Interesting Cases in Dermatology:

Clinical Pearls for Primary Care Providers

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Disclosures

- Disclosures
  - Speakers' Bureau
    - Castle Biosciences
    - DUSA Pharmaceuticals
    - Celgene Corporation
  - Off Label Discussion

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Objectives

- Understand the clinical presentations of different skin diseases.
- Develop a treatment plan for common dermatologic conditions.
- Integrate new therapies and pearls for dermatologic diseases into daily practice.

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What is your diagnosis?

A. Leiomyomas
B. Acne
C. Xanthomas
D. Sebaceous hyperplasia

Cutaneous Leiomyomas

- Etiology
  - Arrector pili muscle of the pilosebaceous unit in the skin
- Clinical Presentation
  - Extremities
  - Small, smooth-surfaced, skin-colored or pinkish-brown, solitary and/or multiple papules or nodules that range from 0.2 to 2.0 cm in diameter
- Treatment
  - Excision
  - Pain management

Reed Syndrome

- Etiology
  - AD, Fumurate hydratase gene mutation
- Clinical Presentation
  - Multiple cutaneous and uterine leiomyomatosis
  - Associated with renal carcinoma, possible carcinoid
- Treatment
  - Genetics referral
  - Gynecologic, renal surveillance
  - Surgical removal
  - Pain management

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Adult Female Acne

- Etiology
  - Hormones, stress, genetic factors
  - Medication induced
  - Hyperandrogenism
- Clinical Presentation
  - Lower 1/3 of the face
- Treatment
  - Off label: spironolactone
  - OCPs
  - Isotretinoin
  - Antibiotics
  - Topicals

Acne Pathophysiology

- Four primary pathogenic factors
  - Sebum production by the sebaceous gland
  - *P. acnes* follicular colonization
  - Alteration in the keratinization process
  - Release of inflammatory mediators into the skin
- Other factors
  - Androgens, stress, occupational exposure, underlying metabolic abnormalities
- Treatment should target these pathogenic factors

Thiboutot D, et al. New insights into the management of acne: An update from the Global Alliance to Improve Outcomes in Acne Group. *J Am Acad Dermatol* 2009;60:S1-50.

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Acne…More than Skin Deep

- Drug Reactions
  - Lithium
  - Isoniazid
  - EGFR inhibitors
- Hyperandrogenism States
  - HAIR-AN Syndrome
  - Congenital adrenal hyperplasia
  - Adrenal tumor
  - Ovarian tumor
  - PCOS

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Laboratory Evaluation

- Laboratory Evaluation
  - Serum βhCG, Hb A1C, Fasting glucose
  - Free and total testosterone
  - DHEAS, LH, FSH
  - 17-hydroxyprogesterone
  - AM Cortisol level
- Interpretation
  - ↑ Total testosterone = Ovarian source
    - Testosterone 150-200ng/dl + ↑ LH:FSH = PCOS
    - Testosterone > 200ng/nl = OVARIAN TUMOR
  - ↑ DHEAS or 17-hydroxyprogesterone = Adrenal source
    - DHEAS 4000-8000ng/ml or 17-hydroxyprogesterone > 3ng/ml = CONGENTIAL ADRENAL HYPERPLASIA
    - DHEAS > 8000 NG/ML +/- ↑ testosterone = ADRENAL TUMOR

Zaenglein AL and Thiboutot, DM. Acne Vulgaris. In: Bolognia J, Jorizzo JL, Rapini RP, editors. Dermatology, 2nd Edition. Spain: Elsevier, 2007. p. 495-508.

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Treatment

- Approach should be multi-therapy, not monotherapy
- Topicals
  - Antibiotics
  - Retinoids
  - Benzoyl peroxide
  - Combination therapies
  - Other therapies
- Oral therapy
  - Antibiotics
  - Isotretinoin
  - Anti-androgen therapy
  - OCPs
- Adjunctive therapy
  - Chemical peels
  - Scar treatment

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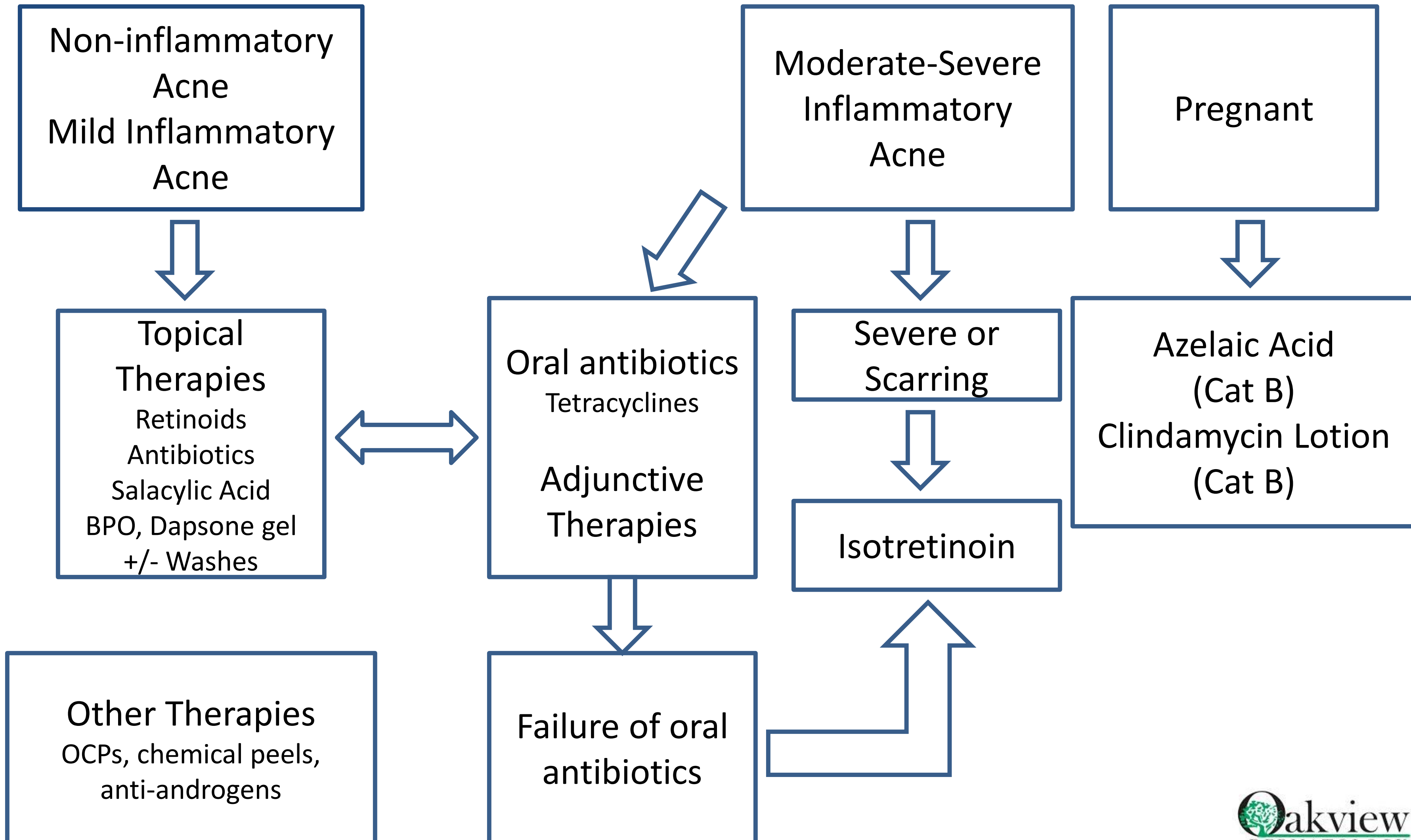
Treatment Approach



Hormonal Therapy

- FDA-approved OCPs for acne
  - Ortho Tri-Cyclen®
  - Estrostep®
  - Yaz®
- Anti-androgens
  - Spironolactone
    - Doses range between 50-200mg
    - Not FDA-approved for acne
    - Monitor side effects: menstrual irregularities, hyperkalemia
- Corticosteroids
  - Use judiciously for highly inflammatory acne
  - Short-term usage recommended while initiating another therapy (i.e. antibiotics, isotretinoin)

Wolverton SE. editor Comprehensive Dermatologic Drug Therapy 2nd Ed. Philadelphia: Saunders Elsevier; 2007.

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Extended Release (ER) Antibiotics

- ER dosage forms maximize effect of antibiotics while minimizing antibiotic resistance
- Tetracycline Class
  - Minocycline (Generic, Solodyn®)
- Other antibiotics
  - Amoxicillin, clarithromycin, ciprofloxacin
- Advantages
  - Weight based dosing
  - Better compliance
  - Minimize resistance

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Retinoids

- "Least Irritating" (most tolerable)
  - Adapalene gel (Differin® 0.1%, 0.3%)
  - May be appropriate starting point for darker and/or sensitive skin
- "Moderately Irritating"
  - Tretinoin (cream, gel)
    - Tretinoin 0.01%, 0.05%, 0.025%
    - Retin-A Micro® 0.1%, 0.04%
    - Atralin™ Gel 0.05%
    - Renova® 0.02%, 0.05%
- "Most Irritating" (least tolerable)
  - Tazarotene (cream, gel)
    - Tazorac® 0.05%, 0.01% cream or gel
    - Avage® 0.01% cream

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Less Known Topical Therapy

- Dapsone gel 5% (Aczone®)
  - Approved for moderate to severe acne
  - BID dosing
  - May cause a temporary yellow or orange discoloration of skin and facial hair if used along with BPO
  - Low risk of hemolytic anemia in G6PD deficient patients
- Azelaic acid (Finacea™)
  - Off label for acne
  - Bacteristatic/bactericidal against *P. acnes*
  - Good choice for pregnant women (Pregnancy Category B)

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Clinical Pearls

- There are several variants of acne.
- Acne can be sign of internal disease.
- Benign skin tumors can mimic acne.
- Hormonally triggered acne tends to affect the lower 1/3 of the face.
- Treatment of acne is multi-therapy.
- ER antibiotics may result in better compliance and tolerability.

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What is your diagnosis?

A. Female pattern hair loss
B. Seborrheic dermatitis
C. Alopecia areata
D. Frontal fibrosing alopecia

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Frontal Fibrosing Alopecia

- Etiology
  - Lymphocytic, variant of lichen planopilaris
  - Abnormal functioning of the peroxisome proliferator–activated receptor γ (PPAR-γ), which affects lipid metabolism and causes inflammation
- Clinical Presentation
  - Post menopausal women
  - Symmetrical band of hair loss on the front and sides of the scalp, and loss of eyebrows
- Treatment
  - Steroids, tetracyclines, antimalarial agents
  - Off label: pioglitazone, PPAR-γ agonist

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Seborrheic Dermatitis

- Etiology
  - *Malassezia* organisms
  - T-cell depression, increased sebum levels, activation of the alternative complement pathway
- Clinical Presentation
  - Greasy, scaling orange to pink plaques
- Treatment
  - Topical and oral antifungals
  - Topical steroids
  - Off label: calcineurin inhibitors

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Clinical Pearls

- Think beyond seborrheic dermatitis for the scalp especially with hair loss.
- Seborrheic dermatitis is associated with HIV, Parkinson’s disease, mood disorders.
- Use of corticosteroids should be limited in seborrheic dermatitis.
- There may be a difference in clinical efficacy between fungicidal and fungistatic medications.

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What is your diagnosis?

A. Psoriasis
B. Allergic contact dermatitis
C. Atopic dermatitis
D. Irritant contact dermatitis

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Allergic Contact Dermatitis

- Etiology
  - Hapten sensitization
  - Delayed Type IV hypersensitivity response
- Clinical Presentation
  - Unique pattern
  - Pruritic papules and vesicles on an erythematous base
  - Lichenified pruritic plaques
- Treatment
  - Patch testing
  - Avoidance of allergen
  - Topical and systemic steroids
  - Antihistamines

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Corticosteroids

- Mechanism of Action
  - Anti-inflammatory
    - Inhibit phospholipase A_2 , via production of lipocortin
    - Inhibit NF-kappa1
    - Inhibit IL-1
  - Immunosuppressive
    - Decreases Langerhan cells
    - Decreases leukocyte attraction and adhesion
    - Decreases cytokine production
  - Anti-proliferative
    - Reduce mitotic activity in the epidermis
    - Inhibits collagen and GAG synthesis
  - Vasoconstrictive

Warner MR, Camisa C. Topical corticoteroids. In: Wolverton SE editor, Comprehensive Dermatologic Drug Therapy. Philadelphia (PA): 2007. p. 595-624.

Corticosteroids

- Potency
  - Determined by Stoughton vasoconstriction assay
  - Seven Classes of Potency
    - Class I: Most potent
    - Class IV: Least potent
  - Ointments tend to be more potent than creams
- Vehicle
  - Ointment, creams, lotions
  - Solutions, foams
- Side Effects
  - HPA axis suppression
  - Atrophy, striae, telangiectasia, delayed wound healing
  - Perioral dermatitis, rosacea, acne
  - Glaucoma/cataracts
  - Allergic contact dermatitis

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Clinical Pearls Corticosteroids

- Potency
  - Pick a few in each level and become comfortable with them
  - Choose based on body location
    - Face, neck, intertriginous: Mild to moderate
    - Trunk, extremities, palms, soles: Moderate to high
- Vehicle
  - Choose vehicle based on body location
  - Use vehicle based on potency desired and patient preference
- Size
  - Dispense appropriate amount for BSA to be treated
- Educate patients on side effects
- Consider allergic contact dermatitis

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ACD Clinical Pearls

- Most cases of contact dermatitis are irritant and not allergic.
- Eruptions in distinct patterns may suggest ACD.
- Disease states that impair barrier function have an increased risk of sensitization.
- Patients can have an allergy to a topical steroid.

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What is your diagnosis?

A. Candidiasis
B. Psoriasis
C. MRSA
D. Seborrheic dermatitis

Inverse Psoriasis

- Etiology
  - Autoimmune, genetics, triggers
- Clinical Presentation
  - Intertriginous sites
  - Shiny, thin erythematous plaques, lacking scale
  - Nail changes: pitting, onycholysis
  - Psoriatic arthritis

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Psoriasis—More than knees and elbows!

- Different clinical presentations
  - Classic Plaque
  - Erythrodermic
  - Pustular
  - Guttate
  - Verrucous or hypertrophic
  - Sebopsoriasis

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Psoriasis Co-Morbidities

- Depression
- Metabolic Syndrome
- Type 2DM
- Cancer
- Cardiovascular disease
- Osteoarthritis, Chrohn’s, uveitis

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Psoriasis Treatment

- Topical therapy
  - Steroids
  - Retinoids, vitamin D analogues
  - Salicylic acid, tar preparations
- Intralesional steroids
- Phototherapy
- Systemic agents
  - Methotrexate
  - Acetretin (Soriatane)
  - Apremilast (Otezla)
  - Biologics
    - TNF Inhibitors
    - IL-12/23 Inhibitors
    - IL-17 Inhibitors

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Diet & Psoriasis?

Which of the following is **NOT** considered to be a part of a pro-inflammatory diet?

A. Processed foods
B. Alcohol
C. Red meat
D. Salmon
E. Cheese

Answer D. Salmon

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Psoriasis Clinical Pearls

- Infectious intertrigo can mimic inverse psoriasis.
- Ask about joint symptoms, screen for co-morbidities.
- Check ASO titers for guttate form and consider treating with antibiotics.
- Ask about therapies before giving vaccines.
- Avoid systemic steroids as primary therapy.

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Intertrigo

- Etiology
  - Infectious
  - Inflammatory
- Clinical Presentation
  - Intertriginous sites
  - Shiny, thin erythematous plaques, lacking scale
  - Satellite pustules
- Treatment
  - Topical & oral antibiotics or antifungals
  - Short term topical or oral steroid use

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Intertrigo Clinical Pearls

- Perform bacterial culture as a part of work up.
- Avoid steroid/antifungal combinations.
- Scrotal involvement in men often candidiasis.
- Think beyond infectious and include inflammatory skin conditions in your differential.

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Post-Test

Which of the following would be considered the safest option to treat acne in pregnancy?

A. Doxycycline
B. Tretinoin
C. Benzoyl peroxide
D. Topical clindamycin

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Answer D. Topical clindamycin

You diagnosed a patient with stasis dermatitis and treated them with triamcinolone but their rash worsens with itching and vesicle formation. What do you think is the likely diagnosis?

A. Herpes simplex infection
B. Allergic contact dermatitis
C. Cellulitis
D. Diabetic bullae

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Answer B. Allergic Contact Dermatitis

A patient presents to your office with severe seborrheic dermatitis. What associated condition may he/she have?

A. Hypertension
B. Diabetes
C. Parkinson’s disease
D. Hypercholesterolemia

Answer C. Parkinson's Disease

Your inverse psoriasis patient has cleared and asks for a treatment to safely prevent the psoriasis from returning. What would you recommend?

A. Triamcinolone 0.1% cream
B. Calcipotriene cream
C. Betamethasone dipropionate
D. Calcineurin inhibitor
E. B & D

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Answer B & D. Calcipotriene cream and calcineurin inhibitor

Summary

- Acne may be a sign of an internal disease.
- Choice of topical CS depends on factors like potency, vehicle, body location and patient preference.
- Not all hair loss is androgenic and early diagnosis is essential to preserving hair.
- When eruption or lesion does not respond to therapy, biopsy and/or refer.

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Questions?

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