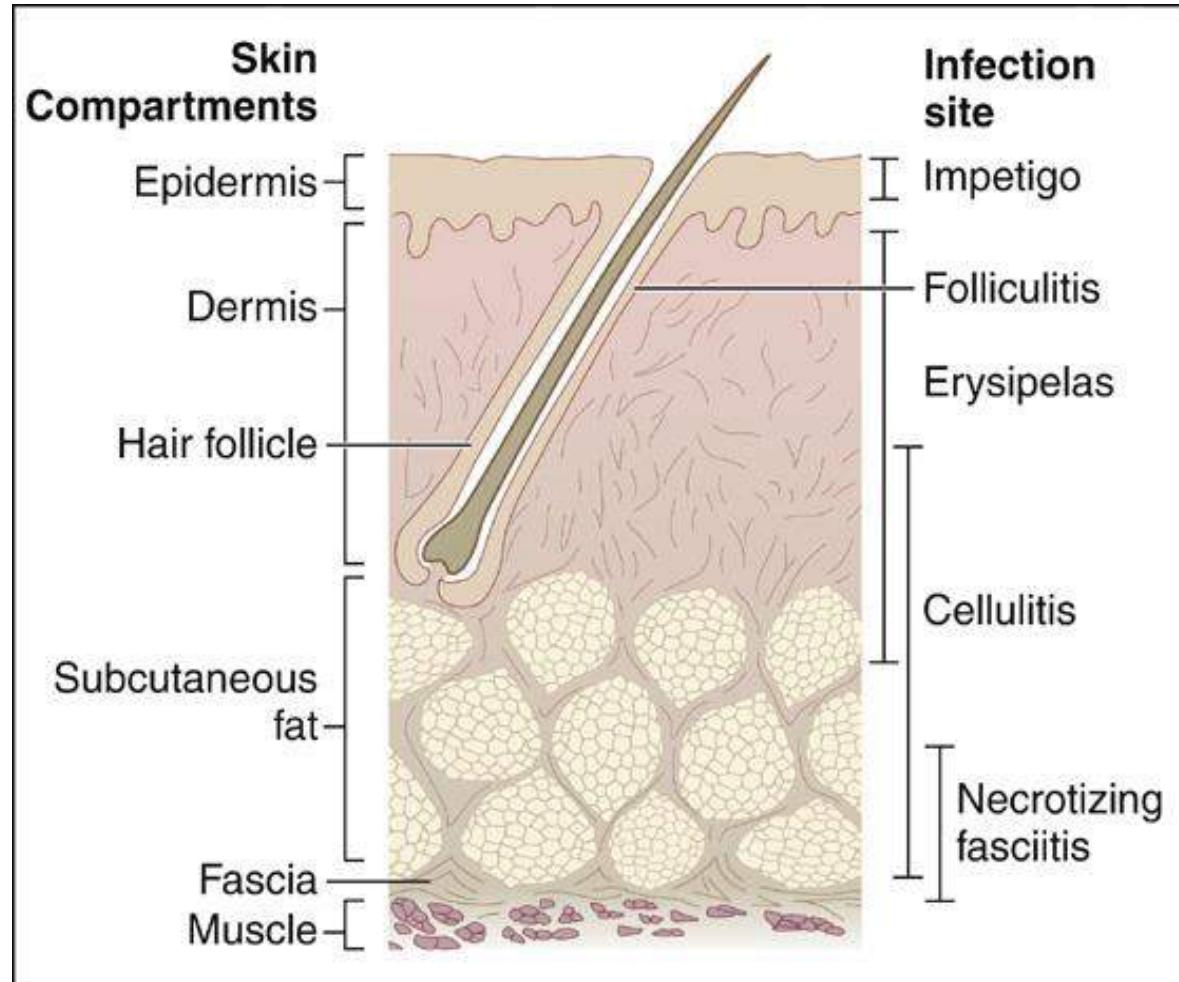


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Treatment of skin infections and acne
Dr. Mohammad Salem Hareedy
2025

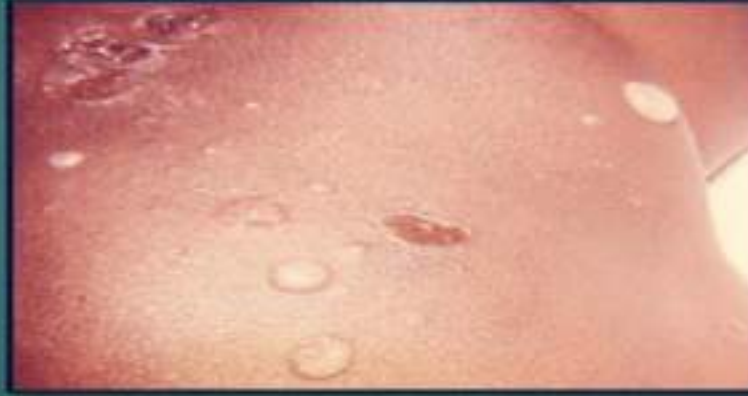
Non specific bacterial skin and soft tissue infections



Non-bullous Impetigo



Bullous Impetigo



Ecthyma



Most cases of impetigo (infection of stratum corneum) are caused by ***Strept. pyogenes***, and/or ***Staph. Aureus***.

The **bullous** form is caused by strains of ***Staph. aureus*** capable of producing **exfoliative toxins**.

Streptococcal infection may cause glomerulonephritis.

Ecthyma is infection of whole epidermis.

Treatment of impetigo and ecthyma

- 1- Treatment of **predisposing causes**: e.g. pediculosis & scabies.
- 2- **Remove the crusts**: by soap and warm water, if necessary use olive oil or hydrogen peroxide. Good hygiene should be maintained to prevent recurrence.
- 3- **Topical antibiotics**: e.g. **Fusidic acid**. **Nasal mupirocin** can eliminate carrier state.
- 4- **Systemic antibiotics** are indicated especially in the presence of fever or lymphadenopathy, in extensive infections involving scalp, ears, eyelids or if a nephritogenic strain is suspected.
 - 1- Penicillinase resistant penicillins (**dicloxacillin**)
 - 2- **penicillin G** or **penicillin V** or **Flucloxacillin**.
 - 3- **Augmentin** can be used .
 - 4- **Cephalexin** or **cefadroxil**.
 - 5- Macrolides (**erythromycin** and **azithromycin**) can be effective in susceptible strains.

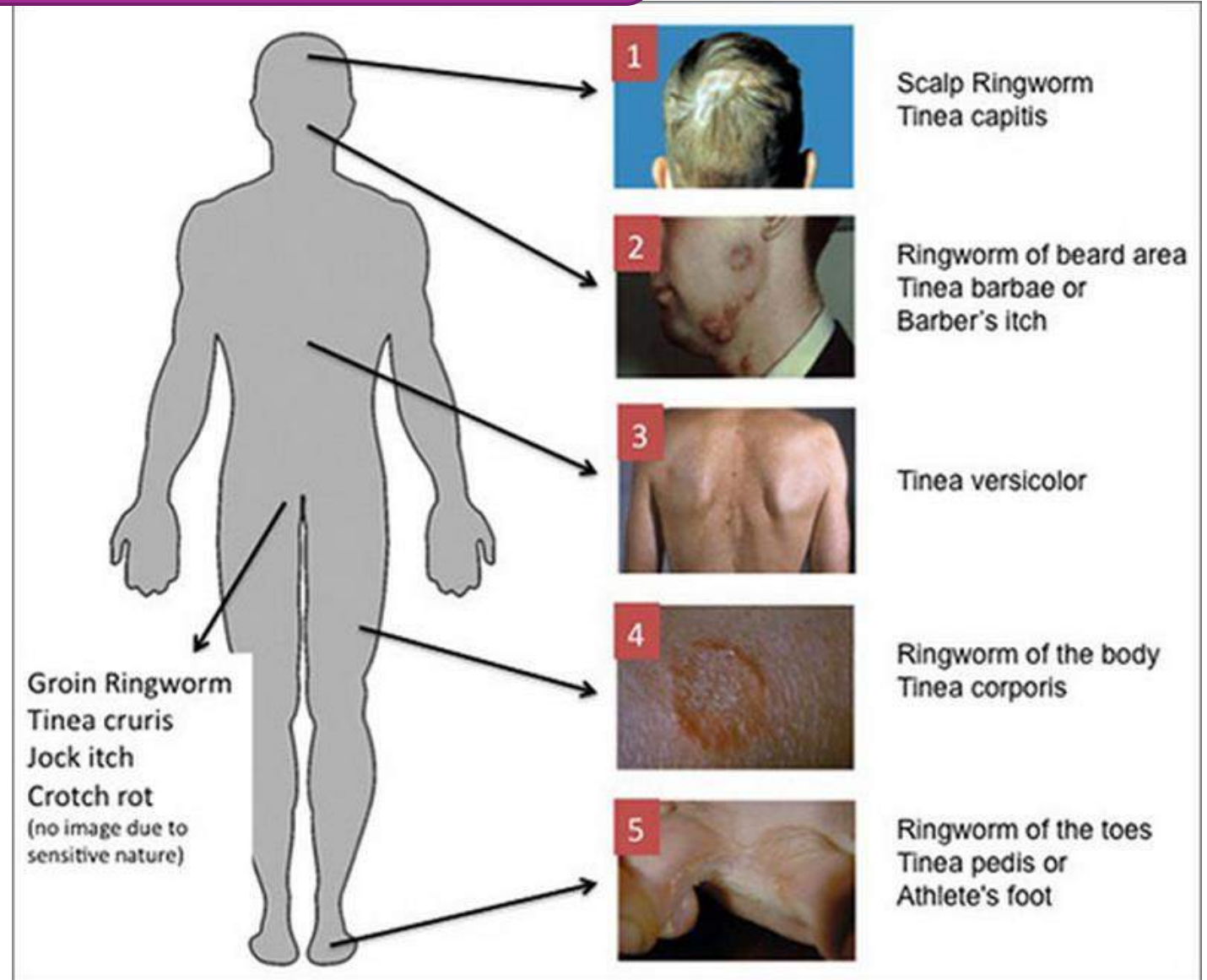
Management of cellulitis

- Elevate limb.
 - Treat underlying Cause
 - Antibiotics
 - Phenoxyethylpenicillin
 - erythromycin
 - flucloxacillin (all 500 mg qds)
 - Vancomycin
 - Linezolid
 - Clindamycin
 - Widespread
 - IV antibiotics (3–5 days) ,2 weeks (oral)
 - Recurrent
 - low dose antibiotic prophylaxis (phenoxyethylpenicillin)
- } MRSA Cellulitis

Treatment of superficial fungal infections (by Candida and dermatophytes)

1- Topical antifungal agents,
e.g. **Azoles** (e.g. **clotrimazole**, **miconazole**, **ketoconazole**) and **terbinafine**,

2- Oral antifungals:
griseofulvin, **terbinafine**,
Azoles (ketoconazole, fluconazole, voriconazole and itraconazole)



Topical azoles

The two azoles most used topically are **clotrimazole** and **miconazole**). They inhibit ergosterol formation by inhibiting fungal cytochrome enzymes. They are often used for:

1-Treating **vulvovaginal** and **oral candidiasis**.

2- Treating **dermatophytic** infections, including tinea corporis, tinea pedis, and tinea cruris.

➤ Absorption is negligible, and adverse effects are rare.

➤ Topical and shampoo forms of **ketoconazole** are also available and useful in the treatment of **seborrheic dermatitis** and **pityriasis versicolor**.

Topical Terbinafine

Terbinafine cream is effective for treatment of dermatophytes (tinea) but not Candida.

Mechanism: selective inhibition of synthesis of fungal ergosterol (by inhibiting squalene epoxidase a enzyme).

Adverse reactions include local irritation, and erythema. **Contact with mucous membranes should be avoided.**

Griseofulvin

Griseofulvin is fungistatic drug (inhibit mitosis)

Its only use is in the **systemic treatment** of **dermatophytosis**.

it binds to keratin, protecting the skin from new infection.

Adverse effects **serum sickness** like illness , **hepatitis**, and **drug interactions**.

Treatment of skin infestation by scabies

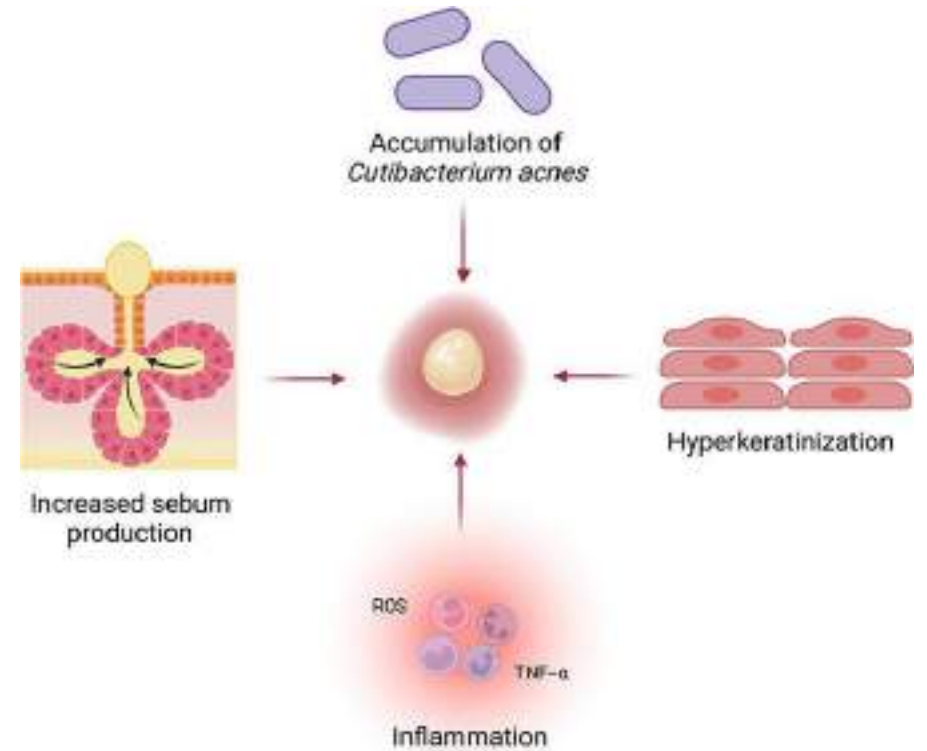
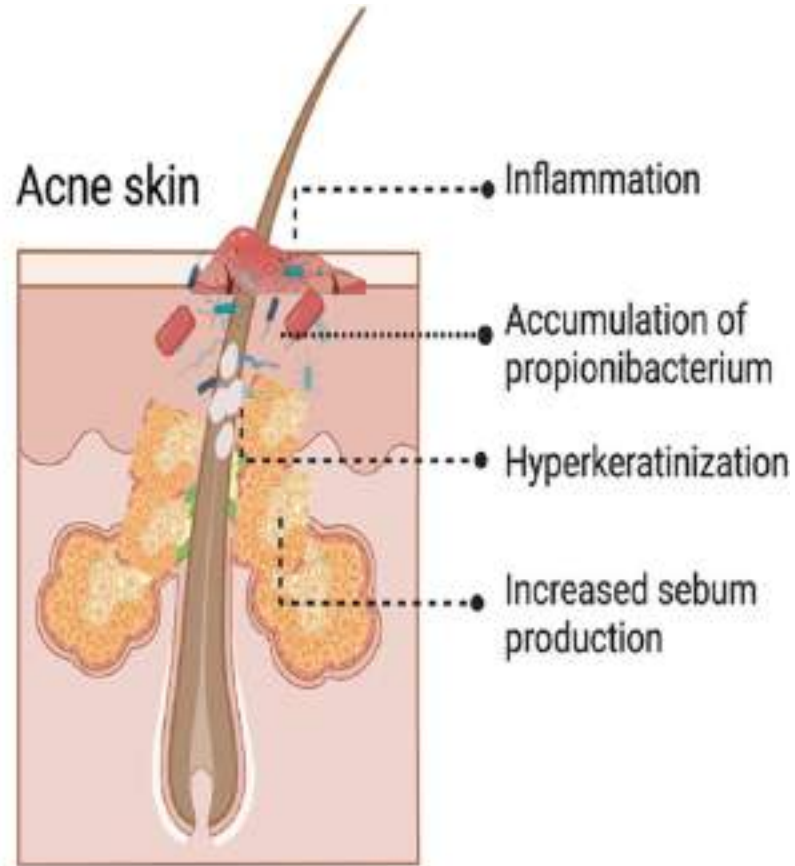
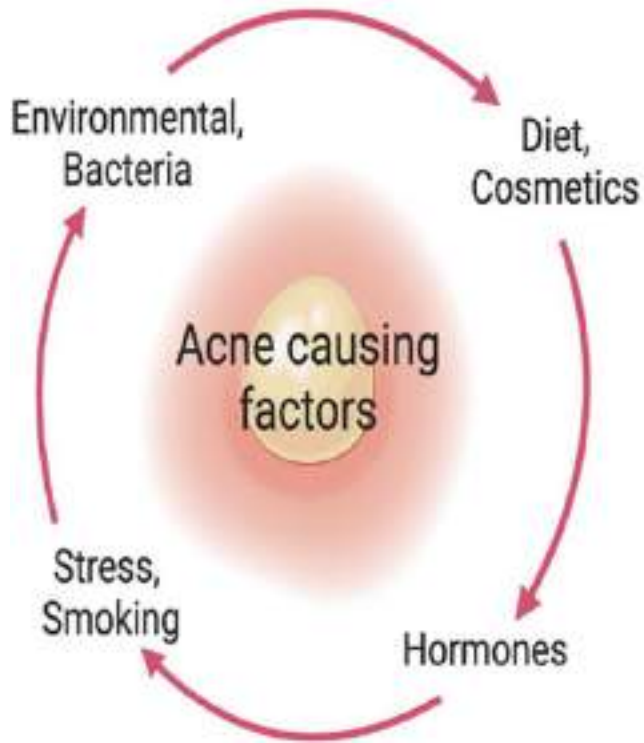
❑ Several drugs can be used; the most important one is **permethrin**. Other drugs include **sulfur ointment** and **ivermectin**.

❑ Permethrin causes opening of sodium channels and persistent depolarization leading to paralysis and death of scabies.

❑ Less than 2% of an applied dose to the skin is absorbed to the circulation .

❑ Adverse reactions to permethrin include transient burning, stinging, and pruritus.

Treatment of Acne



Topical drugs for acne

1- Topical retinoids

❑ They include (**tretinoin**, **adapalene**, **tazarotene**) and **topical isotretinoin** creams and gel formulations

❑ Topical retinoids are vitamin A derivatives and serve as the **cornerstone of acne treatment** since they are **comedolytic** and **anti-inflammatory**, **decrease scarring** and improve dyspigmentation,

❑ side effects:

1-increased risk of **burning sensation**, **dryness**, **erythema**, **exfoliation**, peeling, and pain

2-Some tretinoin formulations should be applied in the evening due to its **photolabile** nature and should **not be applied with Benzoyl peroxide** to avoid oxidation and inactivation.

3-Topical retinoids may cause photosensitivity; concurrent **daily sunscreen** use can reduce sunburn risks.

4- Risk of teratogenicity

2- Benzoyl peroxide

Mechanisms: **antimicrobial** (releases free oxygen radicals) and is mildly **comedolytic**.

Adverse effects: burning sensation, stinging, dryness, erythema, pain, peeling, irritation

3- Topical antibiotics

Topical antibiotics (including erythromycin, clindamycin, minocycline, and dapsone) treat acne through both **antibacterial** and **anti-inflammatory effects**.

4-Salicylic acid

Salicylic acid is a topical comedolytic agent that is available (0.5% to 2% conc.)

5- Azelaic acid

Azelaic acid is a topical **comedolytic**, **antibacterial**, and **anti-inflammatory** agent, which may be particularly helpful for patients with **sensitive skin** or **darker skin** types due to its **lightening effect** on Dyspigmentation.

Fixed-dose topical combinations of Benzoyl peroxide , retinoids, or antibiotics facilitate treatment regimen adherence

Systemic treatment

1-Systemic **antibiotics** have been used extensively to treat acne, typically moderate to severe acne. Oral **doxycycline**, minocycline, and **azithromycin** are commonly used.

2- Combined **oral contraceptives** treat hormonal acne through their overall anti-androgenic properties

3- **Spironolactone** (anti-androgen). Used for treating hormonal acne.

4-Oral isotretinoin, is the only FDA-approved treatment for severe acne vulgaris.

- ❑ Given orally with fatty meals to help its absorption

- ❑ Isotretinoin is the only medicine that shows an effect on all four pathogenic causes of acne.

- ❑ The duration of isotretinoin therapy is typically administered over 16–24-week period. Because of the adverse effects of isotretinoin, patients must be continuously monitored

Adverse effects of isotretinoin:

1. Teratogenicity
2. Photosensitivity
3. Severe dryness in skin, eye and other mucous membranes
4. Elevation of serum triglycerides
5. Elevated liver enzymes
6. Rarely elevation of urea and abnormalities in blood cells

THANK YOU