

Contents: Using topical corticosteroids in general practice

## Using topical corticosteroids in general practice

**Patients with eczematous skin conditions are commonly seen in general practice. Itching and cosmetic disfiguration often occur, which may hamper social relationships and lead to much distress.**

Some cases of eczema or other dry skin conditions can be managed solely by the regular and correct use of emollients (see *MeReC Bulletin* Vol. 9 No. 12). However, topical corticosteroids are often required to control inflammatory exacerbations, as such episodes are rarely helped by using emollients alone.

Despite their usefulness, many patients are reticent about using topical steroids because of the fear of side-effects.<sup>1</sup> This *Bulletin* discusses the role of topical corticosteroids in general practice and explores the common misconceptions that exist around the safety of these agents.

### Use of emollients

**All patients with eczema or other dry skin conditions should be using an effective and cosmetically acceptable emollient regimen.** Emollients are underused in general practice,<sup>2</sup> and many patients have not used them at all before being prescribed a topical steroid.

There is some evidence to suggest that emollients may reduce the need to use topical steroids in atopic eczema and psoriasis, i.e. they have a 'steroid sparing effect'.<sup>3</sup> Avoiding soaps and detergents by using soap substitutes, such as aqueous cream, is also important.

### SUMMARY

- \* Topical corticosteroids are effective in reducing inflammation associated with skin conditions such as eczema. However, they are not curative and, wherever possible, should only be used in short bursts (for 3-7 days) to treat exacerbations of the disease. Once the flare is treated, many patients only require emollients to control their symptoms.
- \* Many patients are reluctant to use topical steroids because of the fear of local and systemic side-effects. **Patients should be reassured that side-effects are rarely seen when mild or moderately potent steroids are used in short bursts.** Clear explanations are needed so patients are aware of how much steroid to use, where and when to apply it, and for how long.
- \* The risk of side-effects increases with steroid potency and the amount used. Extra care should be taken when applying steroids to sites such as the face, as these areas are more susceptible to skin thinning.
- \* There are no published systematic reviews comparing the effectiveness of different topical corticosteroids. Choice of agent is made according to patient need, remembering that all topical products must be cosmetically acceptable. In addition, there is wide inter-patient variability in response to treatments.
- \* Ointments are preferable to creams as they have a deeper, more prolonged emollient effect and increase the penetration of steroid. They are also less likely to cause irritation as they do not contain preservatives.
- \* Diagnosis should be reassessed and, if appropriate, another steroid considered if no improvement is seen within 3-7 days of starting a topical steroid.

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- Steroids should not be used regularly for more than 4 weeks without review.
- Do not use potent steroids regularly for more than 7 days.
- No unsupervised repeat prescriptions should be made; review every 3 months.
- Do not use more than 100g per month of a moderately potent steroid preparation.
- Attempts should be made to rotate steroids with alternative treatments.

**Use of potent and very potent steroids**

**Table 1.** Guidelines for appropriate use of topical corticosteroids in psoriasis.<sup>5</sup>

**What skin conditions are topical corticosteroids used for?**

Corticosteroids suppress various mediators of the inflammatory response. As there is often an inflammatory component to skin disorders such as eczema and psoriasis, topical steroids are used to suppress or relieve signs and symptoms of these conditions. However, they are not curative and may cause a rebound exacerbation of the condition when stopped.<sup>4</sup>

Topical steroids should only be used in psoriasis according to appropriate guidelines (see **table 1**). In addition, many dermatologists only recommend applying steroids to areas such as flexures and the scalp, or for localised pustular psoriasis, e.g. on the soles of the feet.

Topical corticosteroids are contra-indicated in ulcerative conditions and rosacea since they worsen these conditions.<sup>4</sup> In addition, they are not recommended for urticaria or acne vulgaris, and should not be used in pruritus of unknown cause.<sup>4</sup>

**Potency of topical corticosteroids**

The potency of topical steroids is determined by the amount of vasoconstriction they produce.<sup>6</sup> It also relates to the degree to which they inhibit inflammation and to their potential for causing side-effects. As well as the properties and concentration of the steroid, potency is also affected by the formulation and other ingredients, for example, propylene glycol, urea or salicylic acid may enhance absorption of

steroids.<sup>4,5</sup> The salt of the steroid may also affect potency, e.g. *hydrocortisone* is a mild steroid, while *hydrocortisone butyrate* is classified as potent.

Topical corticosteroids are classified in the BNF according to their potency, as listed in the monograph of each preparation. This is also illustrated in the **insert** to this *Bulletin*.

**What is the evidence that topical steroids are effective?**

While there are no published systematic reviews of the effectiveness of topical steroids, there is evidence from small, randomised controlled trials that they improve atopic eczema over a two to four week period.<sup>7</sup>

As with emollients, comparing the results of one clinical trial of topical steroid preparations with another is difficult. Different measures of efficacy are often used, for example, there are various clinical scoring systems and a wide inter-patient variability in response to steroids. This makes it difficult to predict how much benefit an individual will gain from a particular agent.

**How safe are topical steroids?**

Incorrect use of topical steroids has led to much concern about their potential to cause side-effects.<sup>1</sup> **However, patients should be reassured that, provided certain precautions are taken, topical steroids can be used safely and effectively.**

**Table 2** shows some of the potential side-effects of topical corticosteroids. Local and systemic side-effects are rarely seen when mild and moderate potency steroids are used.<sup>1</sup> Although the risk is higher with more potent agents, topical steroid use was not associated with an increase in serious side-effects in several short-term studies (six weeks or less).<sup>7</sup> Other studies involving a small number of healthy volunteers (n=12), showed a degree of skin thinning when potent and very potent topical steroids were used for six weeks. However, skin thickness

- Exacerbation of skin infection.
- Thinning of the skin (often reversible).
- Irreversible striae atrophicae and telangiectasia.
- Contact dermatitis.
- Perioral dermatitis.
- Acne at the site of application.
- Mild depigmentation.
- Pituitary-adrenal-axis suppression

**Table 2.** Side-effects of topical corticosteroids.

returned to normal within four weeks of stopping treatment.<sup>7</sup>

Less commonly, excessive absorption through the skin can cause pituitary-adrenal-axis suppression and Cushing's syndrome. It has been suggested that agents claimed to have a low potential to cause adrenal suppression, such as fluticasone, may be less likely to cause systemic side-effects.<sup>8</sup> However, there is no evidence from published clinical trials involving patients with inflammatory skin conditions to confirm this.

The risk of systemic side-effects increases when steroids are used for prolonged periods on areas of thin skin, such as the face, or on inflamed or raw surfaces. Skin occlusion also increases steroid absorption, as well as the risk of bacterial overgrowth. Occlusion of steroids using polythene gloves or film, or 'wet wraps' (moistened or cream-soaked bandaging) may be useful for treating particularly thick skin, e.g. on the hands or feet. These methods require specialist advice and close supervision of patients.<sup>1</sup>

**Balancing the risks and benefits of topical corticosteroids**

Topical steroids should only be used where measures such as emollients do not provide sufficient relief. Where possible, they should only be used intermittently to treat exacerbations of eczema or to reduce the size and thickness of psoriatic plaques.

Patients should use the least potent corticosteroid preparation that relieves their symptoms.<sup>1</sup> While it is important that patients use enough steroid to control their condition, applying them in the smallest amounts, and for the shortest possible time, will

minimise the risk of side-effects. Where possible, patients should be maintained on emollients only. If topical steroids are required for maintenance, there should be periods each year when they are withdrawn for as long as possible and emollients used on their own ('emollient holidays').

There are two approaches to the use of topical corticosteroids in eczema: the **step-up** and the **step-down** methods. The **step-up** method involves using a mild steroid initially and increasing the potency if there is no response.<sup>6</sup> This may suit those with mild eczema as it ensures patients do not receive a more potent steroid than is necessary.

With the **step-down** method, patients use a more potent steroid initially to control the condition, and then reduce the potency to a suitable maintenance preparation.<sup>9</sup> This is often used in more severe cases or to treat flares of eczema. **Whichever approach is taken, it is essential that patients are maintained on the weakest possible steroid, or preferably on an emollient regimen only.**

#### Does the formulation of steroid make any difference?

There are many different topical corticosteroid preparations available (see **cost table**). A practice formulary containing two preparations of each potency is likely to serve the needs of most patients adequately.

**Ointments are generally preferable to creams.** As well as producing a deeper, more prolonged emollient effect, ointments occlude the affected area, thereby increasing the efficacy of steroids.<sup>1</sup> Ointments are also less likely to cause hypersensitivity or irritation as, unlike creams, they do not usually contain preservatives.

Some patients may prefer to use a cream for exposed areas such as the face. Scalp formulations such as lotions may also be useful. Although lotions containing alcoholic solutions dry quickly, aqueous lotions are better tolerated on very sore skin.

If dilution of the steroid is required, a commercial product should be prescribed. Requests to add other substances to preparations should only be made where strictly necessary.

#### How long should topical steroids be used for?

Improvement should be seen within 3-7 days of starting topical steroids.<sup>9</sup> Once an eczema flare is controlled or a psoriatic plaque is reduced to a manageable size, treatment can be tapered by using less potent steroid preparations, down to emollients only if possible.

If the condition does not improve after 3-7 days of steroid use, diagnosis should be reassessed and other potential causes examined. These may include infection, hypersensitivity to the steroid or the base, as well as patient non-compliance because of fear of side-effects. Tolerance or loss of efficacy with continued use of topical steroids can also occur.<sup>5,6</sup> In such cases another steroid within the same potency group may still be effective.

Contact sensitivity can develop not only to preservatives within steroid preparations, but also to the steroid molecule itself.<sup>5,10</sup> However, it may be difficult to distinguish this from worsening of the underlying skin condition. Referral to a dermatologist for patch testing may be appropriate in resistant cases.

Relapse or vigorous rebound of psoriasis may occur after stopping potent topical steroids. This may even precipitate unstable or severe pustular psoriasis.<sup>11</sup> Flares of eczema may also occur if steroids are stopped abruptly.<sup>6</sup> Topical steroids should be withdrawn gradually, decreasing the potency in a stepwise manner.

#### How often should topical steroids be applied?

Steroid preparations should normally be applied once or twice daily. It is not necessary to apply them more often, and the less frequently a steroid is applied, the lower the risk of side-effects.

A review of studies comparing once daily with twice daily use of various potent and moderately potent steroids, found both regimens to be similarly effective.<sup>12</sup> Two steroid preparations are specifically marketed as 'once daily' applications: mometasone furoate, (*Elocon*, Schering-Plough) and fluticasone propionate, (*Cutivate*, GlaxoWellcome). There is no published evidence to show they are more effective than other potent topical steroids, and they are both relatively expensive (see **cost table**).

#### How much should be applied?

A simple, practical guide to how much topical steroid to apply to different areas of the body is the fingertip unit (FTU).<sup>13</sup> An FTU is the amount of ointment or cream that covers the distal third of the index finger (see **table 3**). The number of FTUs to adequately cover different areas of the body with a topical steroid according to age, is also shown in **table 3**.

#### How much should be prescribed?

The amount of topical steroid to prescribe depends upon the areas being treated. Suitable quantities for specific areas of the body are given in the BNF. While these act as a rough guide for adults, quantities for children may be much less.

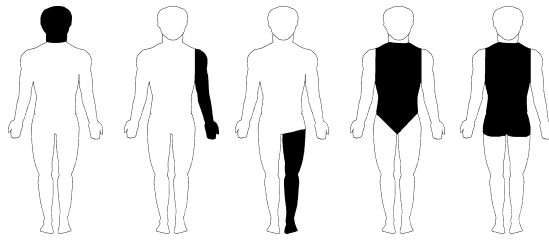
As another simple guide, the extent of a patient's skin disease (and, therefore, how much steroid to prescribe) can be estimated by the 'rule of hand'.<sup>13</sup> This involves using a flat adult hand placed on the skin with the fingers together, to roughly estimate the area of affected skin. **Two adult hands** equates to **one FTU**, which is approximately **0.5g** of ointment or cream. This can be used to estimate how much steroid to prescribe for a given time period.

#### Patient counselling

Successful treatment of skin conditions requires thorough discussion with patients, or their parents, so informed choices about treatment are made. **It is vital that patients find their**



ONE adult fingertip unit (FTU)\*



Age	Number of finger tip units (FTUs)				
	Face & neck	Arm & hand	Leg & foot	Trunk (front)	Trunk (back) inc. buttocks
Adult	2½	4	8	7	7
Children:					
3-6 months	1	1	1½	1	1½
1-2 years	1½	1½	2	2	3
3-5 years	1½	2	3	3	3½
6-10 years	2	2½	4½	3½	5

\* One adult fingertip unit (FTU) is the amount of ointment or cream expressed from a tube with a standard 5mm diameter nozzle, applied from the distal crease to the tip of the index finger.

Table 3. 'Finger tip units' (FTUs) of steroid preparation to apply to specific areas.<sup>13,14</sup>

**skin treatment regimens cosmetically acceptable, otherwise they may never be used.**

When topical corticosteroids are prescribed for eczema an explanation should be given of:

- the incurable and chronic nature of the disease
- the different potencies of each steroid preparation
- the area(s) of the body where each product should be used
- how much to apply
- how long to apply them for
- how often to apply them in relation to other treatments.

Such information could be written down on a 'skin care plan'. Patient information leaflets with instructions may also be helpful, but should not replace personal explanation. Reminding patients to dispose of unwanted or out of date medicines may be worthwhile, as reuse of a microbially contaminated steroid product could be harmful.

There is no consensus as to when to apply corticosteroids in relation to emollients. Steroids may be more effective if applied before emollients. However, applying topical steroids 10-20 minutes after using emollients ensures the skin is fully moisturised and avoids spreading the steroid to other areas of the skin. As there are potential advantages

to both methods, patients should choose a regimen which suits their daily routine and, therefore, encourages compliance.

**Can topical corticosteroids be used safely on infected skin?**

Topical steroids should not be used routinely on clinically infected skin unless the infection is being treated. A short course of a suitable oral antibiotic (e.g. flucloxacillin) may be indicated.<sup>1</sup> Topical antibiotics should only be used where infection is limited to a small area of the skin.

To minimise the development of resistance, all antimicrobials, including topical agents, should not be used indiscriminately. In addition, studies have shown that topical antimicrobial/steroid combinations do not confer any benefit over steroids alone in patients with atopic eczema.<sup>7</sup>

**Using topical steroids in children**

Children, especially babies, are particularly susceptible to the side-effects of topical steroids. In addition, growth retardation may occur in up to 10% of children referred to hospital with atopic eczema.<sup>15</sup> However, it is not clear whether this is associated with the use of topical corticosteroids. A mild steroid, such as 1%

hydrocortisone ointment, should be adequate to control most cases of eczema in children.<sup>1</sup> More potent steroids should only be prescribed on the recommendation of a dermatologist, and only for short periods in order to gain control of the disease.<sup>1</sup>

**Conclusions**

The key to the safe and effective use of topical corticosteroids in conditions such as eczema, is to use them in short bursts of 3-7 days to treat inflammatory exacerbations. The least potent agent that controls the flare should be used depending on the skin area being treated. During remissions, many patients will only require an emollient to control their condition.

Patients should be clear as to how much topical steroid to use, when to apply it and for how long. As with all topical therapy, patients must use products that are cosmetically acceptable so they are prepared to keep using them on a regular basis.

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