Personal practice

Treatment of atopic eczema

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Atopic eczema is a common disorder affecting about 3% of children under the age of 5 and producing much personal and family distress. It markedly improves or spontaneously resolves in most of these by the mid-teens, but in some individuals eczema will reappear later on. The cause is unknown, and there is no convincing evidence yet that food intolerance, including food allergy, is more than occasionally present or relevant.

The term atopy indicates an inherited tendency to develop one or more of a related group of conditions (asthma, eczema of atopic type, allergic rhinitis, acute urticaria of allergic type) subject to much environmental influence. More than 10% of the British population are atopic, and allergic rhinitis is the most common manifestation. Raised serum IgE concentrations are a secondary phenomenon found in 80% of atopics, and one study of adults with atopic eczema concluded that a raised IgG4 concentration in atopic eczema is a monitor of prolonged exposure to an allergen that initiated an IgE response.¹ There is clearly, however, much more to atopic eczema than simply allergy. Atopic eczema is a common problem, and its treatment requires the patience and cooperation of family, patient, family practitioner, and, with more severely affected children, the dermatologist and social worker.

The affected individual

Mention of atopic eczema immediately brings to mind the baby vigorously rubbing his itchy head on the bedding and the older infant toddling along scratching or rubbing his itchy dry skin, making it painful and himself miserable. One also sees the older child, the adolescent, and even the adult, however, scratching more methodically and with exacerbations often related to stress at home, school, or work. Patients with atopic eczema tend to have a characteristic facial pallor, may show extra wrinkling below the eyelids mainly as a result of rubbing and old oedema (children particularly), and are often lip lickers.

Although usually presenting between the ages of 3 months and 2 years, atopic eczema often first appears after the age of 2, and onset may sometimes be delayed until late childhood or adult life. Affected individuals have a one in four chance of developing asthma or allergic rhinitis, or both, sometime later. Many children with atopic eczema are managed perfectly well by their family doctor without ever requiring hospital referral, and there are those with mild eczema whose parents do not even consult their own family doctor. It is a measure of the problem, however, that each year nearly 20% of the new child outpatient referrals that I see have atopic eczema.

Commonly affecting the face or scalp initially, eczema later affects the extensor aspect of the limbs and then localises to the flexures, including cubital and popliteal fossae. Frictional areas such as wrists and ankles are regular sites of involvement.

Routine management

At the first interview it is important to enquire about and listen to the history of the condition from the parent and to be seen to listen; important factors in that particular child may thus be revealed. Atopic eczema affects the individual but influences the whole family, and treatment must be directed towards the parents as well as the child.

The affected individual has dermatitis, and his itchy skin is prone to secondary bacterial infection and sweat retention. The skin of children with atopic eczema is commonly dry, and some children inherit a tendency to both atopic dermatitis and autosomal dominant ichthyosis vulgaris. Wool next to the skin must be avoided, and cotton clothing is recommended.

Too frequent bathing will make dry skin drier, and when washing a soap substitute such as aqueous cream (BP) or emulsifying ointment (BP) can be used, and proprietary preparations such as Oilatum emollient, Alpha Keri lotion, Balneum, or Aveeno Oilated can be added to bath water. A child who

makes himself filthy at play will need a bath, but the general advice is regular washing but bathing only 2–3 times a week for the dry skinned eczema child: a child with eczema may enjoy his bath, however, so that the number of baths a week will vary from individual to individual. Skin cleansing by short contact with soap may benefit eczema,² perhaps by removing bacteria and other debris and allowing topical applications to be more effective; soap substitutes should be equally beneficial and less liable to irritate eczematous skin. Contact, such as kissing or bathing, with sufferers from herpes simplex with active cold sores, must be avoided because the individual with eczema may acquire widespread simplex (eczema herpeticum) and become very ill: eczema herpeticum is usually a manifestation of primary herpes infection.

Topical applications include preparations containing tar such as White's Tar Paste (Zinc and Coal Tar Paste (BP)), applied directly to the skin and then covered with cotton bandages, or Tubigrip. Prescribable occlusive impregnated bandages such as zinc paste and coal tar bandage (Coltapaste, Tarband) covered with cotton bandages may be used over the limbs, and parents can be instructed in their application.

Topical hydrocortisone alone or in combination with tar, antiseptic, or antibiotic is of benefit, and I find a combination of tar and hydrocortisone (Carbo-Cort cream) the most useful. Hydrocortisone is very useful to combat itching, and an antiseptic or antibiotic in combination with it will help counteract secondary infection. If a topical steroid is used it should be preferably Hydrocortisone Ointment (BP) or Hydrocortisone Cream (BPC), but in any case as weak a preparation as will control the itching and eruption adequately. Another mildly potent topical steroid cream is Synalar 1 in 10 (fluocinolone acetonide). Moderately potent steroids and drug combinations containing steroids that are useful for more severe eczema include Eumovate (clobetasone butyrate) and Trimovate (clobetasone butyrate, nystatin, and oxytetracycline calcium), Synalar 1 in 4 and Synandone (fluocinolone acetonide), Ultradil Plain and Ultralanum (fluocortolone hexanoate and fluocortolone pivalate), and Haelan (flurandrenolone) and Haelan-C (flurandrenolone, clioquinol). Urea promotes hydration of the skin and is useful alone as a 10% cream (Aquadrate, Calmurid, Nutraplus) or combined with hydrocortisone (Alphaderm, Calmurid HC). Most of the children referred to my clinics do not require the potent or very potent topical steroid preparations that they have often already received, and their eczema can be reasonably controlled with the weaker preparations.

Potent steroids are sometimes necessary, of course, but should be reserved for use sparingly, infrequently, and in the short term only, over more severely affected areas, because of their well known topical and even systemic side effects. Occasionally systemic corticosteroids or adrenocorticotrophic hormone may be required in acute severe disease, particularly in the adult with severe uncontrolled atopic dermatitis; short term treatment should be the aim.

Antihistamines in a dose sufficient to allay itching are useful by day and at night, and short term dosage may be of adult proportions if itching is severe. It is important to remember that the affected individual often scratches during sleep. In atopic eczema itching is the main problem, and it is the itch that requires treatment. Trimeprazine (Valgeran) or hydroxyzine hydrochloride (Atarax) are particularly useful. One problem I have found with promethazine hydrochloride (Phenergan) is that it may produce unwanted euphoria in the young child. Other sedative antihistamines I find helpful are chlorpheniramine maleate (Piriton), brompheniramine maleate (Dimotane), and clemastine fumarate (Tavegil). The newer non-sedative antihistamines, terfenadine (Triludan) and astemizole (Histamal) are not of help in atopic eczema.

Systemic antibiotic treatment should be prescribed for severe secondary bacterial infection of the skin, and clearing of such infection may sometimes improve the eczema where infection has been the cause of an exacerbation. Oral evening primrose oil (Efamol), providing γ linolenic acid, may improve the dry atopic eczema skin.

Wearing cotton gloves or mittens to prevent scratching and secondary infection is important and also allows healing of affected hands treated with ointment. Keeping fingernails clean and short is also essential. Sunlight and ultraviolet light are generally beneficial, although the condition of a few children undoubtedly worsens with such exposure. Severe intractable eczema is an indication to admit for a period of treatment, both for the patient's sake and to relieve the strain on long suffering parents. The move from home itself is often beneficial to the patient, but I believe that in general the child should have a short term stay of 1–3 weeks, aiming both to clear the eczema and also to indicate to parents how to control it similarly at home. Hospital stay also allows an assessment of both affected individual and parents, and this can be very useful in future management.

Investigations

If, clinically, food intolerance seems to be a factor in

the worsening of atopic eczema, a short term elimination diet can be given (see later); a recent adult study suggested that antigen absorption from the gut may play a role in the aetiopathogenesis of atopic eczema.³ Prick testing to detect food allergy is unreliable in young children, and in patients with active eczema some positive results are often merely a reflection of the state of skin reactivity at the time of testing. Performing hyposensitisation to ingested (or inhaled) allergens so shown will not improve atopic eczema and is not recommended. Sometimes more useful, particularly if it confirms a clinical impression, is a radioallergosorbent test on blood, which will indicate the IgE concentration and the materials against which IgE is directed—for example, milk, egg, or house dust mite. Many patients with clinically proven food intolerance have negative skin and blood tests, suggesting that not only IgE but other immunological or non-immunological mechanisms are responsible.⁴ Thus IgG, immune complexes, or non-immunological mechanisms, including psychological, pharmacological, or toxic reactions or enzyme defects, may be relevant.

Diet, allergy, and atopic eczema

Environmental influences on eczema include diet, inhalants, infections, climate, weather, and personal relationships at home and outside. Food intolerance, whether allergic or otherwise, is occasionally of some importance in children. Inhalants, such as house dust, seem to be of greater importance in the older individual.

Repeated ingestion of a dietary allergen may result in the development of allergy and the occurrence of a diffuse erythematous rash,⁵ vomiting, urticaria, or even anaphylaxis. Urticaria is not atopic eczema, and any atopic eczema already present may not necessarily worsen with exposure to the allergen that produces urticaria. The widespread itching that accompanies urticaria, however, will possibly tend to make existing eczema more itchy and thus more prone to scratching, and may tend to localise atopic eczema occurring later to the most irritant areas.⁶

It has been suggested that after a time or with repeated exposure an allergen initially producing an erythema or urticaria in the atopic patient ceases to cause urticaria but sets off itching and scratching manifesting as eczema.⁷ In practice, however, it is unusual to find atopic eczema starting other than *per se*, and this perhaps offers some evidence in favour of immediate hypersensitivity to dietary allergens playing no great part in the pathogenesis of atopic

eczema. Atopic eczema can, of course, worsen with an allergen that does not produce urticaria.

In a review of many studies evidence favoured the hypothesis that giving infants cows' milk or solids increases the risk of allergic disease.⁸ Prevention or delayed occurrence of cows' milk allergy may be helped by encouraging breast feeding in the early postnatal months, particularly in those with a strong atopic family background⁹ and in infants of low birth weight.¹⁰

In a large study reported 50 years ago the incidence of infantile eczema was lowest in breast fed infants.¹¹ Exclusive breast feeding is to be encouraged, particularly in the first three months of life, as it may delay the onset of atopic eczema in some predisposed children, but I do not believe it will necessarily prevent its occurrence at a later date. In practice it may be difficult to confirm that an infant has been exclusively breast fed and that potential allergens or other harmful substances have not been introduced into his diet. Atopic eczema occurring in the wholly breast fed infant, however, is not uncommon even while the child is still being breast fed; some such babies developing eczema may be sensitised by foods eaten by their mothers.¹² Nutritionally complete soya cows' milk substitutes containing protein (Prosobee, Formula S, Wysoy), prescribable as borderline substances, may benefit some children with atopic eczema if there is good evidence of milk protein allergy, and the history from the mother, including any mention of gastrointestinal symptoms, is important. It should not be forgotten that allergy to soya can also develop, and a recent infant study found soya feeds to be associated with eczema as often as cows' milk based feeds.¹³ Occasionally, boiled or long life milk can be tolerated while raw milk cannot, perhaps because denatured proteins are not so allergenic as natural ones. Food intolerance proved in infancy may resolve in many cases with increasing age.

The substitution of goat's milk for cow's milk is unlikely to be beneficial and is not recommended for infants. It has certain dangers such as a high solute load, and deficiency of folic acid and probably vitamins B12, C, and D. Furthermore, untreated goat's milk should not be fed to young babies because of the risk of bacterial infection, which in practice is usually introduced by those handling it.

An elimination diet is followed for a period of four weeks, and, for example, all cows' milk, eggs, beef, fish, and chicken are excluded, and then each of these items is reintroduced separately into the diet. Such a diet should be carefully supervised by a dietetic department in conjunction with a dermatologist or paediatrician. Even so, compliance is a real problem in children when they go to birthday parties

and so on. Other elimination diets may only exclude milk and eggs or wheat or fruits, or preservatives and colouring agents. There is obvious wisdom in withdrawing suspect harmful foods, but reintroduction should be carried out in hospital, if possible, because of the danger of anaphylaxis.¹⁴ Oral sodium cromoglycate (Nalcrom) may also have a place when food allergy is suspected.

If house dust mite is considered a factor in worsening of atopic eczema then spraying of bedding with natamycin (Tymasil) may be indicated. This spray reduces the aspergillus population (an important food source for house dust mite): extra thorough vacuuming in all living rooms can be just as effective, and an inexpensive air purifier may also help.

It must always be remembered that atopic eczema is subject to spontaneous exacerbations, and remissions and claims for any particular treatment must always be assessed with this in mind.

Pertinent points

The medical social worker can have an important role to play in the management of atopic eczema, particularly in assessing the family background.¹⁵ An unhappy child often shows unhappy skin (dry, rubbed, excoriated), or he may wheeze. Overcrowded home or school conditions may lead to worsening of eczema and indicate a need for rehousing or a change of school. Atopic eczema is not a contraindication for diphtheria, tetanus, and pertussis inoculation or for oral polio vaccine.

Those with active eczema should avoid occupations such as engineering (which involves contact with irritant chemicals such as oils and degreasing agents), hairdressing, and similar occupations. Atopic eczema tends to improve with increasing age, a point one always emphasises to parents, but it is impossible to prophesy the prognosis in a particular child. Fifty per cent of children are clear by the age of 6 years, and 90% are clear by the age of 15. In some, however, eczema will reappear later on, and this emphasises the importance of long term follow up when one talks of prognosis in atopic eczema.^{16 17}

As a group children with eczema tend to be bright and intelligent. Many healthy atopics in families of average height are of short stature for their chrono-

logical age, but they usually shoot up around puberty and beyond. Parents should be instructed to allow an affected child to lead a normal life and not allow him to rule the roost to the detriment of siblings or to direct their lives. For instance, children with eczema should neither be permitted to share the nuptial bed nor be bribed to stop scratching. I emphasise that firmness with love is an important rule in the correct management of the young atopic.

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