Management of Eczema/ Dermatitis in Adults

14

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Key Points

- Dermatitis causes a reduced skin barrier function which leads to dry, itchy, scaly skin and a susceptibility to external aggravating factors such as irritants, allergens and infections.
- The majority of cases of contact dermatitis (80%) are caused by irritant contact dermatitis.
- The definitive treatment of contact dermatitis is the identification and avoidance of the underlying causes (irritants or allergens).
- The clinical and histological features of atopic eczema, contact allergic and irritant dermatitis may be indistinguishable.

What to Tell the Patient

- The first step in the management of dermatitis is always to moisturise liberally with a safe, greasy, cheap moisturiser.
- Patients with dermatitis should avoid soaps and other irritants such as shampoos, shower gels, bubble baths, washing up liquids and detergents.
- When used under careful medical supervision, topical steroids are extremely safe and effective for treating dermatitis.

14.1 Introduction

The terms eczema and dermatitis are synonymous. Eczema is more commonly used when there are constitutional abnormalities (e.g. atopic eczema) whereas dermatitis usually implies some external causative factors (e.g. contact dermatitis or hand dermatitis). In this chapter we will use the term "dermatitis" only.

14.2 Clinical Features and Diagnosis

While in children the most common form of dermatitis is atopic dermatitis, in adults there are many other forms of dermatitis (Table 14.1). All share the common problem of reduced skin barrier function which leads to dry, itchy, scaly skin and a susceptibility to external aggravating factors such as irritants, allergens and infections. Scratching and picking further compromises the skin barrier function. Chronic scratching can lead to thick, leathery patches of the skin (lichenification).

It is not unusual to find patients with a current or past medical history of atopic eczema developing irritant and/or allergic contact dermatitis in adult life. Some patients may have features of both allergic and irritant dermatitis particularly when presenting with foot and hand eczema [1].

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Table 14.1 Some common types of dermatitis seen in adults

– Atopic dermatitis
– Irritant contact dermatitis
– Allergic contact dermatitis
– Asteatotic dermatitis (also called eczema craquele)
– Nummular dermatitis (also called discoid eczema)
– Seborrhoeic dermatitis
– Varicose eczema
– Otitis externa
– Hand dermatitis
– Pomphylix dermatitis
– Neurodermatitis (also called lichen simplex chronicus)

Fig. 14.1 Contact irritant hand dermatitis

The majority of cases of contact dermatitis (80%) are caused by irritant contact dermatitis (Fig. 14.1) [2]. Contact dermatitis accounts for 70–90% of all occupational skin diseases [3]. High risk occupations include hairdressing, florists, beauticians, cooks, metal workers and dental assistants. Homemakers, kitchen workers, plasterers, health care workers and dairy farmers are also prone to irritant dermatitis. Atopic eczema (Fig. 14.2) and contact dermatitis are diagnosed clinically. Histology is usually nonspecific and will not always help distinguish between the various forms of dermatitis.

Fig. 14.2 Atopic eczema in a 17-year-old patient

The clinical features of atopic eczema, contact allergic and irritant dermatitis may be indistinguishable and more detailed allergy testing may be required in severe resistant cases (see allergy testing below) (See Table 14.2).

Allergy testing such as skin prick testing, IgE and RAST testing, exclusion diets and skin patch testing (Table 14.3) may be necessary for more severe, refractory cases but should only be carried out by doctors who have experience in conducting these tests and interpreting the results (see Chap. 21 on allergic skin disorders). Food allergies are far less common in adults than in children. Patients who need to stay on a restricted diet should be seen by a dietician to ensure the diet is balanced and nutritious. Restricted diets should be reviewed annually.

Severe, resistant or frequently relapsing cases of dermatitis or cases requiring an allergy work up should be referred to a skin specialist for further evaluation (see Chap. 21 on Allergic Skin Disorders).

14.3 Differential Diagnosis

Atopic dermatitis can be confused with many other forms of eczema (Tables 14.1 and 14.2) and skin disease. Psoriasis, seborrheic dermatitis, allergic contact and irritant dermatitis, nummular eczema (also called discoid eczema) (Figs. 14.3 and 14.4), neurotic excoriation and dermatitis herpetiformis can share similar clinical presentations. Patients with scabies can develop widespread, itchy, eczematous inflammation. Tinea infection, especially when the classical clinical features are altered with the inappropriate use of topical steroids (tinea incognito) may resemble dermatitis. Cutaneous T-cell lymphoma such as mycosis fungoides can resemble atopic dermatitis but has characteristic histological features. Think of this possibility in patients in their fifth or sixth decade, with generalised relapsing dermatitis. Sub acute and discoid lupus erythrematosus may

Table 14.3 Indications of skin patch testing include

– Acute or chronic dermatitis if a contact allergy is suspected
– Chronic eczema failing to respond to treatment
– Hand, foot face or eyelid dermatitis
– Chronic stasis (varicose) dermatitis
– Chronic or recurrent otitis externia
– Dermatitis in individuals involved in high risk occupations for contact dermatitis

Table 14.2 How to distinguish the various forms of Eczema-Dermatitis

	Atopic eczema (AE)[a]	Allergic Contact Dermatitis (ACD)[a]	Irritant Contact Dermatitis (ICD)[a]
Age	– 20% children – 10% adults	Mostly adults	Mostly adults 80% of CD-irritant
Aetiology	Atopic disease, strong hereditary factors. Filaggrin gene defect → skin barrier defect	Type IV delayed hypersensitivity reaction to an allergen in contact with the skin	Not immunologically mediated. Irritation for detergents and other harsh chemicals
Onset after exposure	Not relevant	8–96 h	Minutes to hours
Distribution	Mainly flexural	At site of contact (e.g.: Earlobe, face, hands) may become more generalised	Mostly hands
Clues to diagnosis	Personal or family history atopy. Itchy +++	Reaction to cheap earrings (nickel). Itchy++. May blister. Relapses within 24–48 h after returning to work after holidays.	Web space involvement. High risk occupation: e.g. hairdressing, kitchen worker, homemaker, healthcare worker, cleaner. Slow to relapse after hollidays
Diagnosis	Clinical. IgE + RAST Skin patch test. Atopy patch test	Patch test	Clinical
Treatment	Emollients (E), Soap substitutes (SS), Topical steroids (TS), Topical Immunomodulators (TIM)	Avoidance of allergens E, SS, TS, TIM	Avoidance of irritants and barriers (gloves) E, SS, TS, TIM

Ref: adapted from BMJ 2016;353:i3299
[a]There can be considerable overlap

also resemble dermatitis and these conditions are usually diagnosed histologically.

Patients with hand dermatitis should always have their feet examined as occasionally tinea pedis (athlete's foot) can provoke an "**id reaction**" (also called autosensitisation dermatitis or interface dermatitis) on the hands. This is an itchy rash with small vesicles similar to allergic dermatitis or pompholyx in the hands and is caused as response to the primary infection (Fig. 14.5a, b). Treating the tinea pedis may clear the hand dermatitis. Contact allergic dermatitis from a leg ulcer dressings or inflammation from an infected leg ulcer may also cause a generalised eczematous reaction (disseminated secondary eczema). In general, a severe inflammatory process may cause a distant eczematous lesion.

Fig. 14.3 Discoid eczema

Fig. 14.4 Discoid eczema

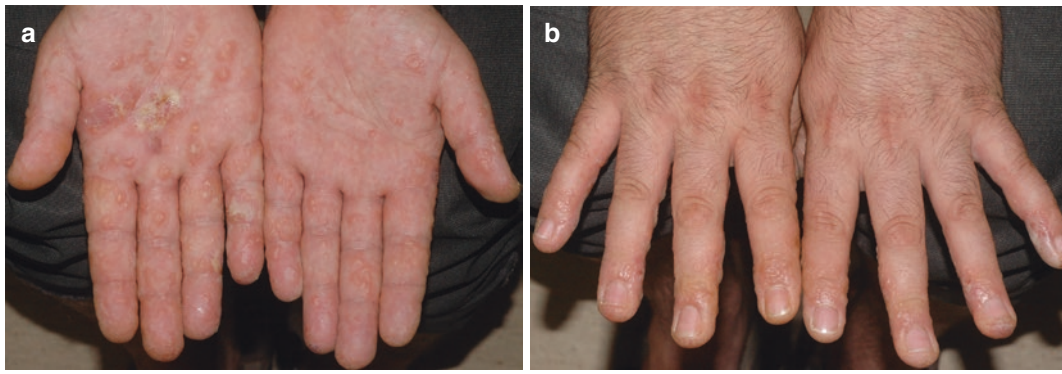

Fig. 14.5 (**a**) and (**b**). Pomphylix on the hands

14.4 Pathophysiology

As in children, the pathophysiology of atopic eczema in adults remains incompletely understood with a complex interaction between genetic predisposition and environmental triggers. There is often a personal or family history of other IgE related atopic diseases such as asthma, allergic rhinitis or allergic conjunctivitis. Patients with a personal or family history of atopic eczema are more likely to suffer from allergic or irritant contact dermatitis as a result of a defective skin barrier.

The reaction to the various substances with which patients come in contact may be immunologically mediated (**allergic contact dermatitis**) (Fig. 14.6a, b, c) or merely due to a patient's sensitive skin reacting adversely to irritating substances such as soaps, detergents, or industrial

Fig. 14.6 (**a**) Contact allergic dermatitis to cutting oils in the workplace. (**b**) Sofa dermatitis form contact allergic dermatitis to dimethyl fumarate in a cheap leather couch. (**c**) Allergic reaction to benzoyl peroxide

Fig. 14.7 Neurodermatitis on the skin

oils (**irritant contact dermatitis**). Some patients may have features of both allergic and irritant contact dermatitis (Table 14.2).

Chronic scratching in one area of the skin with no obvious underlying cause can lead to **neurodermatitis** (**lichen simplex chronicus**). It starts with an itch which leads to scratching which in turn causes more skin irritation and more itch. Eventually the patient gets into an "itch-scratch cycle" causing a patch of dry, thickened, scaly skin which is common in certain areas of the body such as the shins, the elbows, wrists and the back to the neck (Fig. 14.7). Treatment is by blocking the itch and stopping the scratching using emollients, potent topical steroids and sometimes by protecting the area with bandaging.

14.5 Treatment

The definitive treatment of contact dermatitis is the identification and avoidance of the underlying causes (irritants or allergens). Treatment can vary according to whether the eczema/dermatitis is generalised or localised (see Chap. 36 on regional dermatology for localised eczema/dermatitis management).

The stepwise approach to the management of dermatitis in adults (Fig. 14.8) is similar to that in children (See Chap. 13—Atopic eczema in children). In adults, potent topical steroids like betamethasone ("Betnovate®") and sometimes very potent topical steroids like clobetasol propionate ("Dermovate®") can be used on the body (but not on the face).

14.6 Emollients

Topical steroids will do nothing for dry skin. The first step in the management of dermatitis is always to moisturise liberally with a safe, greasy, cheap moisturiser. The best moisturiser is the greasiest one that the patient is willing to use. Dermatitis sufferers should only use hypoallergic, oil based moisturisers that come in sufficiently large quantities and are relatively inexpensive as most of these moisturisers will have to be used in high quantities over a long period of time (sometimes up to 500 g per week for an adult). Ointments are the best on dry skin, next creams and lastly lotions which do not offer much as they evaporate quickly off the skin.

Emulsifying ointment is cheap, safe, effective and usually available on national health services. Some patients may not like it as they find it too thick or greasy. It is important to give patients a choice of different moisturisers, a greasy one such as Emulsifying ointment, Paraffin gel or "Epaderm®" ointment to be used at home and at night and a less greasy one such as "Aveeno Dermexa®" or "Epaderm®" cream to be used during the day and at work. Greasy moisturisers should be rubbed downwards, especially on hairy areas on the body, as rubbing up and down will irritate the skin and may cause folliculitis. Urea based moisturisers (eg, "Calmurid®" or "Eucerin®") are less greasy, but can sting, if the skin is cracked or fissured (see Chap. 62 on emollients). It is helpful to have a few different types of emollients in the office to show the patient what they look like and their consistency.

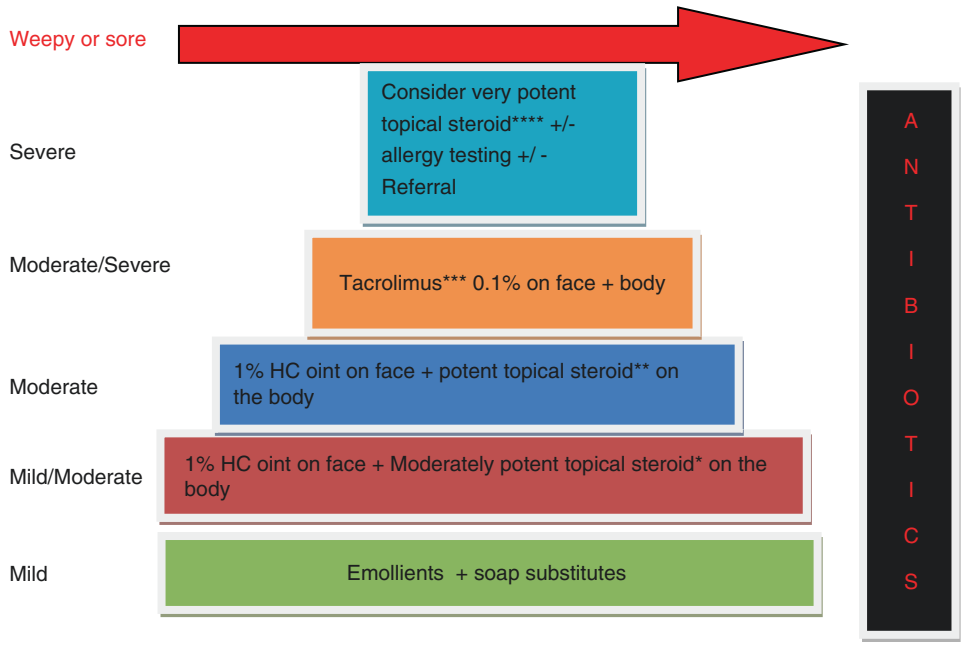

Fig. 14.8 Stepwise approach to the management of dermatitis/eczema in adults. *Moderately potent topical steroid—e.g. = Clobetasone butyrate 0.5% (= "Eumovate® ointment"). **Potent Topical Steroid—eg Betamethasone valerate 0.1% (= "Betnovate®"). ***Tacrolimus (= "Protopic®"). ****Very potent topical steroids e.g. = Clobetasol Prooprionate 0.05% (="Dermovate®")

14.7 Soap Substitutes

Patients with dermatitis should avoid soaps and other irritants such as shampoos, shower gels, bubble baths, washing up liquids and detergents. Safe soap free washes, such as "Elave®" wash, Aveeno wash and "Elave®" Shampoo can be used instead. Bath oils such Oilatum® bath oil or Aveeno® bath treatment can be added to a lukewarm bath (27–32 °C) but the patient should be instructed not to spend more than 5 min in the bath. Rubbing in a greasy moisturiser should be done immediately after patting the skin dry once out of the bath: this will help seal in the bath moisturiser.

Adding an anti-bacterial agent to the bath, such as "Milton®" (sodium hypochlorite), can reduce bacterial load on the skin in patients with infected dermatitis and reduce exacerbations (see Chap. 66). People whose job involves getting their hands wet a lot should wear gloves for all wet work, not only when their hands are very irritated but also as they improve, to prevent relapse. It is advisable to give patients with hand dermatitis written instructions on how to moisturise and avoid irritants since most patients will remember very little of what they are advised by the time they get home (See Hand Dermatitis patient information leaflet, Chap. 66).

Aqueous Cream and Silcocks Base are cheap and usually available on national health schemes but they are not suitable a moisturisers as they are not greasy enough and both contain sodium laurel sulphate (SLS) which is a surfactant used in many cleansing products and detergents. Aqueous Cream and Silcocks Base and syndet may be used as cheap, safe soap substitutes.

Some patients can reduce itching by spraying on colloidal oatmeal 1%.

14.8 Topical Steroids

Topical steroids are the most effective way to alleviate itch and scratching. When used under careful medical supervision, they are extremely safe. Once daily topical steroids are usually sufficient and convenient for the patient. Start with a potent topical steroid and work down to a moderate potency topical steroid or reduce the frequency of application of the potent topical steroid as the dermatitis improves. This should be applied to the itchy areas at night and ointment based topical steroids are generally safer and more effective than creams. Emollients can be applied all over the affected areas 15 minutes after the topical steroid ointment has been applied to the irritated areas. An adult may use up to100 g of a potent topical steroids per month if necessary.

The fingertip unit (FTU) is a useful way of explaining to a patient how much topical steroid to apply. A FTU is the amount of ointment expressed from a tube with a 5 mm nozzle and measured from the distal skin crease to the tip of the index finger. This equates to approximately 0.5 g of the ointment and is an adequate amount to cover an area equivalent to two adult palms.

It is rare have to use a very potent topical steroid in dermatitis in adults and if they are required they should usually only be for the first few weeks, until the eczema comes under control. It is important to reduce to a less potent topical steroid as the dermatitis improves (see Chap. 63 on topical steroids). "Haelan tape®", which contains a moderately potent topical steroid impregnated into the tape, can be useful for fissures on the feet or hands. Wet wraps, as described in Chap. 13 for children, can also be used in adults and special wet wrap garments are available in adult sizes.

As the skin is such an accessible organ for topical therapies, it is rare to have to resort to oral steroids for the management of dermatitis in general practice (see Chap. 63).

14.9 Anti-histamines

Histamine is not primarily involved in the pathophysiology of dermatitis and so non-sedating antihistamines do not usually help. The older sedating oral antihistamines may help at night to relieve itch by virtue of their sedating effect (see Chap. 50 on pruritis).

14.10 Topical Calcineurin Inhibitors

A topical calcineurin inhibitor such as tacrolimus ("Protopic® 0.1%") is very useful for more severe eczema on delicate skin such as on the face, the axilla, the groin or the perianal skin, especially when the dermatitis in these areas is not responding to weak or moderately potent topical steroids (Fig. 14.9). Tacrolimus is the treatment of first choice for eyelid dermatitis (Fig. 14.10).

Tacrolimus is a large molecule and will not penetrate thick skin such as the soles of the feet or the palms of the hands (see Chap. 64 topical calcineurin inhibitors). It may cause a transient stinging or burning of the skin for the first few days of application. It often takes a week for benefits to be seen. If used on exposed skin, such as the face or hands, then a high factor, total UV block should also be used. "Protopic®" recently got a licence for maintenance treatment to prevent flare ups and to prolong flare free intervals by applying it twice weekly to the commonly affected areas but treatment should be reviewed after 12 months.

Fig. 14.9 Eczema around the eyes and upper lip

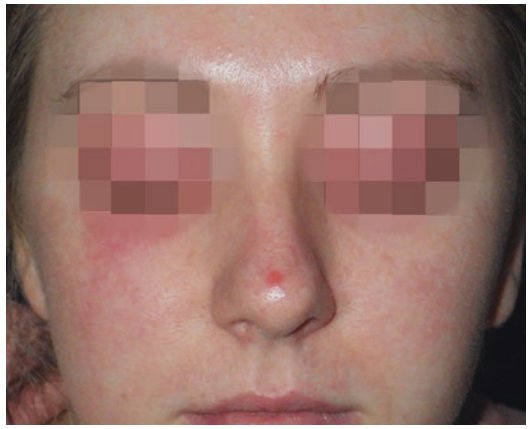

Fig. 14.10 Contact alleric dermatitis possibly to nickle

Fig. 14.11 Pomphylix hands and feet. Potassium permanganate soaks can help dry up the rash

14.11 Antibacterials

Dermatitis is usually dry and itchy. Moderately to severe presentations might weep (skin oozing) and become sore suggesting it has become infected. If there are clinical signs of infection (weepy, crusty and painful instead of dry and itchy) it is important to give the patient a course of oral antibiotics, (usually flucloxicillin 500 mg, three times a day or erythromycin if they are penicillin allergic) for seven to fourteen days. Topical antibiotics (eg "Fucidin®", "Fucidin H®" or "Fucibet®") may be used for less severe infections but should only be used for a maximum of fourteen days and should not be repeated for a further three months, otherwise resistance will develop rapidly. **Potassium permanganate** soaks can be helpful for weepy infected hand or foot eczema (Fig. 14.11). "Permitabs® 400 mg tablets" are the most convenient way to make up the solution. One tablet diluted in 4 liters of water makes up a 1:10,000 solution (light pink) which is suitable for soaking hands, feet or legs for 10–15 min. Patients should be warned that the tablets are poisonous and should not be swallowed. Gloves should be worn when handling the tablets as they are corrosive. The solution should be made up fresh and it will stain the skin and nails a dark purple for a few weeks after use. A 1:1000 solution may be used as a wet soak on a piece of gauze that can be held against the skin for 20–30 minutes. A 1% solution (1 in 100) is used to treat fungal infections such as athlete's foot. Some patients may be sensitive to PPM soaks and develop redness or itchiness in the areas soaked. If this happens the solution should be washed off immediately and not used in the future. In mild oozing, chamomile compress can be helpful.

14.12 Habit Reversal

Habit reversal (see www.atopicskindisease.com) is a self-funded membership website for patients and practitioners. This site explains a combined approach to managing atopic eczema, combining optimal conventional topical treatment with the behaviour modification technique and habit reversal to eliminate habitual scratching.

14.13 Systemic Treatments

Severe resistant cases of atopic eczema in adults may require phototherapy or systemic anti-inflammatory such as oral steroids, cyclosporin, methotrexate, azathioprine or systemic retinoids such as acitretin.

Alitretinoin ("Toctino®") is an oral retinoid similar to "Roaccutane®" which is licensed for the treatment of chronic refractory hand eczema. It is not available in all countries. It should not be used in pregnancy, with hyperlipidaemia, uncontrolled hypothyroidism and hypervitaminosis A. The side effect profile is similar to

"Roaccutane®". It is usually given for up to 6 months and the treatment can be repeated if the hand eczema recurs.

Dupilumab ("Dupixnet®") is a new human monoclonal antibody that specifically inhibits IL-4 and IL-13 which are believed the be major drivers in the persistent underlying inflammation in AE. It constitutes one of the biggest therapeutic promises in the AD management and is now licensed to treat moderate to severe, resistant atopic eczema in adults in the US and Europe [2]. It is given by self-administered, prefilled subcutaneous injections every 2 weeks after an initial loading dose. The most common side effects are injection site reactions, eye and eyelid inflammation, allergic reactions and herpes simplex infections of the mouth or lips. It should not be used in pregnancy or when breast feeding and is not yet licensed in people less than 18 years old.

A number of other new biologic agents and monoclonal antibodies will be coming on the market in the next few years to manage itch and inflammation in severe AE. These are much more specific at how they work compared to some of the old systemic anti-inflammatories. These new biologic agents will be considerably more expensive that the more conventional systemic anti-inflammatory drugs currently available [4].

14.14 Conclusion

Dermatitis in adults can have many causes. Most forms of adult dermatitis will respond to moisturising, avoiding soaps and other irritants and topical treatment with a steroid or calcinurin inhibitor to relieve inflammation, itch and scratching. More resistant cases may need special investigations such as swabs and skin scrapings to look for underlying infections, skin biopsy to rule out other skin disease and allergy testing looking for allergens which may be causing or aggravating the dermatitis.

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