THE UNIVERSITY OF ALABAMA AT BIRMINGHAM.

Acne Management

Practical Day of Pediatrics 2020
Roundtable Discussion

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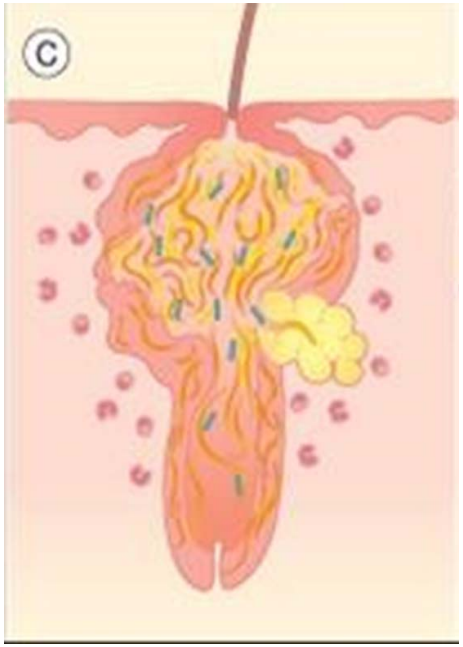
INTRODUCTION

- Acne is a chronic, inflammatory disease of the pilosebaceous unit
- Acne affects up to 85% of adolescents
- Psychosocial effects of acne can be profound
- Associated with anxiety, depression, and social isolation
- Physical scarring and post-inflammatory pigmentary changes
- Pediatricians are in a key position to manage mild to moderate acne

PATHOGENESIS OF ACNE

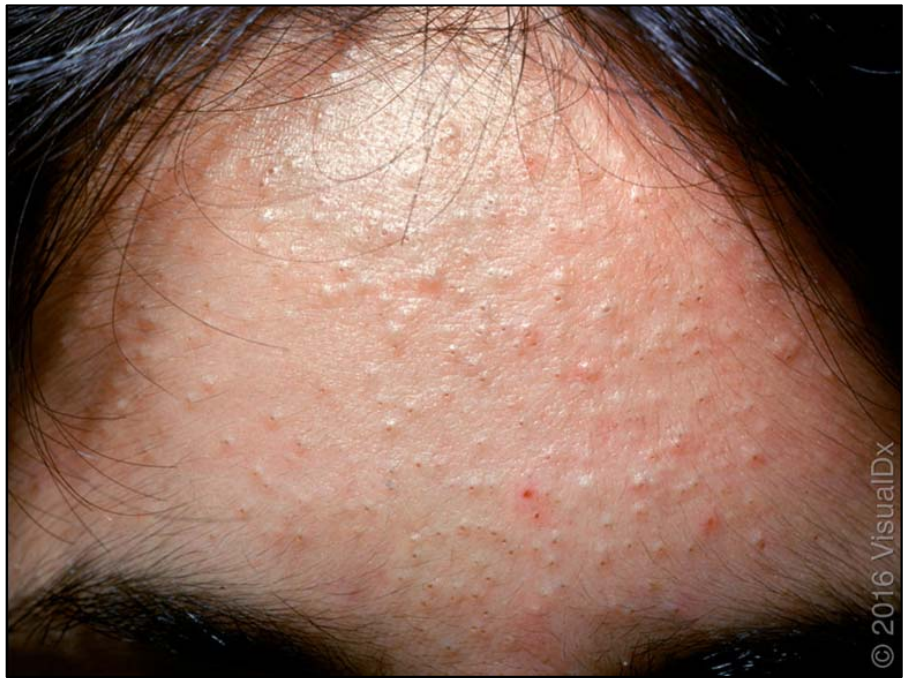
- Understanding the pathogenesis is key to developing an effective treatment plan
- Caused by interplay of 4 factors:
  - Increased sebum production (**androgen** driven)
  - Abnormal follicular keratinization (**follicular plugging**)
  - Colonization of follicle by ***Propionibacterium acnes***
  - **Inflammation**
- Genetic background and environment modulate these factors



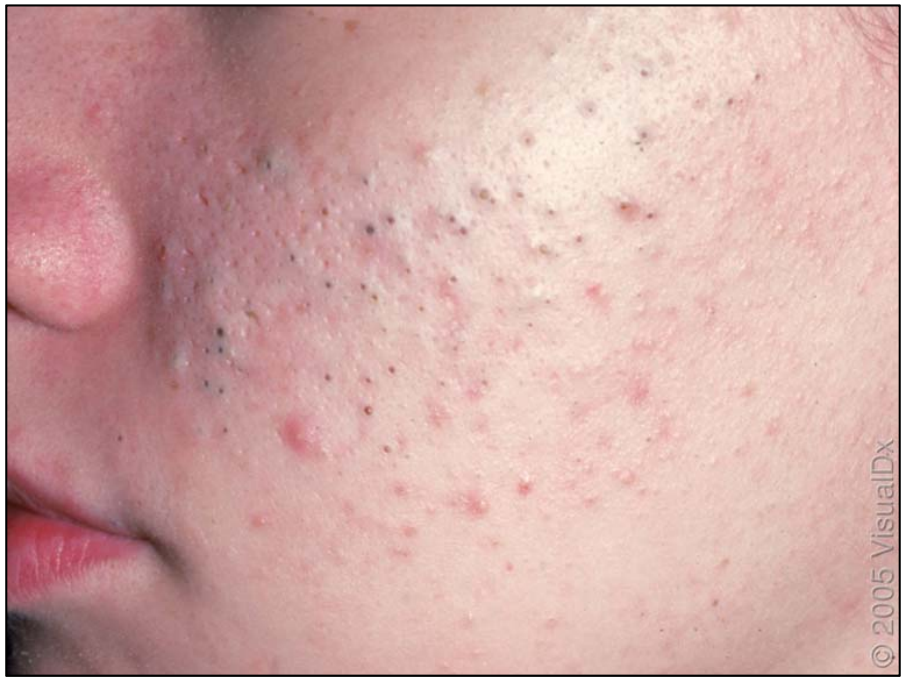
EVALUATION OF ACNE PATIENT

- Predominate lesion morphology (‘pimple profile’)
  - Comedonal, inflammatory, mixed
- Assess severity (‘doorway test’)
  - Mild, moderate, severe, very severe
  - Based on number, type, extent of lesions
- Look for secondary changes (scarring, pigmentation, erythema)
- Elicit patient’s level of concern (motivation)
- Record skin care routine and past treatments (response, adverse reactions)
- Insurance coverage ☹

LESION MORPHOLOGY

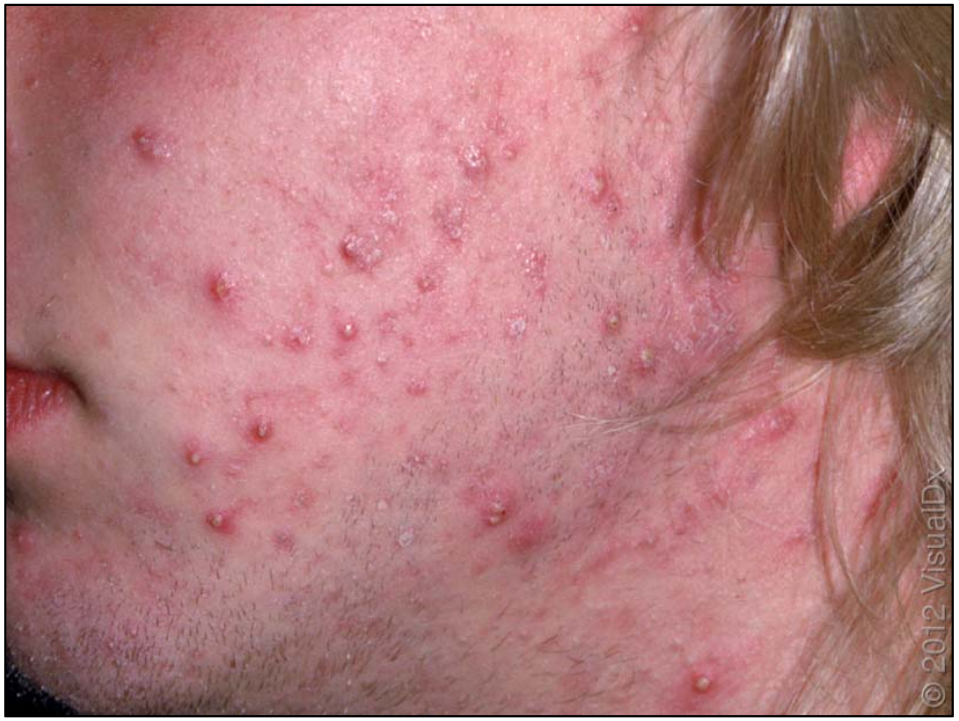


Closed Comedones
(whiteheads)

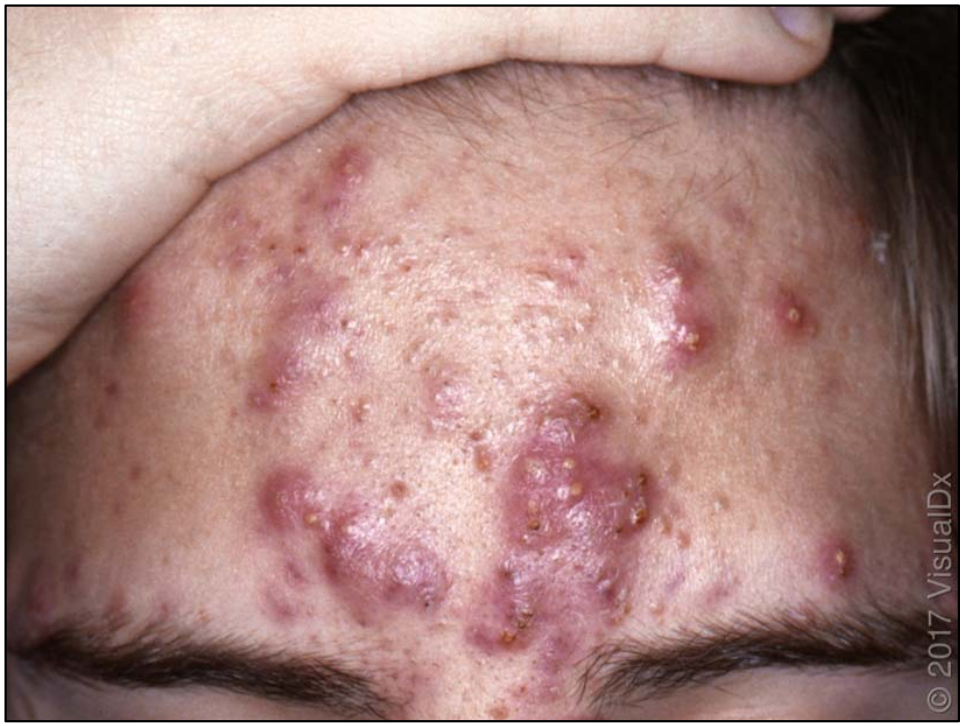


Open Comedones
(blackheads)

LESION MORPHOLOGY

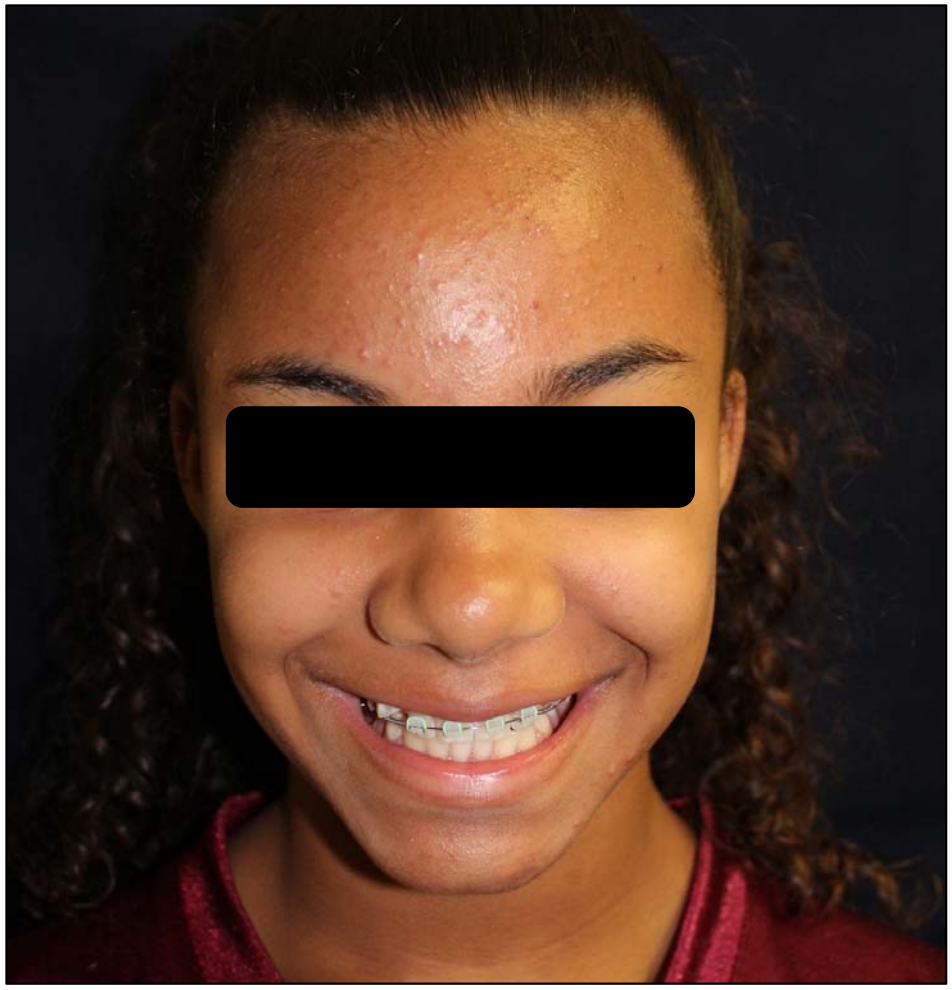


Papules and Pustules

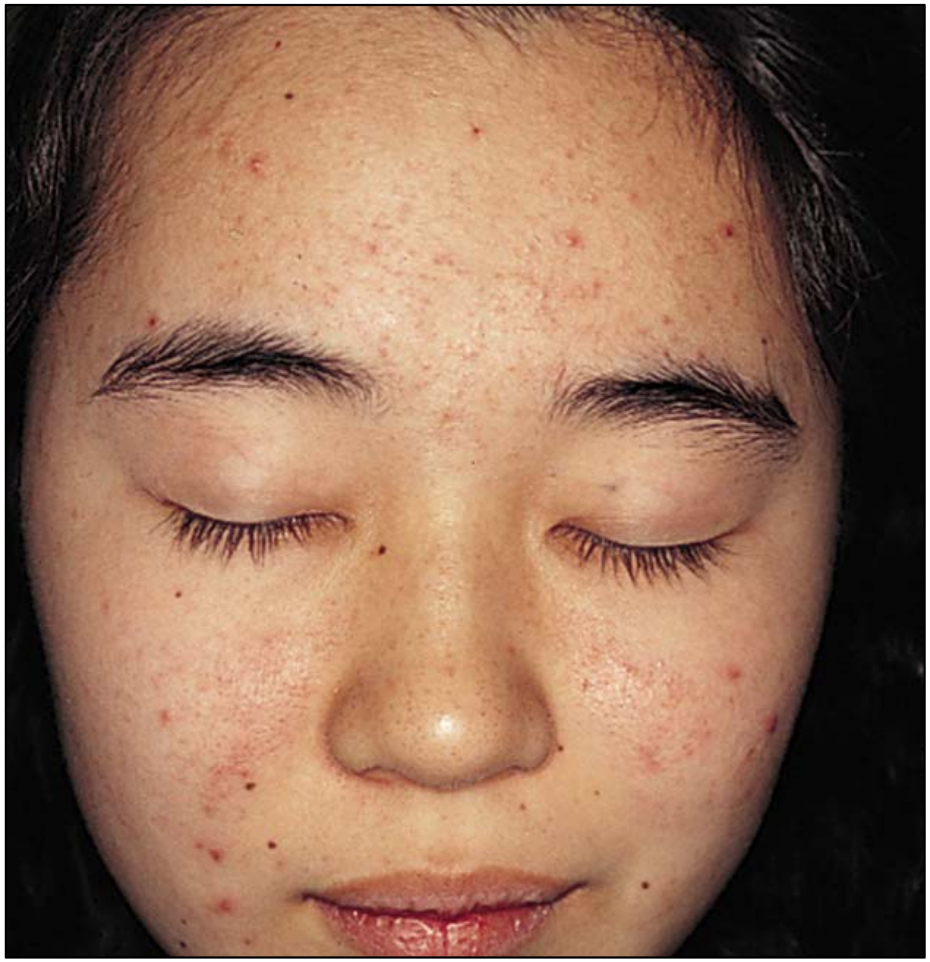


Nodules / Cysts

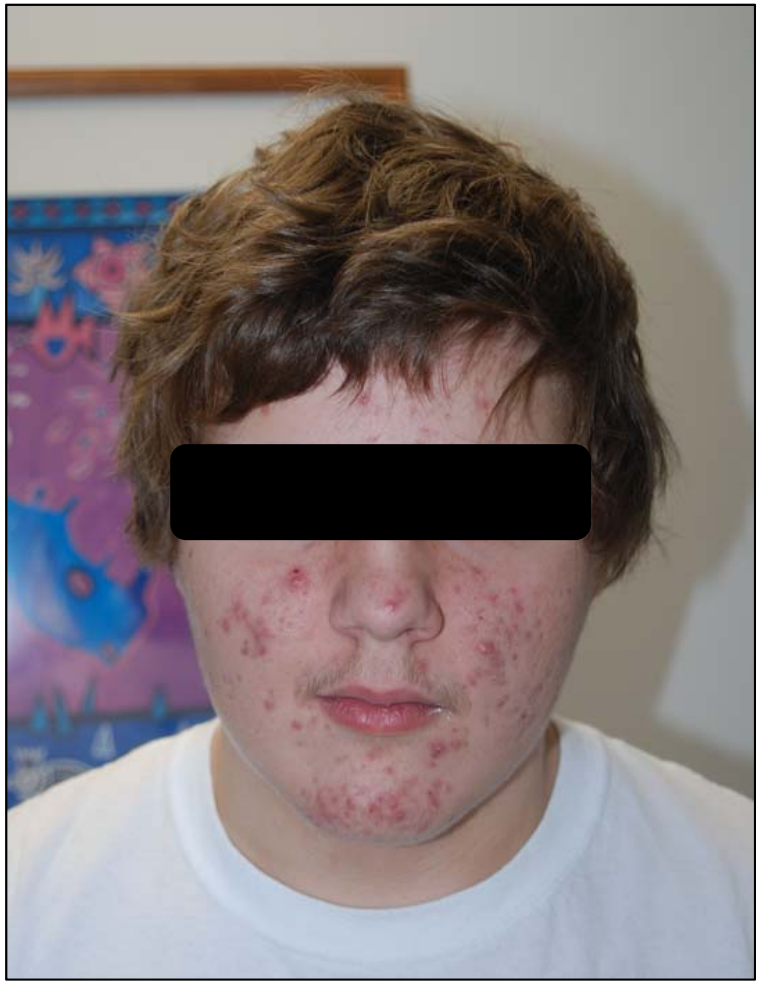
ACNE SEVERITY - MILD



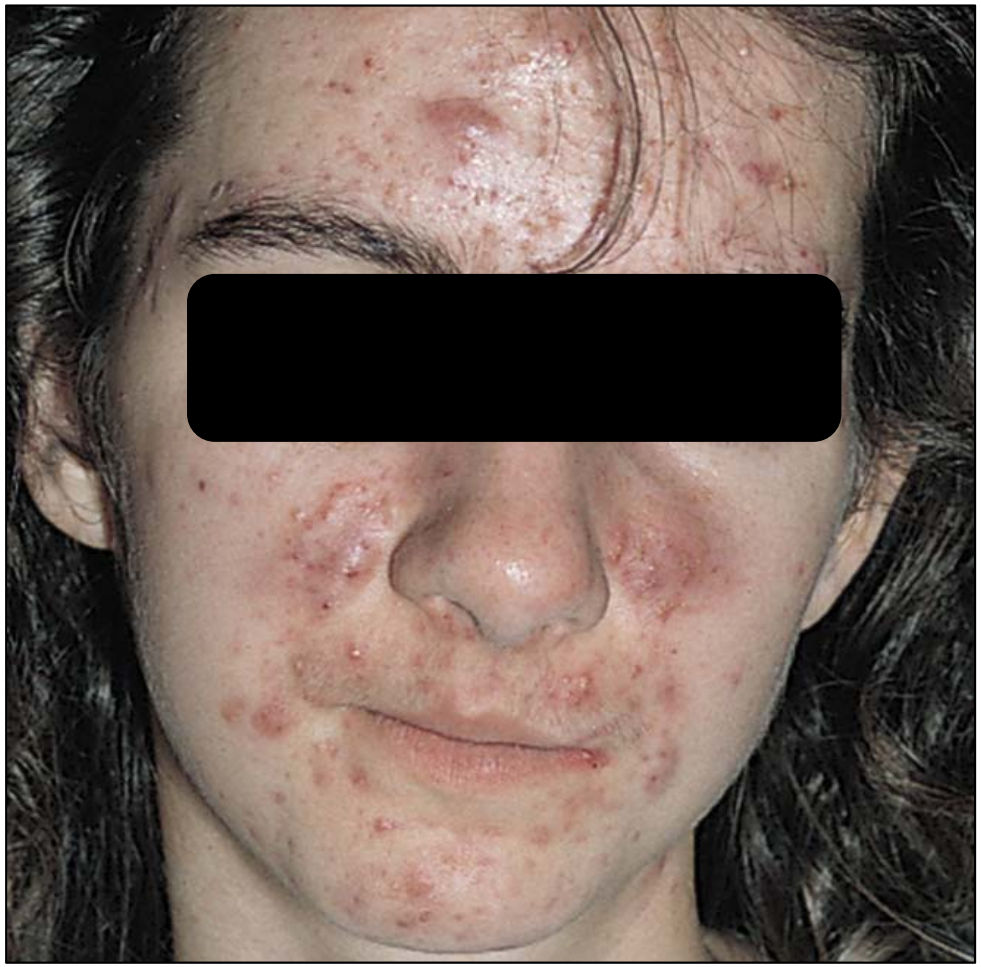
ACNE SEVERITY - MODERATE



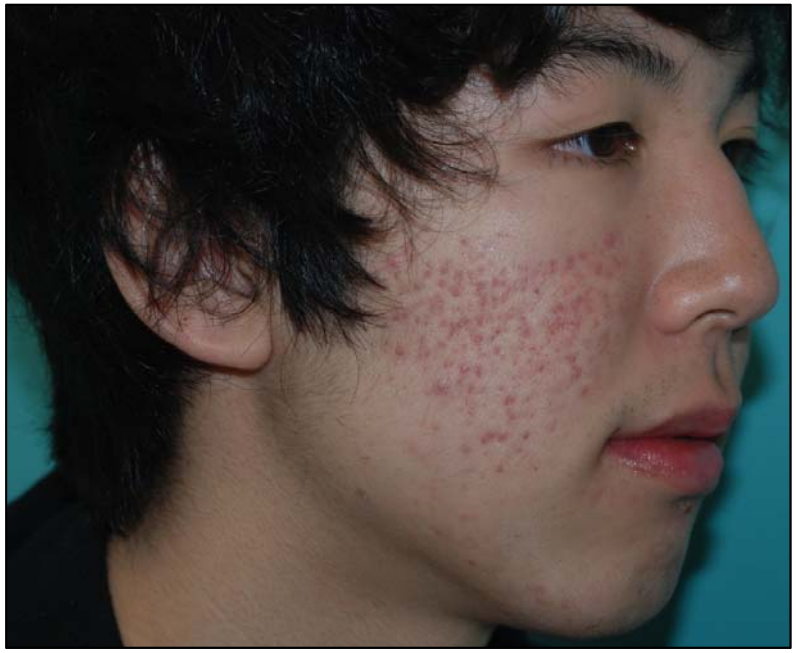
ACNE SEVERITY - SEVERE



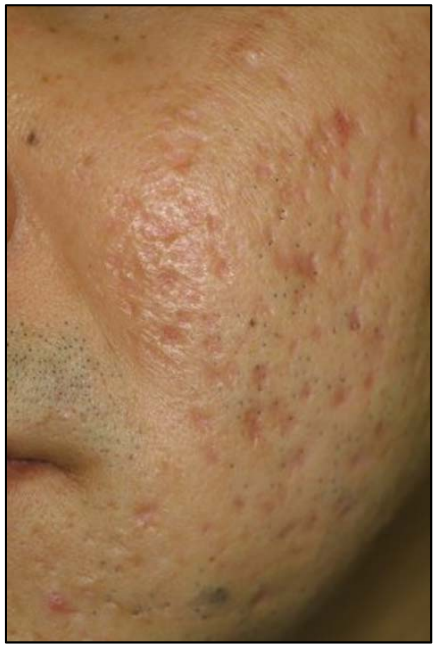
ACNE SEVERITY – VERY SEVERE



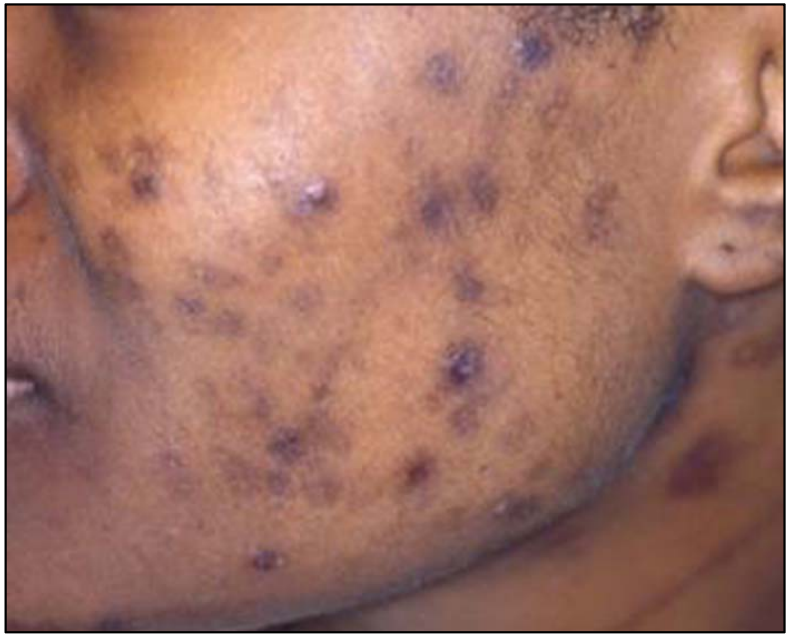
SECONDARY LESIONS



Post-inflammatory erythema



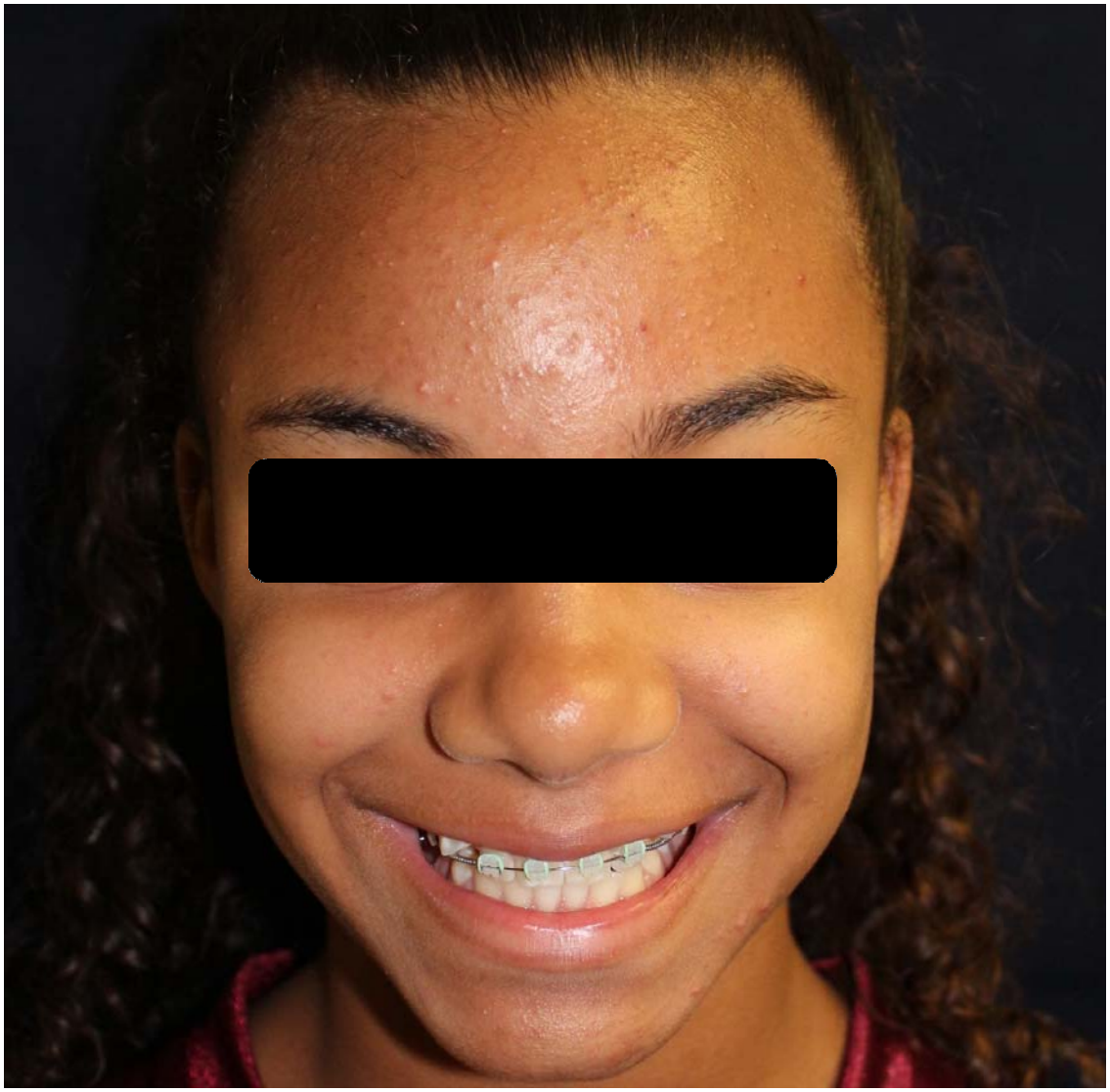
Scarring



Post-inflammatory hyperpigmentation

TREATMENT OF ACNE – KEY POINTS

- Topical retinoids should be foundation of any acne treatment plan
- Benzoyl peroxide is antibacterial without risk of resistance
- Antibiotics should never be used as monotherapy
- Antibiotics should always be combined with a benzoyl peroxide
- Oral antibiotic use should be limited to 3 to 4 months, whenever if possible
- Isotretinoin is highly effective and should be considered for nodulocystic acne, treatment resistant acne, or relapsing acne

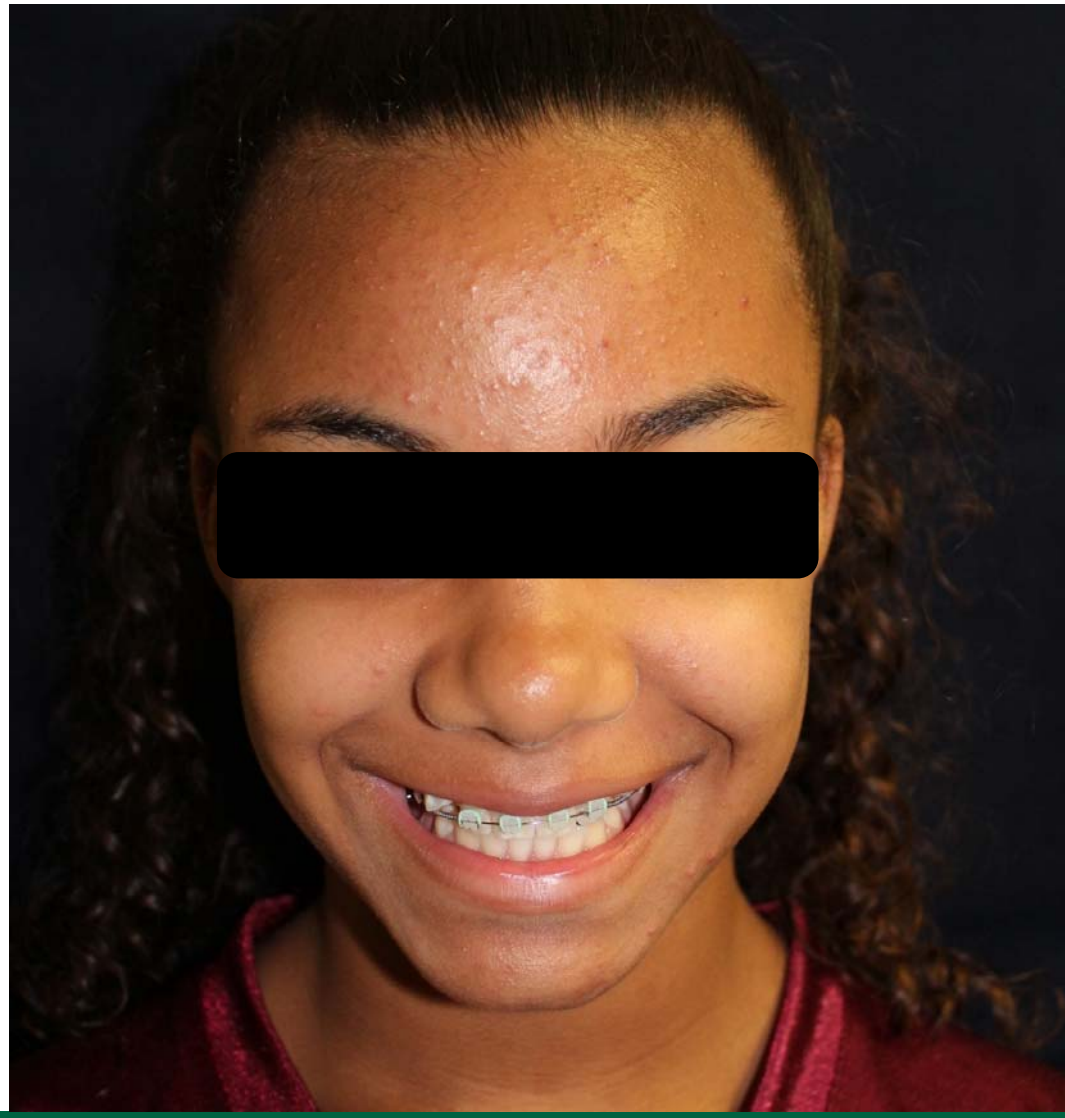


TREATMENT OF ACNE

- Mild acne, comedonal
- 1st line:
  - Benzoyl peroxide (BP)

    OR
  - Topical retinoid

    OR
  - Topical combination therapy
- Review skin care routine
- Discuss compliance, set expectations



BENZOYL PEROXIDE (BP)

- Available OTC
- Antimicrobial, kills *P. acnes*
- Protects against bacterial resistance
- Works globally and long-term
- Adverse effects:
  - Concentration dependent irritation, peaks around 2 weeks
  - Allergic contact dermatitis rare
  - Photosensitivity
  - Bleaches textiles

BENZOYL PEROXIDE (BP)

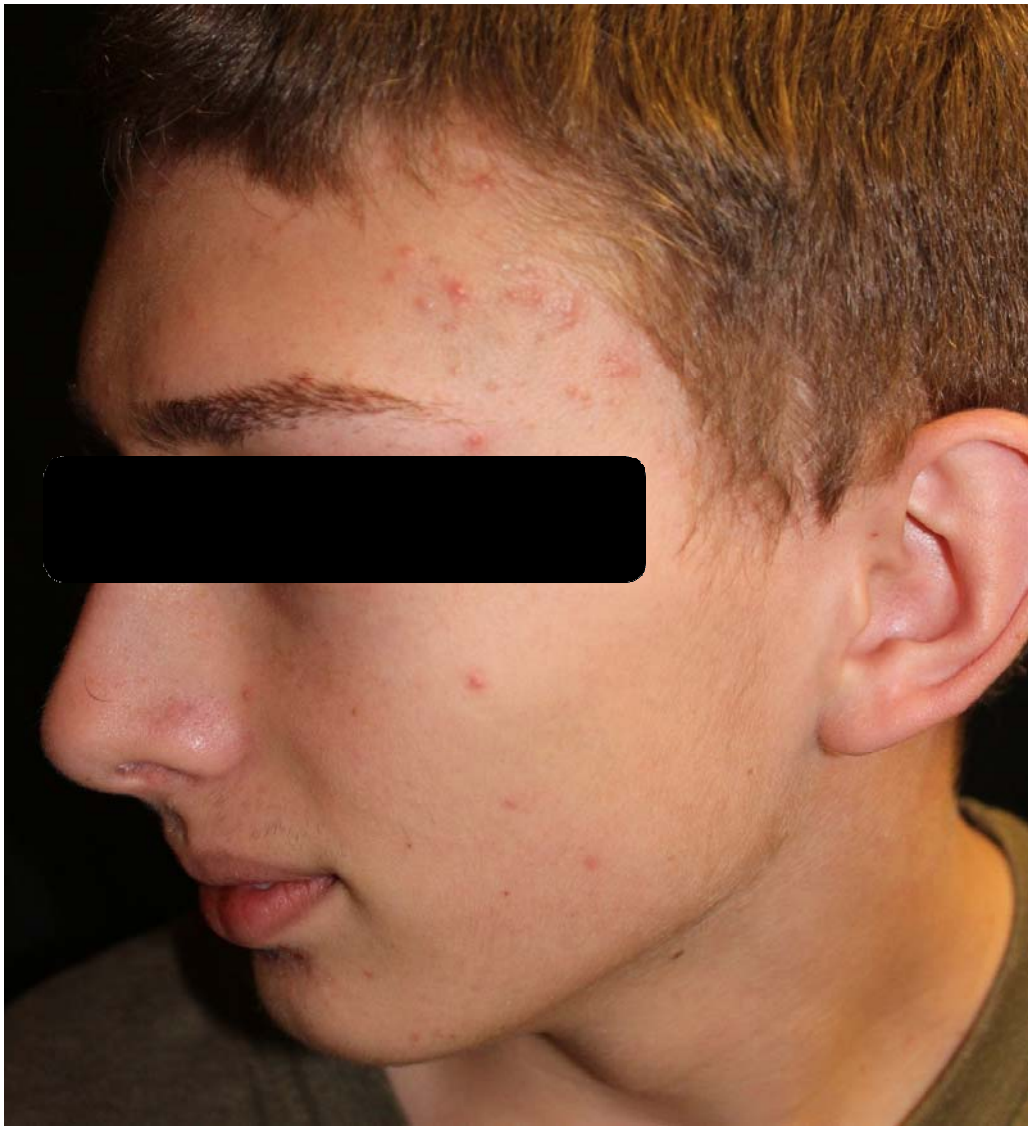
- Tips to choosing a BP:
  - For face: 2.5 – 3.75% leave on product (gel, foam, lotion) once a day
  - For trunk: 5 – 10% wash off product (bar, liquid) once a day
  - Higher concentrations better for oily skin
  - Lower concentrations for sensitive or dry skin
- Rx combination products
  - BP 2.5% + adapalene 0.1% or 0.3% gel
  - BP 5% + clindamycin 1% or 1.2% gel
  - BP 5% + erythromycin 3% gel

TOPICAL RETINOIDS

- Adapalene, tretinoin, tazorarotene
- Comedolytic and anti-inflammatory
- Reduces comedones and inflammatory lesions (TREATS) and prevents formation of microcomedones (PREVENTS)
- Helps with scarring and post-inflammatory hyperpigmentation
- Adverse effects:
  - Erythema, dryness, peeling, burning/stinging
  - Photosensitivity
  - Ocular dryness
  - Pregnancy category C (tazarotene category X)

TOPICAL RETINOIDS

- Tips for using a topical retinoid
  - Pea-sized amount to entire face (not spot treating)
  - Follow general skin care routine
  - Use every other day and increase as tolerated
  - Sensitive skin: lower concentrations, creams or lotions, special formulations
  - Oily skin: higher concentrations, gels
  - Generic tretinoin is degraded by sunlight and must be applied at night
  - Generic tretinoin and tazarotene are inactivated by BPO and must be used at different times



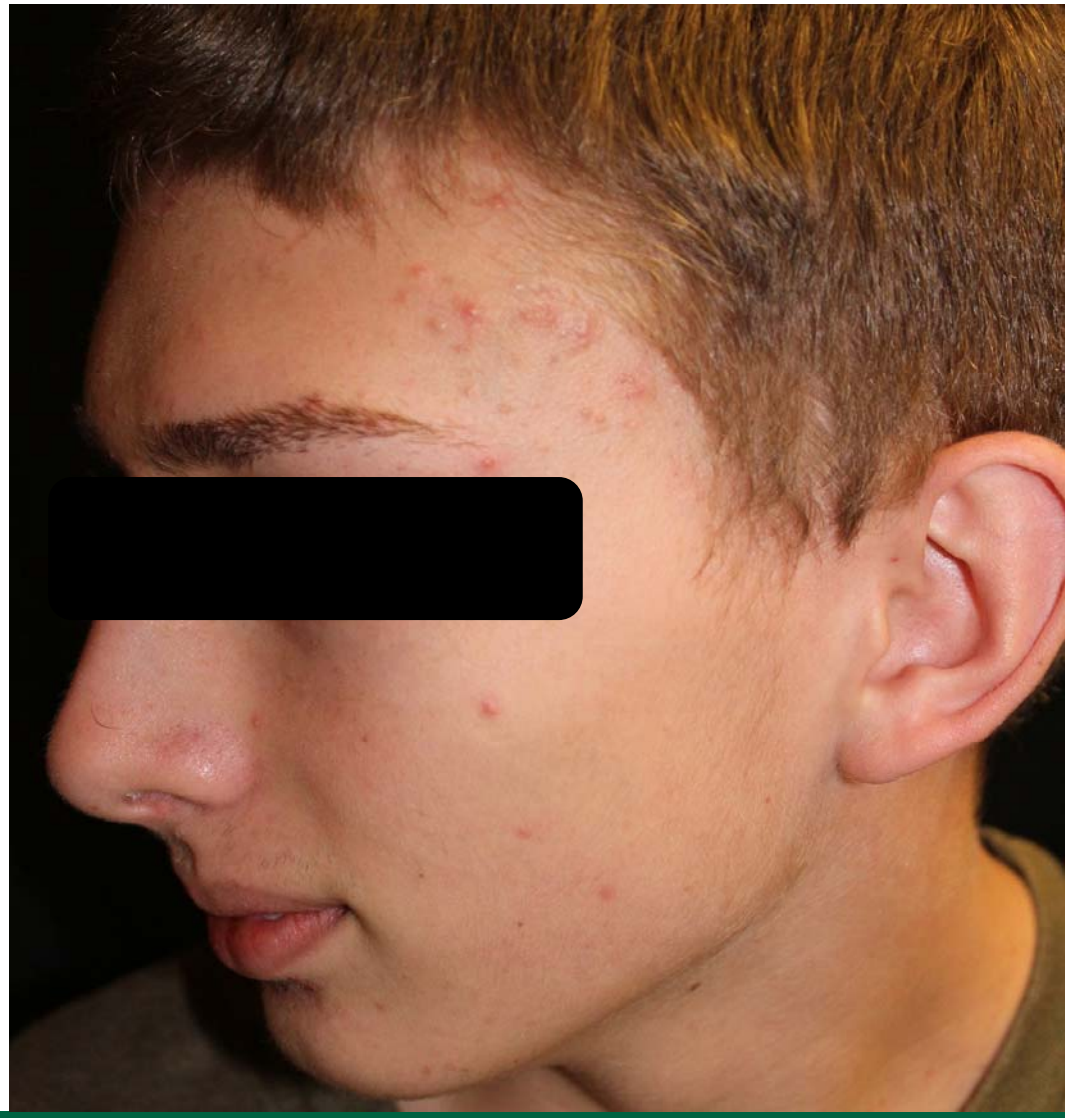
TREATMENT OF ACNE

- Mild acne, inflammatory
- 1st line:
  - Benzoyl peroxide (BP)

    OR
  - Topical retinoid

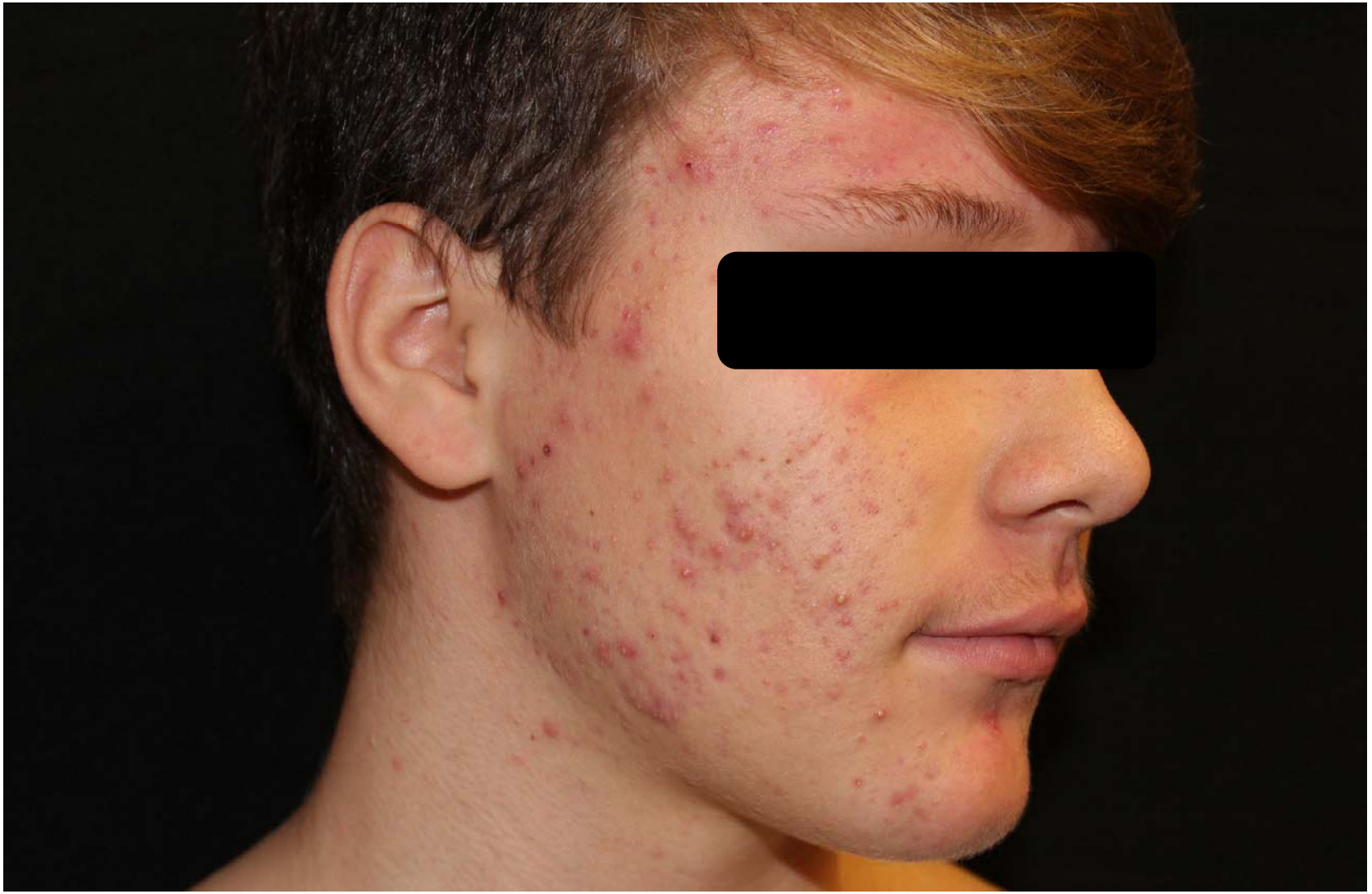
    OR
  - Topical combination therapy

    BP plus topical antibiotic
- Review skin care routine
- Discuss compliance, set expectations



TOPICAL ANTIBIOTICS

- Mild to moderate inflammatory acne
- No role in treating comedonal acne
- Antibacterial, kills *P. acnes*
- Due to risk of bacterial resistance, should never be used as monotherapy
- Best used in combination with benzoyl peroxide
- Not for maintenance of acne
- Topical preparations (Rx)
  - Clindamycin 1% solution, gel, lotion, foam
  - Erythromycin not used much anymore
  - Rx combination products BPO 5% + erythromycin 3% OR BPO 2.5, 3.75, 5% + clindamycin 1, 1.2% OR tretinoin 0.025% + clindamycin 1.2%



TREATMENT OF ACNE

- Moderate acne, inflammatory/mixed
- 1st line:

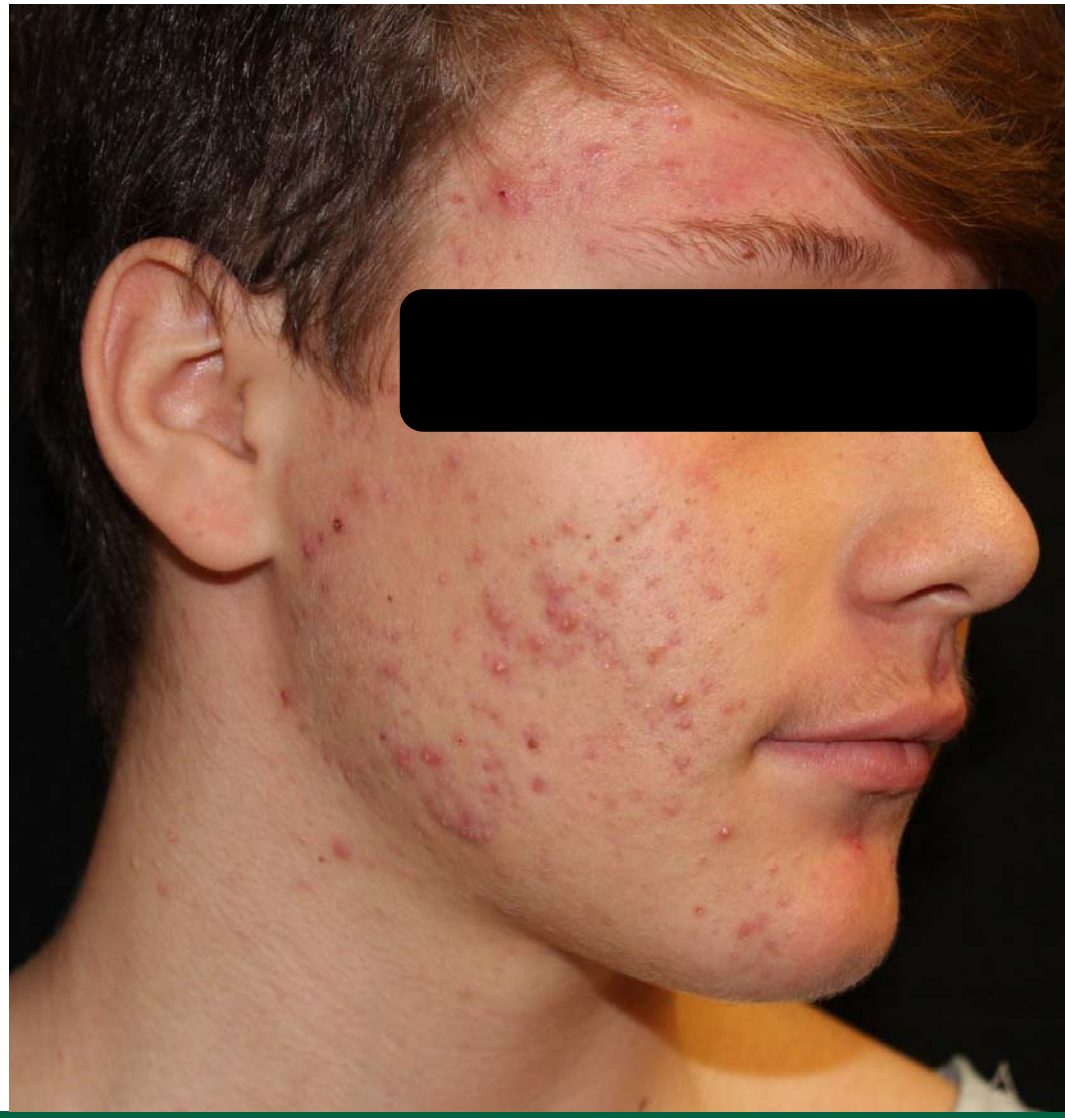
  Topical combination therapy

  Retinoid + BP or Retinoid + BP + antibiotic

  OR

  Oral Antibiotic + retinoid + BP

- Review skin care regimen
- Discuss compliance
- Follow-up 2 to 3 months to assess response to treatment
- Consider referral if not improved



ORAL ANTIBIOTICS

- Moderate to severe inflammatory acne
- Antimicrobial and anti-inflammatory
- Never use as monotherapy due to bacterial resistance
- Combine with benzoyl peroxide (reduce resistance) and a topical retinoid (maintenance)
- Limit duration to 3 to 4 months, if possible
- Doxycycline or minocycline most commonly used
- Alternatives: macrolides (≤ 8 years), trimethoprim-sulfamethoxazole, cephalosporins, penicillins

TREATMENT OF ACNE

- Severe acne, inflammatory
  - 1st line therapy

  Oral antibiotic + BP + topical retinoid

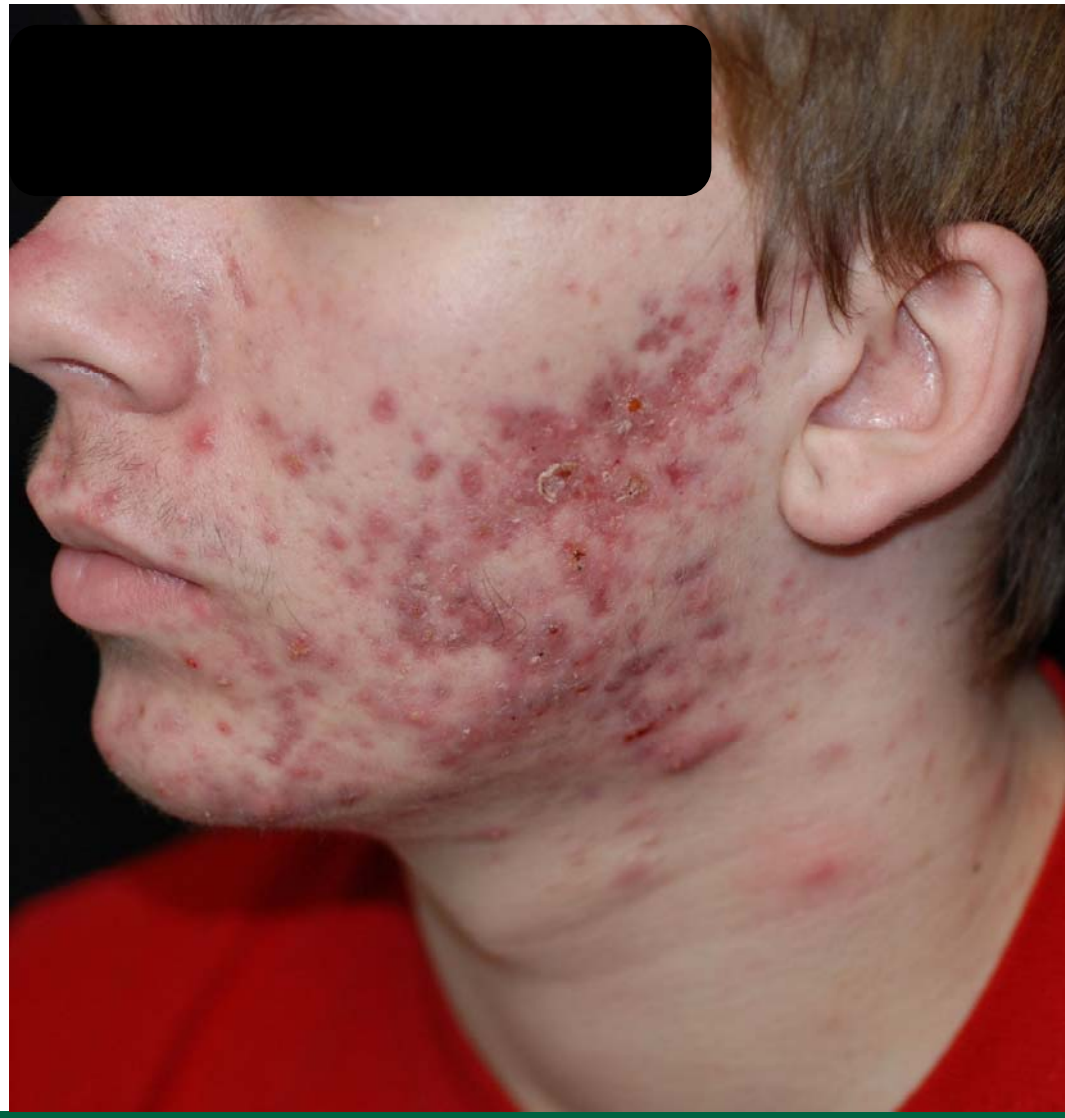
  OR

  Isotretinoin

  AND/OR

  Hormonal therapy (♀)

- Dermatology referral



ISOTRETINOIN

- Indicated for severe nodulocystic acne, scarring acne, moderate to severe acne unresponsive to 3-4 months of treatment, or chronic acne prone to relapse
- Isotretinoin monotherapy remains treatment of choice for severe acne
- Targets all 4 pathogenic factors
- FDA risk management program (iPledge) registration is necessary for all patients and physicians using isotretinoin

ISOTRETINOIN

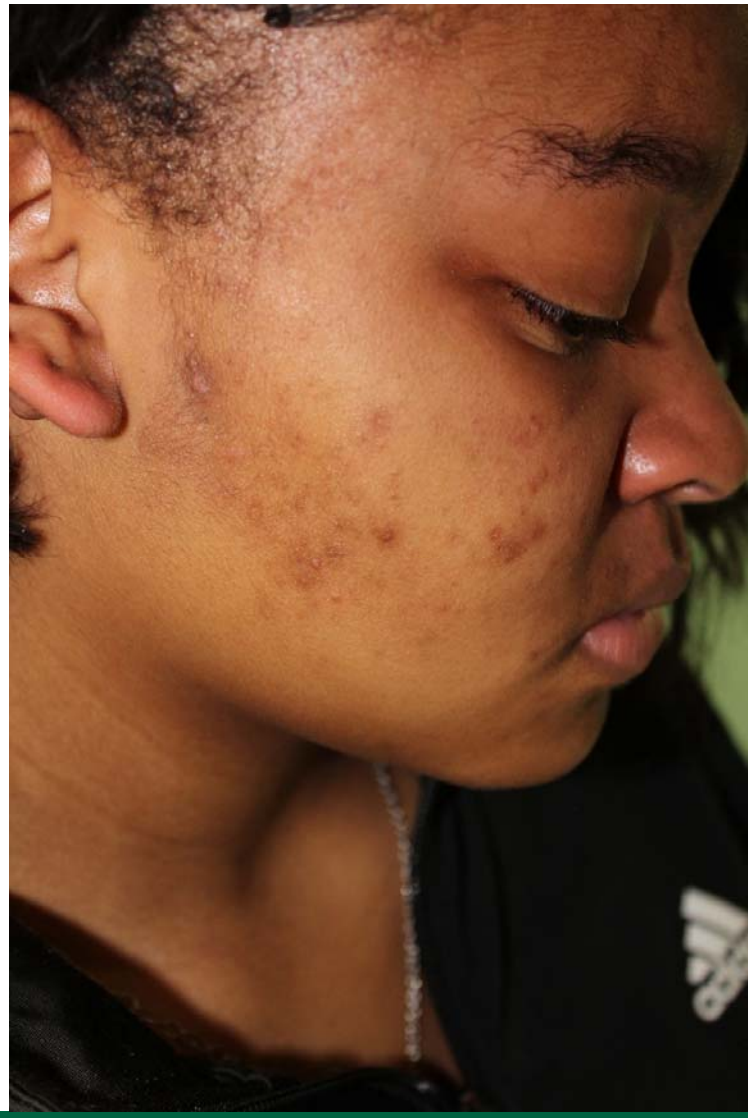
- Teratogenic: must be abstinent or use 2 forms of birth control during and for one month after treatment
  - Work together to ensure adhere to this
- Risk of depression and suicide:
  - Many studies, incl. recent meta-analysis show no increased risk, depression actually decreased
  - Important to screen for depression/mood changes and stop isotretinoin if indicated
- Risk of IBD: Data does not support this
- Surgical procedures: wisdom teeth extraction, skin surgery, cosmetic procedures ok during treatment

HORMONAL THERAPY

- Decrease androgen levels -> sebum production
- Combination oral contraceptives suppress ovarian androgen production
  - Norgestimate/ethinyl estradiol (Ortho Tri Cyclen)
  - Norethindrone acetate/ethinyl estradiol (Estrostep)
  - Drospirenone/ethinyl estradiol (Yaz)
  - Drospirenone/ethinyl estradiol/levomefolate (Beyaz)
- Spironolactone blocks androgen receptors (25 mg to 150 mg QD); often with OCP (lessen menstrual irregularity, prevent pregnancy)
- Progestin-only OCPs can worsen acne

ACNE IN SKIN OF COLOR

- Considerations for skin of color patients
  - PIH very common and distressing
  - Discuss PIH upfront when treating acne
  - Consider regimens containing topical retinoid and azelaic acid (10-20%, OTC) to address both acne and PIH
  - Educate patients about sun protection, sunscreen use
  - Ask about pomades or oils on hair and face



COST CONSIDERATIONS

- AL Medicaid covers oral antibiotics, COC, spironolactone, but NO other treatments for acne
  - Makes following guidelines challenging
  - Leads to overuse of oral antibiotics in this population
  - Isotretinoin is only treatment option for patients with severe acne
- Benzoyl peroxide and adapalene gel 0.1% are OTC
- GoodRx is a good resource for obtaining topical retinoids and isotretinoin at ‘affordable price’
- Shop around for best price
- Hormonal options in females

REFERENCES

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J Am Acad Dermatol 2016;74:945-73

Update in the Management of Acne in Adolescence

Curr Opin Pediatr 2018;30:492-98

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Thank you!