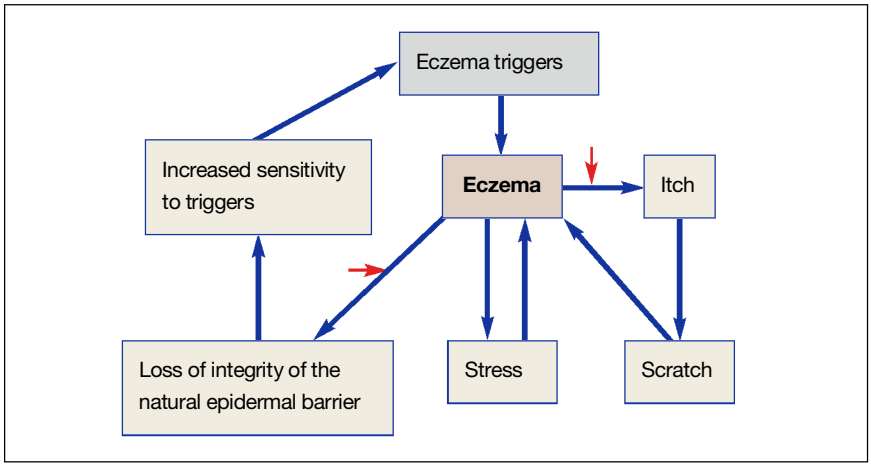

Figure 7. The rationale for topical corticosteroid therapy. Once eczema has been triggered, loss of integrity of the epidermal barrier, damage from scratching and general stress all worsen the eczema further. Corticosteroid therapy (red arrows) helps reduce itching and loss of integrity of the natural barrier.

When to suspect

Food intolerance should be particularly suspected in toddlers and preschool children with stubborn perioral eczema (Figure 6).

Management

There is no formal test and so critical trial and error is the only option for patients with a suspected food intolerance. These foods most often do not need to be absolutely removed from the diet but rather reduced in number and/or diluted in serves.

Stimulation of the immune system

When to suspect

Any stimulation of the immune system can temporarily induce an eczema flare. This can be caused by viral infection or hidden bacterial infection (such as a urinary tract infection), vaccination or emotional stress. The most common scenario would be that of a child with previously well-controlled eczema developing urticaria or symptomatic dermographism following a viral infection.

Management

Antihistamine therapy may be helpful in patients with suspected stimulation of the immune system if symptomatic dermographism is present.

Immunosuppressive therapy for eczema

The first-line immunosuppressive therapy for patients with eczema is topical corticosteroid creams. There are many corticosteroid creams available and they range significantly in their strength. For sensitive skin areas such as the face and groin, usually a mild cortisone skin cream such as hydrocortisone will suffice. Most other skin areas need and will tolerate stronger creams such as methylprednisolone aceponate (Advantan) or mometasone (Elocon, Novasone). The rationale of therapy is outlined in Figure 7. It is not only important to relieve symptoms but also restore the integrity of the epidermal barrier and minimise the damaging impact on it from scratching. Fear and therefore underuse of cortisone creams is an extremely common management error.

Side effects of corticosteroid creams can be divided into local and systemic. Local side effects include atrophy, telangiectasia, striae, perioral rosacea and ocular side effects. These side effects

Table 2. Common systemic immunosuppressive therapies for eczema

Systemic immunosuppressive therapy	Trade name	Comments
Ultraviolet B radiation	N/A	Useful when eczema is controlled but requires maximal topical therapy. Will not settle severe active disease
Prednisolone	Panafcortelone Predsolone Solone	Fast-acting oral agent. Valuable for acute reactions but side effects contraindicate medium- to long-term usage
Cyclosporin	Cicloral Neoral Sandimmun	Well tolerated and relatively safe if used for periods of months. Useful when more prolonged respite is needed
Azathioprine	Azahexal Azamun Azapin Imuran Thioprine	Slow acting. Helps management of disease in patients with longer-term poor control. Very successful at times
Methotrexate	Methoblastin	Less immunosuppressive than cyclosporin or azathioprine but a less powerful alternative

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only apply to certain sites such as the face, axillae and groin. Systemic side effects include adrenal suppression, osteoporosis, growth disturbance and other Cushingoid features.

As a general rule, potent topical corticosteroids need to be applied to large surface areas of skin for long periods of time to produce significant side effects. They therefore should be prescribed without fear and applied liberally for the short term. There is no absolute time limit for the use of corticosteroid creams and it is best not to suggest to use them 'sparingly' as this will frequently have patients significantly underutilising their effect. They may be used on scratched or open areas and there are no complications from inadvertent ingestion of small quantities (e.g. if a child sucks their fingers after the cream has been applied). However, it is important to monitor the quantities used over the long term, particularly if the patient is also using inhaled and/or oral corticosteroids. One would not anticipate any impact on the hypothalamic–pituitary axis even if a young baby has a 15 g tube of potent corticosteroid cream applied to his or her skin each week.

The calcineurin inhibitor pimecrolimus (Elidel) is now available as an alternative topical immunomodulation. This product does not have the power of potent topical corticosteroids to settle severe or lichenified eczema but it is very useful in sites where corticosteroids may produce side effects with longer-term usage. It is a more expensive cream and can sting slightly on initial application. For chronic mild eczema of the face or eyelids, it can be used without any fear of long-term side effects. With millions of patient years of therapy having been used, the reported theoretical side effects of lymphoma and skin cancer have not been shown to be a real threat.

Occasionally, stronger systemic oral immunosuppression is warranted. The indication for use of systemic oral immunosuppression is 'life ruining' eczema and this can depend upon a number of other factors apart from severity of eczema upon presentation. Social impact, school absence and family circumstance are all relevant in making this decision. The quality of life impact of eczema can be severe and it should not be left for the child to 'grow out of'. A full discussion of the indications and contraindications to these therapies is beyond the scope of this article. Some of the common agents used and comments regarding their utilisation are listed in Table 2.

Conclusion

Eczema is a common but very complex multifactorial disease. The key to satisfactory eczema control is to identify the relevant underlying triggers, which vary from patient to patient. Thoroughness with history and examination, and patient (and family) education therefore play a pivotal role in management. Active eczema should be settled promptly with topical immunosuppressive agents as first-line therapy. MT

COMPETING INTERESTS: None.