Scabies and Pediculosis
Definition

Scabies is a common parasitic infection caused by the mite, arthropod-acarina, Sarcoptes scabiei var hominis
Incidence and prevalence

- 300 million cases yearly worldwide
- Incidence common in all ages, sexes, ethnic & socio-economic groups, urban > rural.
- Throughout the year, more in winter
- Overcrowding, poor socio-economic conditions, institutions, immuno-compromised, mental retardation
Mite

- Obligate parasite of humans
- Fertilized female mite: 300 microns
- Eggs → larva → nymph → adults
- Crawls 2.5 mm/day
  - male: dies after fertilization
  - female: lays 15-20 eggs/day (max 300), mature by 2-3 weeks
- Average parasite index: 10-12 (classical scabies)
Transmission

- Skin to skin: predominantly.
- ? Fomites, clothing, furniture-rare
- Sexually transmitted

- Incubation period in new cases: 1 month
- Symptoms due to hypersensitivity to mite and products
- Reinfection- incubation period: 1-3 days
Clinical features

• Symptoms
  - Itching-worse at night, with skin rash
  - Family members affected

• Signs
  - Characteristic distribution along the circle of Herba.
  - Papules, vesicles
  - Burrow- grey-brown line 5mm, seen on webs & genitalia with mite as black dot at the end
  - Burrow may be a dot, dotted line, curve or curved line
CIRCLE OF HEBRA

- Interdigital Spaces
- Elbow
- Anterior Axillary Fold
- Gluteal Region
- Anterior Aspect of Wrist
- Ulnar Aspect of Forearm
- Peri Umbilical Area
- Genitalia & Thighs
Clinical features

- Secondary skin lesions
  - Excoriations
  - Eczematization
  - Nodules
  - Pustules
  - Urticaria?
Clinical types

- **Classical Scabies:** characteristic distribution of lesions along the circle of Hebra
- **Genital Scabies:** sexually transmitted
- **Scabies in clean:** fewer, atypical, severe itching
- **Incognito:** topical/systemic steroids
- **Infants:** scalp, palms, soles
- **Nodular** (sensitization): scrotum, penis, elbows, axillary folds
INFANTILE SCABIES

GENITAL SCABIES
Clinical types

- Crusted (Norwegian scabies): mentally retarded, paralysis, immunocompromised, leprosy; highly infectious, millions of mites
- Elderly
- Ping-pong scabies
- Animal scabies
Complications

- Secondary infection
- Eczematization
- Glomerulonephritis
- Phimosis, Paraphimosis
- Urticaria
- Erythroderma
- Immunologic sequelae?
- Drug reactions: irritation, eczematization
SECONDARY INFECTION

ECZEMATISATION
Investigations

- Scraping: from papule, burrow to demonstrate mite, egg, scyballa
- Histopathology
- Ig E- specific levels
- Newer: Polymerase chain reaction, Immunosorbent assays
Differential diagnosis

- Pompholyx
- Prurigo mitis
- Atopic dermatitis
- Lichen planus
- Id eruptions
- Vasculitis
- Senile eczema
- HIV pruritus
- Erythroderma
- Neurotic excoriations
- Dermatitis herpetiformis
- Bullous pemphigoid
**Treatment-principles**

- Treat secondary complications first
- Treat all household members
- Treat all inmates and caretakers in institution
- Treat fomites by putting in hot water, insecticides for 2-4 days
- Scabicides to be applied throughly behind ears and from neck to toes; repeat application depending upon scabicides used
# Topical Treatment

<table>
<thead>
<tr>
<th>Drug</th>
<th>Application/Duration</th>
<th>Pregnancy</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permethrin 5%</td>
<td>8-14 hrs</td>
<td>B</td>
<td>Expensive, ovicidal</td>
</tr>
<tr>
<td>Lindane / GBH 1%</td>
<td>8 hrs, repeat after 1week</td>
<td>B</td>
<td>Seizures</td>
</tr>
<tr>
<td>Benzoyl benzoate 10-25%</td>
<td>3 consecutive nights</td>
<td>none</td>
<td>Burning, dryness</td>
</tr>
</tbody>
</table>
## Topical Treatment

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</thead>
<tbody>
<tr>
<td>Crotamiton 10%</td>
<td>2 application in 48hr period</td>
<td>C</td>
<td>Not very effective</td>
</tr>
<tr>
<td>Precipitated sulphur 3-6%</td>
<td>3 consecutive nights</td>
<td>none</td>
<td>Moderate, infants</td>
</tr>
<tr>
<td>Allethrin/pyrethrin 0.6%</td>
<td>aerosol</td>
<td>B</td>
<td>Not with asthma</td>
</tr>
</tbody>
</table>
Systemic treatment

- **Ivermectin**: 200 microgms/kg single dose; 56% cure; repeat 14 days later, 96% cure
- Act by interrupting glutamate and aminobutyric acid induced neurotransmission in parasite causing paralysis & death
- Lacks ovicidal action
- Better with eczematised patients
Supportive treatment

- Antihistaminics
- Antibiotics: systemic, local
- Emollients
- Soaps?
- Steroids: Topical /Systemic (in eczematised scabies)
- Keratolytics in crusted scabies
- Future trends: Local Ivermectin, tea tree oil
Failure of treatment

- Improper treatment
- Poor compliance
- House hold and/or institutions contacts not treated
- Resistance to drugs
Causes of itching even after treatment

- Re-infection/relapse
- Eczematous reaction
- Contact irritation to drugs
- Sensitization
- Delusion of parasitosis (acarophobia)
- Other skin problems

Itching persists for few days even after successful treatment
Pediculosis

- **Types:**
  - Pediculus capitis - head louse
  - Pediculus humanus - body louse
  - Pthirus pubis - pubic/crab louse

- **Morphology:**
  - Head louse & body louse morphology identical (Thin & long)
  - Crab louse (broad & short)
HEAD LOUSE

CRAB LOUSE
Normal Habitat

- **Pediculosis capitis:**
  scalp hair of host.
  Children (3-11 yrs), Females > males

- **Pediculosis corporis:**
  Clothing close to skin of host
  Vagabond’s disease

- **Phthiriasis:**
  Pubic, axillary, beard hair, eyebrows; eyelashes;
  hair of trunk & limbs; rarely scalp margins.
  Sexually active young adults; in children due to
  sexual abuse or parental contact.
Clinical features

Pediculosis capitis:

- Scalp pruritus
- Detection of nits/adults lice on scalp hair
- Secondary bacterial infection
- Cervical lymphadenopathy
- Matting of hair with pus and exudate - plica polonica
- Eczematization - neck / generalized
Clinical features

Pediculosis corporis:
- Body pruritus
- Detection of nits / lice on clothing
- Secondary bacterial infection
- Post inflammatory hyperpigmentation of skin

Phthiriasis:
- Nocturnal pruritus
- Detection of nits & louse on affected hair
- Blue grey macules (maculae caerulae) / Rust coloured speckles on skin
## Pediculocides

### Topical treatment:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malathion 0.5%</td>
<td>12 hrs</td>
<td>Repeat after 10 days</td>
</tr>
<tr>
<td>Carbaryl</td>
<td>12 hrs</td>
<td>Repeat after 10 days</td>
</tr>
<tr>
<td>GBH 1%</td>
<td>8-12 hrs</td>
<td>2 applications</td>
</tr>
<tr>
<td>Permethrin 1%</td>
<td>8-12 hrs</td>
<td>Single application</td>
</tr>
</tbody>
</table>

### Oral treatment:

Ivermectin 200 mcg/kg, Cotrimoxazole
Pediculosis: Treatment

Pediculosis capitis / Phthiriasis:
- Good hygiene
- Treatment of patients & contacts.
- Removal of nits & lice with comb, vinegar, kerosene application.

Pediculosis corporis:
- Treatment of clothing; not patient.
- Treatment of clothes with topical pediculicides & laundering
Cutaneous manifestations of parasitic insects and worm infestations

Insects:
- Demodecidosis
- Myiasis
- Creeping eruptions

Worms:
- Creeping eruptions
- Filariasis
- Dracunculosis
- Leishmaniasis
Demodicidosis

Mite:

- Demodex folliculorum & Demodex bren’s
- Obligate parasite of pilosebaceous follicles, sebaceous glands.
- High incidence in HIV patients

Clinical features:

- Diffuse facial erythema with scaly follicular papulonodular eruptions
- Sites: face, scalp, neck, upper chest.
  Rosacea like lesions.
DEMODICIDOSIS
Demodicidosis: Treatment

Diagnosis:
10% KOH mount

Treatment:
- 25% benzoyl benzoate
- 1% GBH
- 5% permethrin
- 5% benzoyl peroxide
Myiasis

- Larvae of dipterous flies (maggots)

Clinical features:
- Traumatic wound - suppurative ulcers
- Furuncle – pustule - abscess
- Creeping eruptions

Treatment:
- Turpentine soaks followed by mechanical removal of larvae
- Killing by freezing with ethyl chloride spray
- Systemic thiabendazole, DEC
Cutaneous larva migrans

- **Nematode larvae**
- Infections with larvae of nematodes which wander in subcutaneous tissue
- Ankylostoma, Strongyloides stercolaris, Loa loa, flies

**Clinical features**
- Erythematous papulovesicles within few hours
- Creeping eruptions over hands, feet, abdomen, buttocks
- Itchy tortuous red indurated tracts or bizarre serpentine patterns
- Urticaria / secondary infection
CUTANEOUS LARVA MIGRANS
Cutaneous larva migrans

Diagnosis:
- Clinical
- Demonstration of larva not possible

Treatment:
- Thiabendazole, Mebendazole, DEC, Albendazole
Thank you