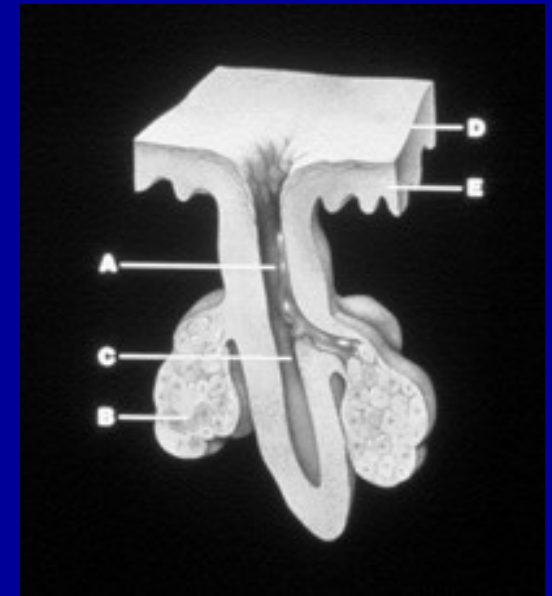


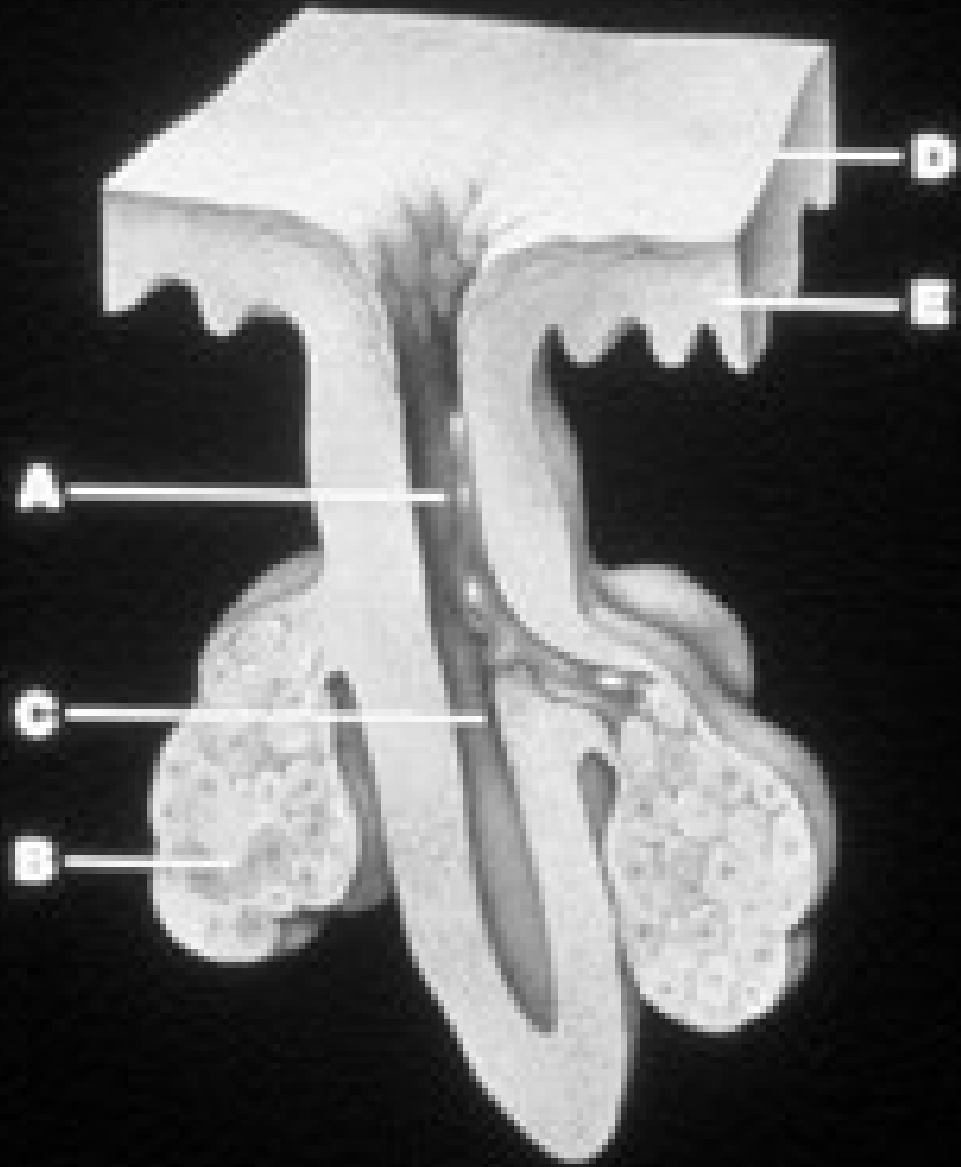
Acne Vulgaris



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Background

- Common skin disease affecting 85-100% of people at sometime during their lives



Definition

- Chronic inflammatory disease of pilosebaceous follicle characterized by **non-inflammatory** (comedones) & by **inflammatory lesions** (red papules, pustules, nodules) in its more severe form. Affects areas of skin with dense population of sebaceous glands (Face, upper chest, back)

Clinical Features

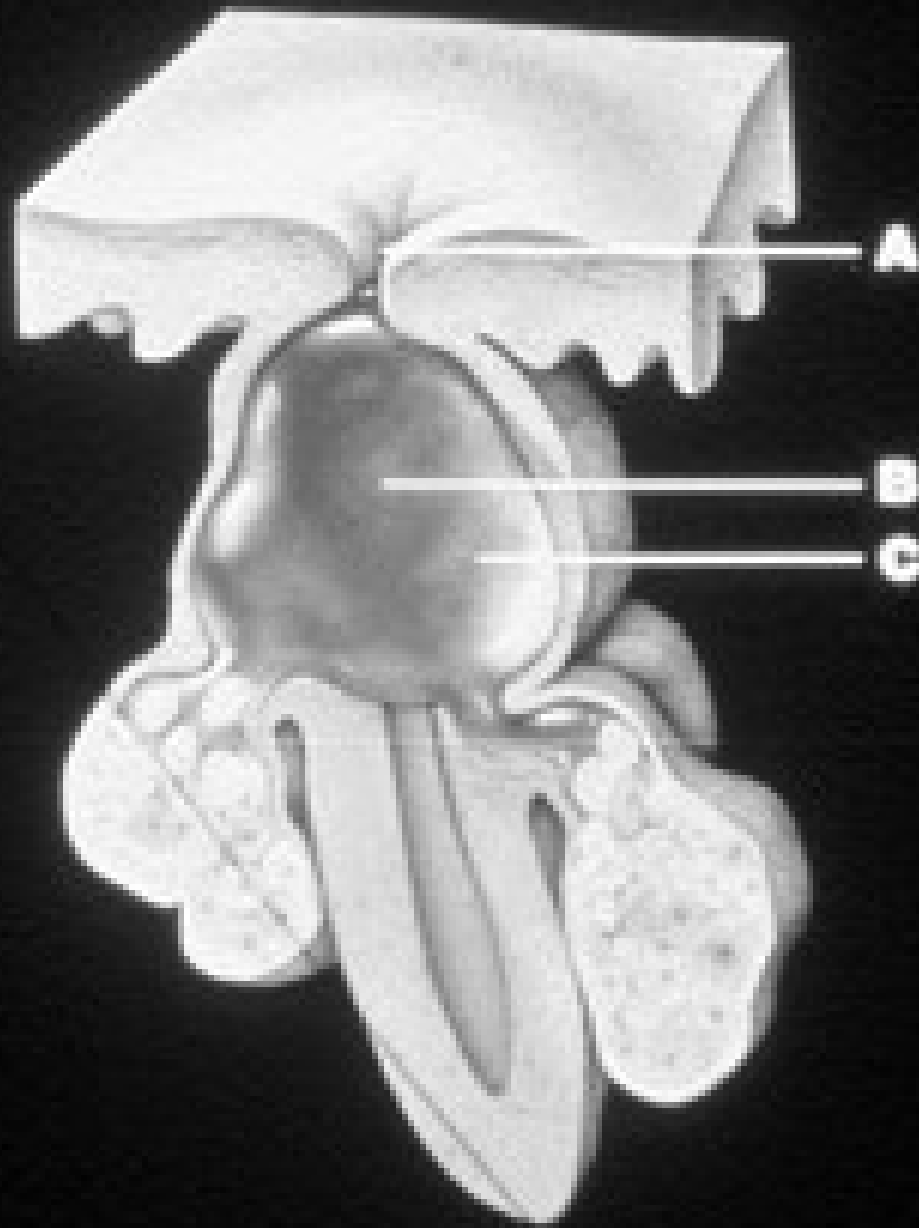
- Age
 - 12-35 years (commonly)
- Sites
 - Face (90%), Back (60%), Chest (15%)

Pathophysiology

- Pathogenesis is multifactorial
- Four Key Factors
 - Abnormal **ductal hyperproliferation** causing excessive keratin formation ,obstructing duct and producing comedones
 - Excess **sebum production**
 - **Propionobacterium acnes bacterial** (presence & activity)
 - **Inflammation**

Abnormal ductal hyperproliferation

- First recognized event
- Causes of hyperproliferation (Exact cause not known)
 - Androgen Hormones
 - Changes in lipid composition
 - Pro-inflammatory mediators (IL-1 especially)



Excessive Sebum production

- Different hormones & mediators regulate sebum production & excretion (Androgens, Growth Hormone, Insuline-like growth factor)
- End-organ hyper-responsiveness to hormones

P.Acnes

- Anaerobic organism
- Promotes inflammation through various means
 - Pro-inflammatory mediators(IL-2,IL-8,TNF)
 - Hypersensitivity to P.Acne

Factors Influencing Acne

- Genetic
- Oily cosmetics, hair pomades
- Medicines
 - Steroids, Lithium
 - Antiepileptics
 - Antituberculous
 - Iodides

Factors Influencing acne

- Diet
 - **Scientific proof is lacking.**
 - Chocolate & diet restriction of no value
 - No Definite link of acne severity with calorie intake, carbohydrates, lipids & protein intake.

Factors Influencing Acne

- Pre-menstrual Flare
 - About 70% women complain of acne-flare 2-7days premenstrually
 - Due to increase hydration of the duct
 - Pro-inflammatory effects of estrogens & progesterons

Factors Influencing Acne

- Sweating
 - About 15% complain of acne-flare with increase sweating
 - Probably related to ductal hydration

Factors Influencing Acne

- Occupation
 - Catering
 - Patients dealing with oil industry

Factors Influencing Acne

- Endocrine disorders
 - Polycystic Ovary Syndrome
 - Congenital adrenal hyperplasia
 - Other endocrine disorders with excess androgens

Factors Influencing Acne

• Occlusive Cosmetics/Hair

Pomades

- Halogenated Hydrocarbons
- Heat/Humidity
- Excessive/Vigorous Washing
- Friction/Pressure
- Manipulation of Lesions

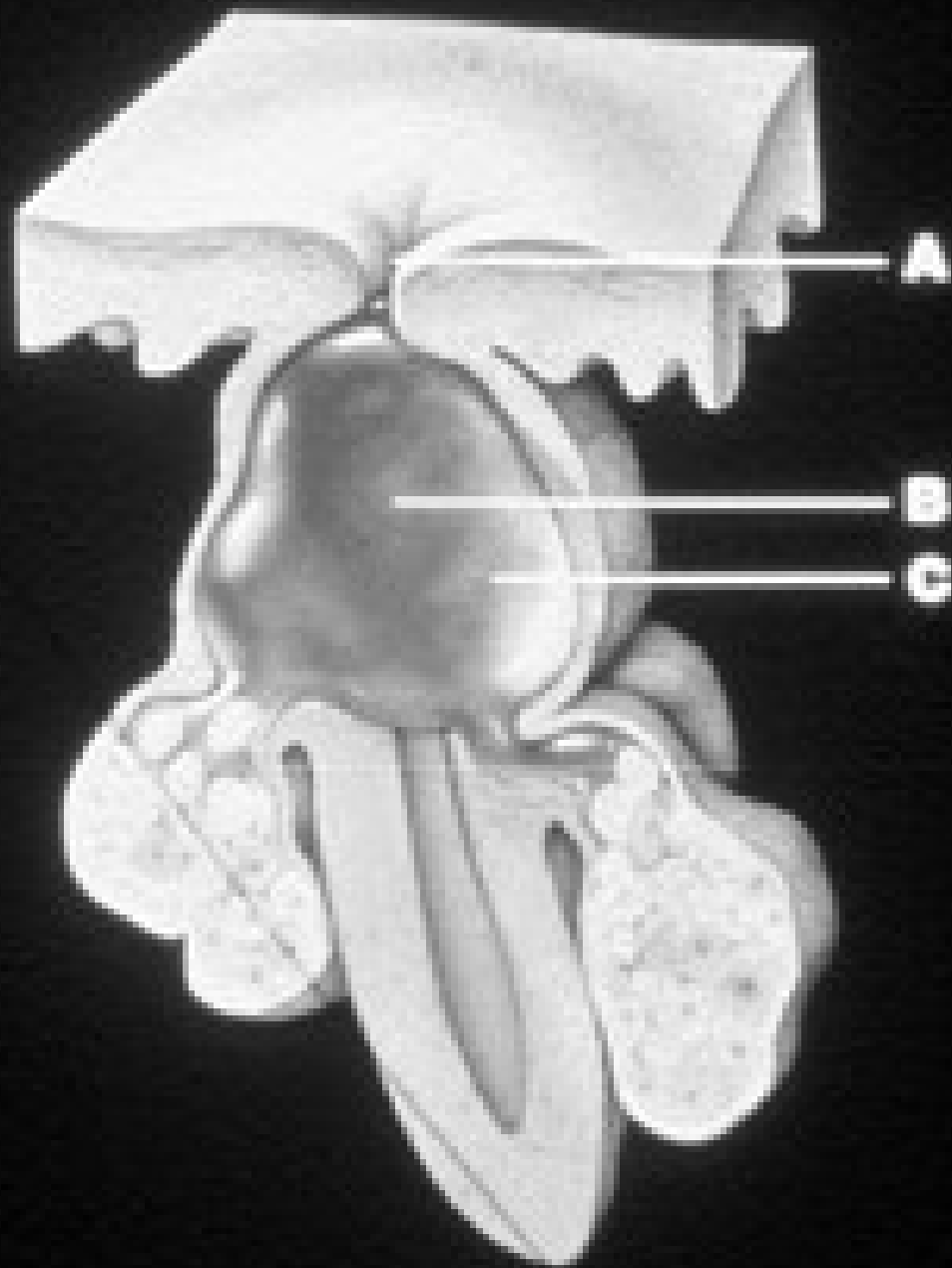
Clinical Features

- Non-Inflammed Lesions
 - Blackheads (Open Comedones)
 - Whiteheads (Closed Comedones)

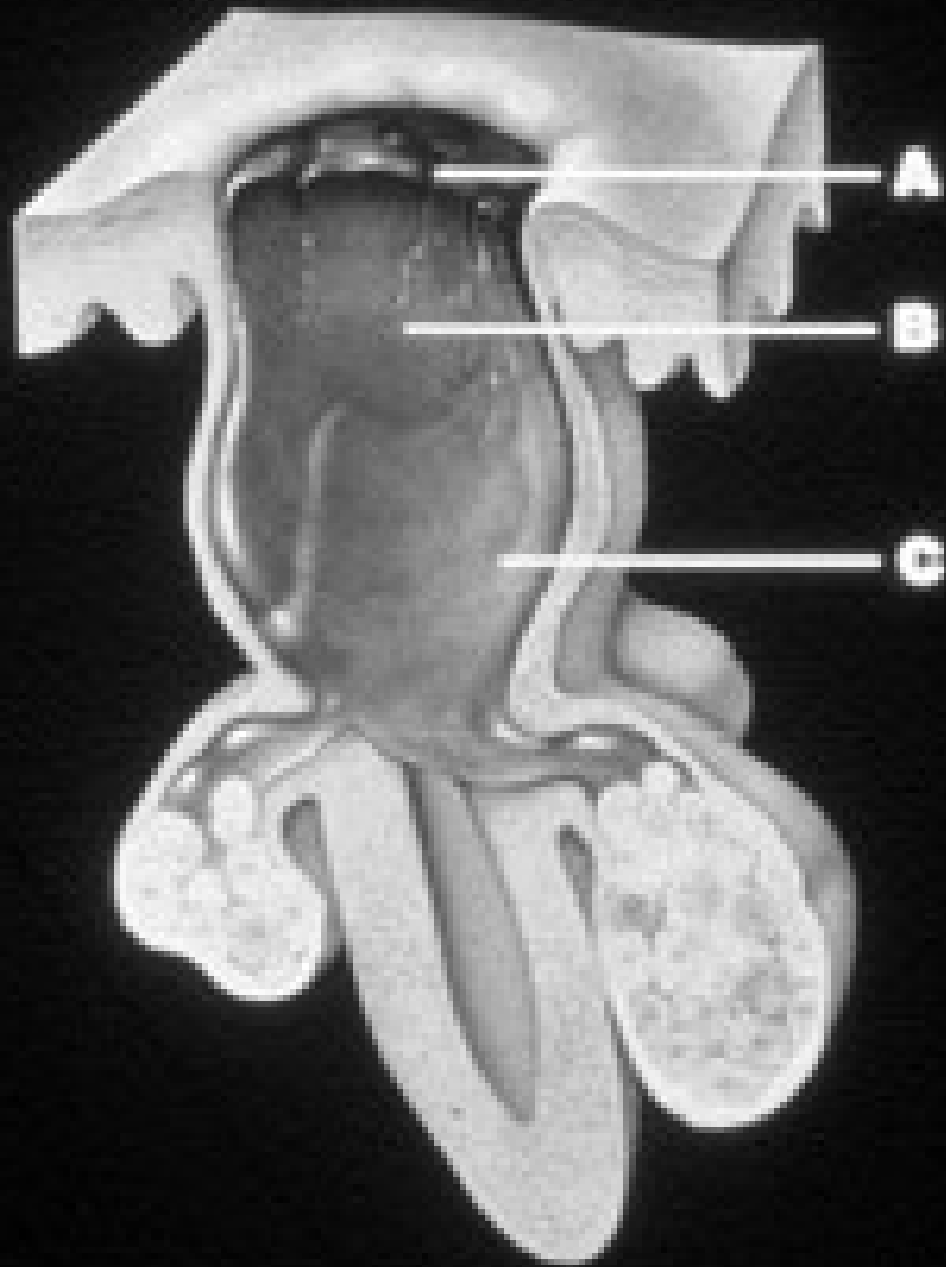


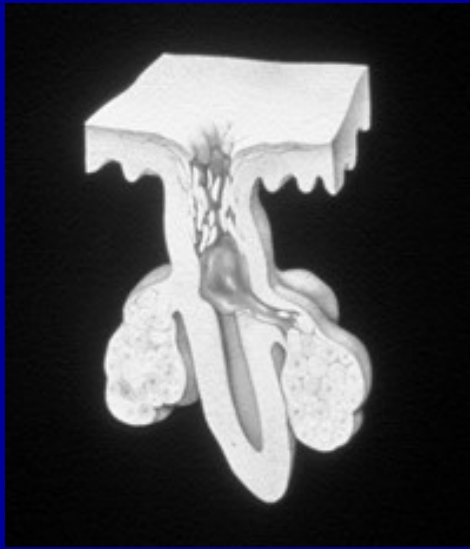
Microcomedone

Closed Comedone

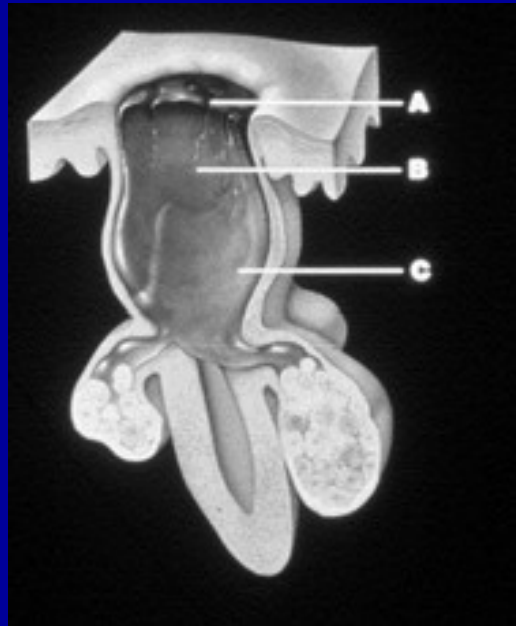
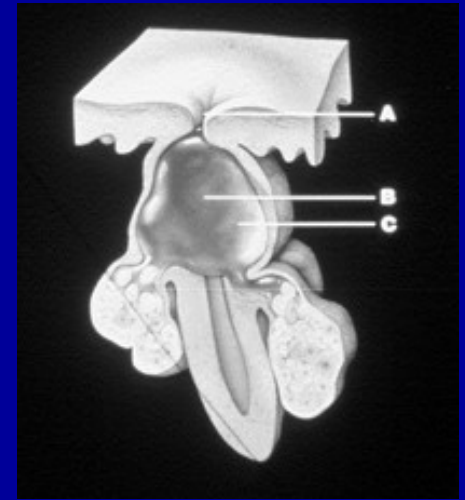


Open Comedone





Types of Comedones



Clinical Signs (Comedonal Acne)

- **Open (black) Comedones**
 - Sebum & Keratin accumulate
 - Appear black papules



Closed (White) Comedones

- Appear as skin-coloured papules
- Sebum & keratin accumulate
- It lies at a distance from follicular opening





Clinical Features

- Inflammatory Lesions
 - Red papules
 - Pustules
 - Nodules

















Clinical Features

- Healing Lesions
 - Pigmented macules
 - Scarring

Scars in Acne

- Hypertrophic
- Keloids
- Atrophic depressed







D/D

- Rosacea
- Bacterial Folliculitis







Psychological Effects of Acne

- Stress
- Embarrassment
- Anxiety
- Lack of confidence
- Impaired social contact
- Anger
- Suicidal ideation

MANAGEMENT

General Measures

- Avoid oil-based cosmetics
- Avoid manipulation of lesions
- Avoid topical Steroids
- Avoid Fairness creams
- Avoid Facials, Massage

Acne Myths

- Not to worry, “You will grow out of it”
- Acne is caused by poor hygiene
- Acne is caused by something in your diet
- Vigorous washing helps
- Treatments don't work

Lab. Investigations

- Hormonal evaluation: (Serum Testosterone, DHEA-S, Pelvic US) be done in patients with dysmenorrhea & hirsutism

Topical Therapy

- Retinoids
- Benzoyl Peroxide
- Antibiotics

Retinoids

- Retinoic Acid or Tretinoin
 - Vitamin A analogue
- Mode of Action
 - Effective against comedones, as it normalises follicular keratinization
 - Anti-inflammatory

Clinical Use

- Available in 0.05% concentration
- Use only at night as it can cause photosensitivity
- Apply to all acne-prone areas
- Side Effects
 - Irritation, dryness, redness, aggravation of acne.

Other Retinoids

- Isotretinoin
- Adapalene
- Tazarotene
- **ADVANTAGE**
 - Less irritating

Benzoyl Peroxide

- Mode of Action
 - Antimicrobial
 - Anti-inflammatory
- Clinical Use
 - Available in 2.5%,4%,5% concentration
 - Initially used in lower concentration for short period(1-2 hours)
- Side Effects: irritation

Topical Antibiotics

- Clindamycin (1-2%), Erythromycin (2-4%)
- Mode of action
 - Suppresses P.Acnes
 - Anti-inflammatory
- Clinical Use: Usually used in combination with retinoids & Benzoyl peroxide
- Side Effects: Resistance of P.Acnes

Other Topical Agents

- Azelaic Acid(20%)
- Salicylic Acid
- Sulphur

Systemic Treatment

- Antibiotics
 - Tetracyclines, including Doxycycline & Minocycline
 - Erythromycin & Azithromycin
 - Sulphamethoxazole-Trimethoprim
- Mode of Action
 - Inhibit growth of P.Acnes
 - Anti-inflammatory Effects

Clinical Use

- Moderate to severe acne and in patients with psychological problems
- Tetracycline (0.1 g), Doxycycline (100 mg)
Minocycline (100 mg)
- Erythromycin (0.1 g), Azithromycin (500 mg on alternate days)
- Daily for long periods of time (upto 06 months sometimes even longer)

Hormonal Therapy

- Antiandrogens
 - Decrease sebum secretion rate
 - Cyproterone acetate: available in combination with ethinyl estradiol (0.02 mg cyproterone acetate, 35 microgram ethinylestradiol). Used in difficult to treat acne in females
 - Spironolactone: 50-100mg daily is another alternative

Oral Isotretinoin

- It has revolutionized the management of severe and intractable acne
- Mode of Action
 - Inhibits sebum secretion
 - Decreases *P. Acnes* count
 - Reduces inflammation

Treatment Schedule

- Dose: 0.5-1 mg /kg body weight daily for a period of 12-16 weeks
- Indications:
 - Severe acne
 - Moderate acne not responding to conventional therapy





Side Effects

- Dry skin, cheilitis, dry eyes,
- Few may have initial flare
- Teratogenicity
- Monitoring:
 - Pregnancy test
 - CBC, LFTs, Lipid Profile

Physical modalities

- Intralesional Steroids
- Cryotherapy
- **Laser Therapy-Fractional Co2 and ERG:GLASS resurfacing for acne scars**
- Dermabrasion
- Injectable Fillers

Message

Acne, being so common a problem **every medical graduate** should have **clear basic concept of acne so as to manage patients effectively**