

Family Medicine Review Course:
**Diagnosis & Management of
 Dermatitis**

Whitney A. High, MD, JD, MEng
 Associate Professor
 Dermatology & Pathology
 University of Colorado Health Sciences Center

Associate Editor, *Dermatitis*
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General Skin Care

“The Total Dermatitis Package”

- General skin care includes
 - Moisturizer/emollient use
 - Soap use
 - Overall bathing habits
- Instruction in skin care is important part of any treatment plan
- Pointless to provide a prescription for a topical steroid without discussing emollient use

Emollients

- Emollients essential as one ages
- Atopics in dry climates need generous moisturizers all the time
- Good moisturizers – potent & bland
 - White petrolatum
 - Major brands extensively tested
 - Crisco™ - cheap and potent
- Apply within minutes of bathing



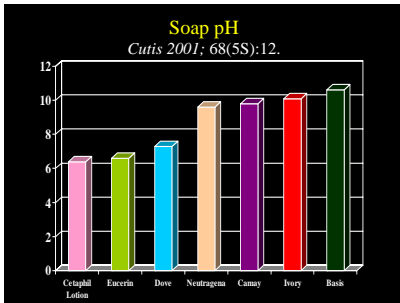
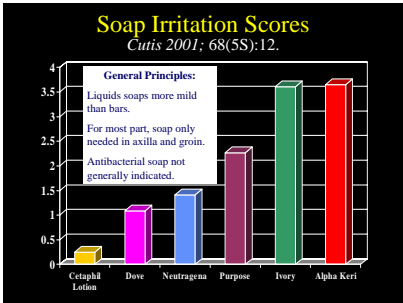
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Bathing Instructions

- Bathe once a day
- Shower or bath (not longer than 15 minutes)
- Turn down water temperature:
 - Many use hot water to “relieve” pruritus
 - Actually makes the problem worse!
 - “Use steam to degrease an engine...”
- Blot dry, don't rub dry

Soap

- Americans “over-soap”
- Only in axilla & groin
- Antibacterial soap virtually unnecessary

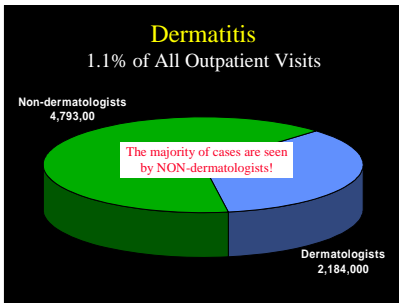
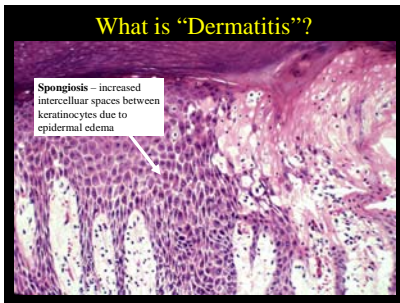



“Good” Soaps

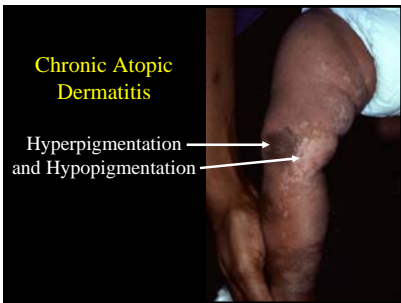
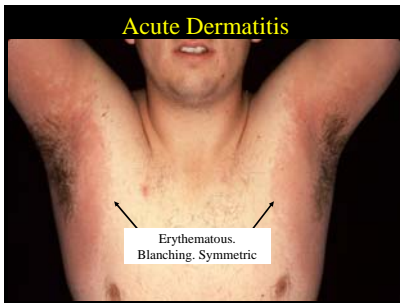


“Bad” Soaps





- ### Types of "Dermatitis"
- Allergic contact dermatitis
 - Irritant contact dermatitis
 - Atopic dermatitis ("eczema")
 - Nummular dermatitis
 - Seborrheic dermatitis
 - Exfoliative dermatitis
 - Dyshidrotic dermatitis (pompholyx)



- ### Allergic Contact Dermatitis Pathogenesis
- Topical allergens
 - More than 85,000 chemicals in the environment
 - More than 3,700 chemicals are known allergens
 - Type IV delayed type hypersensitivity reaction
 - Initial exposure - 5-21 days to sensitization
 - Subsequent exposure - 1-3 days to elicitation

Most Common Allergens

• Nickel	14.3%
• Quaternium-15 (preservative)	9.6%
• Neomycin	9.0%
• Formaldehyde (preservative)	7.8%
• Thiuram mix (rubber)	7.7%
• Balsam of Peru (fragrance mix)	7.5%
• P-phenylenediamine (hair products)	6.3%
• Carba mix (rubber)	4.8%

Allergic Contact Dermatitis Clinical Features

- Marked pruritus
- **Configurations**
 - Follows contact initially
 - Spreads beyond contact site later
- Erythema, induration, vesicles, bullae
- New lesions persist for up to 3 weeks!

Allergic Contact Dermatitis Elastic



Allergic Contact Dermatitis



Allergic Contact Dermatitis



Allergic Contact Dermatitis



Allergic Contact Dermatitis to Vitamin E



Photoallergic Contact Dermatitis

Spare the sun-protected
shadow areas



Allergic Contact Dermatitis "Medical Tape"



Allergic Contact Dermatitis Diagnosis

- Careful history
- Clinical presentation
- Biopsy - helpful but not specific
- Patch testing

Allergic Contact Dermatitis Treatment

- **Withdrawal** of offending agent(s)
- Topical corticosteroid (ointment)
- Antihistamines (sedation?)
 - Hydroxyzine (Atarax®) - moderate sedation
 - Cetirizine (Zyrtec®) - lesser sedation (? lesser efficacy)
 - Fexofenadine (Allegra®) - very little sedation (? lesser efficacy)
- Oral corticosteroids (don't undertreat poison ivy)

Principles of Corticosteroid Therapy

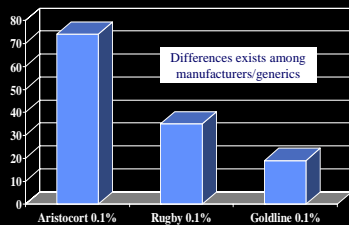
- Ointment>cream>gel>solution>spray
- Occlusion increases potency
- Once or twice a day
- Amount
 - 15 grams for whole body one time
- Absorption site dependent
 - Scrotum>cheek>scalp>back>forearm>palm>sole
- **AVOID** fluorinated steroids on face
- Superpotent steroids - **atrophy** in as few as 7 days

Topical Corticosteroid Potency

- Super potent (more than 1500 times > hydrocortisone)
 - Clobetasol (Temovate®)
 - Halobetasol (Ultravate®)
 - Betamethasone dipropionate (Diprolene®)
- High potency (100-500 times > hydrocortisone)
 - Amcinonide (Cyclocort®)
 - Fluocinonide (Lidex®)
- Mid potency (10-100 times > hydrocortisone)
 - Betamethasone valerate (Valisone®)
 - Fluciclonide (Synalar®)
 - Hydrocortisone valerate (Westcort®)
 - Mometasone furoate (Elocon®)
 - Triamcinolone (Kenalog®, Aristocort®)
- Low potency (1-10 times > hydrocortisone)
 - Aclometasone (Aclovate®)
 - Desonide (DesOwen®, Tridesilon®)
 - Hydrocortisone acetate (OTC)

Topical Corticosteroids

Vasoconstrictor Scores for Triamcinolone Ointment



Irritant Contact Dermatitis Pathogenesis

- Non-immunologic
- Direct toxic injury
- More common than allergic dermatitis (>70-80% all cases)
- Common causes
 - Soaps (bath soap, dishwashing liquids)
 - Cleansers (window cleansers, bathtub cleansers)
 - Alcohols
 - Glues/cements

Irritant Contact Dermatitis Clinical Features

- Strong irritants
 - Immediate burning and stinging
 - Erythema and edema
 - Vesiculation
- Mild irritants
 - Hours to days
 - Mild erythema
 - Scaling and fissuring

Irritant Dermatitis to Surgical Prep

Note drip marks!



Chronic Irritant Dermatitis to Soaps

Subtlety can be vexing to non-dermatologist!



Irritant Contact Dermatitis Diagnosis

- Clinical history
 - Strong irritants - diagnosis self-evident
 - Mild irritants - extensive history
- Clinical presentation
- Biopsies - usually not helpful
- Patch testing - useful only to exclude allergic contact dermatitis

Irritant Contact Dermatitis Treatment

- Withdrawal of offending irritant
- Withdrawal of other irritants (soaps)
- Moisturizers (Lachydrin®)
- Corticosteroids - mild to moderate

Atopic Dermatitis Epidemiology

- Atopy is inherited (70% pts with + FH)
- Atopic diathesis (classic triad)
 - Allergic rhinitis
 - Asthma
 - Atopic dermatitis
- Prevalence of atopy in US is around 17% (thought to be increasing)

Atopic Dermatitis Clinical Features

- Dermatitis
 - Erythema, excoriations, lichenification
 - Face/extensors in infants > flexural areas in adolescents/adults
 - Hand dermatitis in adults
- Xerosis
- Keratosis pilaris
- Ichthyosis vulgaris
- Dennie-Morgan lines
- Pityriasis alba

Infantile Atopic Dermatitis

Classic early facial involvement



Atopic Dermatitis

White Dermographism



Atopic Dermatitis Flexural



Atopic Dermatitis Flexural



Follicular Atopic Dermatitis



More common among African Americans.

- ### Keratosis Pilaris
- pervasive
 - stubborn
 - improves with age



Atopic Dermatitis Diagnosis

Three of four major criteria:

- Presence of pruritus
- Morphology and distribution for age group
- Chronic or relapsing dermatitis
- Personal or family history of atopy

Aggravating Factors in 2501 Children Atopic Dermatitis

Br J Dermatol 2004; 150: 1154-61.

• Sweating	42%
• Hot Weather	40%
• Fabrics (wool)	39%
• Illness	36%
• Dust	33%
• Sea swimming	30%
• Anxiety/stress	28%
• Cold weather	28%
• Animals	28%
• Grass	27%
• Soaps/shampoos	26%

Atopic Dermatitis Treatment

- Removal of irritants/triggers
- Food elimination diets controversial
 - (AAD position = not a significant cause)
- Lubrication - generous & bland
- Topical corticosteroids (mild to potent)
 - Alternatives = **tacrolimus** or **pimecrolimus**
- Oral antihistamines (hydroxyzine)

Excellent Moisturizers

- Vaseline® (no irritants)
- Cetaphil®
- Aquaphor® - white petrolatum + water
- Eucerin Plus® - mildest lactic acid formulation
 - Sodium lactate + urea
- AmLactin® (OTC)
 - 12% ammonium lactate
- LacHydrin® (prescription)
 - 12% ammonium lactate



What are “topical immunomodulators”?

- Protopic™ = tacrolimus *ointment* (0.03 or 0.1%)
- Elidel™ = pimecrolimus *cream*
- Non-steroidal
- Do not have same side-effects of steroids



How efficacious are immunomodulating agents?

- Protopic equal to low mid-potency steroid
- Elidel slightly weaker
- Neither particularly effective in conditions unresponsive to strong corticosteroids
- Advantage lies in lack of steroid side-effects
 - Striae and atrophy
 - Increased intraocular pressure
 - Telangiectasia
 - Dyspigmentation



What are the side-effects and drawbacks to immunomodulating agents?

- Burning in up to 20%
- “Anecdotal” increased risk of viral superinfection
- Reports of perioral dermatitis with use of face
- January 19, 2006
 - FDA announced “Black Box” warning
 - Note long-term safety is not established
 - Not for use in < 2 years
 - Possibly implicated in lymphoproliferative disease or sun-induced skin cancers (if used on sun-exposed skin)

WARNING

Long-term Safety of Topical Calcineurin Inhibitors Has Not Been Established

Although a causal relationship has not been established, rare cases of malignancy (e.g., skin and lymphomas) have been reported in patients treated with topical calcineurin inhibitors, including ELIDEL Cream.

Therefore:

- Continuous long-term use of topical calcineurin inhibitors, including ELIDEL Cream, in any age group should be avoided, and application limited to areas of involvement with atopic dermatitis.
- ELIDEL Cream is not indicated for use in children less than 2 years of age.

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- PROTOPIC Ointment is not indicated for use in children less than 2 years of age. Only 0.03% PROTOPIC Ointment is indicated for use in children 2-15 years of age.

In sum...

- Protopic and Elidel **ARE** useful!
- They **ARE NOT** a panacea!
- Chief advantage is lack of steroid side-effects
- Particularly useful for thin & fragile skin
- New “Black Box” warning mandates caution in:
 - Young children
 - Those with an immunosuppressive disorder
 - Those with a history of a lymphoproliferative disorder
 - Those with a history of sun-induced skin cancers

Nummular Dermatitis

Pathogenesis

- Pathogenesis unknown
- Associated with xerosis
 - Higher incidence in winter months and in dryer regions
- Disease worsened by irritants
- Staphylococci found in 95% of skin lesions
- Normal serum levels of IgE (differs from atopy)

Nummular Dermatitis

Clinical Presentation

- Usually older men (>50 years)
- Pruritic round to oval coin-shaped lesions
- Pinpoint vesicles, erosions and crusts
- Usually lower extremities
- Lichenification in chronic lesions

Nummular Dermatitis



Nummular Dermatitis



Nummular Dermatitis



Nummular Dermatitis

Diagnosis

- History
- Distribution
- Clinical presentation
- Biopsy - not diagnostic but can exclude mimics (tinea)

Nummular Dermatitis

Treatment

- Avoidance of irritants
- Lubrication
- Topical corticosteroids
- Antibiotics (controversial)
- Antihistamines
- Severe cases
 - Systemic corticosteroids
 - PUVA
- Anticipate relapses

Seborrheic Dermatitis

Pathogenesis

1. Pityrosporum theory?
 - Increased numbers of organisms
 - Response to antifungal therapy
 - Severe disease in HIV infection
2. Familial - aberrant immunological response to #1?
3. Dysregulated sebaceous function - yeast overgrowth incidental?

Seborrheic Dermatitis

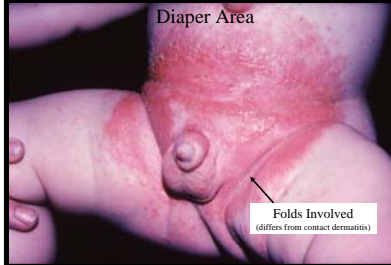
Clinical Features

- Infantile presentation
 - 2-10 weeks of age
 - Clears spontaneously by 12 months
 - “Cradle cap”
 - “Napkin” dermatitis
 - ? Less fussy than atopic infants

Infantile Seborrheic Dermatitis (Cradle Cap)



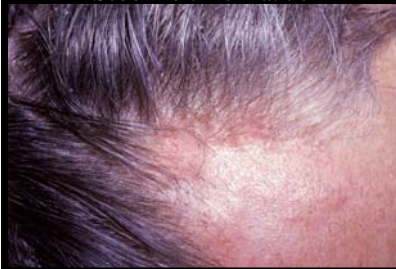
Seborrheic Dermatitis



Seborrheic Dermatitis Adult Presentation

- Appears after puberty
- “Seborrheic” distribution
 - scalp, eyebrows, eyelashes, nasolabial folds, auditory canal, auricular areas, presternal area, umbilicus, anogenital area
- Erythema with a white/yellow, greasy scale
- Pruritus varies from absent to severe

Seborrheic Dermatitis



Seborrheic Dermatitis

“Sebopsoriasis”



Seborrheic Dermatitis “Seborrhea Petaloides”



Seborrheic Dermatitis in African Americans



Seborrheic Dermatitis Diagnosis

- Clinical presentation
- Distribution
- Biopsy usually not indicated
 - Can be highly suggestive

Seborrheic Dermatitis Treatment

- Low potency steroids (HC 1-2.5%, desonide)
- Vytone® - expensive, but effective (HC + iodquinol)
- Topical imidazole (ketoconazole)
- Systemic imidazoles - Sporanox®
 - 200 mg/day x 7 days then 200 mg/day first 2 days each month
 - 19/28 with complete clearing at one year
 - Expensive & contraindicated in those with liver disease

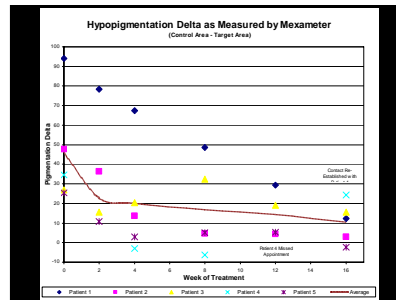
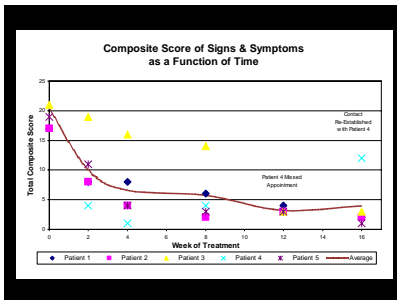
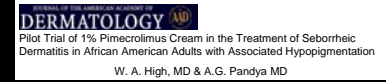
Seborrheic Dermatitis Hair Bearing Skin

- OTC anti-dandruff shampoos
- Keratolytic shampoos - Neutrogena T Sal®
- Ketoconazole shampoo (Nizoral®)
- Johnson & Johnson Baby Shampoo® - near eyes
- Steroid solutions - fluocinolone, fluocinonide
- Steroid foams - betamethasone (Luxiq®), clobetasol (Olux®), wonderful vehicles but expensive

Seborrheic Dermatitis Immunomodulators

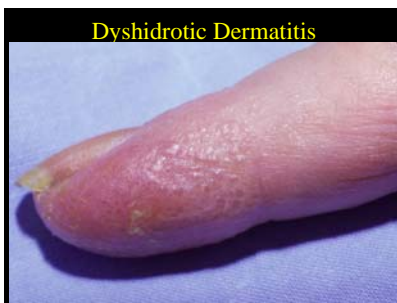
- Limited reports of efficacy of topical immunomodulators including:
 - pimecrolimus (Elidel®)
 - tacrolimus (Protopic®)
- I performed a study to investigate efficacy of pimecrolimus for seb derm in African Americans
- 16 week pilot trial in African American adults with using subjective and objective data (mexameter)

Would Elidel work in seborrheic dermatitis?
Would it be a "safer" choice for the face?



Dyshidrotic Dermatitis (Pompholyx)

- Pathogenesis
 - 50% patients with personal or family history of atopy
 - Higher than expected + nickel sensitivity
- Clinical features
 - Typically adults (often 20-50 y/o)
 - Pruritic small vesicles on lateral digits ("tapioca pearls")
 - Seasonal aggravation in some patients
 - Chronic and relapsing course ("waxes and wanes")
 - ? Worsened with stress (neuropeptide studies pending)



Dyshidrotic Hand Dermatitis Diagnosis

- Clinical history
 - Recurrent or chronic disease
 - Personal or family history of atopy
 - History of nickel allergy
- Clinical presentation
- Consider patch testing
- Biopsy - atypical cases, not diagnostic

Dyshidrotic Hand Dermatitis Treatment

- Withdrawal of irritants
 - Synthetic detergent soaps
 - Dishwashing soap - Palmolive Sensitive Skin®
- Lubrication - 1% dimethicone lotions (Thereseal®)
- Moderate to potent corticosteroids
 - Consider short term occlusion
- Consider anti-staphylococcal antibiotics
- Oral corticosteroids - short burst in severe cases
- Recalcitrant cases - PUVA, methotrexate, Grenz ray



Hand Moisturizers



- Chronic hand dermatitis
 - consider a barrier cream
 - 1% dimethicone
 - “ArmorAll” for the hands



Erythroderma



Erythroderma



Exfoliative Dermatitis/Erythroderma Clinical Presentation

- | | |
|--------------------------------|------|
| • Diffuse erythema and scaling | 100% |
| • Pruritus | 36% |
| • Malaise | 34% |
| • Palmar/plantar keratoderma | 34% |
| • Lymphadenopathy | 26% |

Exfoliative Dermatitis Pathogenesis in 236 Patients

- | | |
|-----------------------------|-----|
| • Idiopathic | 30% |
| • Drug-induced dermatitis | 28% |
| • Pre-existing skin disease | 25% |
| • Lymphoma/leukemia | 14% |
| • Atopic dermatitis | 10% |
| • Psoriasis | 8% |
| • Contact dermatitis | 3% |

Exfoliative Dermatitis/Erythroderma Diagnosis

- History - drug history, known skin disorder
- Clinical presentation
- Biopsy definitive in just 43% of cases
 - Useful to exclude cutaneous T-cell lymphoma
- CBC - striking eosinophilia favors drug

Exfoliative Dermatitis/Erythroderma Treatment

- 34% clear spontaneously (mean of 7 years)
- If diagnosis known - treat specific entity
- Idiopathic
 - lubrication
 - topical corticosteroids
 - oral antihistamines
 - oral prednisone (rarely)
 - UVB or PUVA therapy

Thank you.



Questions or Comments?