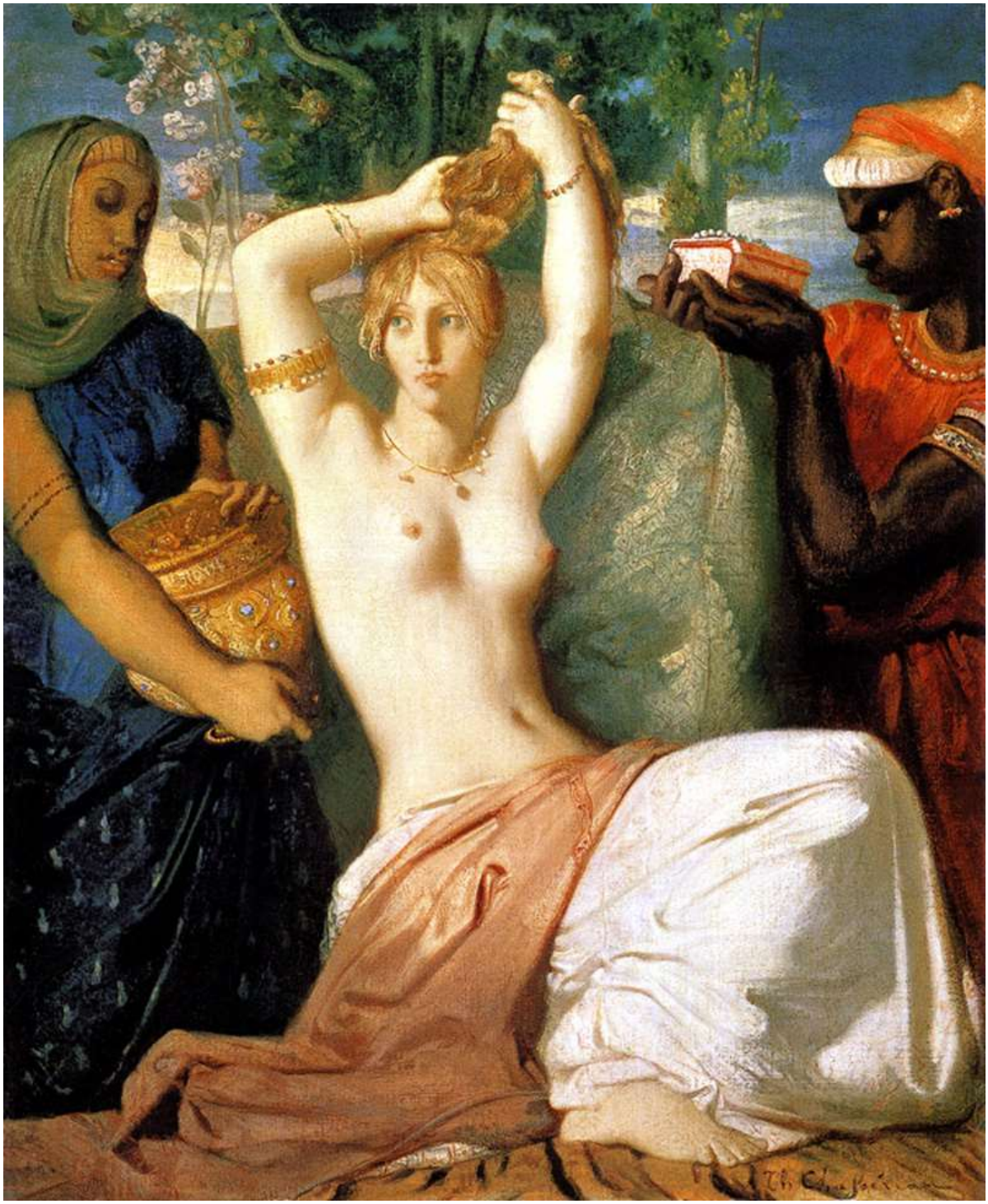
THE NORTHERN HOSPITAL

TOPICAL STEROIDS



"Esther Preparing to be Presented to King Ahasuerus", oil on canvas, Theodore Chasseriau, 1841, Musée du Louvre, Paris.

"A witty woman is a treasure; a witty Beauty is a power".

George Meredith 1885, "Diana of the Crossways".

"Each girl had to appear in turn before King a Ahasuerus after a delay of 12 months…this preparatory period was occupied as follows, six months with oil of myrrh, and six months with spices and other lotions commonly used for feminine beauty…

Esther won the approval of all that saw her. She was brought to King Ahasuerus in his Royal apartments…and the King liked Esther better than any of the other women, none of the other girls found so much favour and approval with him. So he set the Royal diadem on her head and proclaimed her Queen instead of his own wife, Vashti."

Book of Esther, 2nd Century B.C

Although Esther was born into a very lowly position in life, she lived it to her upmost potential, eventually becoming Queen to the most powerful king of her day, Ahasuerus, King of the Persians. Not only was she breath takingly beautiful, she was also extremely intelligent, witty and resourceful, which made her a very powerful figure in King Ahasuerus' Empire. She realised that to initially catch the eye of the King, intelligence alone was not enough, she also had to be the most attractive woman in the land. To this end she spent no less than 12 months preparing herself with the finest of skin beauty treatments the Empire had to offer, so that after this period her skin was so pure that not a single blemish was to be found.

Though a little short on "oil of myrrh" and "spices", the 21st century nonetheless, as in Esther's time, boasts an impressive array "lotions" for the betterment of the skin. In the medical field, one of our most powerful includes the range of topical steroids for the treatment of various skin diseases, one of the most serious of which is pemphigus. Like Esther's beauty treatment the treatment of pemphigus is both complex and protracted. Unfortunately for those suffering from skin conditions however the end game of this process is not quite the same as it was for Esther. Rather than catching the eye of a powerful King, sadly we must dramatically lower our aim, and settle merely for a "semblance of normality"!

TOPICAL STEROIDS

Introduction

Topical corticosteroids are best avoided when the diagnosis is uncertain.

If used on *infectious conditions* such as tinea, they will partially ameliorate the symptoms, but this can lead to a delay in institution of curative treatment, alteration of the morphology of the rash (tinea incognito), or local complications as a result of the prolonged use.

For example, patients who use potent topical corticosteroids on a groin rash where the diagnosis is tinea cruris may continue to use it for years as it alleviates the itch. Meanwhile, the tinea slowly extends and the patient may not present until they develop striae.

Potency

The potency of topically applied corticosteroids is assayed by the degree of vasoconstriction they produce when applied under an occlusive dressing.

This depends on:

- The concentration used.
- The intrinsic activity of the compound.
- Its ability to penetrate the barrier of the epidermis, which may be influenced by the vehicle in which it is applied.

The assay permits topical corticosteroid preparations to be arranged in groups with similar potency. Such a ranking corresponds approximately with clinical effectiveness

Preparations available

Steroid bases:

Use:

- A **cream** base for acute **weeping** dermatoses
- An **ointment** base if the area is **dry or lichenified**
- A **lotion** for **hairy** areas.

Relative potencies:

Mild	
Desonide	0.05%
Hydrocortisone	0.5%, 1%
Hydrocortisone acetate	0.5%, 1%
Moderate	
Betamethasone valerate	0.02%, 0.05%
Clobetasone butyrate	0.05%
Methylprednisolone aceponate	0.1%
Triamcinolone acetonide	0.02%
Potent	
Betamethasone dipropionate	0.05%
Betamethasone valerate	0.1%
Mometasone furoate	0.1%
Triamcinolone acetonide	0.1%
Very potent	
Betamethasone dipropionate	0.05% in optimised vehicle
Clobetasol propionate	0.05%

Adverse effects

Adverse effects of topical corticosteroids may be due to local effects on the skin at the site of application or to a systemic response to absorbed drug.

Potential adverse effects include:

1. Loss of dermal collagen, leading to:
    - Skin atrophy
    - Formation of striae
    - Fragility and easy bruising
2. Telangiectasia (development of prominent blood vessels)
3. Promotion of infection

4. Idiosyncratic reactions (e.g. allergic contact dermatitis, perioral dermatitis)

5. Purpura (in the elderly).

6. Systemic absorption:

   Absorption of **more potent agents** applied to **large areas** for **prolonged periods** may cause suppression of the hypothalamic pituitary axis and other complications usually associated with *systemic corticosteroid administration*

Usage considerations

Regional considerations

Suggested potencies and preparations for long term use of topical corticosteroids for chronic dermatoses are:

Face and flexures:	Hydrocortisone 1%
Trunk:	Betamethasone valerate 0.02%, triamcinolone acetonide 0.02%
Elbows/knees and palms/soles:	Betamethasone dipropionate 0.05%, mometasone furoate 0.1%, methylprednisolone aceponate 0.1%.

Penetration of corticosteroid to the dermis is greater on the face, the scrotum and where conditions mimic application under occlusion, i.e. flexures and intertriginous areas.

The use of the more potent corticosteroids on these sites therefore carries greater risk of local damage and should be used with caution.

The only corticosteroids that are safe to use on these sites are hydrocortisone and desonide.

In certain circumstances, more potent corticosteroids (eg methylprednisolone aceponate) may be used intermittently on these sensitive areas for up to 2 weeks; however, the greater the potency the greater the risk of local adverse effects, particularly perioral dermatitis.

General considerations

If improvement does not occur after 2 weeks, do not persevere with treatment, reconsider the diagnosis and seek expert advice.

With greater potency, there is increased risk of rebound on withdrawal.

It is common for patients to be reluctant to use topical corticosteroids, or to underuse them because of misconceptions about the risks of their use.

Patients should be reassured that *mild topical* corticosteroids are very safe and even prolonged use over many months rarely produces any complications.

This also applies to *moderately potent* topical corticosteroids, unless used inappropriately long term on sensitive areas such as the *face and flexures.*

Underuse of topical corticosteroids also may occur if patients are warned to use the preparation very sparingly or are under-supplied with medication.

Widespread dermatoses:

The prescription of a 15 g tube of cream to treat a widespread dermatosis is inadequate, and the prescriber should provide for adequate quantities of a corticosteroid of appropriate strength for that dermatosis.

Full body coverage requires 20 to 30 grams of a cream (for an average adult male) and slightly less if applying an ointment. If liberal application is required, this should be explained to the patient, written on the prescription and underlined.

If widespread use of topical steroid is required this will best be done under the supervision of a dermatologist.

References

1. Dermatology Therapeutic Guidelines 3rd ed 2009.

Dr J. Hayes
Reviewed 1 June 2017