Treating Acne in Ethnic Skin

Beatriz Zevallos, MD
Acne

- Most common skin disease in general population as well as African American and Hispanics
- Second most common skin disease in Asians
Pathophysiology of Acne

- Sebaceous follicle ductal hypercornification
- Hyperseborrhea
- Increased number of P. acnes
- Inflammation
Types of Acne

- Acne vulgaris
- Acne conglobata
- Acne fulminans
- Acne excoriee
- Other types include mechanical, occupational, drug-induced, neonatal, and infantile
Acne Vulgaris

- Most common
- Three types of lesions
  - Non-inflamed lesions
  - Inflamed lesions
  - Scars
Acne Vulgaris

- Non-inflamed lesions
  - Microcomedones
  - Closed comedones (whiteheads)
  - Open comedones (blackheads)

- Inflamed lesions
  - Papules
  - Pustules
  - Nodules
  - Cysts
Acne Vulgaris

- **Scars**
  - Atrophic scars
    - Ice pick
    - Rolling
    - Boxcar
  - Hypertrophic
    - Keloids
Acne Conglobata

- Chronic, severe form of inflammatory acne
- Characterized by grouped comedones, cysts, abscesses, draining sinus tracts and scars
Acne Fulminans

- Multiple, intensely inflamed nodules, cysts, and plaques
Acne Excoriee

- Predominantly found in young adult women
- Picking and scratching of lesions leads to inflammation and crusting
Acne in Ethnic Skin

- Two consequences of acne occur at significantly greater rates in darkly pigmented kin
  - Post-inflammatory hyperpigmentation (PIH)
  - Keloids
- High incidence of PIH with acne patients with skin of color
Acne in Ethnic Skin

- Incidence of PIH with acne and acne-related hyperpigmented macules:
  - African American patients: 65%
  - Hispanic patients: 53%
  - Asian patients: 47%

PIH and Acne

- High prevalence of PIH attributed to increased of melanocytes in pigmented skin
- Inflammation or trauma triggers increase in melanogenesis or a release of melanin from labile melanocytes
- Marked inflammation may also contribute

Treatment of Acne

- Topical agents the first-line of treatment
- Topical retinoids are essential in treatment of acne vulgaris and associated acne vulgaris in skin of color and associated PIH
Topical Retinoids

- Tretinoin
- Tazarotene
- Adapalene
Topical Retinoids

- Potential risk of irritant contact dermatitis, which can also result in PIH

- Mechanism of action
  - Anti-inflammatory properties
  - Normalization of follicular epithelium
  - Loosen comedones and prevent sebum build up
Topical Retinoids

- Used for mild acne that is nonscarring, has open and closed comedones, and moderate pustules
- Need to be maintained to have comedolytic effects
- Onset of improvement usually takes 8 weeks
Adapalene Studies

- African American patients with Fitzpatrick IV-VI

- Adapalene gel 0.1% significantly reduced number of inflammatory lesions and caused less erythema and scaling

- Reduction in number and density of post-inflammatory hyperpigmented macules

Asian Acne Study

- Adapalene gel 0.1% compared with tretinoin gel 0.25% in randomized study of 150 Chinese patients for 8 weeks

- Both adapalene and tretinoin shown to reduce number of inflammatory and non-inflammatory lesions

- Tretinoin caused more irritation

Topical Antibiotics

- Topical antimicrobials effective in reducing levels of P. acnes
  - Erythromycin
  - Clindamycin
- Antibiotic resistance concern with long-term use
Topical Antibiotics

- Resistance can be reduced by use of benzoyl peroxide

- Primary consideration with benzoyl peroxide is minimizing irritation and drying effects that could lead to post-inflammatory hyperpigmentation
Azelaic Acid

- Topical azelaic acid 20% cream effective in managing acne in ethnic skin
- Reduces inflammatory and non-inflammatory acne lesions
- Decreases hyperpigmentation via tyrosinase inhibitory effects
- Comparable efficacy to tretinoin, benzoyl peroxide, erythromycin, clindamycin

Depigmenting Agents

- Adjunctive use of depigmenting agents to improve PIH commonly incorporated in acne treatment for ethnic skin

- Agents used
  - Hydroquinone
  - Azelaic acid
  - Kojic acid
Chemical Peels

- Superficial peeling agents effective and sage in darker skin types
- Benefits of peels in ethnic skin
  - Treat existing primary and secondary lesions
  - Improvement of PIH
  - Improved absorption of topical agents
Chemical Peels for Acne

- Glycolic acid buffered 30-50%
- Jessner’s solution
- Salicylic acid 25%
- Pyruvic acid 40-70%
- TCA 25-30%
- Unna paste (resorcinol 40%)
- Phenol 45-80%
Indications

- Comedonal acne
  - Glycolic acid
  - Jessner
  - Salicylic
  - Pyruvic acid
  - Unna paste
Indications

- Mild/moderate inflammatory acne
  - Salicylic acid
  - Pyruvic acid
  - Glycolic acid
  - Jessner
  - Unna paste

- Severe nodulo-cystic acne
  - Pyruvic acid
Indications

- Superficial post acneic scars
  - Pyruvic acid
  - TCA
  - Salicylic plus TCA

- Medium-deep post acneic scars
  - Phenol
  - TCA >40%
Frequency of Application

- Glycolic acid: 3-6 peels every 1-2 weeks
- Jessner’s solution: 3 peels every 2 weeks
- Salicylic acid 25%: 3-8 peels every 2-4 weeks
- Pyruvic acid 40-70%: 3-8 peels every 2-4 weeks
- Salicylic acid plus 25-30% TCA: 5-6 peels every 4-5 weeks
- Phenol: 1 treatment
Advantages of Various Agents

- **Salicylic acid**
  - Safety and efficacy in darker phototypes (V-VI)
  - Possible association with other substances such as TCA and pyruvic acid to improve absorption
  - Easier to manage than glycolic acid in terms of uniformity of application

- **Salicylic acid and pyruvic acid** better than glycolic and Jessner in terms of risk of side effects and patient discomfort

- **Glycolic acid preferred over Jessner**: equal treatment effect but lesser degree of exfoliation in glycolic acid
Pre-Treatment

- Pre-treatment with 4% hydroquinone to reduce post-peel hyperpigmentation in skin types IV-VI
- Topical retinoids discontinued 1 week before peel and restarted 5-7 days after the peel
Chemical Peel Study

- 9 patients with darker skin types with acne vulgaris treated with series salicylic peels

- Moderate to significant clearing of acne vulgaris occurred in 8 of 9 (89%)

Acne Results

Acne Results
Acne Treatment with Laser & Light
Q-SWITCHING

- The Q-Switch acts as an extremely high speed shutter.
- It allows the Nd:YAG rod to store a large amount of energy.
- Allows a single, high energy, high speed pulse to exit the cavity.
Laser Toning-Active Acne

1064nm, 6.0mm spot size, 3.5 J/cm², 8 treatments 1 week intervals

Images Courtesy of Skin Laser Clinic, Taipei, Taiwan
Laser Toning-Active Acne

1064nm, 6.0mm spot size, 3.5 J/cm², 8 treatments 1 week intervals

Images Courtesy of Skin Laser Clinic, Taipei, Taiwan
Acne and Ethnic Skin

- Cystic and inflammatory acne common
- Bad scarring can occur
- Distressing PIH and erythema can last for months
- Elos Acne laser treatment gives overall improvement of acne and acne scars
- Can be performed 2x/month or more in combination with traditional medical treatment
THE CHALLENGE with ethnic skin

Traditional lasers and IPL systems are very challenging to use because excessive epidermal absorption of optical energy can lead to complications!!!
Possible Complications

- Post-inflammatory hyperpigmentation (PIH)
- Permanent hypopigmentation
- Prolonged recovery, erythema and dyschromia with invasive resurfacing techniques
- Scarring/keloids
- No effect from treatment with lower energy parameters (very common)
Post-inflammatory Hyperpigmentation (PIH)

- Most common complication
- Can occur whenever there is enough trauma or inflammation regardless of actual cause
- Histologically increased melanin pigment production in the epidermis and dermis
- Discoloration can last for many months
- Patients should be advised before treatment
Hyperpigmentation and Persistent Erythema after CO2 Laser Skin Resurfacing
Technological Migration to Multiple Energies


Lasers
IPL
elos™

Conducted Bi-Polar RF

EPIDERMIS
PAPILLARY DERMIS
RETICULAR DERMIS
DEEP DERMIS
HYPODERMIS
PDT for Acne on Ethnic skin

Before

After 2 treatments

Dr. Mauricio’s Actual Patient
Acne and Acne Scars

glas AC applicator

Before

After

Dr. Mauricio’s Actual Patient