Good morning
Infections & Infestations

• Bacterial
• Viral
• Fungal
• Parasitic
Bacterial skin infections
Also called pyodermas, pus forming bacterial infections of skin may be primary and secondary.

Several microorganisms involved are:

- Staphylococcus aureus
- Group A streptococci

The most common primary skin infections includes:

- Impetigo
- Folliculitis
Impetigo

- Superficial infection of skin caused by the multiple bacteria.

- **Bullous impetigo**, a more deep seated infection of skin caused by *staphylococcus aureus* is characterized by the formation of bullae from original vesicles.

- The exposed areas of body like face, hands, neck and extremities are more frequently involved.

- It is contagious and may spread to other parts of the body and other members of the family who comes in contact.
Clinical features

- Lesions begin as small, red macules which quickly become discrete, thin walled vesicles that ruptures and become covered with a loosely adherent honey-yellow crust.
Medical management

- Systemic antibiotics therapy is the usual treatment.
- In bullous impetigo a pencillinase resistant penicillin e.g. **cloxacillin** may be used.
- In penicillin allergic patients erythromycin can be used.
- Topical anti-bacterial therapy e.g. **mupirocin** may be prescribed when the disease is limited to the small area.
Folliculitis, Furuncles & Carbuncles

- Folliculitis is an infection of fungal or bacterial origin that arises within the hair follicles, mainly caused by staphylococci.
- Single or multiple pustules or papules appear close to hair follicles, mainly affecting the beard area of man and women’s leg if they shave.
- Other areas includes axillae, trunk and buttocks.
- **Furuncle** is an acute inflammation arising deep in one or more hair follicles & spreading into surrounding dermis.

- **Furunculosis** refers to multiple or recurrent lesions.

- **Carbuncle** is an abscess of skin & subcutaneous tissue that represents an extension of a furuncle. It appears most commonly in areas where skin is thick & inelastic; the back of neck & buttocks are common sites.
Medical management

• The only entirely effective treatment is to avoid shaving.

• Other treatments includes using lotions or antibiotics or using hand brush to dislodge the hairs mechanically.

• Oral cloxacillin & dicloxacillin are first line medications.

• When the pus is localized it can be removed by small incision ensuring direct evacuation of pus & debris.
Viral skin infections
Herpes zoster also called Shingles is an infection caused by varicella zoster virus member of a group of a DNA viruses.

The disease is characterized by painful vesicular eruption along the area of distribution of the sensory nerves from one or more posterior ganglia.

It develops in about 10% of the adults usually after 50 years & in 50% of people by 85 years of age.
Clinical features

- Painful vesicular eruption radiating to the whole area supplied by the affected nerve.
- The pain may be burning, lanceating (tearing or sharply cutting), stabbing or aching.
- Malaise & GI disturbances may precede eruption.
- The early vesicles containing pus may later burst and form crust.
- The inflammation is usually unilateral involving the thoracic, cervical & cranial nerves in a band like configuration.
Management

- Oral anti-viral drugs e.g. Acyclovir, valacyclovir are administered within 24 hours of the initial eruption.
- Systemic corticosteroids may be prescribed for the patients more than 50 years of age to reduce the incidence of posttherpetic neuralgia (persistent pain of affected nerve after healing).
- Triamcinolone can be injected subcutaneously under painful area as an anti-inflammatory agent.
Herpes simplex

- It is a common skin infection
- Generally herpes simplex virus type-1 occurs on the mouth and type-2 occurs in the genital area, but both viral types can be found in both locations.
- The prevalence of type-2 is low because it usually appears at the onset of sexual activity.
Orolabial herpes

- Also called fever blisters or cold sores consists of erythematous clusters of vesicles on the lips.
- Burning or tingling with pain may precede the appearance of vesicles by up to 24 hours.
Genital herpes

- Minor infections may produce no symptoms at all.
- Severe primary infection with type-I can cause flu-like symptoms.
- Lesions appears as grouped vesicles initially involving vagina, rectum & penis.
- New lesions can continue to appear for 7 to 14 days.
- As the vesicle rupture the erosion and ulcerations appears.
evaluation

- Appearance of skin eruption is strongly suggestive.
- Viral culture & rapid assays.
- Acute vesicular lesions are more likely to react positively to viral assay where as older, crusted patches are better diagnosed with viral culture.
Management

- Use of sunscreen in case of orolabial herpes.
- Acyclovir 200 mg; 5 times/day for 5 days is often started as soon as the earliest symptom occurs.
- For mild & rare outbreaks of genital herpes no treatment is required.
- Intermittent oral medications to reduce the symptoms of infrequent episodes of infection.
- Acyclovir, valacyclovir suppress 85% of the recurrences.
Fungal Skin infections
In some cases fungi affects only the skin & its appendages (hair & nails); in other cases internal organs are involved & the disease may be life threatening.

The most common fungal skin infection is **Tinea**, also called ringworm because of its appearance as a ring or rounded tunnel under the skin.

Tinea infection affects the head, body, groin, feet & nails.
Types of Tinea infection

- **Tinea Capitus: Affects the head**
  - Contagious fungal infection of hair shaft, commonly occur in children.
  - Oval, scaly & erythematous patches.
  - Hair becomes brittle and breaks easily.

**Treatment:**

- **Griseofulvin** for 6 weeks.
- Shampoo hair 2-3 times with Nizoral or Selenium sulphide shampoo.
Tinea Corporis: Affects the whole body

- Begins with red macule, which spreads to a ring of papules or vesicles with central clearing.
- Lesions found in clusters and many spread to the hair, scalp & nails.
- An infected pet may be the source.

Treatment:

- Topical anti-fungal creams in mild condition.
- Griseofulvin or terbinafine in severe conditions.
Tinea Cruris: Affects the groin area, “Jock itch”

- Begins with small, red, scaly patches which spread to form circular elevated patches.
- Very pruritic
- Clusters of pustules may be seen around the borders.

Treatment:
- Same as Tinea corporis
**Tinea Pedis: Affects the foot, “Athlete's foot”**

- Soles of one or both feet has scaling & mild redness with maceration in the toe webs.
- More acute infections have clusters of clear vesicles on dusky base.

**Treatment:**

- Soak feet in vinegar and water solution
- For resistant infections Griseofulvin or Terbinafine (daily for 3 months)
Tinea Ungum: Affects the toe nails

- Affects about 50% of the adults.
- Nail thicken, crumble easily & lack luster.
- Whole nail may be destroyed.

Treatment:

- Itraconazole 1 week a month for 3 months in cases of Terbinafine failure.
Parasitic Skin infections
● These conditions includes infestations of the skin by lice (Pediculosis) & the tick mites (Scabies)
Pediculosis: Lice Infestation

- Lice infestation affects people of all ages.
- Lice are called ectoparasites as they live on the outside of host’s body.
- They inject their digestive juices into the skin, which causes severe itching.
Types of Pediculosis

- **Pediculosis Capitis:**
  - It is the infestation of the scalp by the head louse. The female louse lays her eggs (nits) close to the scalp.

- **Pediculosis Corporis and Pubis:**
  - It is an infestation of the body by the body louse.
  - This is a disease of unwashed people or those who live in close quarters & don’t change their clothings frequently.
  - Infestation is generally localized in genital region & is transmitted by sexual contact.
Clinical features

- Head lice are found most commonly along the back of the head & behind the ears.
- To the naked eye the eggs look like silvery, glistening oval bodies.
- The body louse lives primarily in seams of underwear and clothing.
- Its bites cause minute hemorrhagic points.
- Pruritis, particularly at night is the most common symptom of pediculosis pubis.
- There may also be infestation of the hair of chest, axillae, beared & eyelashes.
Management

- Wash the hair with shampoo containing lindane or Pyrethrin compounds with Piperonyl butoxide (RID or R&C shampoo).
- After the hair is rinsed thoroughly it is combed with a fine toothed comb dipped in vinegar to remove any remaining nits.
- All articles, clothing that may have lice should be washed in hot water.
- The patient with body lice is instructed to bathe with soap & water & after that lindane or 5% permethrin is applied to affected areas.
Scabies

- Scabies is the infestation of the skin by itch mite *Saroptes scabiei*.
- The disease may be found in people living in unhygienic sub standard conditions, but it can occur in anyone.
- In children, over night stay with
Clinical features

• It takes approximately 4 weeks from the time of contact for the patient’s symptoms to appear.
• Severe itching due to delayed immunological response to the mite or its fecal pellets.
• Thread like lesions most commonly observed between the fingers & on the wrist.
• One classic sign of scabies is severe itching over night, perhaps because the increased warmth of the skin has stimulating effect on the parasite.
Management

- The patient is asked to take warm, soapy bath to remove the scaly debris.
- A prescribed scabicide such as Lindane, Crotamiton or 5% permethrin is applied thinly to the skin.
- The medication is left on for 12-24 hours.
Nursing management

- The patient should wear clean clothing and sleep in fresh bed linens.
- Topical corticosteroids can be applied to the skin as scabicide may be irritant to the skin.
- Instruct the patient not to take hot shower as it can cause dryness which in turns leads to pruritis.
- All family members and close contacts should be treated simultaneously.
prevention

- Reduce friction from clothing
- Avoid shaving the area if possible (if shaving is necessary, use a clean, new razor blade or an electric razor each time)
- Keep the area clean
- Avoid contaminated clothing and wash cloths
- Avoid using oils on your skin. Oils can trap bacteria in the pores of your skin and can cause folliculitis.
Nursing diagnosis

- Impaired skin integrity related to lesions and inflammation
- Disturbed body image related to body appearance and self perception
- Knowledge deficit related to disease condition.
Thank you