
Medicines Q&As

Q&A 258.2

Can topical steroids be applied at the same time as emollients?

Prepared by UK Medicines Information ([UKMi](#)) pharmacists for NHS healthcare professionals
Date prepared: 2/11/2012

Background

Emollients are used for the first-line treatment of a wide variety of dry or eczematous skin disorders. Since their soothing and hydrating properties are short-lived, they require frequent liberal application, especially after bathing, with continued use after improvement occurs. Emollients should be applied in the direction of hair growth to reduce the risk of folliculitis. A wide variety of preparations are available, with choice guided by the severity of the condition, site of application and patient preference (1, 2).

Topical steroids are used intermittently for acute exacerbations of inflammatory skin disorders where other measures such as emollients are ineffective. Steroids suppress the inflammatory reaction during use; they are not curative and on discontinuation a rebound exacerbation of the condition may occur. Again, a wide variety of preparations are available, with choice guided by the severity of the condition, site of application and age of the patient. Topical steroids are associated with adverse effects – skin thinning, spreading of untreated infection, striae, acne and mild depigmentation. To minimise potential adverse effects, the least potent formulation which is fully effective should be used, it should be spread thinly on the affected areas only (measured in terms of fingertip units) application should not be more frequent than twice daily (1, 2).

There appears to be no real consensus on the timing of the application of emollients and topical steroids in conjunction with each other. In addition there are no published controlled studies that have investigated this issue. The following information is a summary of position statements from various stakeholders on whether topical steroids can be applied at the same time as emollients and a conference abstract describing a prospective randomised controlled study (n=46) which found that the order of application of emollients and topical steroids did not make a difference in the treatment of atopic eczema in children.

Answer

Recommendations from various stakeholders

NICE in its guidance on eczema in children states that an interval of several minutes should be left between application of a topical steroid and an emollient where practicable; the order of application was not addressed. However it does suggest that the preferences of the child and parents or carers should determine which product should be applied first. This recommendation is based on expert opinion rather than data from controlled clinical trials and on the theory that mixing creams and ointments may change the formulation and absorption characteristics of the treatments (3).

Similarly, the British Association of Dermatologists states that emollients should not be applied shortly after application of a topical steroid and that ideally an interval of 30 minutes is recommended between applications of either agent (4). The Drug and Therapeutics Bulletin (2003) states that emollients should not be applied at the same time as topical steroids (5).

According to a Clinical Knowledge Summary (CKS) on atopic eczema, when both treatments are being used, the emollient should be applied first followed by the topical steroid, preferably after several minutes' wait and only after the emollient has been fully absorbed (6). The guideline incorporates advice from NICE (3) and the Scottish Intercollegiate Network (SIGN) guideline on atopic eczema (7). CKS makes additional reference to the clinical guideline *Best practice in emollient therapy*, published by the International Skin care Nursing Group (8) which states that "emollients should be allowed to absorb before topical corticosteroids are applied (the skin should be moist or slightly tacky, but not slippery). This is because:

- Well-moisturised skin may require a reduced amount of corticosteroid, and there is evidence from one study (type unspecified) that topical drugs may be more effective when used after emollients.

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- Application of a corticosteroid *immediately on top of or before* an emollient may lead to dilution of the product, and transfer corticosteroids to areas that do not require treatment.”

CKS also comments that “some experts recommend that the corticosteroid should be applied first. This is also a reasonable strategy provided the emollient is not applied too quickly (particularly on top of an ointment) and dilutes the corticosteroid” (6).

The American Academy of Dermatology Guidelines on atopic dermatitis did not address the order of application of topical steroids and emollients (9). These guidelines are currently under review.

Unpublished clinical trial data

A small prospective randomised controlled two week study evaluated whether the order of application of emollient and topical corticosteroids would make a difference in the treatment of 46 children with moderate to severe atopic eczema (10). Children (aged between 4 months and 5 years; 27 male) were randomised to two groups:

- Group A (n=26) applied emollient (aqueous cream) followed by topical corticosteroids 15 minutes later twice daily
- Group B (n=20) applied topical corticosteroids followed by emollient (aqueous cream) also 15 minutes later twice daily.

The topical corticosteroids used were hydrocortisone acetate 1% cream for facial use and clobetasone butyrate 0.05% cream for use over the body and limbs. The primary outcome measure was Eczema Area and Severity Index (EASI) score (a score that reflects the severity and extent of atopic eczema, affecting the head and neck, upper limbs, trunk and lower limbs).

19 patients in Group A and 12 patients in Group B completed the study. Group A demonstrated an improvement in the primary endpoint at week 1 and 2 compared to baseline and Group B demonstrated an improvement only at week 1 compared to baseline (no absolute data available within conference abstract and difference not reported to be statistically significant at each and every assessment).

Summary

The optimal order and timing of application of emollients and topical steroids is not known. There is a theoretical risk that if the topical steroid is applied immediately after the emollient or vice versa then there is a risk of diluting the steroid or possibly transferring it to areas that do not require treatment. General consensus opinion is conflicting and is based on anecdotal evidence; further studies are required to clarify this issue.

Limitations

- No published evidence was found to address this question; therefore content is based on consensus viewpoints.
- A primary literature search has identified various review articles and a few clinical trials but these have investigated the use of emollients as steroid sparing agents and have thus been excluded.
- The information does not relate to the use of emollient bath additives.

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Date Prepared

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12/11/12

Search strategy

Original search strategy (2/12/2008)

- Standard in house reference sources (BNF, Martindale, AHFS, MICROMEDEX, CKS, Clinical Evidence, Cochrane, NICE, MHRA, NPC, MeReC, NeLM, NLH)
- Embase: (exp EMOLLIANT AGENT/) AND (exp CORTICOSTEROID/ AND exp TOPICAL DRUG ADMINISTRATION/)
- Medline: (exp EMOLLIANTS/) AND ((topical AND corticosteroid).ti,ab) OR (*ADRENAL CORTEX HORMONES/) OR (*GLUCOCORTICOIDS/) AND (*ADMINISTRATION, TOPICAL/)
- CINAHL: (exp EMOLLIANTS/) AND (GLUCOCORTICOIDS, TOPICAL/)

Updated search strategy (2/11/2012)

- Standard in house reference sources (BNF, Martindale, CKS, Clinical Evidence, Cochrane, NICE, NPC, MeReC, NeLM)
- Embase: (exp EMOLLIANT AGENT/) AND (exp ANTI ECZEMA AGENT) AND (exp DERMATITIS).
- Medline: (DERMATITIS) OR (exp ECZEMA) AND (exp EMOLLIANTS/) AND (STERIODS)
- CINAHL: (exp EMOLLIANTS/) AND (exp ANTI INFLAMMATORY AGENTS, TOPICAL)