AMERICAN COLLEGE OF EMERGENCY PHYSICIANS
SCIENTIFIC ASSEMBLY
1999

Dermatitis: Which Medication Should I Use?

There are some basic things that patients can be instructed to do to help a rash defervesce. Beyond that, there are many different treatment preparations. Given the wide array of medications, it can be difficult to choose one to use. The lecturer will cover those therapeutic choices, with special attention to the many formulations of topical and systemic steroids.

- Discuss the non-pharmacologic measures used to treat various skin conditions.
- Give examples of different potencies of steroids and steroid preparations, and state the appropriate uses for each of them.
- Describe the advantageous properties of creams, lotions, and ointments as vehicles for delivering dermatologic medications, especially steroids.

MO-21
Monday, October 11, 1999
12:30 PM - 1:25 PM
Room # N227
Las Vegas Convention Center

FACULTY

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Dermatitis: What medication should I use? MO-21

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OUTLINE:

I. Course Description:

1. Patients presenting with acute or chronic dermatoses in the emergency department are often challenging, not only to diagnosis, but to treat. This is complicated due to the vast amount of prescription and over-the-counter medications that could be prescribed to relief the patient's symptoms.

2. This lecture will review steroid preparations that are often used by dermatologists to alleviate the cutaneous inflammation associated with dermatoses. In addition, it will discuss supplemental medications/preparations that can help relieve the symptoms of a dermatitis eruption.

II. Course Objectives:

At conclusion of this lecture, the attendee should be able to:

1. Determine the grades of topical steroids, when to use the different topical steroids clinically and list the side-effects of topical steroids.

2. Describe the differences in topical steroid preparations (i.e. cream, ointment, gel).

3. Describe the intralesional, intramuscular, oral and intravenous steroid preparations available, dermatologic uses and their side-effects.

4. Identify shampoos, soaps, bath preparations, emollients/moisturizers anti-itch preparations (topical and oral) that can supplement the use of steroids in treating a dermatitis.

III. Course Outline:

1. Steroid responsive dermatoses
    a. Types:
        Acute: - moderate to intense erythema, vesiculation
        - intense pruritus.
        - examples: allergic/irritant contact dermatitis
        Id reaction, nummular dermatitis
        stasis dermatitis, dyshidrotic eczema
        drug eruption.
        Subacute: - faint to moderate erythema with scale
        - slight to moderate pruritus, pain, burn, stinging
        - examples: evolving acute dermatitis (see above)
        asteatotic eczema, finger tip dermatitis
        seborrheic dermatitis

        Chronic: - thickened skin, excoriations, erythema mild, fissuring
        - moderate to intense pruritus
        - examples: evolving acute/subacute dermatitis (see above)
        - atopic dermatitis, lichen simplex chronicus

2. Topical Steroids:
    a. Definition: - glucocorticoids formulated for application to the skin and mucous membranes.
    - hydrocortisone moiety with modification by halogenation, methylation, acetylation, double-bonds
    - changes increases therapeutic effects

    b. Selection Criteria:
        i. vehicle:
        ointment - water repellent hydrocarbons, absorption bases
        water in oil emulsions, water soluble.
        - lubricating and occlusive (increases penetration)
        - greasiness inconvenient, aesthetically undesirable
        - suggested for chronic dermatoses

        cream - emulsion of oil in water
        - easily spread, aesthetically appealing
        - vehicle of choice for acute to subacute dermatoses
        - may be drying, apply moisturizer simultaneously

        gels - transparent colloidal dispersions prepared in a solid or semi-solid state that liquefy on contact with skin.
        - contain alcohol, propylene glycol and can be drying
        - suggested for scalp/oral mucosal
        other: sprays: aerosolized
        lotion: powder in water

ii. nature of dermatitis:
- thin, acute, inflamed skin may respond to a low to medium strength topical steroid
- thick, chronic skin lesions may respond to only high or super high potency topical steroids

iii. location of skin lesions:
- facial/intertriginous areas need low strength preparations

iv. extent of body surface area:
- due to possible systemic absorption of a topical steroid when used on large body areas use a low to medium strength topical steroid

v. age of patient:
- due to thinness and fragility of skin in infants/elderly use a lower strength topical steroid

vi. duration of treatment:
- super-high strength topical steroids don't exceed 3 weeks of use
- medium to high strength don't exceed 3 months
- every case however unique on dermatitis being treated
- discontinue use once skin has returned to normal

c. Frequency of Duration
- once to twice daily
- active skin areas (hands/feet) may require additional applications
- for chronic conditions which may require long term use can go to a alternate day or weekend-only (pulse therapy) regimen

d. Factors influencing absorption: (See Table I)
i. patient/anatomical
ii. epidermal barrier function
iii. pharmacologic factors
iv. application factors

e. Pregnancy/breast feeding:
i. pregnancy – no fetal anomalies
ii. breast feeding: - no adverse effects, avoid application to nipples prior to feeding if being treated for a nipple dermatitis

f. Side-effects:
i. local: (See Table II)
ii. systemic:
- rare, however can occur especially in children with extensive disease or with super-high potent steroids
- cataracts/glaucoma with periorbital use
- growth retardation: infants/young children –reversible with discontinuation
- hypertension/Cushing's syndrome
- Adrenal suppression

g. Dr. English's suggested topical steroid preparations (See Table III)

h. Amount of topical steroid to give:

Finger-tip units = 2.5 to 3.0 cm bead of prep (0.5gm)

BID x 10days:

i. face/ neck 30gm tube (1FTU per one application)
ii. trunk 60gm tube (7FTU per one application)
iii. one arm 30gm tube (3 FTU per one application)
iv. one hand 15gm tube (1 FTU per one application)
v. one leg 60gm tube (6 FTU per one application)
vi. one foot 30gm tube (2 FTU per one application)

3. Non-topical steroids:
   a. Routes of administration:
      i. intralesional
      ii. intramuscular
      iii. oral
         - single dose
         - divided dose
         - alternate day dose
      iv. intravenous

   b. complications of oral steroids:
      i. skin: atrophy, alopecia, acneiform eruptions, poor healing, purpura, striae, hirsutism, desquamation
      ii. systemic acute use: nervousness, insomnia, weight gain, increased hunger
      iii. systemic chronic use: osteoporosis, AVN, Adrenal suppression, atherosclerosis, glaucoma, depression, pseudotumor cerebri
      iv. steroid withdrawal syndrome: fatigue, malaise, anorexia, nausea, weight loss, postural hypotension, myalgias, depression
      v. dermatitis rebound phenomenon

   c. drug interactions with oral steroids:
      i. decreases effect: Rifampin, phenytoin, ketoconazole, antacids, other enhancers of hepatic cytochromes
      ii. increases effect: Oral BCP, other inhibitors of hepatic cytochromes
      iii. steroid worsens: hypoglycemic agents, digoxin, isoniazid

4. Supplemental treatments for dermatitis: Rx and OTC
    a. Antihistamines
        Oral:
        Sedating: benadryl (diphenhydramine)
        atarax (hydroxyzine),
        CTM (chlorpheniramine)
        dimetapp (brompheniramine)
        sinequan (doxepin)
        Non-sedating:
        loratadine (claritin)
        cetrizine (zyrtec)
        Topical:
        benadryl 1-2%
        Zonalon (doxepin)
    b. Emollients/Moisturizers –AVOID Alpha Hydroxy containing preps
        Cetaphil
        Lubriderm
        Curel
        Eucerin
        Aquaphor
        Moisturel
        Aveeno moisturizing cream
        Vasoline
        Bag balm
        Blue star ointment
    c. Bath preparations:
        Coal tar (zetar emulsion, polytar bath)
        Colloid oatmeal (aveeno)
        Mineral oil (“baby oil”)
        Cotton seed oil (robathol)
        Seasame seed oil (neutrogenia seasame seed oil)

        Soaps: Cetaphil – bar/liquid
        Dove
        Purpose
        Aveeno

        Shampoo:
        Selsun Blue
        T-gel/sal
    d. Anti-itch:
        Sarna lotion
        Calamine lotion
        Caladryl
        Aveeno anti-itch
        Goldbond anti-itch cream
        Benzocaine (Lanacane)

    e. Anti-weeping:
        Aluminum acetate
    f. Powders:
        Goldbond medicated
        Zeasorb
        Talcum

Table I: Factors influencing absorption of topical steroids:

1. Patient factors:
   - Age
   - Site
   - Skin hydration
   - Blood flow
   - Skin appendage density

2. Epidermal barrier function:
   - Inflammation
   - Hyperkeratosis
   - Climatic factors (Humidity)
   - Abrasion
   - Erosion

3. Pharmacologic factors:
   - Vehicle
   - Occlusivity

4. Application factors:
   - Frequency
   - Amount
   - Occlusion
   - Massage
   - Hydration
   - duration of application

Table II: Local (Cutaneous) side effects of topical steroids:

Acneiform eruption – folliculitis, rosacea
Perioral dermatitis
Atrophy
Skin fragility
Delayed wound healing
Gluteal granulomas
Purpura
Telangiectasia/erythema
Striae
Hypopigmentation
Hypertrichosis
Masking/aggravating dermatophyte/bacterial infection
Contact dermatitis from vehicle preservative or corticosteroid molecule

Table III: Dr English's Topical steroid's

CLASS	Trade	Generic	vehicle
Super-High			
	Ultravate	Halobetasol	cream/ointment
	Temovate	Clobetasol	cream/oint/gel
	Diprolene	Betamethasone Diproprionate	lotion/gel/oint
	Cordran tape	Flurandrenolide	occlusive tape
High			
	Cyclocort	Amcinonide	cream/oint/lotion
	Lidex	Fluocinolone	cream/ointment
Medium			
	Aristocort	Triamcinolone	cream/oint
	Valisone	Betamethasone Valerate	cream/oint
	Westcort	Hydrocortisone Valerate	cream/oint
	Kenalog	Triamcinolone	spray
Low			
	Tridesilon	desonide	cream/ointment
Lowest			
	Hytone	Hydrocortisone	cream/lotion/oint

Table IV: Non-Topical Steroid preparations for the treatment of dermatitis

A. General:

Short Acting/high mineral corticoid potency
- Cortisol (Cortef)
- Cortisone (Cortone acetate)

Intermediate acting/low mineralocorticoid potency
- Prednisone (Deltasone)
- Prednisolone (Delta-Cortef)
- Methylprednisolone (Medrol)
- Triamcinolone (Kenalog)

Long Acting/low mineralocorticoid potency
- Dexamethasone (Decadron)
- Betamethasone (Celestone)

B. Dermatologic uses:
- Intralesional:
  - Triamcinolone
    - 3mg/ml
    - 10mg/ml
- Intramuscular:
  - Triamcinolone
    - 40mg/ml
  - Betamethasone
    - 3mg/ml
- Oral:
  - Prednisone 1mg/kg/day
  - Medrol dose pack
- IV:
  - Methylprednisolone 10-20mg/kg
  - Dexamethasone 2-5mg/kg
  - Both infused over 30-60minutes once daily

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