PAEDIATRIC SOCIETY of PNG SYMPOSIUM 2023

THEME: ACUTE & CHRONIC DISEASE MANAGEMENT

VENUE: SCHOOL OF MEDICINE & HEALTH SCIENCES

September 5th – 8th , 2023.

TOPIC: PAEDIATRIC UPDATES:

PAEDIATRIC DERMATOLOGY

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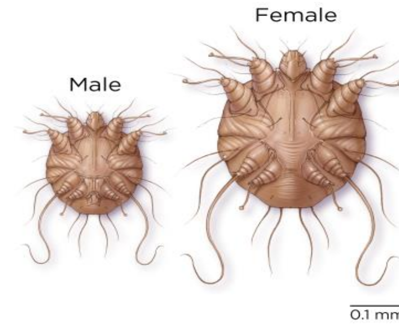
COMMON PAEDIATRCI DERMATOLOGY CONDITIONS:

1) Scabies
2) Fungal Infection – Tinea Capitis/Tinea Corporis
   - Pityriasis Versicolor
3) Bacterial – Impetigo
   - Ecthyma
4) Viral – Molluscum Contagiosum
   - Varicella
5) Leprosy in Children
6) Dermatitis – Seborrheic & Atopic

1) SCABIES

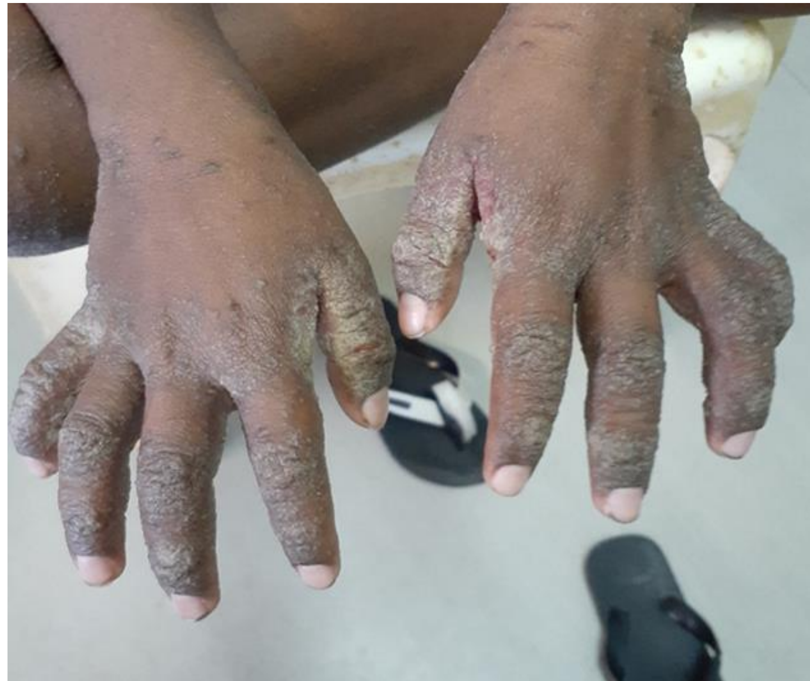
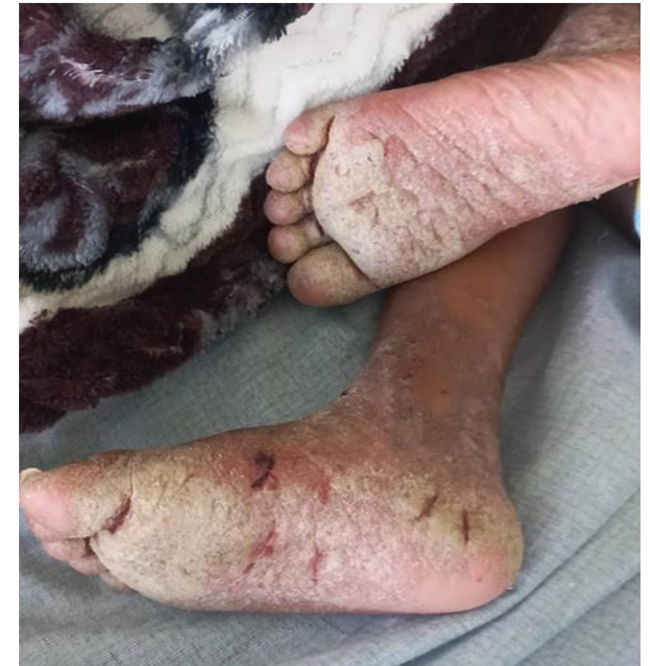


- Caused by Sarcoptes Scabiei var. hominis
- Scabies is a highly contagious infestation of the human epidermis
- Scabies presents as a rash with intense itching esp. nocturnal
- May have a characteristic appearance & distribution (webspace of hands/wrist/axilla/soles of feet/groin & buttock area etc.)
- Currently being given several nicknames – “I don’t care”/”No worries”/”Wege Wege”/”Community Service” etc.
- Scabies is common in children, adolescents & elderly
- Can be acquired during close contact at school, sleepovers
- Diagnosis is mainly Clinical

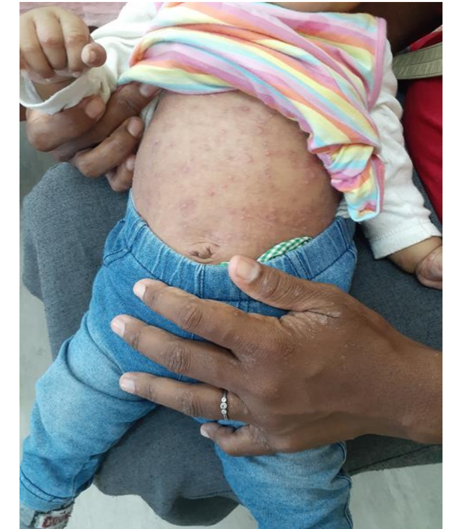
Complications of Scabies:

1) Crusted Scabies (Norwegian Scabies)

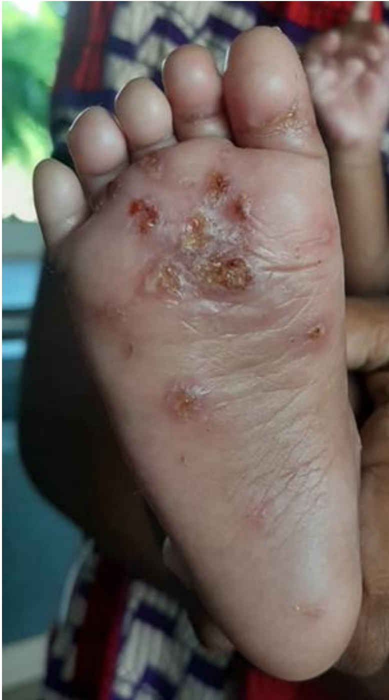
- Caused by altered host immune response (e.g. HIV/Leprosy etc.)
- associated with dense hyperkeratosis/thickening of the skin

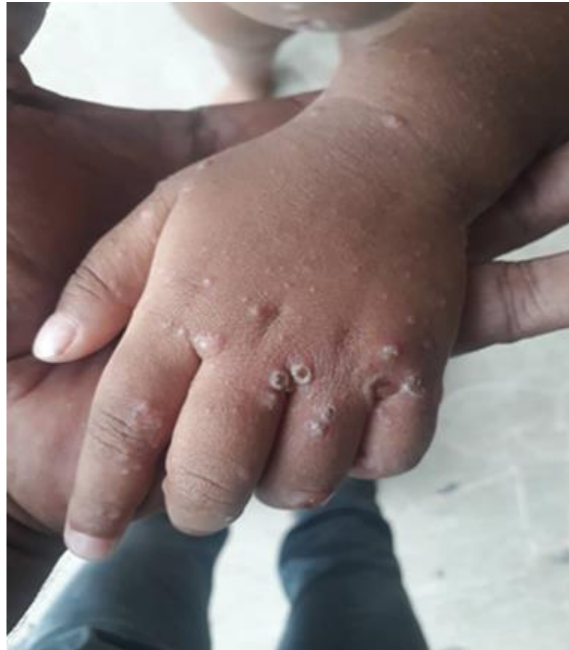



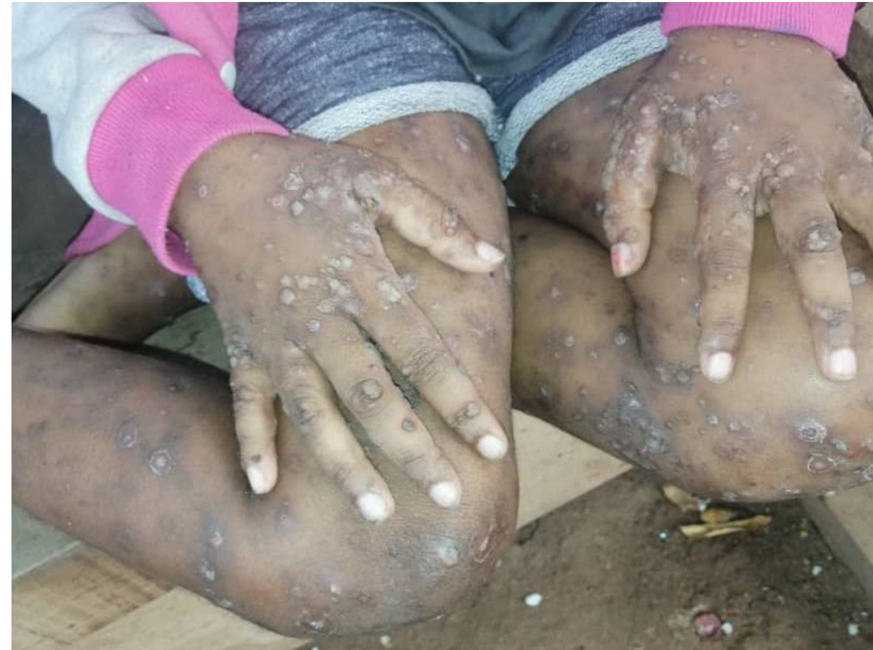
2) Secondary Bacterial Infections



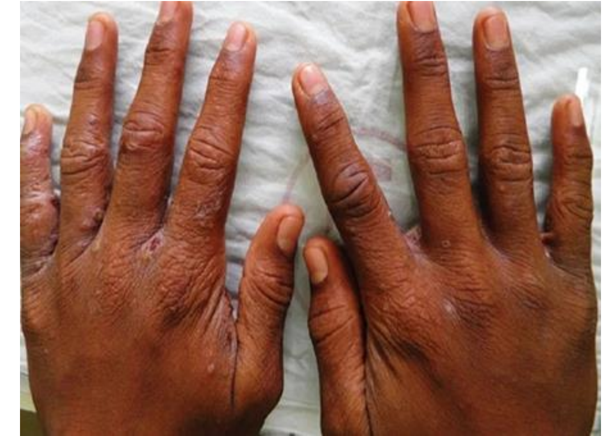
- Staph. Aureus or Streptococcus Pyogenus bacteraemia
- Post-Strept. Glomerulonephritis & Acute Rheumatic Fever







Management of Scabies:



1) General Measures

- Personal Hygiene – wash sheets, towels & clothes and air for 72 hours
- All close contacts to be treated

2) Topical Therapy

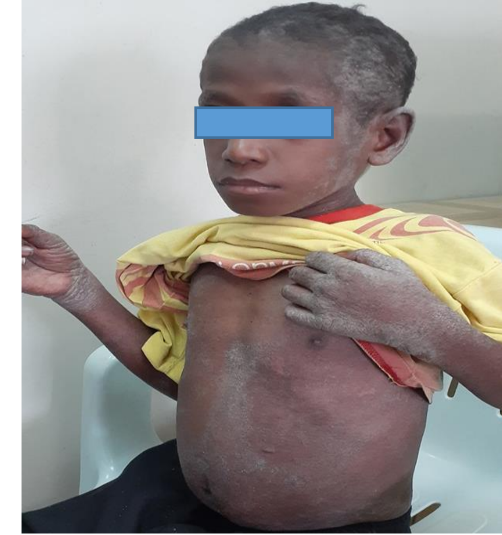
- Topical **Permethrin 5%** (Kills adults & eggs) cream or lotion – apply from the neck down at night & leave overnight for 8 hours. Repeat Rx 3rd nightly x 3 or 4 applications
- Alternative is i) **Gamma Benzene Hexachloride (GBH / lindane) 1% lotion,** topically.

ii) **25% Benzyl Benzoate** (child 6 months to 2 years: dilute with 3 parts water; child 2 to 12 years: dilute with equal parts of water).

iii) **Whitfield ointment in Crusted Scabies** (3% salicylic acid and 6% benzoic acid) *In children, Whitfield's ointment should be applied to no more than ¼ of the body on any one day and should not applied to the face.

Itch may initially worsen with treatment and may take 3 weeks to resolve after treatment completion. Topical steroids and/or antihistamines can be used to relieve symptoms.

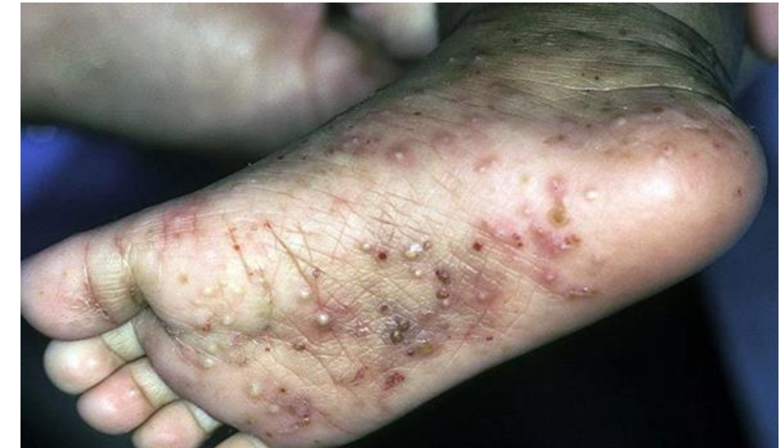
Scabies Management cont'd..



3) Oral Therapy

Oral Ivermectin - Ivermectin 200 mcg/kg

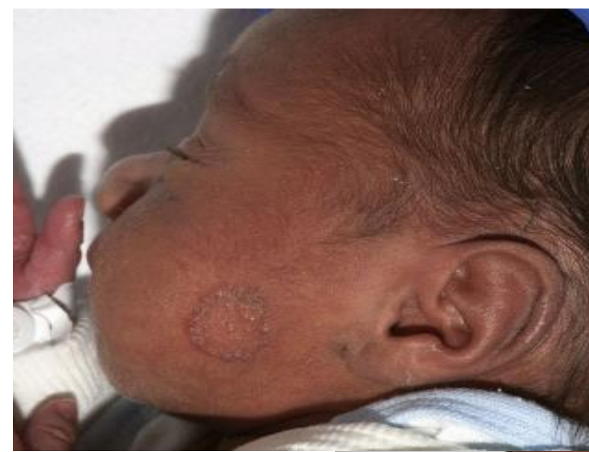
Treatment of crusted scabies is difficult. A combination of 3 treatments is required: oral Ivermectin plus a topical scabicide plus a topical keratolytic agent to reduce scaling.

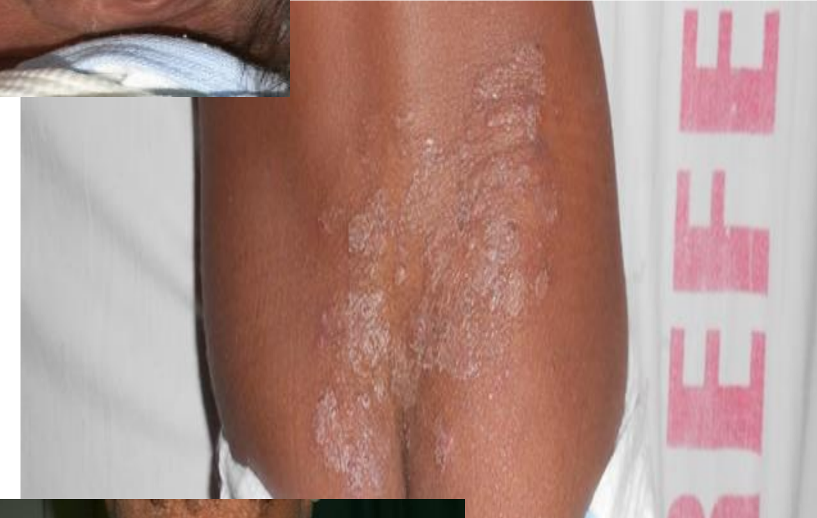


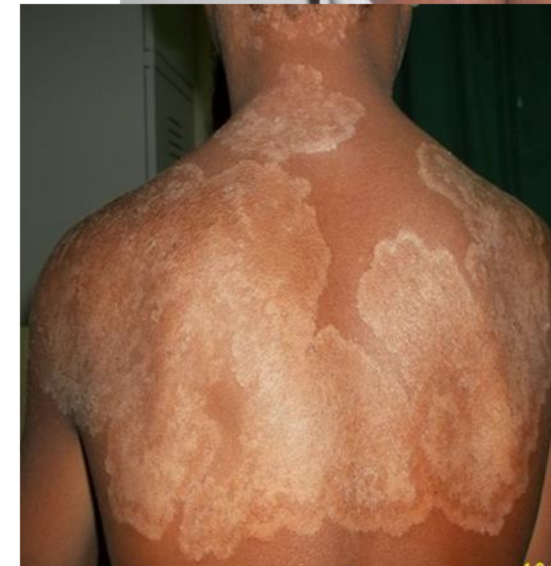
Note: Increased itch with treatment usually represents increased mite activity and should not be routinely considered allergy unless other features of allergy present.

2) FUNGAL INFECTION:

a) Tinea Corporis







i) Tinea (ringworm) is caused by dermatophytes, which can infect the skin, scalp or nails.
ii) The typical rash is annular, itchy, and scaly with a definite edge and central clearing.

Management:

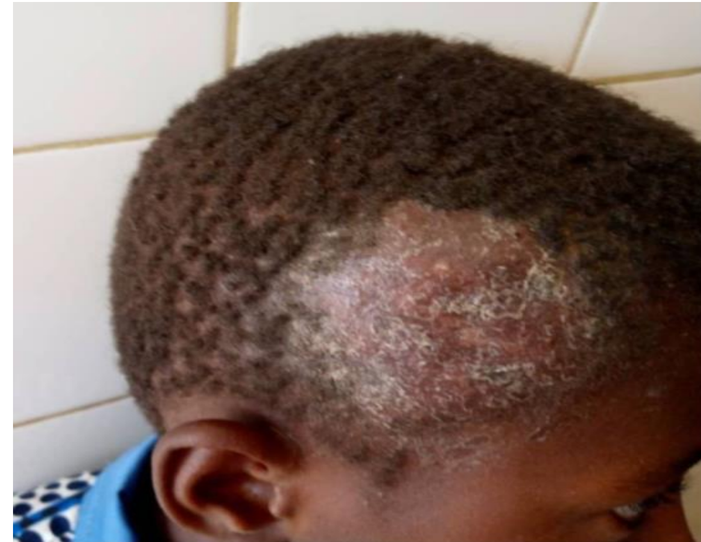
i) Topical antifungal therapy is appropriate for recent onset of localized tinea affecting the trunk (including groin), limbs, face, or between the fingers or toes.

i) Miconazole 2% cream/ Clotrimazole cream/Terbinafine 1% cream topically, twice daily for up to 14 days. *Terbinafine cream can be used in children older than 1 year old).

ii) **Topical azoles** should be continued for 2 weeks after fungal rash disappears (usually 2 to 4 weeks in total).

b) TINEA CAPITIS/KERION

Kerion: An inflammatory abscess, especially on the scalp, caused by dermatophyte fungal infection. Often associated with alopecia.
To confirm diagnosis, send skin scrapings and hair for microscopy.

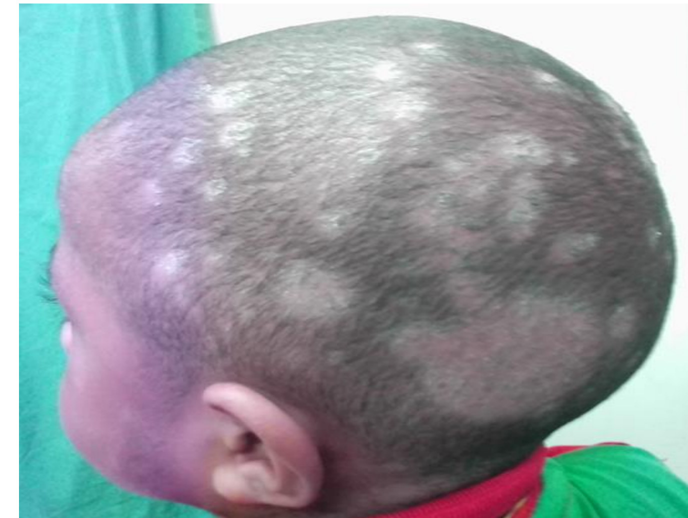


Management:

1) Tinea of the scalp (tinea capitis), including kerion, and tinea of the nails (onychomycosis) require treatment with oral antifungals.

i) **Griseofulvin** 20 mg/kg (up to 500 mg) orally, once daily for 6 to 8 weeks
OR
ii) **Terbinafine** 250 mg (child less than 20 kg: 62.5 mg; child 20 to 40 kg: 125 mg) orally, once daily for 4 weeks.

Ketoconazole or selenium sulfide shampoos reduce spore shedding. They are ineffective when used alone but can be used as an adjunct to therapy.



c) PITYRIASIS/TINEA VERSICOLOR (WHITE SPOTS)

i) Caused by Malassezia yeasts.
ii) Most commonly seen in adolescents and young adults.
iii) Presents with patches of hypopigmentation or hyperpigmentation, with fine scale.
Usually on the neck, chest, back, and upper arms. Rash is usually asymptomatic
iv) The diagnosis can be confirmed with fungal skin scraping and potassium hydroxide (KOH) test, if available. If the diagnosis remains uncertain, send a fungal skin scraping to the laboratory for microscopy, prior to antifungal treatment.

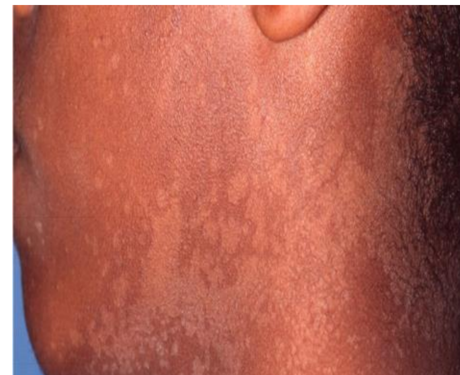
Management:

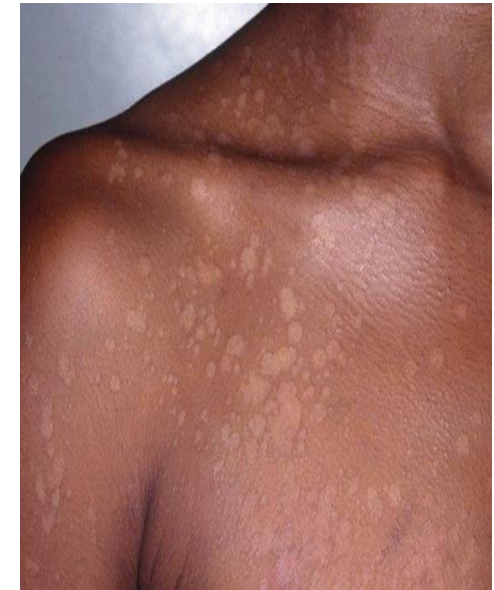
Topical Therapy:

i) Ketoconazole shampoo 2% topically, once daily (leave for 3 to 5 minutes and wash off)
OR
ii) terbinafine 1% cream topically, twice daily.

Systemic/Oral Therapy:

i) If there is no response to topical therapy, use:
Fluconazole 6mg -12 mg/kg orally, as a single dose.





*Do not use oral terbinafine or Griseofulvin because they are ineffective against Malassezia yeasts.

Management of Fungal Infection in children:

GENERAL MEASURES:

Advise all patients to:

i) Bath daily and wear clean clothes

ii) Avoid sharing towel/clothes & sheets

iii) Avoid contact with infected pets.

TOPICAL THERAPY:

Topical antifungal therapy is appropriate for recent onset of localized tinea affecting the trunk (including groin), limbs, face, or between the fingers or toes.

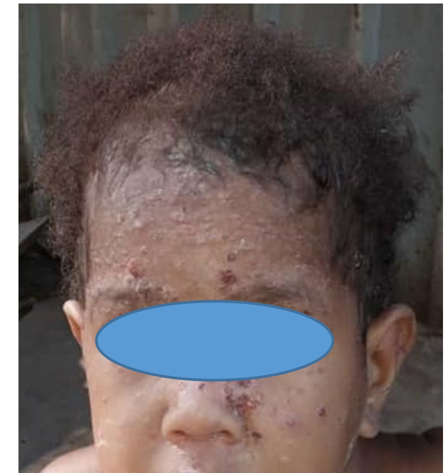
i) **Miconazole 2% cream/ Clotrimazole cream/Terbinafine 1% cream** topically, twice daily for up to 14 days. *Terbinafine cream can be used in children older than 1 year old). Topical azoles should be continued for 2 weeks after fungal rash disappears (usually 2 to 4 weeks in total).

ii) **Ketoconazole** or **selenium sulfide shampoos** reduce spore shedding. They are ineffective when used alone but can be used as an adjunct to therapy.

SYSTEMIC/ORAL THERAPY:

- **Griseofulvin** 20 mg/kg (up to 500 mg) orally, once daily for 6 to 8 weeks
- **Terbinafine** 250 mg (child less than 20 kg: 62.5 mg; child 20 to 40 kg: 125 mg) orally, once daily for 4 weeks.

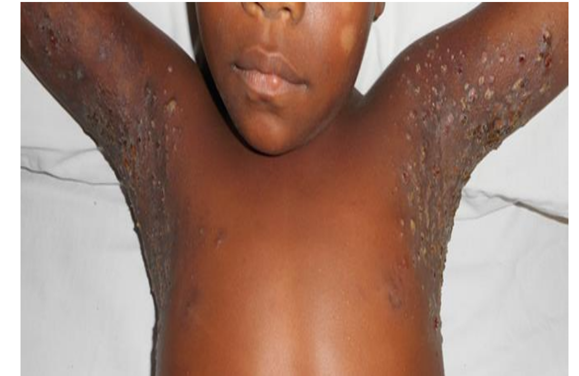
3) BACTERIAL INFECTIONS



a) IMPETIGO

i) Impetigo is a superficial bacterial skin infection most often caused by Streptococcus pyogenes or Staphylococcus aureus.

ii) Children may also present with multiple crusting sores, usually on the face.



b) ECTHYMA

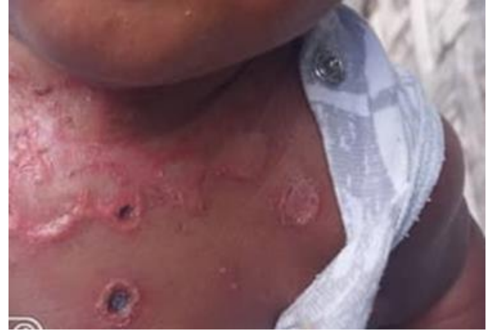
i) Ecthyma is a skin infection characterized by crusted sores beneath which ulcers form.

ii) It is a deep form of impetigo, as the same bacteria causing the infection are involved. Ecthyma causes deeper erosions of the skin into the dermis.

iii) Streptococcus pyogenes and Staphylococcus aureus are the bacteria responsible for Ecthyma.

iv) Complications of Ecthyma may include: cellulitis, erysipelas, lymphangitis, gangrene, lymphadenitis, and bacteremia & rarely, post-streptococcal glomerulonephritis

Management of Bacterial Infection in Children:



The aim of treatment is to eradicate streptococcus to minimize the risk of post-streptococcal diseases and transmission to other children.

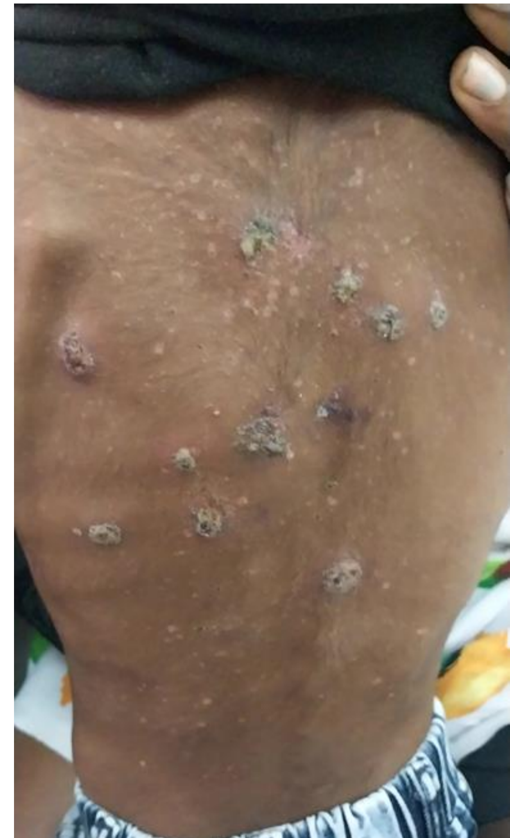
i) Clean skin with soap and water

ii) Treat scabies or headlice if present

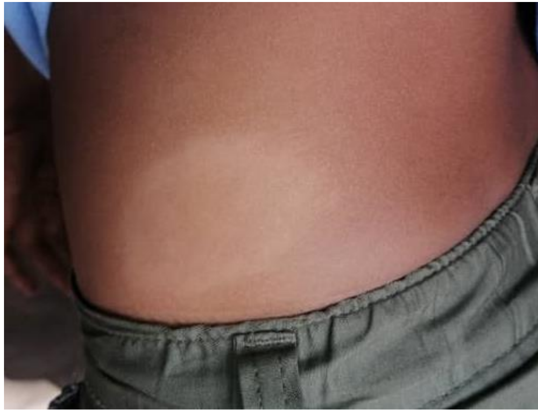
iii) Fusidic acid 2% ointment topically to crusted areas, twice daily for 5 days. **Mupirocin** use is often reserved for possible **MRSA infection**.

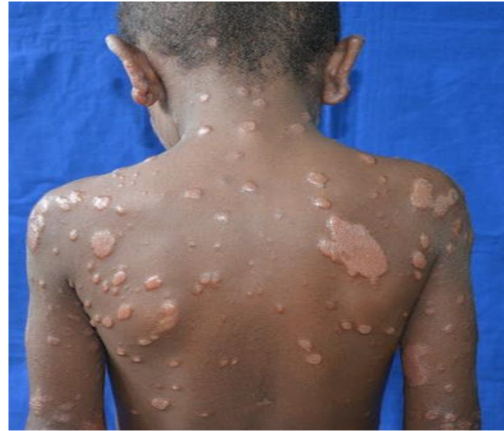
iv) For moderate to severe disease multiple skin sores or recurrent infection), use:

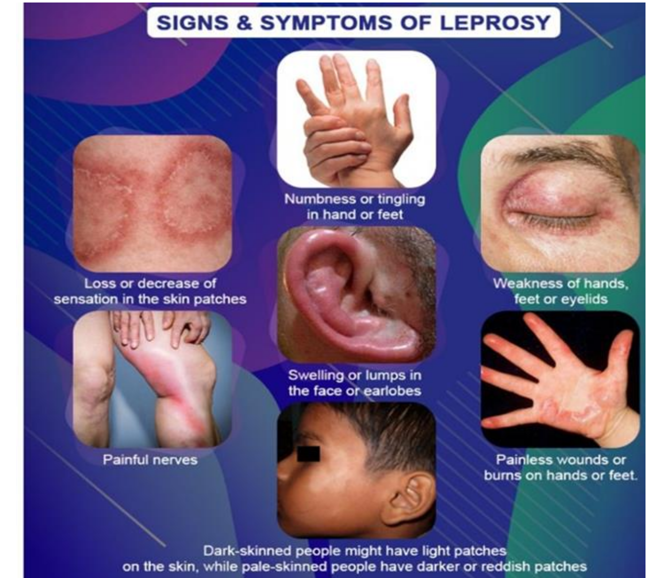
Flucloxacillin: child 12.5 mg/kg orally, 6-hourly



c) LEPROSY (HANSENS DISEASE)







3 CARDINAL SIGNS OF LEPROSY:

1) HYPOPIGMENTED/ERYTHEMATOUS ANAESTHETIC PATCH (ALSO THICKENED EARLOBES/LOSS OF EYEBROWS etc.)

2) ENLARGED PERIPHERAL NERVE WITH LOSS OF SENSATION OR WEAKNESS IN THE MUSCLES SUPPLIED BY THAT NERVE

3) POSITIVE SLIT SKIN SMEAR

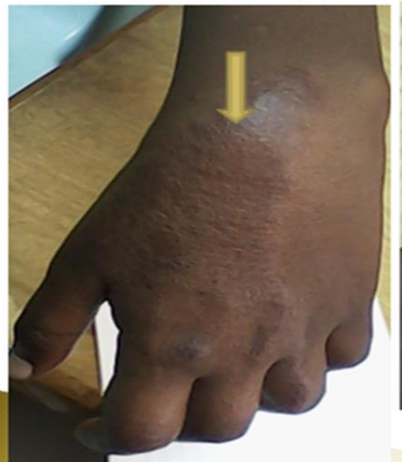
SUMMARY OF LEPROSY:

Characteristics	PAUCIBACILLARY (PB)	MULTIBACILLARY(MB)
Skin Lesions	1 – 5 skin lesions	> 5 skin lesions Nodular, infiltrates, leonine face, nasal collapse
Nerve Involvement	0 – 1 nerve involved	> 1 Nerve involved
Slit Skin Smear	Negative	Positive (if <5 patches still MB)
Treatment duration	3 drugs (Rifampicin & Dapsone & Clofazimine) completing for 6 blister packs within 6 - 9 months	3 drugs (Rifampicin, Dapsone & Clofazimine) completing 12 blister packs within 12 - 18 months

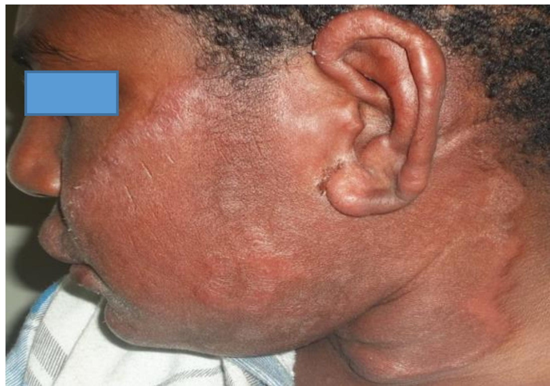
LEPRA REACTIONS (Immunological)

a) **TYPE 1 (Nerve & Skin Patch)**

- Tender erythematous skin patches & Peripheral Nerves – Emergency – may lead to loss of function.



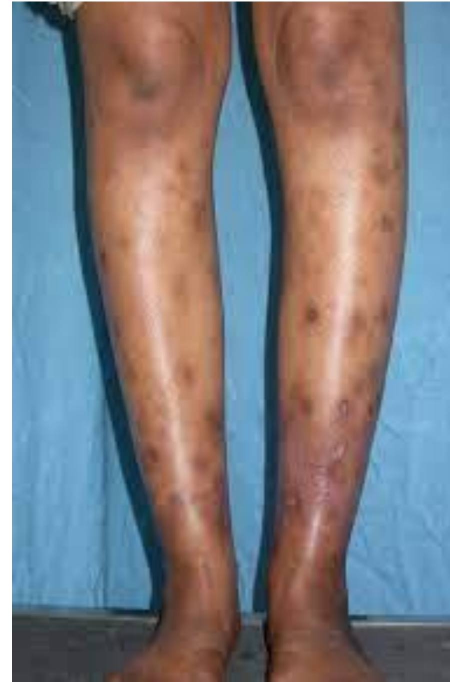
Nerve

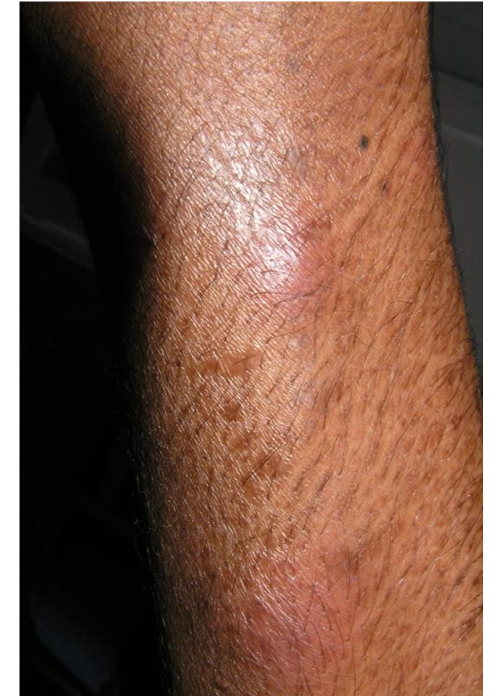


Skin Patch

b) TYPE 2 (Erythema Nodosum Leprosum)/ENL

- Tender Subcutaneous Nodules





Management of Lepra Reactions:

1) STEROIDS are the main stay of Treatment

- Prednisolone 1 mg/kg (Tapering doses weekly)

2) Anti – inflammatory (Panadol)

3) Rest body and affected limb

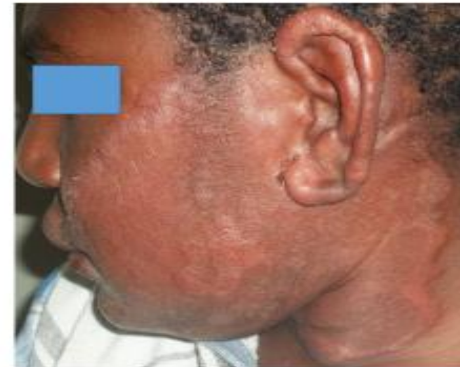
4) if still on Multi Drug Therapy (Leprosy Treatment) – CONTINUE MDT

- (If completed MDT – Do not restart MDT to treat reaction).

Only restart MDT if evidence of new infection.

After accurate management

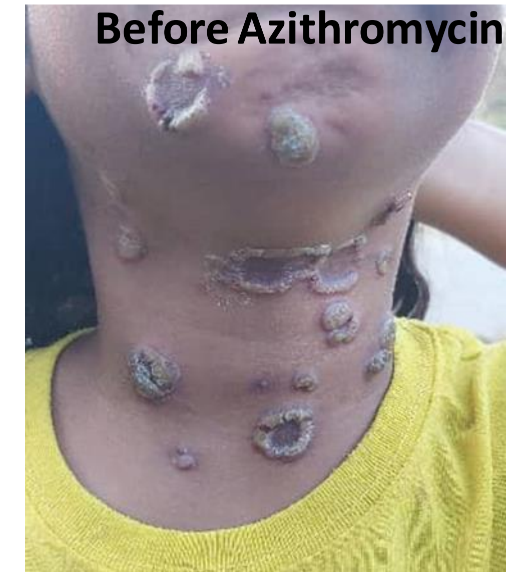
Before Steroid Treatment



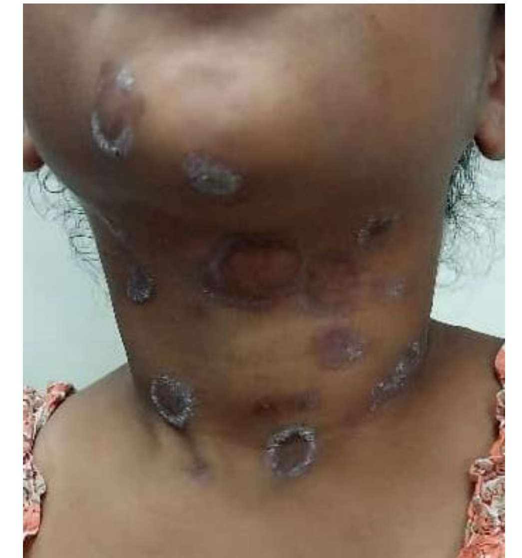
After Steroid Treatment

d) YAWS

i) Yaws is a skin infection caused by Treponemal pallidum subspecies pertenue which is transmitted by skin-to-skin contact.
ii) Mostly cause self-limiting primary infection with papules that enlarge into wart-like lesions with superficial erosion that heal spontaneously within 6 months. Weeks to months later a generalized eruption of similar skin lesions occurs via haematogenous or lymphatic spread, and multiple relapses occur in the first 5 years.
iii) Typically, lesions are painless, raised, and reddish brown with a yellow crust.
iv) PCR is used to confirm diagnosis of yaws.
v) Yaws can be complicated by periostitis or paranasal maxillary erosions.



A week after stat dose of Azithromycin



<u>Management of Yaws:</u>

Azithromycin 30 mg/kg (maximum dose 2 g) orally, as a single dose.

Alternative:
Benzathine benzylpenicillin 900 mg (child <20kg 450 mg) IM single dose.

4) VIRAL INFECTIONS:

a) MOLLUSCUM CONTAGIOSUM

i) MC is a common viral skin infection of childhood that causes localized clusters of umbilicated epidermal papules

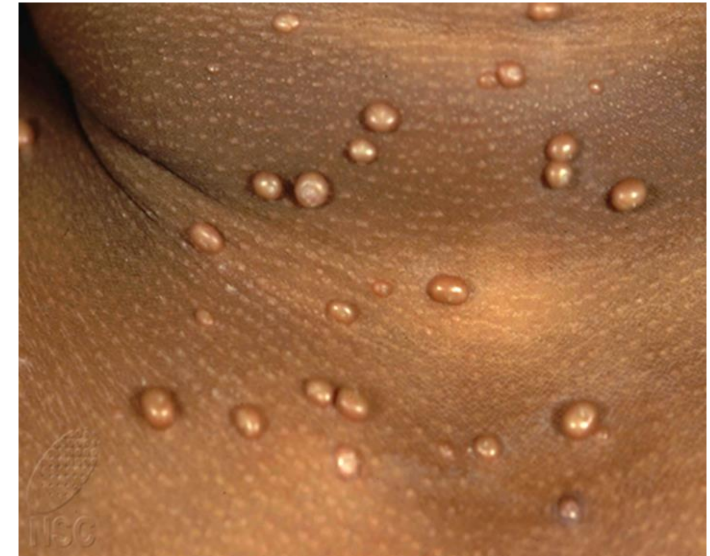
ii) MC mainly affects infants and young children under the age of 10 years. It is more prevalent in warm climates than cool ones, and in overcrowded environments.

iii) tends to be more numerous and last longer in children who also have atopic dermatitis, due to deficiencies in the skin barrier. It can be very extensive and troublesome in patients with human immunodeficiency virus (HIV) infection or that have other reasons for poor immune function.

iv) Transmission of MC a) Direct skin-to-skin contact

b) Indirect contact via shared towels or other items

c) Auto-inoculation into another site by scratching



Management:

There is no single perfect treatment of MC since we are currently unable to kill the virus.

In many cases no specific treatment is necessary.

Physical treatments

Picking out the soft white core (note, this could lead to autoinoculation)

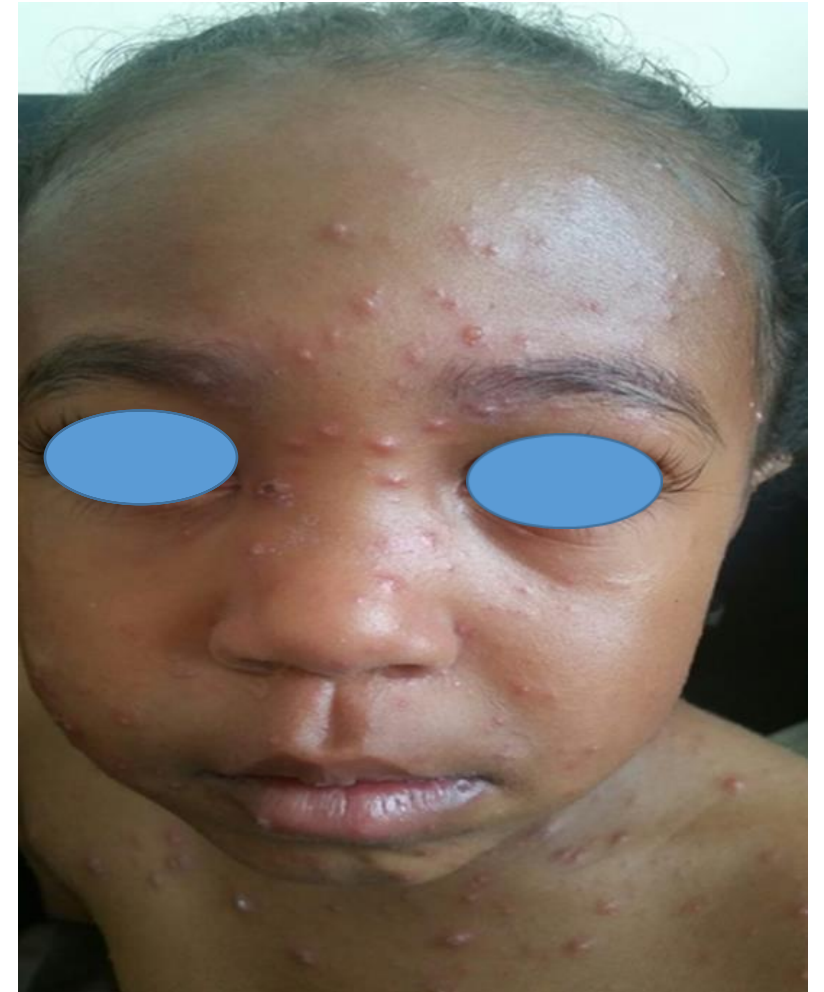
*In immune competent hosts, molluscum contagiosum is a relatively harmless. The papules may persist for up to 2 years or longer. In children, about half of cases have cleared by 12 months, and two-thirds by 18 months, with or without treatment

b) VARICELLA (CHICKEN POX)

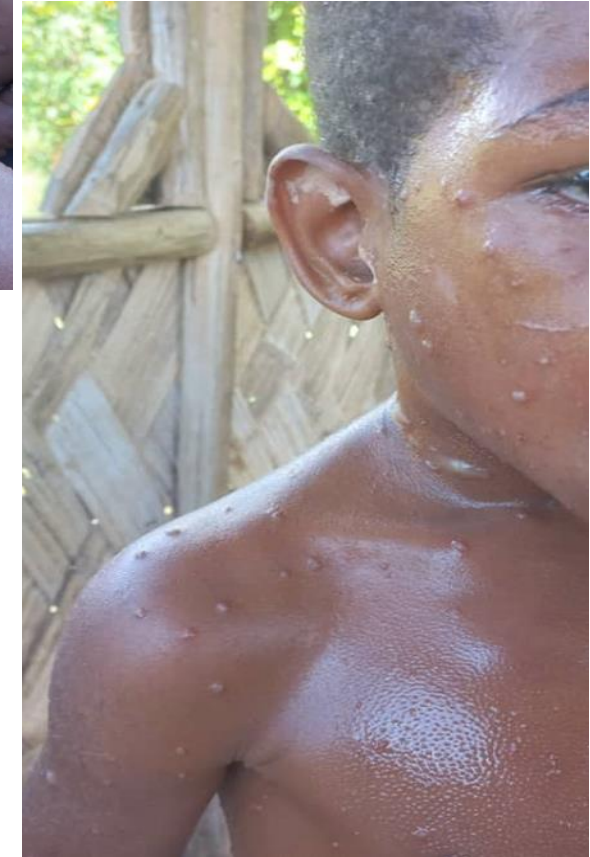
i) Chickenpox is caused by primary infection with the varicella-zoster virus, of the Herpesviridae family.

ii) Chickenpox is highly contagious and is easily spread from person to person by breathing in airborne respiratory droplets from an infected person's coughing or sneezing or through direct contact with the fluid from the open sores.

iii) In children, chickenpox usually begins as itchy red papules progressing to vesicles on the stomach, back and face, and then spreading to other parts of the body. Blisters can also arise inside the mouth



Varicella/Chicken Pox cont'd..



- <u>Complications:</u>

i) Secondary bacterial infection

ii) Dehydration from vomiting and diarrhea

iii) Exacerbation of asthma

iv) Viral pneumonia

<u>Management:</u>

For most healthy patients with chickenpox symptomatic therapy is usually all that is required.

i) Trim children's fingernails to minimize scratching.

ii) Take a warm bath and apply moisturizing cream.

iii) Paracetamol can reduce fever and pain

iv) Calamine lotion and oral antihistamines may relieve itching.

<u>Systemic Therapy:</u>

Consider oral Aciclovir (antiviral agent) in people older than 12 years,

which reduces the number of days with a fever. (child: 10 -20 mg/kg up to 800 mg), orally 5 times a day.

THANK YOU..