

Acne Vulgaris

- Most common skin disease, affecting 80% of persons between 11 to 30 years old at some point
- 4.8 million patient visits per year
- It can persist for years resulting in disfigurement and permanent scarring→ emotional problems, societal withdrawal and depression

Pathophysiology

- Begins in the prepubertal period, the adrenal glands mature (adrenarche) and secrete increasing amounts of androgens→ increased sebum production
- Sebaceous follicles located primarily on the face and trunk become obstructed by excessive amounts of sebum as well as excessive numbers desquamated epithelial cells from the wall of the follicle
- The obstruction causes formation of a microcomedo which may develop into a comedones or inflammatory lesion
- Propionibacterium acnes, an anaerobic organism, proliferates well in the obstructed follicle→ chemotactic factors and proinflammatory mediators
- With the development of gonads, androgen production and activity of the sebaceous gland increases
- Most patients with acne probably have sebaceous glands which are hyper responsive to androgens
- However patients with androgen excess (PCOS) frequently develop acne

Clinical manifestations

- Earliest clinical expression of acne is usually noninflammatory comedones (blackheads and whiteheads) typically found on the central forehead, chin, nose and paranasal area
- This usually occurs in preteen or early teenage years prior to colonization with P. acnes
- Next, a mild form of inflammatory acne occurs in many early teenage patients in which there are scattered small papules and pustules with minimal inflammation
- The inflammatory acne typically evolves into a more generalized eruption first on the face then on the trunk
- A minority of patients will go on to develop a more destructive type of inflammatory acne associated with large deep nodules and cysts→ potential scarring

Differential Dx

- Acne vulgaris
- Rosacea (note: absence of comedones and presence of telangiectasias)
- Acne fulminans (d/o of adolescent males→ severe inflammatory acne, leukocytosis, elevated ESR, proteinuria and osteolytic lesions)
- Pyoderma faciale (AKA rosacea fulminans) (d/o of abrupt appearance of many large pustules and furunculoid nodules; usually affects women under severe stress)
- Adrenal excess (Cushing's)
- PCOS

Therapies

- No topical therapies influence production of sebum (only hormonal and antiandrogen therapies)
- Soaps, detergents and astringents remove sebum from the surface but do not alter production
- Vigorous scrubbing can aggravate acne→ inflammation and worsening
- Gentle nonabrasive cleansing is best
- Dietary factors do not influence sebum production and therefore have no role in the treatment of acne
- Oil based cosmetics and hair products can worsen acne and should be avoided

Comedonal acne

- Goal is prevention of progression
- Topical retinoids: mechanism: normalize follicular keratinization and thus prevent new comedones
- May cause local skin irritation so lowest strength should be used
 - Topical tretinoin (Retin A)
 - Can increase photosensitivity so should be used at night with sun screen

- Adapalene (Differin): causes less irritation but is weaker
- Salicylic acid: OTC
- Tazorac
 - Contraindicated in pregnancy

Mild Inflammatory acne

- Most patients respond to a topical antibiotic such as benzoyl peroxide or benzoyl peroxide plus erythro or clinda
- The antibiotic have both comedonal and anti-inflammatory properties
- Used BID for 2-4 weeks

Inflammatory acne

- If inflammatory lesions are present along with comedones → topical retinoid used q day along a topical or systemic antibiotic
- If systemic antibiotics are used they should be continued for 2-4 months and weaned slowly while topical abx are applied
 - Tetracycline is preferred because of its low cost and high efficacy; usual dose is 500 BID
 - Must be taken on an empty stomach: Absorption is inhibited by food, dairy products and antacids
 - Contraindicated in pregnancy and in children <12 yo
 - Doxycycline and minocycline are other options
 - Can be taken at lower dose and with food
 - Doxy can cause photosensitivity and esophageal ulcerations

If acne persists:

- Systemic isotretinoin (Accutane)
 - Indicated for severe nodular cystic acne, acne without improvement after 6 months of oral abx, scarring or relapsing acne
 - Usual duration: 20 weeks
 - 80 % will have a stable longterm remission after one course
 - Very teratogenic: every female must have 2 negative pregnancy test before starting and q monthly tests while on therapy
 - Sexually active women need two form of birth control while on therapy
 - Many Side effects: photosensitivity, dry skin depression (increased suicide risk), arthalgias, myalgias, pseudo tumor cerebri, decreased night vision, corneal opacities, hypertriglyceridemia and bone marrow suppression
 - Serum triglycerides, cholesterol, LFTs, CBC must be drawn prior to therapy and at regular intervals during therapy
- OCPs: Decrease sebum production
 - Preparations which contain estrogen or antiandrogen progestin are most effective
 - Must be used for 3-6 months
- Antiandrogen: spironolactone → decrease sebum production
 - Used at doses of 50-150 mg/day
 - Must monitor BP and potassium