ACNE UPDATE 2017

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FACULTY DISCLOSURE

- I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider of commercial: Spouse owns Eli Lilly & Co stocks.
- I do intend to discuss an unapproved/ investigative use of commercial product/device in my presentation.

ACNE UPDATE

- GAP: Practitioners who treat acne may not consistently address the abnormal keratinization aspect of acne.
- PRACTICE CHANGE: As a result of attending this lecture, attendees will make the following practice change: prescribe agents to address abnormal keratinization.
OBJECTIVES

- Review pathogenesis of acne
- Develop differential diagnoses of acne
- Review evidence based interventions and treatments:
  - Topical therapies
  - Oral therapies

ACNE VULGARIS

- Chronic inflammatory dermatosis which is characterized by:
  - Blackheads (open comedones)
  - Whiteheads (closed comedones)
- Inflammatory lesions
  - Papules
  - Pustules
  - Nodules
  - Cysts

ACNE CLINICAL FINDINGS

- Distribution: face, upper chest, back, and shoulders
- Lesions
  - Comedones
  - Inflammatory papules
  - Nodules
  - Cysts
ACNE PATHOPHYSIOLOGY

- Androgen-mediated stimulation of sebaceous gland activity
- Abnormal keratinization resulting in follicular plugging (comedo formation) in pilosebaceous unit (PSU)
- Proliferation of Propionibacterium acnes in the follicle
- Inflammation

DIFFERENTIAL DIAGNOSES

- Perioral dermatitis
- Bacterial folliculitis
- Drug-induced acneiform eruption
- Angiofibromas

- The presence of comedones confirms the diagnosis of acne vulgaris

MANAGEMENT OF ACNE

- Environmental factors
- Diet
- Topical retinoids
- Benzoyl peroxide/topical antimicrobials
- Oral antibiotics
- Hormonal therapy
- Oral isotretinoin
OVERZEALOUS CLEANING

- Disruption of the skin barrier
- Increased transepidermal water loss
- Rough and itchy skin
- Increased bacterial colonization
- Increased comedonal formation
- Secondary irritant contact dermatitis
- Burning and stinging

ROLE OF DIET

- Ecologic studies: risk factors and disease prevalence in different populations. Low prevalence:
  - Inuit people
  - Rural Africa
  - Rural Brazil
  - Kitavan Islanders in Papua New Guinea
  - Ache’ hunters-gatherers of Paraguay

Slaying The Low Carb Dragon

Kitavan Islanders of Papua New Guinea and Ache People
Wisdom from the Pacific Islands and rural Paraguay
DIET AND ACNE

- Glycemic index/glycemic load
- Milk

OCCLUSION

- Helmets
- Head gear
- Chin straps

ACNE TREATMENT

- Retinoids - First line
- Benzoyl peroxide and combinations with antibiotics
- Topical antibiotics alone are effective, but can be associated with bacterial resistance
- Salicylic acid is moderately effective
- Azelaic acid has limited efficacy
CHOOSE THE RIGHT VEHICLE

- Oily skin, larger, or hair-bearing areas: use gels and solutions
- Dry skin: creams, lotions, or even ointments

TOPICAL RETINOIDS

- First line therapy, can reduce lesions by 40-70%
- Mechanism: modifies abnormal follicular keratinization, may be anti-inflammatory
- Use for both comedonal and inflammatory acne
- Retinoin cream, gel, liquid; adapalene gel (now OTC); tazarotene cream and gel

TOPICAL RETINOIDS-side effects

- Erythema, dryness, peeling, burning, and cutaneous edema
- Dose and formulation dependent
- Irritation may occur initially
- Meta analyses have shown no increase in lesions
BENZOYL PEROXIDE (BP)

- Bactericidal and comedolytic
- Variety of concentrations and formulations
- Minimizes P. Acnes resistance
- Useful in combination with oral or topical antibiotics
- 1:500 will have a true allergic contact dermatitis

BENZOYL PEROXIDE

- Wash, lotion, cream, gel
- DRYING effect proportional to concentration (not efficacy)
- Side effects
  - Allergic contact dermatitis
  - Urticaria
  - Can bleach clothing and bedding

TOPICAL ANTIBIOTICS

- Erythromycin (solution, gel, pads)
- Clindamycin (solution, gel, pledgets)
- Slow to act, best in combination with BP or retinoids
- Resistance more likely with single agent
TOPICAL DAPSONE

- Antimicrobial
- Anti-inflammatory

SYSTEMIC ANTIBIOTICS

- Not FDA approved for acne
- Inhibit P. acnes
- Anti-inflammatory- inhibits neutrophil chemotaxis, cytokines, and (MMP)-9
- Doxycycline
- Cephalexin
- Erythromycin

SYSTEMIC ANTIBIOTICS

- All similarly effective
- Low doses can be as effective as higher doses; once daily dosing
- May give GI disturbances
- Tetracyclines may have photosensitivity
- Minocycline- rare autoimmune disorders (lupus-like changes, hepatitis, arthritis, thyroiditis, or polyarteritis nodosa)
HORMONAL AGENTS FOR ACNE

- For female patients, may use estrogen-containing oral contraceptives
- Oral anti-androgens, such as spironolactone and cyproterone acetate, can be useful
- Limited data about the effectiveness of oral corticosteroids but may provide temporary benefits

ORAL CONTRACEPTIVES (OCP)

- Androgens stimulate PSU, increase sebum production and microcomedone formation
- OCP's containing ethinyl estradiol are anti-androgenic
- FDA approved
  - Ortho Tri-cyclen
  - Estrostep
  - Yaz
  - Beyaz

DYSPIGMENTATION

- Non-comedogenic sunscreens
- Azelaic acid
- Avoid picking
ACNE-TREATMENT

- Oral Isotretinoin
- Pregnancy prevention program
- 1 mg/kg/day
- 5 month treatment duration
- Follow CBC, triglycerides, and cholesterol
- IPLEDGE program 3-1-06

ACNE-treatment

- Isotretinoin side effects
  - Teratogenic
  - Cheilitis
  - Epistaxis
  - Eye irritation
- Less common
  - Depression
  - IBD
  - Pseudotumor cerebri

ACNE-treatment

- Laboratory abnormalities
  - Increased TG, Chol, LFT’s
  - Decreased RBC, WBC, PLTs
REFERENCES


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