CC: Acne

Subjective:
Patient presents for evaluation of acne. Has had problems with acne for [\_]. Has tried [topicals/oral/cleaning regimen/moisturizer] in the past that [did/did not] work.

Females: LMP [\_].

GEN: NAD

SKIN: [\_] acne located [face, chest, upper back]

[Inflammatory papules
Cysts/nodules/pustules
Scarring
Comedones: noninflammatory closed comedones-whiteheads, open comedones-blackheads]

A/P:

1. Acne
Based on extent of lesions Pt has [mild/moderate/severe] acne.

[Comedones: treat with topical retinoids, if ineffective go to next level of treatment
Mild inflammatory papules and pustules: topical retinoid plus benzoyl peroxide, if ineffective go to next level of treatment
Moderate inflammatory papules and pustules with or without a few nodules:
-Nodules: topical retinoid +benzoyl peroxide + topical antibiotic
-Papules and pustules: topical retinoid +benzoyl peroxide + oral antibiotic
Severe inflammatory papules and pustules with or without multiple nodules:
-Nodules: oral isotretinoin, maintenance therapy topic retinoid + benzoyl peroxide + topical abx
-Papules and pustules: topical retinoid + benzoyl peroxide + topical/oral antibiotic, if not effective oral isotretinoin]

Mild Acne
-Plan to start pt on topical retinoid and non-antibiotic topical agent
-Tretinoin (Retin-A, Atralin): Pt was educated on adverse effects including burning, peeling, stinging, pruritus, erythema, dryness, photosensitivity. [Consider avoiding use during pregnancy, especially in the first trimester. Approved for use in children 10 years and older. Affordable]
[-Benzoyl peroxide: Burning, dryness, stinging, erythema, peeling, hypersensitivity, bleaching of hair or clothing. May use during pregnancy; inadequate human data available, although risk of fetal harm is not expected based on minimal systemic absorption. Safety and effectiveness not established in children younger than 12 years. Variable cost]

Moderate Acne
-Will initiate treatment with topical retinoid, benzoyl peroxide, and [topical/oral antibiotic]
-Clindamycin 1% and erythromycin 2% in combination with benzoyl peroxide
-To reduce the risk of resistance, use of topical antibiotics as monotherapy or maintenance therapy is not recommended, and the duration of therapy should be limited to 12 weeks
'severeacneAP\_

Treatments

Topical Retinoids for the Treatment of Acne Vulgaris
-Adapalene (Differin): Burning, peeling, stinging, pruritus, erythema, dryness, photosensitivity. May use during pregnancy; risk of fetal harm not expected based on limited human data and insignificant systemic absorption. Approved for use in children 12 years and older. Expensive
-Adapalene/benzoyl peroxide (Epiduo): Burning, peeling, stinging, pruritus, erythema, dryness, photosensitivity. May use during pregnancy; risk of fetal harm not expected based on limited human data and insignificant systemic absorption. Approved for use in children nine years and older. Expensive
-Clindamycin phosphate/tretinoin (Veltin, Ziana): Burning, peeling, stinging, pruritus, erythema, dryness, photosensitivity, colitis. Consider avoiding use during pregnancy, especially in the first trimester Approved for use in children 12 years and older. Expensive
-Tazarotene (Tazorac): Burning, peeling, stinging, pruritus, erythema, dryness, photosensitivity.
Use alternative during pregnancy. Approved for use in children 12 years and older. Very expensive

Nonantibiotic Topical Agents for the Treatment of Acne Vulgaris
-Azelaic acid (Azelex, Finacea): Burning, dryness, stinging, erythema, pruritus, hypersensitivity reaction, asthma exacerbation, hypopigmentation in individuals with dark skin. May use during pregnancy; no human data available, although risk of fetal harm is not expected based on minimal systemic absorption
Safety and effectiveness not established in children younger than 12 years. Expensive]
-Dapsone (Aczone): Burning, dryness, erythema, pruritus, orange staining of skin. May use during pregnancy; no human data available, although risk of fetal harm is not expected based on minimal systemic absorption. Safety and effectiveness not established in children younger than 12 years. Expensive

Oxidation, a chemical reaction, occurs with tretinoin (except with the microsphere formulation) when used in combination with benzoyl peroxide. Because oxidation causes degradation of tretinoin, reducing its effectiveness, simultaneous application of benzoyl peroxide and tretinoin should be avoided.

Topical Antibiotics for the Treatment of Acne Vulgaris:
-Clindamycin 1% (Cleocin, Evoclin): Pruritus, erythema, dryness, peeling, Clostridium difficile colitis, folliculitis, photosensitivity. May use during pregnancy; no human data available, although risk of fetal harm is not expected based on minimal systemic absorption. Safety and effectiveness not established in children younger than 12 years. Affordable
-Clindamycin 1%/benzoyl peroxide 5% (Benzaclin): Pruritus, erythema, dryness, peeling, C. difficile colitis, anaphylaxis. May use during pregnancy; no human data available, although risk of fetal harm is not expected based on expected limited systemic absorption. Safety and effectiveness not established in children younger than 12 years. Affordable
-Erythromycin 2% (Erygel, Ery): Dryness, irritation, C. difficile colitis. May use during pregnancy; no human data available, although risk of fetal harm not expected based on minimal systemic absorption
Safety and effectiveness not established in children younger than 12 years. Affordable
-Erythromycin 3%/benzoyl peroxide 5% (Benzamycin): Pruritus, erythema, dryness, peeling, burning, urticaria, C. difficile colitis. May use during pregnancy; no human data available, although risk of fetal harm is not expected based on minimal systemic absorption. Safety and effectiveness not established in children younger than 12 years. Mildly expensive

SYSTEMIC ANTIBIOTICS:
-Doxycycline (Vibramycin, Acticlate): Children: 2 mg per kg per dose every 12 hours on day 1, then 2 mg per kg once per day thereafter (maximum dose is 100 mg).
Adults: 50 to 100 mg once or twice per day
Nausea, diarrhea, dyspepsia, esophagitis, headache, vaginal candidiasis, photosensitivity, tooth/bone discoloration, pseudotumor cerebri, hepatotoxicity, Clostridium difficile colitis
Avoid use during pregnancy. Safety and effectiveness not established in children younger than eight years. Affordable
-Erythromycin: Children and adults: 250 to 500 mg two to four times per day
Nausea, vomiting, drug interactions, arrhythmias
May use during pregnancy; possible risk of fetal harm based on conflicting human data
Safe for use in children. Afordable
-Minocycline (Minocin):
Children: 1 mg per kg once per day
Adults: 50 mg one to three times per day
Nausea, vomiting, diarrhea, vestibular dysfunction, photosensitivity, hyperpigmentation, pseudotumor cerebri, lupus-like reaction, drug reaction with eosinophilia and systemic symptoms, hepatotoxicity, Stevens-Johnson syndrome. Avoid use during pregnancy. Not indicated in children younger than eight years. Affordable
-Sarecycline (Seysara): Children and adults
 33 to 54 kg (73 to 119 lb): 60 mg per day
 55 to 84 kg (121 to 185 lb): 100 mg per day
 85 to 136 kg (187 to 300 lb): 150 mg per day
Treat for 12 weeks then reassess
Nausea, lightheadedness, dizziness, vertigo, headache, vaginal candidiasis, photosensitivity, tooth/bone discoloration, pseudotumor cerebri, hepatotoxicity, C. difficile colitis. Avoid use during pregnancy or while breastfeeding. Avoid use in children younger than nine years. Expensive
-Tetracycline:
Children: 25 to 50 mg per kg per day in two to four divided doses
Adults: 250 to 500 mg once or twice per day
Nausea, vomiting, diarrhea, abdominal pain, photosensitivity, tooth and nail discoloration, pseudotumor cerebri, hepatotoxicity, urticaria. Avoid use during pregnancy. Not indicated in children younger than eight years. Affordable
-Trimethoprim/sulfamethoxazole: Children and adults: 160/800 mg twice per day
Stevens-Johnson syndrome, toxic epidermal necrolysis, hepatotoxicity, bone marrow suppression, drug eruptions. Consider alternative during pregnancy; possible risk of spontaneous abortion based on limited human data; possible risk of congenital neural tube and cardiovascular defects based on conflicting human data and trimethoprim's mechanism of action. Safety and effectiveness not established in children younger than two months. Affordable

American Academy of Dermatology (AAD) recommends doxycycline and minocycline (Minocin) as first-line therapies based on studies indicating superiority over tetracycline and azithromycin (Zithromax). Clindamycin is favored over erythromycin because of the declining effectiveness of erythromycin, which is likely associated with emerging resistance of C. acnes

ISOTRETINOIN:
A systematic review and meta-analysis found no evidence to support periodic laboratory monitoring in healthy patients on typical dosages of isotretinoin after initial assessment. However, consensus guidelines based on expert opinion recommend monitoring liver function and lipid panels until stability is assured. Because of isotretinoin's risk of teratogenicity, patients, pharmacists, and prescribers must register with the FDA-mandated risk management program, iPledge, before initiating therapy. All female patients who may become pregnant must have pretreatment and posttreatment contraceptive counseling and monthly urine pregnancy tests.

HORMONAL AGENTS:
Combination oral contraceptives are antiandrogenic, effective in the management of inflammatory and comedonal acne in menarchal females, and FDA approved for treatment of acne in females older than 15 years who also desire contraception. There are currently four combined oral contraceptives approved for the treatment of acne vulgaris (ethinyl estradiol/norgestimate, ethinyl estradiol/norethindrone acetate/ferrous fumarate, ethinyl estradiol/drospirenone, ethinyl estradiol/drospirenone/levomefolate).]

ANTIANDROGENS:
spironolactone for its antiandrogenic properties in women with resistant and hormonally mediated acne. Spironolactone should be used in conjunction with contraception because of the risk of fetal antiandrogenic effects. Breast tenderness, menstrual irregularities, and hyperkalemia may occur in patients treated with spironolactone. Intralesional triamcinolone injections reduce inflammation and pain in nodular acne

CORTICOSTEROIDS:
Prednisone (5 mg to 15 mg daily) has demonstrated effectiveness in the treatment of acne and may be used as an adjunct in select patients; however, the potential adverse effects limit its use. Prednisone is indicated for the treatment of acne fulminans, prevention of acne fulminans–like eruptions in patients initiating isotretinoin, treatment of severe nodulocystic acne in pregnancy (after the first trimester), and in patients with adrenal hyperandrogenism. Intralesional triamcinolone injections reduce inflammation and pain in nodular acne

COMPLEMENTARY THERAPIES
Dietary interventions (i.e., low-glycemic-load diets and avoidance of dairy or skim milk), acupuncture, cupping, herbal medicines, tea tree oil, and purified bee venom have been recently reviewed for the treatment of acne. Although of low quality, there is evidence that purified bee venom, tea tree oil, a low-glycemic-load diet, or avoidance of skim milk is associated with a reduction in skin lesions.

Differential Diagnosis of Acne Vulgaris:
-Acne cosmetica: Associated with use of heavy oil-based hair products and cosmetics and resolves with discontinuation of these products
-Drug-induced acne: Monomorphic lesions and history of medication use (glucocorticoids, lithium, oral contraceptives, phenytoin or Dilantin, isoniazid, androgens)
-Folliculitis: Monomorphic lesions, abrupt onset and variable distribution with absence of comedones, spreads with scratching or shaving
-Hidradenitis suppurativa: Double-headed comedones (two pustules), inflamed nodules with abscesses, predilection for intertriginous areas, sinus tracts
-Miliaria: Nonfollicular papules, pustules, and vesicles; occurs in response to heat or exertion
-Perioral dermatitis: Papules, pustules, and erythema confined to the chin and nasolabial folds with sparing of the area directly adjacent to the vermilion border
-Pseudofolliculitis barbae: Occurs in bearded areas with short, curly hair that is shaved closely
-Rosacea: Erythema and telangiectasia, absence of comedones
-Seborrheic dermatitis: Greasy scales with yellow-red, coalescing macules and papules