

ECZEMA

For the purpose of this article, I will concentrate on the most common type of eczema, atopic eczema. However the treatment of atopic and non atopic eczema is similar. Atopic dermatitis is a chronic inflammatory skin condition that involves a complex interaction between environmental and genetic factors. The greek word atopy means “out of place” and describes the group of disorders including eczema, asthma and allergic rhinitis and which are genetically linked. The terms “dermatitis” and "eczema" are often used interchangeably. When the term eczema is used alone, it usually refers to atopic dermatitis (atopic eczema).

Atopic eczema affects over 30 per cent of children before they reach school age and 1-3 per cent of adults in the UK¹. It is likely that its prevalence in Ireland is similar to the UK. Its prevalence is increasing. It is very often inherited. There is very often a link with asthma and hay [fever](#). Atopic eczema has become more common in recent years, the cause of this is uncertain.

Triggers include specific allergies to foods, overheating, secondary infection, wool next to the skin, cat and dog fur, soaps, detergents, house dust mites and pollen. Extreme hot and cold, humidity, and hormonal changes in women (caused by the menstrual cycle and pregnancy) can also cause a flare-up.

The goals of treatment are to reduce symptoms (pruritus and dermatitis), prevent exacerbations, and minimize therapeutic risks.

Prevention

The initial approach to treatment of atopic eczema involves the avoidance of exacerbating factors and hydrating the skin. Exacerbating factors in dermatitis disrupt the skin's barrier function include excessive bathing, low humidity environments, dry skin, exposure to solvents and detergents and emotional stress. Avoiding these factors is beneficial for acute flare ups and long term management.

A sleeping environment with minimal dust and upholstery reduces exposure to house dust mites and may potentially reduce the severity of eczema.

Diet

In adults, food allergies do not appear to be a factor in eczema. Using dietary exclusions for long term eczema in a large meta analysis did not improve the condition². In infants, avoidance of certain foods can be helpful. Common food triggers include eggs, nuts, peanut butter, chocolate, milk, seafoods, and soya.

Maintaining adequate skin hydration

Evaporation of water on the skin leads to dry skin in patients with eczema; skin hydration is a key component of their overall management. Lotions, which have a high water and low oil content, can worsen dry skin via evaporation and trigger a flare of the disease. However, thick creams (eg, Eucerin[®], Diprobase[®]) which have a low water content, or ointments (eg, petroleum jelly, Emulsifying Ointment), which have zero water content will better protect against dry skin.

A randomized trial in infants with atopic dermatitis who required moderate or high potency topical steroids found that infants treated with emollients had significantly decreased requirements for topical steroids compared with a control group of infants who were not treated with emollients³. Emollients are best applied immediately after bathing when the skin is well hydrated.

Hydration can be improved by soaking in a bath containing a bath additive such as Oilatum[®] for 10 to 20 minutes. The quantities of bath additive required for an adult size or a child's size bath is specified in all editions of the British National Formulary (BNF). Bath additives leave the skin and bath very slippery so the patient should be warned to take particular care when bathing. No well designed studies have been published to determine whether showering or bathing is preferable in patients with eczema.

To reduce microbial resistance, preparations containing antibacterials should be avoided except where infection is present or is a frequent problem.

Urea

Urea a hydrating agent naturally found in many emollients sold over the counter in pharmacies including Calmurid[®] and Eucerin[®] cream. It is one of three natural moisturising factors (NMF) in the outer horny layer of our skin. The other two NMFs are lactic acid and amino acids. There are markedly reduced amounts of urea in dry skin conditions.

Urea is strongly hygroscopic (water-loving) and draws and retains water within skin cells. Urea softens the horny layer so it can be easily released from the surface of the skin Urea can be beneficial in dry skin conditions where scaling and flaking occur and can be useful in elderly patients. It can also be used in conjunction with corticosteroids to enhance to penetration of skin.

Pruritus

The efficacy of preparations containing crotamiton (Eurax[®]) for pruritus is uncertain so are best avoided in Eczema. Similarly, calamine lotion is best avoided. Topical antihistamines are only marginally effective and can cause sensitisation so again are best avoided in atopic eczema. Topical doxepin (Xepin[®]) is rarely prescribed for pruritus due to the risk of drowsiness and the stipulation that coverage should be less than 10% of body surface area.

Oral antihistamines are widely used as a therapeutic adjunct for pruritus in patients with atopic eczema. The evidence supporting their use is relatively weak since no large, randomized, placebo controlled trials with definitive conclusions have been performed⁴.

However, sedating antihistamines appear to be most affective. There is little evidence to support the use of one sedating antihistamine over the others⁵. The response to different antihistamines varies from patient to patient. From a pharmacist perspective, chlorphenamine (Piriton[®]) is the only sedating antihistamine available over the counter in Ireland. Although not as effective as sedating antihistamines, non sedating antihistamines such as cetirizine and loratadine can be useful where sedation will be an issue.

Tepid baths to hydrate and cool the skin can also temporarily relieve itching.

Therapies for inflammation

Corticosteroids

When skin is not inflamed, patients should bathe daily and then immediately apply an emollient. Patients should use the highest oil content emollient that they will accept. Patients with inflamed skin can be initially treated with topical corticosteroid.

The face and skin folds are areas that are at high risk for atrophy with corticosteroids. Initial treatment in these areas should start with a low potency steroid such as hydrocortisone 1% cream. A moderate or potent corticosteroid such as clobetasone-Eumovate[®] (moderate) or betamethasone-Betnovate[®] (potent) may be needed for those with more severe disease. Higher potency topical corticosteroids (clobetasol-Dermovate[®]) can be used for up to 10 days in some patients with acute flares, and then replaced with lower potency preparations until the lesions resolve. Potent steroids are generally avoided on the face and skin folds. However limited brief use of potent steroids can produce a rapid response after which patients can be switched to a lower potency preparation. This approach is best restricted to supervision by a dermatologist. The British Association of Dermatologists recommends using topical steroids for 10-14 days when eczema is active followed by 'holidays' with just emollients.

Topical corticosteroids can be used one or more times daily, however the benefit of using more than once daily is unclear⁶⁻⁷. There is some evidence that the intermittent use of corticosteroids as maintenance can help prevent relapse. A randomized trial of twice weekly fluticasone ointment in addition to daily emollients in patients with moderate to severe atopic eczema who had brought a flare up under control found a significantly lower rate of relapse over 16 weeks when compared to emollient alone⁸.

Generally ointments are more effective than creams, as the emollient action and occlusive effect results in better penetration. Ointments also require fewer preservatives so the potential for irritant and allergic reactions is lower.

Bandaging techniques

Wet-wraps were originally an inpatient procedure, but they can also be usefully applied at home, especially for severe eczema in children⁹. They may be more effective than steroids alone, decrease sleepless nights and prevent admission to hospital. The benefit of using wet wraps in the long term (beyond about four weeks), or in less severe cases are less firmly established.

Emollients are applied under a double layer of tubular bandage such as Tubifast, the innermost of which is wetted with tepid water. Tubifast garments are an easier alternative to the bandages and can be taken down intermittently to apply more emollient. When necessary, topical steroids can be applied under the wet wrap, but this form of occlusion will increase both the efficacy and the side-effects of the steroid.

The advantage and disadvantages of wet wraps are as follows:

Advantages

- reduces inflammation
- provides a barrier to prevent scratching
- reduces water loss
- reduces steroid requirement
- improves sleep of parent and child
- may reduce admissions to hospital

Disadvantages

- increases steroid absorption and side-effects
- training required
- difficulty, commitment and time
- may be difficult to get the child to co-operate
- child may feel too hot or cold
- increased infection risk
- cost

Topical calcineurin inhibitors

Patients who require therapy to the face or skin folds for more than three weeks should be treated with a topical calcineurin inhibitor (ie, tacrolimus or pimecrolimus) rather than a topical corticosteroid. Unlike corticosteroids, topical calcineurin inhibitors do not cause skin atrophy. Tacrolimus and pimecrolimus are applied twice a day. Tacrolimus (Protopic[®]) comes in two strengths; the 0.1 percent formulation is appropriate initial therapy for adults, and the 0.03 percent formulation is appropriate for children and for adults who do not tolerate the higher dose. In patients who do not tolerate tacrolimus because of burning or stinging, pimecrolimus (Elidel[®]) may be better tolerated. Unfortunately however, Elidel is not licensed in Ireland. Topical calcineurin inhibitors are considered as being equal in strength to low potency topical steroids and should only be considered a second line therapy.¹⁰ Treatment should only be initiated by a dermatologist and continuous long term treatment should be avoided.

Tacrolimus and pimecrolimus may be used on any skin surface. However, these agents are expensive, and there have been concerns raised about reports of malignancies in children and adults.

Other treatments

Where the control of dermatitis is resistant to conventional therapy, referral to a dermatologist is necessary. Other treatments including ultraviolet light therapy and immunosuppressants such as methotrexate are restricted to severe cases unresponsive to conventional treatments. For the purpose of this article I will concentrate on conventional therapies only.

Role of the Pharmacist

Poor response to treatment is often due to poor education or compliance. The community pharmacist has an important role in reassuring and counseling the patient and carer on prevention and treatment of the condition. Sixty percent of patients develop the condition in infancy. Therefore parents unfamiliar with the condition will regularly seek advice from their pharmacist. Because of ease of accessibility and the fact no appointment is needed, many pharmacists are ideally placed to provide regular advice to patients and improve therapeutic outcomes.

I will outline some counseling that can be given to eczema sufferers when they present to the pharmacy. This list is not exhaustive.

- An emollient cream or ointment is best applied after bathing when the water content of the skin is greatest, and at night to prevent drying.
- The frequency of application should be increased to at least three to four times a day when the eczema is active. For whole body application, 250g per week may be required in children and 500g in adults.
- It is important to educate patients about the different steroid potencies. In order to minimise side effects, the mildest steroid likely to be effective should be used.
- In order to avoid diluting the steroid and spreading it to areas of skin where it is not required, emollient creams should not be applied immediately after the steroid.
- Steroids and calcineurin inhibitors are best avoided in the presence of infection
- Although a significant risk of cutaneous malignancy is unlikely, calcineurin inhibitors are immunosuppressant so patients using them should avoid exposing their skin to the sun.
- Antibiotic- steroid combination treatments such as Fucibet[®] cream can be useful for treating limited areas of clinically infected eczema. It is recommended that Fucibet[®] is only used for limited periods in view of concerns over the emergence of bacterial resistance to fusidic acid.
- Patients should be advised that weepy or crusted areas are a sign of infection so the patient should seek treatment immediately.
- House-dust mite is a common triggering factor for atopic eczema, but unfortunately reduction in dust mite levels needs to be significant before a benefit is seen. Daily dusting, vacuuming and the use of Mitex bed covers seem to be the most effective measures. The improvement resulting from these measures is likely to be minimal.

Therapies with no evidence base

- Supplementation with essential fatty acids, pyridoxine, vitamin E, multivitamins and zinc salts has no proven value. The use of gamma linoleic acid supplements

- in evening primrose oil has been shown to be ineffective.¹¹
- Reactions to washing powders are rare and avoidance of biological washing powders is of no benefit.¹²
 - There is no evidence that probiotics improve atopic eczema¹³

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