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Primary Care Guidelines for the Management of Atopic Eczema

10/07100

1.0 INTRODUCTION AND OBJECTIVES

Primary care manages by far the largest number of patients with atopic eczema, the vast majority being well managed in this setting. There is no 'cure', although the symptoms of atopic eczema can be treated very effectively in most patients. This guideline document has been developed in parallel with a similar document for secondary care. The information on treatment and management contained in this document should, be considered as broad guidelines only. Treatment of an individual patient should always be modified according to need and circumstances and may involve a multidisciplinary approach.

The objectives of this document are to provide improved guidelines for management and treatment of patients with atopic eczema in the primary care setting through:-

- Identification of the central role of the GP in providing treatment and coordinating management
- Promotion of a uniform pattern of care based on accepted best practice *
- Improved understanding of the nature of and management of atopic eczema
- Provision of clear referral criteria for specialist advice
- Improvement in the use of current treatment by the patient
- Promotion of a multi-disciplinary approach to treatment involving the primary care team including specialist nurses and secondary care specialists.

*Regrettably there is a lack of evidence based knowledge about atopic eczema

2.0 OVERVIEW OF ATOPIC ECZEMA

Atopic eczema is an inflammatory skin disease characterised by an itchy, erythematous, poorly demarcated rash, which has a predilection for the skin creases'. Eczema is a familial disease that is part of the spectrum of atopy, (asthma and hay fever). These individuals have a genetic predisposition to react to triggers in the environment by developing the various atopic disease states.

The two principal effects of these genes appear to be to induce

1. Dry skin which
 - Loses water
 - Contributes to susceptibility to cutaneous infection
 - Is susceptible to irritants
2. An abnormality in the immunoregulatory system.

For many individuals atopic diseases tend to improve with age. However, the predisposition is always there, and exposure to triggers may cause a recurrence of the disease in later life.

The central role of the GP in treating eczema.

Eczema is most common in childhood affecting 15-20% of school children in the UK². This figure falls to between 2-10% of adults³. It has been estimated that about 30% of dermatological consultations in general practice and 10-20% of all referrals to dermatologists are due to atopic eczema⁴. As with other atopic diseases there is reasonable evidence to support a substantial increase in the prevalence of the disease over the past 30 years, although the reasons for this remain unclear. The GP remains the central pivot in the management of the disease with the vast majority of patients being effectively treated in this setting, for others timely referral to the appropriate specialist with effective coordinated shared care follow up are other roles for GP's.

Eczema and dry skin

Dry skin is a feature of atopic eczema. Patients with atopic eczema have a disturbed epidermal barrier function and show markedly higher transepidermal water loss and lower skin hydration levels than controls"⁵ It is of note that the majority of the physical changes seen in the skin of patients with eczema are actually induced by scratching. Patients with eczema have itchy skin and when they scratch they exacerbate their eczema, this is known as the itch scratch cycle. The itching of atopic eczema can interfere with every aspect of the patient's life. Some of the triggers for the exacerbation of eczema are recognised e.g. animal dander, others are yet to be identified.

Aetiology

The aetiology of atopic eczema is believed to be multifactorial in nature in certain patient groups. These factors include:

- airborne allergens, including house dust mites, pollen and animal dander
- irritants i.e. detergents, household and industrial chemicals
- pollution levels
- climate and variations in temperature/humidity
- rarely diet and food types

The treatment of eczema in the vast majority of patients relies on the liberal use of emollients and intermittent topical steroid use. Consideration may be given to the role of external factors when the eczema is unresponsive to those treatments or if there is a strong link to a particular allergen within the history. Unfortunately, the degree to which avoidance of these allergen exposures is either possible or effective in treatment is relatively small.

3.0

MULTIDISCIPLINARY TEAM APPROACH

For the majority of patients with eczema it is the primary care team of GPs and nursing staff who are responsible for the diagnosis, education, management and referral of patients. Within this section consideration is given to these areas, with guidance on initial diagnosis, patient assessment and referral for specialist advice.

Diagnosis

Atopic eczema is diagnosed on clinical grounds based on the clinical manifestation of the eruption, the patient and family history. Diagnostic criteria were developed by the British Association of Dermatologists and the Research Unit of the Royal College of Physicians'.

Diagnostic criteria for atopic eczema

Must have

An itchy skin condition (or report of scratching or rubbing in a child)

Plus three or more of the following:

- History of itchiness in skin creases such as folds of the elbows, behind the knees, fronts of ankles, or around neck (or the cheeks in children under 4 years)
- History of asthma or hay fever (or history of atopic disease in a first degree relative in children under 4 years)
- General dry skin in the past year
- Visible flexural eczema (or eczema affecting the cheeks or forehead and outer limbs in children under 4 years)
- Onset in the first two years of life (not always diagnostic in children under 4 years)

A skin biopsy is not helpful in the diagnosis.

Diagnosis and Patient Assessment

Enquiry about and discussion of the following:

- Family and personal history of atopy and eczema
- Distribution of disease
- Onset of disease
- Exposure to pets within the household
- Aggravating factors such as exposure to irritants
- Sleep disturbance due to itching/rubbing
- Previous treatments
- Effect on school work, career, or social life
- Most distressing thing for the patient or family
- Patient's or family's expectations from treatment and their understanding of optimal use
- Evidence of clinical infection, suggested by the presence of crusting or weeping in bacterial infection, or grouped vesicles and punched out erosions indicative of herpes simplex infection.
- Other considerations are the impact on the quality of life, dietary restrictions tried and other medications being taken (e.g. steroids for asthma).
- A growth chart should be completed and updated in children with chronic severe eczema.

For the majority of patients effective management of atopic eczema will start and finish within the primary care setting, referral of certain patients may also be necessary. Set down below are guidelines for referral based on the principles of the various consensus meetings and the recommendations of the NICE guidelines group^s:

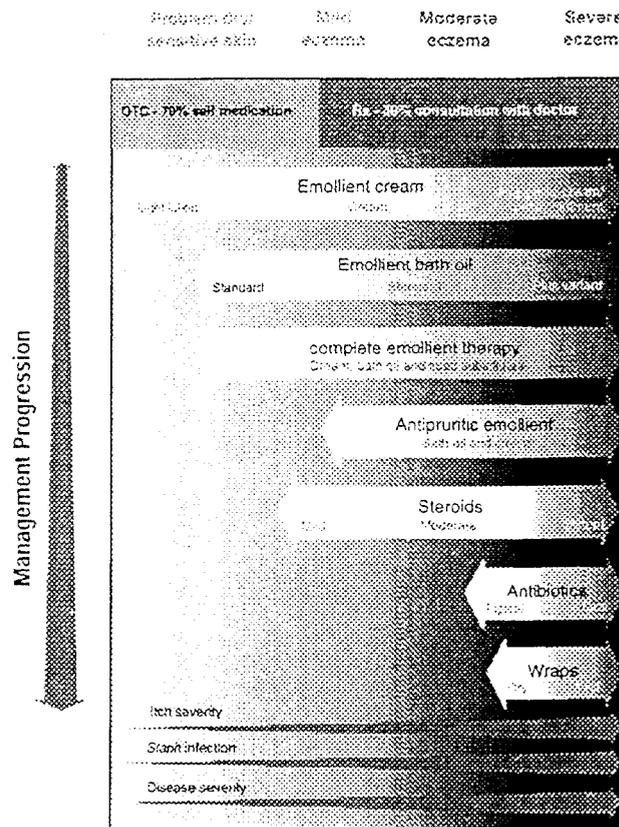
Recommendations for referral to secondary care

- Severe infection with herpes simplex (eczema herpeticum) is suspected.
- The disease is severe and has not responded to appropriate therapy in primary care.
- The rash becomes infected with bacteria (manifest as weeping, crusting or the development of pustules) and treatment with an oral antibiotic plus a topical corticosteroid has failed.
- The rash is giving rise to severe social or psychological problems; prompts to referral should include sleeplessness and school absenteeism.
- Treatment requires the use of excessive amounts of potent topical corticosteroids.
- Management in primary care has not controlled the rash satisfactorily. Ultimately, failure to improve is probably best based upon a subjective assessment by the child or parent.
- The patient or family might benefit from additional advice on application of treatments (bandaging techniques).
- Contact dermatitis is suspected and confirmation requires patch-testing (this is rarely needed).
- Dietary factors are suspected and dietary control a possibility.
- The diagnosis is, or has become, uncertain.

To provide a comprehensive service to patients with eczematous and dry skin conditions a practice should involve relevant appropriately trained personnel. The **GP** and the primary care team of nurses and health visitors are responsible for diagnosis, education, demonstration (eg wet wraps), patient review and monitoring, audit and patient support. For many practices, nurses and health visitors with appropriate training can play a very effective role in improving all aspects of patient management.

4.0 GENERAL PRINCIPLES OF PRIMARY CARE TREATMENT

Sensitive and Problem Dry Skin and Eczema Management



General Principles of Primary Care Management

1. Keep the patient/parent informed
 - Explain the condition and its treatment
 - Educate the patient on the use of topical treatments with details of application and quantities
 - Ideally demonstrate how and when to use
 - Back this up with written information and practical advice
2. Avoid exacerbating factors
 - Avoid anything that is known to increase disease severity where practicable
 - Advise avoidance of extremes in temperature. avoiding irritating clothes containing wool or certain synthetic fibres
 - Advise keeping nails short
 - Avoid use of soaps or detergents, replace with emollient substitutes
3. Keep skin hydrated
 - Use of baths and bath additives
 - Reduce water loss by the use of sufficient appropriate emollient therapy used liberally
4. Treat secondary infection early
 - Use of appropriate topical and oral therapy.

Treat exacerbations

 - Use of appropriate topical steroids on acute basis

5.t) FIRST LINE TREATMENTS

Principles of treatment

Patients with eczema can experience a very wide spectrum of disease from mild to severe, localised to generalised, and infected. It is for these reasons that the treatment responses must reflect the patient's needs.

The first step and the one continuum in the treatment of eczema is the use of emollients which are indicated for use in all types of eczema and are the first line therapy to which others are added. In this respect patient choice and the associated compliance are essential as are good patient education and product use training. Most children with mild/moderate eczema can be controlled by the intense use of complete emollient therapy most of the time, and a resulting steroid-sparing effect of emollients has been demonstrated in several clinical trials^{9,10}. Management of the itch scratch cycle must also be considered as a primary strategy to help improve the eczema of patients.

It is the consensus view that emollient therapy is grossly under-utilised in primary care because of poor patient compliance, inappropriate selection of emollient type or types and a lack of patient education. This may have led to an overuse of steroid creams.

Emollients

Introduction

Emollients are of enormous importance in the treatment of atopic eczema because they counteract a universal defect in eczematous skin. The epidermis provides a barrier to the loss of water and prevents the penetration of irritants and allergens from the environment. Breakdown of this barrier is central to the development of atopic eczema. Emollients have a relatively simple mode of action, providing an oily layer over the surface of the stratum corneum which traps water underneath it. Complete emollient therapy should, therefore, be the first line therapy of atopic eczema. Emollients are, however, under used in primary care and many patients are prescribed topical steroids before being offered emollients¹¹.

There have been no clinical trials investigating the optimum dose range for emollients in atopic eczema. A dose of 250g/week of an emollient cream/ointment for a child and 500g/week for an adult was recommended in the British Association of Dermatology (BAD) guidelines¹². An audit of the treatment of atopic eczema in children indicated that there was a negative reciprocal relationship between the dose of emollient used per week and the severity of the eczema¹³.

Effective use of emollients

Complete emollient therapy involves:

- Avoidance of detergents and soap based products (including 'moisturising soaps')¹⁴
- Use of emollient soap substitutes instead
- Regular applications of an emollient cream or ointment

Use of Emollients

- Emollients are best applied when the skin is moist but they can and should be applied at other times.
- Many patients underestimate the quantity needed and frequency of application to achieve maximal effect¹⁵
- **Emollients** should be applied as liberally and frequently as possible and continual treatment with complete emollient therapy (combinations of cream, ointment, bath oil and emollient soap substitute) will help provide maximal effect¹⁶
- Ideally the frequency of application of emollients should be every 4 hours or at least 3 - 4 times per day.
- Emollients should be prescribed in large quantities¹⁷ with the recommended quantities used in generalised eczema being 500g/week for an adult and 250g/week for a child¹⁸

- Intensive use of emollients *will* reduce the need for topical steroids". It should be emphasised to all patients that emollient use in quantity and frequency far outweighs other therapies they may be given
- A general rule of thumb is that emollient use should exceed steroid use by 10:1 in terms of quantities used for most patients.
- Education on how to use emollients is essential to ensure maximal rehydration of the skin`.

Choice of an emollient

- Emollients come in a wide range of presentations and formulations to meet patient needs with creams, ointments, bath oils and soap substitutes all available for single or combination use.
- Cosmetic acceptability is very important.
- The patients view on choice is very important. The one they prefer they will use` ° " " .
- Different emollients may be preferable at different times of the day".
- It is often useful to allow patients/parents to try a range of emollient creams and ointments.
- Crude lanolin is a weak sensitiser. However, the sensitising potential of hypo-allergenic ultra-purified lanolin has been shown to be minimal` ' ' " " ' .

Other effects of emollients

- Some emollients contain humectants including urea lactate and pyrrolidone carboxylic acid.
- Humectants penetrate into the upper part of the stratum corneum and trap more water causing greater rehydration but sometimes at the expense of irritation in some patients.
- An additional approach is to add a local anaesthetic substance such as lauromacrogols to the emollient to provide antipruritic activity to help break the scratch-itch cycle. They also have the added benefit of counteracting any of the irritation that might be caused by urea.
- Emollients also exert an indirect anti staphylococcal action` ' through rehydration and improved skin barrier fiinction thereby reducing the effects of S. aureus exotoxins.

Education

- The most important part of all topical therapy is repeated *education* and *demonstration* to ensure regular use with effective quantities.
- Education should be supported by written information such as that provided by the National Eczema Society
- It is important to provide realistic practical advice, for example babies will tolerate a warmed emollient better than a cold preparation. A minority of children may prefer cooled emollients because they find they have a greater anti-pruritic effect.

Topical steroids

Topical steroids provide a major intervention for the treatment of 'exacerbation and flare ups' of atopic eczema. They should be regarded as acute short term therapy for this purpose.

Considerations in the use of topical steroids

It may be important to discuss the risk benefits of steroid use especially for children where side effects could be a major issue.

- In the I.K four categories of potency are used mild, moderate, potent and very potent.
- Patients/parents need to be taught the different strengths of steroid and how to use them appropriately (how much to apply and for how long -
- The Finger Tip Unit (FTU) can be used as a guide (see append^{ix})^{21,-1}

Principles of treatment with topical steroids

- As a rough guide, steroid use should be limited to a few days to a week for acute eczema and up to 4-6 weeks for chronic eczema' .
- The weakest steroid should be chosen to control the disease effectively; this may include either a step up approach, low to more potent, or a step down approach, more potent to less potent.

- In each approach regular review of steroid use (especially when using potent steroids) is essential.
- Very potent steroids should not be used in children with atopic eczema in primary care. Very rarely their use may be indicated in resistant severe eczema on the hands and feet of adults, again with regular review of use.
- Patients using moderate and potent steroids must be kept under review for both local and systemic side effects.
- Take care which strength of steroid is entered into your patients repeat prescription.

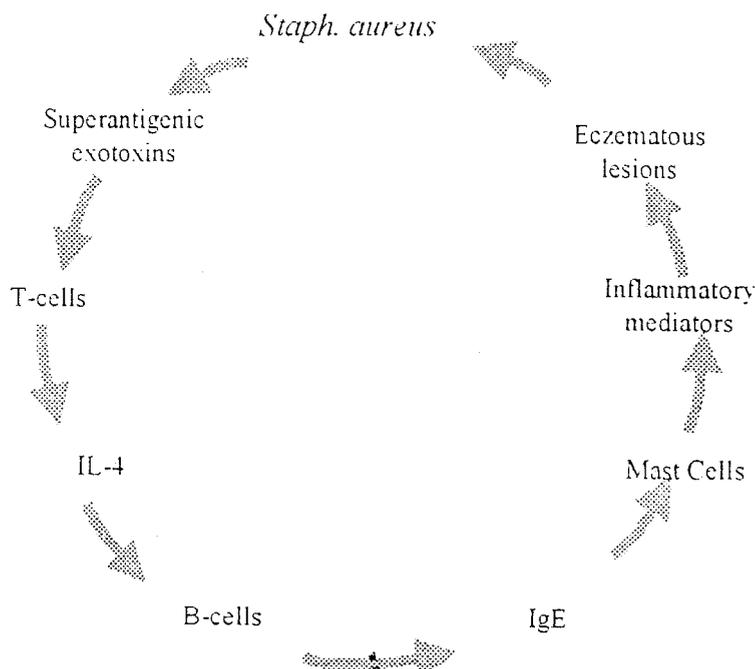
Choice of steroid

- Steroids are available in a variety of formulations including ointments, creams, lotions and gels.
- Both vehicle and occlusion e.g. application of steroid preparation under polythene gloves for hand eczema, can increase the effective potency of the steroid. Ointments increase steroid penetration. Preservatives contained in some creams may cause irritation or allergy.
- Choice depends on the site. Ointments are poorly tolerated in the flex-tires with lotions preferable in hairy areas.
- In general ointments are more effective than creams.
- In children , and for the face and flexures in adults, a weak steroid (1 % hydrocortisone) is the preferred treatment of choice. If a stronger potency is indicated regular review must be undertaken.

Bacterial infection

Flares or exacerbations of eczema may result from bacterial infection, which is suggested by the presence of:

- Crusting
- Weeping
- Pustulation
- And/or surrounding cellulitis with erythema of otherwise normal looking skin
- A sudden worsening of the condition



S.aureus is believed to be an important exacerbating factor in atopic eczema. and that there exists a vicious circle whereby eczema and the impaired epidermal barrier contribute to increased numbers of *S.aureus*. These in turn produce superantigens that induce a cascade of inflammatory mediators, thereby exacerbating the eczema.

Investigation

Swabs for bacteriology are particularly useftil if patients subsequently do not respond to treatment, in order too identify

antibiotic resistant strains of *S.aureus* or detect additional streptococcal infection.

Prevention of infection

Emollient-antimicrobial preparations are widely used to prevent infection with some evidence for antimicrobial effect, but little data on clinical effect. In all there are two published studies of Oilatum Plus and 3 August 2000

one of Dermol 500 which were recently reviewed in the Drug and Therapeutics Bulletin". The conclusion of the Bulletin was that the usage of such preparations is logical, but the lack of published data implies that their routine usage cannot be recommended. In clinical practice, the use of antiseptics such as triclosan and benzalkonium chloride appears to help prevent recurrence of clinical infection in some patients, and in them appears to be of value, although published clinical evidence is still lacking

Tubs of ointments should not be left open and simple clean procedures should be used by patients or parents applying the creams, such as removing cream with clean spoons from the jar. Pump dispensers may also be useful.

Treatment

Oral antibiotics are often necessary in moderate to severe infection. A 14 days course is required. Flucloxacillin oral is usually the most appropriate antibiotic for treating *S. aureus*. Erythromycin or one of the new macrolides with possibly better tissue penetration are an alternative. These can also be used if there is penicillin allergy or penicillin resistance. Penicillin should be given if beta-haemolytic streptococci are isolated.

Steroid-antibiotic combinations are effective in clinical practice although evidence for superiority in efficacy' s lacking.

Other treatments

- Tar has only a limited role in eczema because of some anxieties about a theoretical risk of carcinogenesis and because of its irritancy and cosmetic acceptability
- It is occasionally useful in bandages for heavily excoriated or lichenified eczema
- Sedative antihistamines may be of short term value in some children at night to improve sleep
- Non-sedative antihistamines are of little value in eczema

Use of oil of evening primrose is currently unwarranted in eczema.

For details of all drug use and dosages please refer to the BNF.

APPENDIX 1

Types of emollients available

A review of emollients by the DoH National Prescribing Centre¹⁷ provided a useful categorisation of emollients based on their degree of oiliness from light creams to greasy ointments (Table 1). It also provided a categorisation by soap substitutes and bath emollients (with antiseptic or with coal tar).

Table 1 Types of emollients

Preparation	Size
'Light' or creamy emollients:	
Aqueous cream BP	100g, 500g
Cetomacrogol cream BP, (Formula A)	500g
<i>E45</i> cream	50g, 125g, 500g,
<i>E45 Lotion</i>	Pump dispenser
<i>Diprobase</i> cream	50g, 500g†
<i>Hydromol</i> cream	50g, 100g, 500g†
<i>Oilatum</i> cream	40g, 80g
<i>Humiderm</i> cream	60g
'Rich' cream type emollients:	
Hydrous ointment, BP(Oily Cream,BP)	100g, 500g
<i>Unguentum M</i> cream	50g, 100g, 500g, 200ml†
<i>Lipobase</i> cream	50g
'Greasy' emollients:	
Emulsifying ointment, BP	100g, 500g
White soft paraffin, BP	100g, 500g
White soft paraffin 50%/liquid paraffin 50%	Variable
<i>Epaderm</i> ointment	125g, 500g
Preparations containing urea:	
<i>Calmurid</i> cream	100g, 500g†
<i>Nutraplus</i> cream	100g
<i>Aquadrate</i> cream	30g, 100g
<i>Balneum Plus</i> cream *	100g , 175 g †
Emollient/antiseptic combination products:	
<i>Dermol 500</i> lotion	500ml†

† - available as a pump dispenser
 * - contains lauromacrogols a topical anesthetic

Table 2

Preparation	Size
Soap substitutes:	
Aqueous cream, BP	100g
<i>E45</i> wash cream	250ml
<i>Dermol</i> shower emollient	200ml

3 August 2000

(*Malian* shower emollient (gel)

17Sa

Bath emollients:

Emulsifying ointment, BP

500g

Hydromol Emollient

150 ml, 350ml, 1000ml

E45

250ml, 500ml

Ollcltun

250ml, 500ml

Ollatum fragrance Free

500ml

Balneum

200ml, 500ml, 1000ml

Balneum1 Plus

500ml

Diprobath

500ml

with antiseptic:

Enlilsderm

300ml, 1000ml

Oilatum Plus

500ml

with coal tar:

Polv tur Emollient

350 ml

- contains lauromacrogols a topical anesthetic

Table 3 Steroid potency by product

<i>Steroid potency</i>	<i>Examples listed in order of increasing cost</i>
Mild	1% or 2.5% Hydrocortisone preparations
Moderate	Haelan, Eumovate, Modrasone, Ultralanum, Stiedex
Potent	Synalar, Betnovate, Propaderm, Adcortyl, Metosyn, Locoid, Diprosone, Cutivate(od), Elocon(od)
Very potent	Dermovate, Halciderm, Nerisone Forte

APPENDIX 2

Patients need to understand how much to apply and for how long. The Fingertip Unit (FTU) is used as a guide for patients as to how much cream should be applied. It is the volume of steroid expressed from a 5mm nozzle, to cover a digit from the distal finger crease to the finger tip

A guide to the application of cream per body part in children is given below, based on predicted and actual amounts applied by patients^{2,3,4}. Lewis-Jones simply illustrates the FTU as "one FTU" covers the area of skin covered by two adult hands.

(To be described as body visuals with doses attached)

Table 4 Allocation of steroid by FTU by body site

Age	Face and neck	Arm and hand	Leg and foot	Ant trunk	Post trunk
3 to 6 months	1	1	1.5	1	1.5
1 to 2 years	1.5	1.5	2		3
3 to 5 years	1.5	2	3	3	3.5
6 to 10 years	2	2.5	4.5	3.5	5
Adult	2.5	3	6	6-7	6-7

How much to prescribe?

It is also crucial to prescribe suitable quantities for the body area requiring treatment. The table below gives the weekly requirement of cream in grams for twice daily treatment¹.

Table 5 Quantity of steroid cream per week to permit twice daily application (according to body site in Grammes)

Age	Whole body	Arms and legs	Trunk
6 months	35	20	15
1 year	45	20	15
4 years	60	35	20
8 years	90	50	35
12 years	120	65	45
16 years	155	85	55
Adult	170	90	60

- Ointments (oil-based) are more effective than creams: although creams and lotions (water-based) are useful when the skin is inflamed. Steroid absorption, and hence efficacy, is increased by base ingredients such as propylene Glycol, urea and salicylic acid and by occlusion.