



If It's Dry, Wet It; If It's Wet, Dry It: A Commonsense Guide to Dermatologic Therapy

Pharmacologic management of dermatologic conditions isn't really that simple. This presentation will review classes of dermatologic pharmacology, including not only emollients, drying agents, and steroids, but also other treatments such as antibiotics, antifungal agents, antivirals, chemotherapeutic agents, immunomodulators, and other treatments for common cutaneous conditions. Learn what to use and what complications might develop.

- Review standard treatment regimens for common skin conditions.
- Discuss recent advances in treatment of common cutaneous conditions.
- List common pharmaceutical agents used in therapy of cutaneous conditions.
- Identify patients in need of referral to a dermatologist.

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“If It’s Dry, Wet It: If It’s Wet, Dry It; Otherwise, Use Steroids”...?

A Commonsense Guide to Dermatologic Therapy”

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Objectives:

1. Review standard treatment regimens for common skin conditions.
2. Discuss recent advances in treatment of common cutaneous conditions.
3. List common pharmaceutical agents used in therapy of cutaneous conditions.
4. Identify patients in need of dermatologic referral or consultation.

Introduction

Skin diseases constitute a significant fraction of health care economics in the United States. Cutaneous complaints result in approximately 10% of outpatient medical visits and \$36 billion in health care annually, including \$20 billion in ambulatory care costs and \$3 billion in prescription costs, and \$2 billion in indirect costs (lost work days, etc.). Rapidly advancing diagnostic and therapeutic technologies result in novel dermatologic agents, and novel uses of traditional agents.

Is there truth to the old adage: “ If It’s Dry, Wet It; If It’s Wet, Dry It; Otherwise, Use Steroids” ??? Indeed, there is some truth to the ancient advice that selection of vehicle and formulation are important, and that steroids are frequently therapeutic for inflammatory skin conditions. In addition to a review of vehicles, formulations, and steroids, this lecture will address other commonly prescribed systemic and topical medications used to treat dermatologic disorders.

There is an overwhelming amount of literature on the subject of skin therapies (66,411 published articles in the past 10 years!). This presentation will highlight a select group of therapies for dermatologic complaints seen in emergency medicine. Continuing medical education about new therapies represents an essential component of the effective delivery of quality medical care. Dermatologic consultation should be sought when appropriate. Pharmaceutical references should be used to assist in prescribing appropriate dosages and routes of administration.

I. OVERVIEW: CATEGORIES OF DERMATOLOGIC THERAPEUTIC AGENTS

Systemic	Topical	Mucosal and Intralesional agents	Photodynamic therapy
Antibacterial agents	Antibacterial agents	Corticosteroids	PUVA photochemotherapy
Antifungal agents	Antifungal agents	Topical and local anesthetics	Extracorporeal photochemotherapy
Antiviral agents	Antiviral agents	Antifungal agents	Photodynamic therapy
Corticosteroids	Antiparasitic agents	Antiviral agents	
Antiproliferative drugs	Corticosteroids	Antimicrobial agents	
Antihistamines	Retinoids	Chemotherapeutic agents	
Immunoglobulin therapy	Alpha-hydroxy acids	Botulinum toxin	
	Calcineurin inhibitors		
	Chemotherapeutic Agents		
	Vitamin D3		
	Sunscreens		

II. VEHICLES FOR TOPICAL DERMATOLOGIC AGENTS

Case 1:

A 35 year old man with longstanding psoriasis presents with an exacerbation of symptoms. He requests “that new foam – it’s better than the cream, isn’t it?”

A. Emollients

1. Most effective: petrolatum, mineral oil, baby oil (Eucerin, Aquaphor, Vaseline, etc.)
2. Also effective: glycerin, lanolin, etc.
3. Least effective: “moisturizers” (primarily water, fragrances)
4. Retard water loss, occlude the treatment molecules, increase skin flexibility
5. Ointments, creams and gels: emulsions of oil in water

B. Foams

1. Increase even distribution and absorption
2. More expensive

C. Emulsifying agents

1. wax, lanolin, etc.
2. Create oil-in-water preparations (creams, lotions)

D. Humectants

1. glycerin, propylene glycol, lactic acid, etc.
2. maintain appropriate water content for oil-in-water preparations; increase skin’s ability to hold water

E. Emulsion stabilizers and viscosity builders

1. carbomer, alcohols, etc.

F. Thickening agents

1. wax, gums, etc.

G. Solvents

1. alcohol, glycerin, propylene glycol, etc.
2. Create less viscous products (lotions, gels, sprays)
3. Increase potency by increasing absorption

H. Preservatives and chemical stabilizers

1. Alcohols, parabens, propylene glycol, etc.

I. Powders

1. talc, cellulose, etc.
2. promote drying

J. CHOICE OF PREPARATION:

1. To treat dry conditions (eczema, psoriasis, etc.):
 - a. Emollients (ointment > cream > lotion)
2. To treat moist conditions (contact dermatitis, infections, etc.)
 - a. Gels or solutions or powders, Burrow's emulsion
3. To increase potency:
 - a. Emollients or solvents; apply under occlusion
4. To aid in application (scalp, hirsute areas, difficult to reach areas):
 - a. Consider foams, sprays, or lotions
5. Patient preference and compliance linked more closely to outcomes than exact preparation, in some studies

III. GENERIC OR TRADE?

Generic drugs must meet FDA specifications as equivalent and are usually less expensive. However, vehicle variations are permissible and may affect clinical efficacy.

IV. HOW MUCH IS ENOUGH?

1. 1 gram covers 100 cm² (10 cm x 10 cm)
2. Average total body coverage: 22 grams
3. 1 FTU (fingertip unit) dispenses 0.5 grams (will cover 2 closed hand areas)

4. Face or neck, single application: 1 g
5. Trunk, single application (either front or back): 3 g
6. Arm, single application: 1.5 g
7. Hand, single application: 0.5 g
8. Entire body, single application: 20-30 g
9. to cover one arm, bid for 1 week: 42 grams
10. to cover entire body, bid for 1 week: 400-800 grams

V. STEROIDS: TOPICAL AND SYSTEMIC

Case 2:

A 25 yo female presents with chronic complaints of dry, itchy skin on her inner elbows and backs of her knees. The rash is worse with stress.

Diagnosis: ECZEMA

A. TOPICAL STEROIDS

1. Mechanisms of action of topical corticosteroids:
 - a. anti-inflammatory effects
 - b. antiproliferative effects on fibroblasts and collagen
 - c. reduction of leukocyte adhesion to capillary
 - d. reduction of capillary wall permeability
 - e. reduction of complement components
 - f. antagonism of histamine activity
 - g. suppression of arachidonic acid release

2. Adverse effects: (incidence increased in pediatrics)
 - a. skin atrophy
 - b. striae
 - c. acneform lesions

- d. pigment changes
 - e. telangectasia
 - f. rosacea
 - g. HPA suppression from systemic absorption (med, high potency)
 - h. Exacerbation of fungal infections, viral infections
 - i. delayed wound healing
3. Newer agents: Adequate anti-inflammatory effects with reduced adverse effects, typically one daily application, reduced atrophogenicity
- a. Mometasone furoate (Elocon)
 - b. Prednicarbate (Dermatop)
 - c. Methylprednisolone aceponate (Advantan)
 - d. Alclometasone dipropionate (Aclovate)
 - e. Clobetasol priopionate (Clobex): super high-potency
Approved for psoriasis
Risk of HPA suppression
Spray, lotion, shampoo
 - f. Fluticasone propionate (Flutivate)
4. Principles of Topical Steroid Therapy
- a. Select appropriate potency: use least potent preparation effective (33-50% of patients can be managed with low-med potency agents)
 - b. Use lower potency preparations for face, eyelids, axillae, groin
 - c. Select appropriate vehicle
 - d. No data to support use more frequently than qd
 - e. Tachyphylaxis may occur within one week (may use treatment-free intervals during long term therapy)
 - f. Use occlusive therapy for inflamed, thickened skin

TOPICAL STEROIDS*

Potency	Agent	Notes	Trade Name	Strength	Vehicle
Super High	Betamethasone dipropionate	\$	Diprolene	0.05%	Ointment, gel
	Clobetasol propionate	#	Olux, Temovate	0.05	Cream, lotion, ointment, gel, foam, shampoo, spray
	Halobetasol propionate		Ultravate	0.05	Cream, ointment
High	Betamethasone dipropionate	\$	Diprolene AF	0.05	Cream
	Desoximetasone		Topicort	0.025	Cream, ointment, gel
	Fluocinonide	\$	Lidex	0.05	Cream, gel, ointment
	Halcinonide		Halog	0.1	Cream, ointment
	Mometasone	#	Elocon	0.1	Ointment
	Fluticasone propionate	#	Flutivate	0.05, 0.005	Ointment, cream
	Prednicarbate	#	Dermatop	0.025, 0.05, 1%	Cream
	Methylprednisolone aceponate	#	Advantan	0.1%	Ointment, cream, emulsion, solution
	Triamcinolone	\$	(generic)	0.5	Ointment
	Amcinonide	\$	Cyclocort	0.1	Lotion, cream
	Diflorasone		Florone, Maxiflor	0.05	ointment
	Medium-high	Betamethasone	\$	Alphatrex	0.05
Betamethasone		\$	Luxiq	0.12%	Foam
Diflorasone diacetate			Maxiflor	0.05	Cream
Triamcinolone acetonide		\$	Aristocort, Kenalog	0.1, 0.5	Ointment
Medium	Fluocinolone acetonide	\$	Synalar	0.025	Ointment
	Hydrocortisone valerate	\$	Westcort	0.1	Ointment
	Clocortolone		Cloderm	0.1	Cream
Low	Betamethasone valerate	\$	Betatrex	0.1	lotion
	Fluocinolone acetonide	\$	Synalar	0.01	Cream, solution
	Triamcinolone acetonide	\$	Aristocort, Kenalog	0.025	Cream, lotion
	Desonide	\$	DesOwen, Tridesilon	0.05	cream, ointment
Lowest	Hydrocortisone	\$	(generic)	0.5, 1, 2.5	Cream, lotion, ointment

* This table contains selected topical steroids and is not exhaustive.

newer agents with lower atrophy and other adverse effects

\$ affordable agents (<\$30 /30 g, generic)

B. SYSTEMIC STEROIDS

1. Mechanisms of action:
 - a. anti-inflammatory effects
 - b. antiproliferative effects on fibroblasts and collagen
 - c. reduction of leukocyte adhesion to capillary
 - d. reduction of capillary wall permeability
 - e. reduction of complement components
 - f. antagonism of histamine activity
 - g. suppression of arachidonic acid release

2. Adverse effects:
 - a. endocrine: suppression of hypothalamic-pituitary-adrenal axis
 - b. dermatologic: skin atrophy, striae, acne, rosacea, telangectasia, lanugo
 - c. metabolic: hyperglycemia, hyperlipidemia, inhibition of wound healing
 - d. immunologic: immunosuppression, exacerbation of infections, TB
 - e. cardiovascular: HTN, sodium retention, atherosclerosis
 - f. GI: liver infiltration, nausea, pancreatitis, PUD
 - g. psychosis
 - h. orthopedic: osteoporosis, aseptic necrosis
 - i. ocular: glaucoma, cataracts
 - j. musculoskeletal: myopathy

3. Contraindications
 - a. Absolute: ocular herpes simplex, untreated tuberculosis
 - b. Relative: infection, pregnancy, DM, HTN, PUD, psychosis, renal insufficiency, CHF, diverticulitis, osteoporosis, glaucoma

4. Treatment principles:
 - a. Use once-daily therapy if appropriate, AM dose to reduce cortisol secretion suppression
 - b. Treat for 1-3 weeks for most dermatologic conditions to prevent rebound

VI. ANTI-INFECTIVE AGENTS

A. ANTIBACTERIAL AGENTS

Case 3:

An 18 year old male football player presents with redness and swelling of left forearm.

Diagnosis: METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA)

A. Clinical findings:

1. Skin and soft tissue infections (77%)
2. Cellulitis
3. Abscess
4. Invasive: Bacteremia, pneumonia, osteomyelitis, septic arthritis, necrotizing fasciitis

C. Treatment options:

	<u>Drug</u>	<u>% susceptible*</u>
1.	Vancomycin	100
2.	Rifampin	98
3.	Gentamicin	97
4.	TMP/SMX	97
5.	Linezolid#	96
6.	Tetracycline	88
7.	Clindamycin	87
8.	Ciprofloxacin	65

*NCID, CDC data: Fridkin et al, 2005.

>\$1000/treatment course

1. Systemic Antibacterial agents commonly used to treat skin infections

- a. Tetracycline
- b. Doxycycline
- c. Minocycline
- d. Erythromycin
- e. Trimethoprim-sulfamethoxazole
- f. Vancomycin (IV, effective against MRSA)
- g. Linezolid (IV, po, effective against MRSA)
- h. Dalbavancin (IV, effective against MRSA)

2. Topical antibacterial agents

- a. Clindamycin (Cleocin, Clindagel, etc.) (active against
- b. Erythromycin (EryDerm, Emgel, etc.)
- c. Metronidazole (Metrocream, MetroGel, etc.)
- d. Sodium sulfacetamide (Novacet, Sulfacet-R, etc.)
- e. Neomycin (active against staphylococcus; 1% of population allergic)

- f. Bacitracin (active against streptococcus)
- g. Polymixin B (active against gram negative organisms, inc. Pseudomonas)
- h. Gentamicin (active against gram negative, Pseudomonas, strep, staph)
- i. Mupirocin (Bactroban) (active against staph, strep)
- j. Combination agents (synergistic mechanism of action)
 - 1. Neosporin (neomycin, polymixin B, bacitracin)
(recognize: 1% of population allergic to neomycin)
 - 2. Polysporin (polymixin B, bacitracin)
- k. Silver sulfadiazine (Silvadene)
 - 1. Active against gram positive, gram negative, anaerobes, Candida
 - 2. Commonly used to treat burns
 - 3. May cause skin discoloration (not used on face)
- l. Retapamulin (Altabax)
 - 1. active against staphylococcal, streptococcal, species
 - 2. effective against impetigo

B. ANTIVIRAL AGENTS

Case 4:

A 21 year old woman presents with recurrent episodes of “cold sores” on lip, exacerbated during times of stress or illness.

Diagnosis: Herpes simplex labialis

1. Systemic antiviral agents

- a. Acyclovir (oral or topical) (Zovirax) (least expensive option)
HSV: 400 mg po tid
HZV: 800 mg po five times daily
- b. Famciclovir (Famvir)
HSV: 250 mg po tid
HZV: 500 mg po tid (superior to acyclovir for reducing PHN and pain)
- c. Valaciclovir (Valtrex)
HSV: 1 g po bid
HZV: 1 g po tid (superior to acyclovir for reducing PHN and pain)
Contraindicated in immunocompromised pts (TTP, HUS)
- d. Penciclovir (Denivir)
- e. Docosanol (Abreva)

2. Topical antiviral agents

- a. Acyclovir 5% (Zovirax) (Rx for initial herpes genitalis, herpes labialis)
- b. Penciclovir 1% (Denavir) (Rx of recurrent herpes labialis)
- c. Vidarabine 3% ophth ointment (Vira – A) (Rx for herpes keratitis)
- d. trifluridine 1% ophth solution (Viroptic) (Rx for herpes keratitis)

C. ANTIFUNGAL AGENTS: Systemic and topical agents

1. Polyenes: bind to fungal wall membrane, loss of membrane integrity

- a. Amphotericin B (IV, topical)
 - I. Formulations:
 - A. Amphotericin B deoxycholate (traditional)
 - B. Amphotericin B lipid complex (Abelcet)
 - C. Liposomal Amphotericin B (AmBisome)
 - D. Amphotericin B colloidal dispersion (Amphotec)
 - II. Effective against :
Aspergillosis
Blastomycosis
Candidiasis
Coccidiomycosis
Cryptococcosis
Histoplasmosis
Sporotrichosis, etc.
 - III. Adverse effects:
 - A. Infusion related reactions:
 1. Fever, chills
 2. Headache
 3. Nausea, vomiting
 4. Hypotension
 5. Tachypnea
(Above decreased with pretreatment with acetaminophen, diphenhydramine)
 - B. Nephrotoxicity
 - C. Thrombocytopenia
 - D. Cardiotoxicity
- b. Nystatin (currently available as topical only)

2. Azoles

- a. Systemic agents:
 - I. Fluconazole (Diflucan, etc.): po or iv
Effective against Candida, Cryptococcus, not molds
Adverse effects: GI distress, rash
 - II. Itraconazole (sporanox): po or iv; does not cross blood-brain barrier
Effective against Aspergillus, Cryptococcus, Blastomyces, Coccidioides, Histoplasma, Sporothrix, Dermatophytes, Candida
Adverse effects: nausea, GI distress, rash, hepatic toxicity, hypokalemia, hypertension, CHF, thrombocytopenia
 - III. Voriconazole (Vfend)
Effective against Aspergillus, Cryptococcus, Blastomyces, Coccidioides, Histoplasma, Sporothrix, Dermatophytes, Candida, Mucor
Adverse effects: visual disturbances, hallucinations, rash, hepatic toxicity
 - IV. Ketoconazole (Nizoral, etc.)
Now rarely used due to worse adverse effect profile (N/V, rash, hepatic toxicity)

3. Echinocandins (inhibit cell wall synthesis)

- a. Capsosungin (Cancidas): effective against Candida, Aspergillus

4. Allylamines

a. Terbinafine (Lamisil) : po or topical

- I. Effective against dermatophytes, esp. onychomycosis
- II. Adverse effects: headache, GI distress, rash, urticaria, TEN, EM
- III. 4 week treatment regimen for tinea capitis

5. Griseofulvin: oral only

- I. Effective against dermatophytes (e.g. Tinea capitis) (not yeast)
- II. Adverse effects: GI, HA, lupus flares, porphyria, granulocytopenia, hepatotoxicity
- III. 6-8 week treatment regimen for tinea capitis

Table: Summary of Systemic Antifungal Drug Therapy

<u>Infection</u>	<u>Treatment</u>	<u>Dose</u>
Aspergillosis	Amphotericin B	1-1/5 mg/kg/d
	Voriconazole	6 mg IV q 12
Blastomycosis	Itraconazole	200 mg po bid
	Amphotericin B	0.5-1 mg/kg/d
Candidiasis (oral, esophageal)	Fluconazole	200 mg x 1, 100 mg po qd
	Amphotericin B	0.3-0.5 mg/kg/d
	Caspofungin	50 mg IV qd
	Fluconazole	150 mg po x 1
Candidiasis (vaginal)	Topical therapies	
	Fluconazole	200 mg iv or po qd
Candidiasis (urinary)	Fluconazole	200 mg iv or po qd
	Amphotericin B	0.3-0.5 mg/kg/d

Table: Summary of Topical Antifungal Drug Therapy

<u>Infection</u>	<u>Treatment</u>
Dermatophytes	Terbinafine (Lamisil)
	Clotrimazole (Lotrimin)
	Econazole (Spectazole)
	Miconazole (Monistat)
Yeasts	Clotrimazole
	Econazole
	Miconazole
	Amphotericin B (Fungizone)
	Nystatin (Mycostatin)

4. ANTIPARASITIC AGENTS

- a. Permethrin (Elimite, Nix):
 - I. pediculocide and scabicide; resistance developing in some areas
 - II. 5% cream, 1% lotion, 1% liquid
 - III. 90% cure rate after single application
 - IV. Apply to entire body neck and below 8-14 hours, rinse

- b. Malathione (Ovide)
 - I. Considered treatment of choice for pediculosis capitis
 - II. Pediculocide only

- c. Pyrethrin (Lacid, RID)
 - I. pediculocide only
 - II. 0.3% gel, 0.3% lotion, .33% mousse or shampoo

- d. Ivermectin (Stromectol)
 - I. Indicated for scabies failing topical therapy, strongyloidiasis, onchocerciasis
 - II. 200 ug/kg single dose (ex. 14 g)

- e. Benzyl benzoate
 - I. pediculocide and scabicide
 - II. 20-25% topical
 - III. used widely in developing countries
 - IV. veterinary preparation only available in US

- f. Crotamiton (Eurax)
 - I. Scabicide only
 - II. Less effective than permethrin, lindane

- g. Lindane (Kwell)
 - I. pediculocide and scabicide
 - II. 45-70% cure rate; some resistance developing
 - III. CNS toxicity, bone marrow suppression

- h. Petrolatum, physostigmine ophthalmic ointment
 - I. Effective for eyelashes pediculosis infestation

VII. OTHER THERAPEUTIC AGENTS

A. ANTIHISTAMINES

1. H1 antihistamines (indicated for acute urticaria, seasonal rhinitis, allergic cutaneous reactions)
 - a. Ethanolamine derivatives
 1. High incidence of sedation
 2. diphenhydramine (po, cream, gel, lotion, spray)
 3. dimenhydrinate (Dramamine)
 4. clemastine fumarate (Tavist)
 - b. Ethylenediamine derivatives
 1. High incidence of sedation
 2. pyrilamine maleate (Triaminic)
 3. methapyrilene hydrochloride (Histadyl)
 - c. Piperazine antihistamines
 1. High incidence of sedation
 2. Drug of choice: dermatographism, cholinergic urticaria
 3. Hydroxyzine hydrochloride (Atarax)
 4. hydroxyzine pamoate (Vistaril)
 5. meclizine hydrochloride (Antivert)
 - d. Alkylamine derivatives
 1. Brompheniramine maleate (Dimetapp, etc.)
 2. Chlorpheniramine maleate (Allerest, etc.)
 - e. Phenothiazine derivatives
 1. Often sedating
 2. Promethazine hydrochloride (Phenergan)
 - f. Nonsedating H1 antihistamines
 1. Indicated for allergic rhinitis, chronic urticaria
 2. Fexofenadine (Allegra)
Adverse effects: Prolonged QT, syncope, ventricular arrhythmias
 3. Loratadine (Claritin)
Adverse effects: fewer adverse cardiac effects
 4. Cetirizine (Zyrtec): fewer adverse cardiac effects
2. H2 antihistamines (indicated for peptic ulcer disease, or in combination with H1 antihistamines)

B. ANTIPROLIFERATIVE AND IMMUNOMODULATORY DRUGS

Case 5:

A 19 year old man presents with severe facial acne.

- a. Alpha- hydroxy acids
- b. Imiquimod (Aldara): Rx for actinic ke
- c. Methotrexate
- d. Cyclosporine
- e. Retinoids (Retin-A, tazarotene)
increased turnover of follicular epithelium, interference of P. acnes
exoproducts, inhibition of inflammatory reactions
- f. Chemotherapeutic agents
(5-fluorouracil, mechlorethamine, carmustine)
- g. Calcineurin inhibitors (tacrolimus, pimecrolimus)
- h. Topical Vitamin D3 (calcipotriene)

C. TOPICAL ANALGESIC/ANTIPRURITIC AGENTS

1. Camphor
2. Menthol
3. Phenol
4. Local anesthetics
5. Capsaicin
6. Salicylic acid
7. Calamine lotion

D. SUNSCREENS

1. SPF: Dose of UVR required to produce one MED (minimal erythema dose) on protected skin after the application of 2 mg/cm², divided by the UVR required to produce one MED on unprotected skin.
 - a. SPF 2 = 50% protection
 - b. SPF 15 = 93% protection
 - c. SPC 34 = 97% protection
2. Types of sunscreens:
 - a. Physical blockers (zinc oxide, titanium dioxide, etc.)
 - b. UVA blockers (meradimate, parsol 1789, etc.)
 - c. UVB blockers (octinoxate, cinoxate, etc.)
3. Inadequate application common; application should be 0.5 mm layer, reapplied every 20-90 minutes, should be worn year-round.

E. TOPICAL ANESTHETICS

1. Eutectic mixture of local anesthetics (EMLA): lidocaine, prilocaine
 - a. 1-2 hour onset of action
 - b. use under occlusion
2. LMX (liposomal-encapsulated lidocaine)
 - a. 15-45 minutes onset of action
3. Betacaine gel
 - a. 30-35 minutes onset of action
4. Lidocaine HCl (cream, gel, ointment, jelly, patch, solution, jelly)
 - a. 5-10 minutes onset of action
 - b. duration of action 1 week

VIII. COMPLEMENTARY AND ALTERNATIVE THERAPIES

- A. Increases in popularity:
 1. Estimated over 600 million alternative medicine visits annually (exceeds primary care visits)
 2. Over \$20 billion spent annually
 3. 50% of the population uses some form of alternative medicine
 4. Many patients do not share this information with physicians
 5. Often used after failure of conventional therapies or seeking fewer side effects, “natural” therapies
- B. Efficacy: largely based on case reports and case series; randomized controlled trials lacking
- C. Acupuncture: reports exist of success in treating:
 1. Acne
 2. Psoriasis
 3. Atopic dermatitis
 4. Postherpetic neuralgia
 5. Urticaria
- D. Herbal Therapy: reports exist of success in treating:
 1. Psoriasis
 2. Atopic dermatitis
 3. Adverse effects: hepatotoxicity, cardiotoxicity, respiratory distress, fatalities

- E. Aloe Vera: reports exist of success in treating:
 - 1. Burn therapy
 - 2. Psoriasis

- F. Capsaicin: reports exist of success in treating:
 - 1. Psoriasis
 - 2. Postherpetic neuralgia

- G. Biofeedback (useful to diseases with ANS component) : reports exist of success in treating:
 - 1. Hyperhidrosis
 - 2. Raynaud's disease

- H. Cognitive-behavioral therapy (useful in diseases with behavioral components) : reports exist of success in treating:
 - 1. Acne excoriee
 - 2. atopic dermatitis
 - 3. lichen simplex chronicus
 - 4. neurodermatitis

- I. Hypnotherapy: reports exist of success in treating:
 - 1. Acne excoriee
 - 2. Alopecia areata
 - 3. Atopic dermatitis
 - 4. Lichen planus
 - 5. Neurodermatitis
 - 6. Nummular dermatitis
 - 7. Postherpetic neuralgia
 - 8. Pruritis
 - 9. Psoriasis
 - 10. Rosacea
 - 11. Urticaria

- J. Homeopathy (high dilutions of drugs that induce symptoms): reports exist of success in treating:
 - 1. Verruca vulgaris
 - 2. Acne
 - 3. Rosacea
 - 4. Eczema

CASE STUDIES IN DERMATOLOGIC THERAPEUTICS

1. “ITCHY AND SCRATCHY”

A 25-year-old woman presents with itchy rash, after running through a field.

Diagnosis: Toxicodendron dermatitis

Treatment concepts:

1. Topical steroids
2. Consider systemic steroids
3. Systemic antipruritics

Sample regimen:

1. Triamcinolone 0.025% topical
2. Calamine lotion, topical
3. Hydroxyzine 25 mg po tid
4. Dermatologic or primary care follow-up within 48 hours

2. “RASH DECISIONS”

A 35-year-old man presents with rash on his torso and arms.

Diagnosis: Tinea corporis

Treatment concepts:

1. Topical antifungals
2. Systemic antipruritics

Sample regimen:

1. Clotrimazole 1% topical bid
2. Hydroxyzine 25 mg po tid
3. Dermatologic or primary care follow-up within 48 hours

3. “SEEING RED”

A 45-year-old woman presents with target lesions on arms after taking sulfa antibiotics.

Diagnosis: Erythema multiforme

Treatment concepts:

1. Eliminate causative agent
2. Systemic antipruritics
3. Consider systemic steroids

Sample regimen:

1. Discontinue sulfa drug
2. Hydroxyzine 25 mg po tid
3. Dermatologic follow-up within 48 hours

4. “THE BIG TOP”

A 12-year-old boy presents with patchy hair loss, scalp inflammation and broken hairs.

Diagnosis: Tinea capitis

Treatment concepts:

1. Systemic antifungal agents 4-8 weeks
2. Consider antibiotics if kerion develops

Sample regimen:

1. Lamisil 250 mg po qd x 4 weeks
2. Dermatologic or primary care follow-up within 2 weeks

5. “CHEAPER BY THE DOZEN”

A 21-year-old man presents with longstanding intermittent rash on back, arms, and legs.

Diagnosis: Psoriasis

Clinical Features: chronic condition with sharply demarcated erythematous plaques with silvery scales on extensor surfaces

Therapeutic concepts:

1. Topical therapies: tars, emollients
2. Topical steroids
3. Systemic therapies: steroids, retinoids, methotrexate
4. Topical retinoids
5. Topical vitamin D₃ analogues
6. immunosuppressive agents
7. UVA phototherapy (RePUVA) or UVB phototherapy
8. Biologic-immune response modifiers

Sample regimen:

1. Clobetasol foam 0.05% qhs
2. Calcipotriene ointment 0.005% bid
3. Dermatologic follow-up within 1 week

6. “GROWING LIKE A WEED”

A 72-year-old man presents with scaling and irritation of his forehead and scalp.

Diagnosis: Actinic keratosis

Treatment concepts:

1. Topical chemotherapeutic agents
2. Topical immunomodulator therapy (ex. Imiquimod)
3. Cryotherapy

Sample regimen:

1. Dermatologic follow-up within 1 week

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