Severe Atopic Dermatitis Management Guideline

Severe childhood eczema is a mix of acute and chronic management that often involves acute admission. This CPO pathway covers the acute managementto avoidpotential admission. This is to be used for guidance only and should not replace clinical judgment.

Qualifying Patients

Who qualifies for payment under the CPO scheme?

1. Indicators include: (not all required except vi)
    i. Severe atopic eczema not responding to usual care
    ii. 50% or more of surface area involved
    iii. presence of infection
    iv. previous hospital admissions
    v. failure of conventional treatment
    vi. Age under 16

along with

2. Parents/guardians who agree that they will:
    i. attend all appointments or change to another time if necessary
    ii. apply the treatments at home as they are advised to do by the practice
    iii. launder the wet wrap dressings in the manner described

Care Plan

1. Initial assessment.
2. Intensive treatment to gain control of eczema**. If topical corticosteroid creams are required under wet/dry wraps *only* apply at the practice.**
3. Eczema action plan maintenance programme.
4. Education programme continues while the treatments are being applied at the practice. A check list of topics to be covered is kept for each child and marked off when discussed. Frequent checking for understanding and retention of knowledge will be required.
5. Collaboration with other agencies where appropriate. This will involve liaison with other health professionals.to facilitate reinforcement of the eczema action plan and whanau/family concordance.

Intensive treatment to gain control of eczema

1. Initial assessment for:
    i. Baseline measurements (temperature, heart rate, height, weight).
    ii. Eczema distribution: body site, presence of erythema, excoriation, exudation, lichnefication, severity of itching and skin dryness, +/- clinical photograph.
2. Daily attendance for **up to** 10 days to assess for infection.
3. Swab for culture as increased risk for children with eczema of MRSA infection. Take two swabs; one for nose, other swab over all areas of eczema.
4. Prescribe oral antibiotics; flucloxicillin, cephalexin, or erythromycin.
5. Apply topical corticosteroid creams (TCS) 1% hydrocortisone to eczematiod lesions if prescribed (TCS only applied in practice setting).
6. Apply entire body with emulsifying ointment, smoothing on, in the direction of the hair (do not rub). Apply wet wrap or dry wrap therapy.
7. The establishment of an eczema action plan maintenance programme tailored to meet the needs of the child and whanau.

Topical Corticosteriods (TCS) (See Appendix 1)

- In general eczema needs adequate TCS to be treated. The lowest strength required to clear eczema should be utilized. TCS should be applied to affected eczematiod lesions in adequate amounts. TCS should be applied no more than twice a day.
- TCS are safe, do not thin the skin and are not significantly absorbed into the body.
- TCS should not be utilized continuously for weeks/months without adequate supervision.
- Can cause striae in teenagers on the abdomen, axilla and inner thigh if potent TCS is used continuously for a prolonged length of time.
- If TCS are applied under occlusion (wet wrap therapy) the absorption rate significantly increases by two-fold.
- TCS side effects in children are rare but are more likely to occur with the use of very potent preparations, under occlusion (wet wraps/dry wraps), or with continuous use for months at a time (even of mild preparations).

Wraps:

Tubular bandages or garments (Tubifast) or dry bandages (Coverflex)or wraps.

- Wet wraps are indicated in the control of an acute flare of eczema: to reduce itching; provide a physical barrier against scratching; assist in improved sleep pattern; reduce potency of steroid necessary to control eczema; and allow the whanau/family to feel "in control" of their child's eczema.
- Occlusive dry or wet wraps should not be used to treat infected atopic eczema (the presence of weeping, crusting and exudative lesions). Except after 24 hours of antibiotic treatment.
- Usually applied and left on for 12 hours, they should be changed twice a day, for a maximum or five to seven consecutive days.

Application Method:

- Prepare lengths of tubular bandages (Tubifast), two lengths for each arm and leg, and two lengths for the vest (one of each for Coverflex).
- One length of each is soaked in warm water.
- Apply 1% hydrocortisone over eczematous areas for everyone.
- Apply prescribed emollient (emulsifying ointment) generously so the child is covered with a thick layer before the wrap is applied. Most children will respond to emulsifying ointment alone under the wraps.
- Apply warm wet layer of vest then dry, repeat for arms and legs.
- Secure lengths of tubifast on arms and legs to the vest, by using a small piece as a tie.
- If the under layer dries prematurely the under layer can be made wet using a warm wet flannel or a water spray.
- Supply whanau/family with 3 full sets of wet wraps/dry wraps.
- Warn re virus infections (cold sores, chickenpox)

Ongoing Supervision at the Practice

1. Maintenance programme:
   i. See for two days after wet wraps off. High risk time for rebound flares.
      a) Assess for infection
      b) Eczema distribution: body site, flexural/extensor surface involvement, presence of erythemia, excoriation, exudation, lichnefication, severity of itching and skin dryness.
      c) Demonstrate how to apply TCS..
      d) Demonstrate entire body application with emulsifying ointment
   ii. When control is judged adequate, see once weekly as above.

v. Review every three months; repeat height, weight, eczema distribution +/- photograph. Evaluate eczema action plan, and whanau/family concordance (every visit).

Maintenance Programme at Home

1. a) Individualised written eczema action plan
   b) Emollient application over entire body even when eczema appears controlled.
   c) Infection checks and what to do
   d) Possible need of staphylococcal decolonization programme if recurrent infections are evident.
   e) Importance of regular washing of clothes and bedding.
   f) Launder wet wrap materials inside a pillow slip (reduces fraying, and should last up to 30 washes), hot wash.
2. Discuss need for regular review timetable(review of eczema action plan 3 monthly) and parameters for when to seek medical review.

Education Programme

The child's whanau/family should be provided information in verbal and written forms and should cover the following.

- How much of the treatments to use
- How often to apply treatments
- When and how to step treatment up or down
- How to treat infected eczema

This should be reinforced at every consultation, addressing factors that affect adherence.

1. Explain to the family/whanau about eczema and genetic predisposition. Skin barrier dysfunction arises from gene mutations and result in loss of function of the filaggrin structural protein of the corneocytes. Reduced barrier lipid production increases transepidermal water loss resulting in drying and shrinking of corneocytes. The skin becomes dry and rough in appearance; this enables allergens/bacteria/fungi/viruses to enter the skin.

2. Trigger avoidance should be discussed
   - Avoidance of soap or bubble baths.
   - Avoid synthetic or woollen clothing, cotton is best.
   - Stress can be a trigger whether psychological (family stress, stress from school) or physiological (viral illnesses).
   - Heat and sweating, or low humidity can be triggers.
   - The benefit of aeroallergen (dust mite, and pet dander) avoidance is unclear, and may have limited benefit (unless history describes the possibility).
   - Family pets (with dander) may also be a trigger.
   - dust mite allergen exposure maybe a possible trigger, dust mite reducing strategies are as follows:
   - a) frequent damp dusting of bedroom;
   - c) minimize objects under beds or ontop of wardrobes
   - d) frequent (hot, >60deg) laundry and sun drying of sheets (twice weekly) and blankets (monthly);
   - Weekly freezing or hot wash of soft toys or blankies.
   - e) Dust mite protectors on top of mattress/pillow encasing.
   - The incidence of food allergy in children with eczema is rare only affecting 10% of children with eczema.
   - Keeping finger nails very short.
   - Bath no longer than 20 minutes in lukewarm water.
   - Apply emollients in the direction of the hair do not rub in.

- Use spoons to access emollients out of tubs, and keep lids on the tubs to reduce infections.

3. Holistic approach: assess child's quality of life; the effects of their eczema on every day activities, sleep, school attendance, and psychosocial wellbeing. Psychological impacts on the child eg: being different, unattractive, problems with self-image, self-confidence.

4. Development of long term management plan and expectations of outcomes:
   a) understanding of control rather than cure – on going supervision
   b) multifactor disorder and there is no single "cause";
   c) provision of eczema action plan and regular three monthly review of the action plan
   d) when to seek medical review if the whanau/family are concerned about infected eczema. Bacterial, fungal and viral infections of eczema are common, and can quickly become severe.

Elements of the eczema action plan maintenance programme are as follows:

Bathing

- Daily or twice daily baths containing bath oil (emollient melted into bath water), plus a soap substitute (aqueous cream or emulsifying ointment).
- Antiseptic baths daily to reduce staphylococcus aureus colonization utilizing either bleach (Janola) to the bath water at a concentration of 1/1000 (1/2 a cup of 3-5% bleach to 15cm deep full sized bath) Or Oilatum Plus or QV flare up (both not subsidized)
- Whanau to bath child and then bring into practice for wet wraps.

Drying

- Pat child dry post bath and within three minutes the application of topical corticosteroid (if required) and then emollient must be completed to reduce transepidermal water loss and hence enhance skin hydration.

Emollients

- After wet wraps phase they need to be applied liberally and regularly (three to four times a day) to maintain skin hydration and skin barrier function, even when eczema is controlled.
- Ointments: emulsifying ointment, duoleum (not subsidized) are greasier and more effective.
- Oily creams: healthE fatty cream, lipobase are not as greasy as ointments but are more so than creams.
- Creams: aqueous cream and cetomacrogol are least greasy.
- Lotions: are too light and generally not effective in eczema.

Appendix 1:

Potency of Topical Corticosteroid Creams

TCS	Relative Potency	Potency Class
1% hydrocortisone	1	Mild
Eumovate	25	Moderate
Advantan	100	Potent
Locoid (hydrocortisone butyrate 0.1%)	100	Potent
Beta (betamethasone valerate 0.1%)	100	Potent
Elocon (mometasonefuroate 0.1%)	175	Potent
Dermol (Clobetasolproprionate 0.05%)	600	Very potent

Appendix 2:

Diagnosis of Eczema

Diagnosis of eczema (atopic dermatitis) is characterized by dry, itchy skin with the presence of all or some of the following erythema, excoriation, exudation, and lichenification.

Differential diagnoses to consider:

Differential Diagnoses	Characteristics
Seborrhoeic dermatitis	greasy scale on scalp, flexures and nappy area, not itchy and onset usually under 3 months.
Contact dermatitis	resulting from products such as nickel, sticking plasters, fragrances, hair dye.
Irritant dermatitis	resulting from frequent handwashing.
Plant contact dermatitis	acute indurated vesicular weeping dermatitis in areas of contact with a specific plant e.g. Rhus tree.
Impetigo	bullious or non-bullious
Scabies	itching, superficial burrows in the area of hands, feet, wrists, elbows, back, buttocks, and external genitals.
Eczema Herpiticum	caused by herpes simplex virus. Characterized by multiple vesicles or punched out erosions, painful, with or without fever, lethargy or distress.
Immunodeficiency	ichthyosis; Langerhans cell histiocytosis are rare but can present in the newborn period as eczema like eruptions.

Appendix 3

Alternative treatment not currently funded for use in PHC

- Best practice literature recommends the following; Apply prescribed TCS to eczematiod lesions (once a day Not twice a day): infants <1 year use 1% hydrocortisone (if required). Children > 1 year 10% dilution of potent TCS (Elocon) mometasone furoate 0.005% not 0.1%; Starship recommends the use of Beta 10% dilution mixed in cetomacgrol). The occlusive effect of wet wraps enhances the absorption of TCS into the superficial and deeper inflammation in the skin and

accordingly a lower potency TCS is indicated. Once daily application of TCS diluted reduces the risk of systemic bioactivity.

- For weeping crusted and infected skin potassium permanganate is of benefit for its astringent (drying) and antiseptic properties. Use by dissolving potassium permanganate crystals/tablets/solution in bath water so the water becomes rose-pink colour. It will stain finger and toe nails and the bath brown.

Developed by Stuart Foote, November 2003, modified June 2011 by Catrina Riley RcpN, BN, MN(Hons) child and family, after review of available evidence and available resources. Reviewed by Dr Angela Craig- HBDHB Paediatric Consultant.

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