Acne, Inflammatory and Non-Inflammatory Lesions Causes and Solutions

by

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Sheila has lectured with Age Management, agemed.org, and aaeg.org. These conferences are for both physicians and other professionals, in which they obtain CME credits. She also lectures at multiple aesthetic conferences throughout the United States, and internationally. She has been published in the UK Medical Cosmetic Journal and Healthy Aging Magazine, and is on the faculty of the AAEG. Member of National Association of Professional Women, eWomen Network™, and United Aesthetics Organization.
PREVALENCE

Affects more than 17 million Americans
85% Adolescents ~ 8% of 25-35 years
3% of 35-44 years
Ethnic Skin Types Prone: Asian, Latin American, African American
Most common cutaneous disorder in US
WHAT IS ACNE VULGARIS
Abnormalities in sebum production, follicular desquamation, bacterial proliferation & inflammation

Occurs when pores become clogged

• Whitehead
• Blackhead
• Swollen, Red Bumps

➢ Bacteria

• Propinoibacterium acnes
PREDISPOSITION TO ACNE

- HORMONAL IMBALANCE
- FOLLICULAR HYPERKERATINISATION
- BACTERIAL INFECTION
- GENETIC FACTORS
- ENVIRONMENTAL FACTORS
- NUTRITION
- SMOKING
ACNE LESIONS: TWO TYPES
INFLAMMATORY & NON-INFLAMMATORY

**Non-Inflammatory:** nodular acne, comedones, papules, blackheads & whiteheads...not infected with bacteria

**Inflammatory:** clogged pores that have become infected with bacteria. Inflammatory nodules erupt below surface can cause severe scarring
CLASSIFICATIONS OF ACNE

- **TYPE 1**: Mainly comedones with an occasional inflamed papule or pustule

- **TYPE 2**: Comedones, numerous papules and pustules, some mild scarring

- **TYPE 3**: Numerous comedones, papules, & pustules, spreading to back, chest, & shoulders with an occasional cyst or nodules, and some moderate scarring

- **TYPE 4**: Numerous large cysts on face/back & severe scarring
MANIFESTATIONS of ACNE

➢ **CLOSED COMEDONE (whitehead)** ~ A clogged follicle. Whiteheads usually appear on the skin as small, round, white bumps.

➢ **OPEN COMEDONE (blackhead)** ~ A plugged follicle that opens and turns dark at the surface of skin. Blackheads do not indicate the presence of dirt.

➢ **PAPULES** ~ Inflamed lesions that appear as small, slightly pink bumps.

➢ **CYSTS & NODULES** ~ Large, inflamed, pus filled lesions deep under the skin which can cause pain & sometimes scarring.
PATHOGENESIS OF ACNE

➢ Plugging of hair follicle
   With abnormal keratinized cells

➢ Androgen-induced sebaceous
   Gland hyperactivity

➢ Proliferation of bacteria
   Propionibacterium acnes

➢ Inflammation
PSEUDOFOLLICULITIS barbae/FOLLICULITIS

- Inflammatory response to shaving
- Cause: short hairs get “trapped”
- Bacteria infects hair follicles
- More common in men
- Not to be confused with Acne
OVER THE COUNTER INGREDIENTS FOR ACNE

- Salicylic Acid
- Retinoid~Retinol
- Niacinamide (vitamin B3)
- Hyaluronic Acid
- Wasabi Japonica Root Extract
- Benzoyl Peroxide
- Vitamin C
- Lightening agents (post inflammatory)
PRESCRIBED TOPICALS~ANTIBIOTICS

➢ **Tetracyline:** Severe cases
➢ **Erythromycin:** Recommended for patients who can’t use tetracyclines
➢ **Subantimicrobial-dose Doxycycline:** Treatment of moderate acne
➢ **Accutane:** Recommended more with patients having severe pustulocystic acne
➢ **Retin A-Retinoids (topical):** Aids in elimination of keratinous plugs (1st line of therapy)

The American Academy of Dermatology also recommends topical retinoids as first line therapy for acne followed by oral doxycycline or minocycline if needed. Erythromycin is recommended for patients who can’t use tetracyclines, but with a warning about possible bacterial resistance.

JFP References
DIFFERENT TREATMENT APPLICATIONS

- Antibiotics
- Micro-needling
- Blue Light Therapy
- Intense Pulse Light
- Microdermabrasion
- Chemical Peels
- Topicals ~ over the counter & prescribed
- Oral contraceptives
CHEMICAL PEEL TARGET AREAS

clogged pores
acne
acne scars

sebum production
fine lines
blackheads
**BENEFITS**

- Superficial peels penetrate only the surface layer of skin
- Have anti-inflammatory properties
- Temporarily reduce skin oil secretions.
- Most common are glycolic acid (AHA) and salicylic acid (BHA)

**REFERENCES:**

Moderately penetrating chemical peels normally use trichloroacetic acid (TCA) in 35-50% strength, which penetrates more deeply into the skin than superficial peels such as salicylic.

- TCA causes peeling of deeper layers of the skin
- Increases production of collagen, elastin, and other proteins which give skin its elasticity.

REFERENCES

Deep peels penetrate deeply into the skin and used to treat acne scars.

The procedure is akin to plastic surgery and must be administered by a skilled and highly trained dermatologist.

Deep peels use phenol at a concentration of 88%. In some cases, phenol is combined with croton oil.

Deep peels work by breaking down proteins in skin and stimulating production of collagen in the regenerated skin.

**References**

BLUE LIGHT THERAPY
MILD TO MODERATE ACNE

➢ Blue light kills the bacteria
➢ Bacteria, *Propionibacterium acnes*, clogs pores and causes inflammation.
➢ Blue LED light causes the *p. acnes* to self-destruct, used in treatment

REFERENCES:
WHO BENEFITS FROM BLUE LIGHT THERAPY

Red pimples from inflammatory acne
But...If patient has cystic acne, it won’t work!

WHO SHOULD AVOID BLUE LIGHT THERAPY

Topicals ~ Retinol ~ St Johns Wort...any topical that makes skin sensitive to light

Lupus ~ Pregnant~ Epilepsy

Accutane ~ discuss with physician first
INTENSE PULSE LIGHT TREATING ACNE

- IPL technology allows to treat your acne with specific wavelengths of light.
- Light targets the bacteria in the skin, as well as inflamed sebaceous glands that contribute to breakouts.
- Controlled pulsing prevents thermal damage to your skin and minimizes discomfort.
- Common 4-6 weeks of treatment.
- Not suitable with active viral or fungal skin conditions or skin cancer.

REFERENCE: EFFICACY OF INTENSE PULSE LIGHT IN TREATMENT OF FACIAL ACNE VULGARIS: Comparison Using of Two Different Fluences
Department of Dermatology, Leprology and Venereology, MGM Medical College and Hospital, Aurangabad, Maharashtra, India.
Patidar MV, Deshmukh AR, Khedkar MY
COMPARISON

**IPL HOME DEVICE**

Specification
Wavelength: 510~1200nm
Area Spot Size: 4.5cm²

**PROFESSIONAL**

Specification
Wavelength: 400~1200 nm
Area Spot Size: 35 x 15 mm², 15 x 8 mm², 6mm
MICRONEEDLING WITH PRP SHOWN TO IMPROVE APPEARANCE WITH ACNEIC SCARRING

35 YEAR OLD FEMALE TWO WEEKS AFTER FOUR SESSIONS
Photos Provided By: Mara Weinstein Velez, M.D.