

21. SKIN CONDITIONS

21.1 Introduction

Certain dermatologic diagnoses are strongly suggested by the characteristic morphology and pattern of arrangement of skin lesions. Location of lesions on the body and presence or absence of associated symptoms, e.g., itchiness, should also be considered when making a diagnosis. There are four distinct patterns of lesions:

- Linear lesions (include contact dermatitis, lesions that exhibit Koebner phenomenon, i.e., appear in sites of previous trauma, e.g., psoriasis, lichen planus, warts)
- Annular lesions (include urticaria, erythema multiforme, erythema annulare, tinea, psoriasis, pityriasis rosea, discoid lupus)
- Grouped lesions (include urticaria, herpes simplex, herpes zoster, warts, molluscum contagiosum, dermatitis herpetiformis)
- Reticular (net-like) lesions (include vascular lesions, livedo reticularis)

The morphology of skin lesions varies tremendously and numerous types of primary and secondary lesions may occur.

Some of these are described in Tables 21.1 and 21.2.

Table 21.1: Morphological definitions of primary skin lesions	
Vesicle	Lesion containing visible fluid in or under the epidermis, usually less than 5mm in diameter
Bulla	Lesion containing visible fluid in or under the epidermis, usually more than 5mm in diameter
Pustule	Circumscribed collection of pus
Cyst	Closed cavity or sac containing fluid
Wheal	Transient area of dermal oedema, pale and compressible and may be papular or plaque-like
Erythema	Redness of skin due to vascular congestion or increased vascular flow
Petechiae	Pinpoint, non-raised, round, purplish spots caused by intradermal or submucous haemorrhage
Purpura	Bleeding into the skin
Telangiectasis	Tiny visible blood vessels in dermis
Macule	Flat lesion on skin, alteration of colour or texture of skin
Papule	Solid lesion, elevation in skin, less than 5mm in diameter
Plaque	Solid lesion, elevation in skin, more than 5mm in diameter
Nodule	Elevated, palpable, solid mass in skin more than 5mm in diameter
Papilloma	Finger-like projection above surface of skin
Prurigo	Group of discrete irritable papular or nodular lesions
Discoid	Disc shaped lesion, also known as nummular

	lesion
Poikiloderma	Lesion comprising collection of telangiectasia, hypopigmentation or hyperpigmentation and skin atrophy
Comedo	Papule due to plug of keratin and sebum in the opening and the duct of pilosebaceous gland
Milium	Tiny white cyst containing keratin produced by occlusion of pilosebaceous unit

Table 21.2: Morphological definitions of secondary skin lesions	
Atrophy	Loss of tissue from epidermis, dermis, subcutis with fine wrinkling and increased translucency of skin
Sclerosis	Localised area of diffuse induration of dermal and/or subcutaneous tissues
Erosion	Loss of epidermis that heals without scarring
Excoriation	Loss of epidermis and sometimes dermis due to scratching
Fissure	Linear split in the skin
Scar	Fibrosis that replaces normal skin collagen that has been destroyed by injury or disease
Ulcer	Loss of epidermis, dermis and sometimes subcutaneous tissue
Callus	Localised hypertrophy of stratum corneum
Crust	Dried exudates of necrotic cells, serum, fibrin (also called "scab")
Hyperkeratosis	Cornified cells visible on the skin surface (also called "scale")
Keratoderma	Thickening of skin especially stratum corneum
Lichenification	Papular or plaque-like thickening of skin with increased skin markings, hyperkeratosis and hyperpigmentation

21.2 HIV-Related Skin Conditions

The range of skin conditions that occur in persons with HIV infection is very broad and includes all the skin conditions encountered in persons who do not have HIV infection plus those that are related to HIV infection and to immunosuppression. Skin involvement in persons with HIV infection may be the result of:

- The direct effect of the virus on the skin
- The effect of body's immune mechanisms directed against HIV
- Skin infection (opportunistic and non-opportunistic infections)
- Other dermatoses

21.2.1 Possible direct effect of HIV on skin

A number of skin rashes may occur as a result of the direct effect of HIV on the skin. In many of these skin conditions the exact pathogenesis is not clear.

The following skin conditions probably occur as a result of the direct effect of HIV on the skin:

- i. **Papular pruritic dermatosis** - This is a common clinical problem. Adults with papular pruritic dermatosis usually complain of severe pruritus associated with a generalised follicular or papular rash.
- ii. **Eosinophilic folliculitis** - Folliculitis commonly occurs in HIV infected individuals. It is commonly of bacterial origin but in some cases an eosinophilic infiltrate is found. Lesions are small (less than 5mm in diameter), multiple, erythematous follicles that may have a centre of pus. Lesions are itchy and are often found in clusters.
- iii. **Generalised erythroderma** - This is an erythrosquamous generalised eruption which affects adults mainly. The skin is reddish in appearance and looks hyperpigmented and scaly. The rash is similar in appearance to the rash of eczema.

21.2.2 Immune mediated rashes

Some rashes develop as a result of the body's immune mechanisms being directed against HIV.

- i. **Urticaria** - Early in the course of HIV infection, usually at the time of development of antibodies against HIV, some patients develop urticaria. This probably occurs as a result of the antibody reacting against the viral antigen forming antibody-antigen complexes (immune complexes) that are deposited in the dermis. The deposition of the immune complexes releases histamine which causes the typical flat, itchy wheals and papules of urticaria to appear.
- ii. **Pruritic maculopapular rash** - A generalised itchy maculopapular rash may appear during the acute illness phase of HIV infection. The rash, the cause of which is unclear, may be seen all over the body including the face. Like all the other manifestations of the acute illness syndrome, this rash often disappears on its own. It is different from the rash of papular pruritic dermatosis in that the latter often remains for a long period of time.

21.2.3 Skin infections

With the onset of immunosuppression, a number of opportunistic skin infections may occur. Opportunistic infections may be viral, bacterial, fungal or parasitic and may affect adults and children equally. They are listed below:

- i. **Viruses** - infections with herpes simplex virus (HSV), varicella zoster virus (VZV), molluscum contagiosum virus (MCV), human papilloma virus (HPV) and Epstein-Barr virus (EBV) often occur in immunosuppressed persons. HSV causes oral and genital herpes, VZV causes shingles and chickenpox, MCV causes molluscum contagiosum, HPV causes warts, and EBV causes oral hairy leukoplakia. The skin lesions of Kaposi's sarcoma are purple papules that may be found anywhere on the body including on the mucosal surfaces. Kaposi's sarcoma occurs uncommonly in children. Kaposi's sarcoma is now believed to be caused by the Human Herpes virus Type 8 (known as HHV8 or KSHV).
- ii. **Bacteria** - Any pyogenic bacteria may infect the skin. In persons with immunosuppression infection with *Staphylococcus aureus* and

Streptococcus pyogenes may result in impetigo, furuncles and boils. Bacterial infection of the apocrine glands is fairly commonly encountered in persons with HIV infection; the condition which is known as hidradenitis suppurativa is a chronic one and usually proves very difficult to treat. Tuberculosis of the skin should also be kept in mind in persons with HIV infection.

- iii. **Fungi** - cutaneous fungal infections occur more commonly amongst immunosuppressed persons. Fungal infections include candidiasis, seborrhoeic dermatitis, dermatomycosis and histoplasmosis.
- iv. **Parasites** - In persons who are immunosuppressed, scabies follows an atypical course. Lesions are more numerous, more widespread and larger than those found in non-immunosuppressed individuals.

21.2.4 Other dermatoses

Conditions such as acne, boils, eczema and psoriasis are affected adversely in persons who have HIV infection. All these conditions are common in the general adult population, however, they occur with increasing frequency and are more difficult to treat in immunosuppressed individuals. Boils, skin sepsis and eczema occur frequently in children. Adverse drug reactions occur more frequently in persons with HIV infection: fixed drug reaction, erythema multiforme, Stevens Johnson syndrome and toxic epidermal necrolysis. The latter two are serious conditions and may cause the death of the patient.

Vesicular skin eruptions

Herpes simplex virus and **varicella zoster virus** produce vesicles. The former produces oral, labial and genital lesions, while the latter produces a vesicular rash in a dermatomal distribution (shingles or zoster) and generalised vesicular rash (chicken pox or varicella). Vesicular eruptions may also occur as result of drug allergy.

Papular skin eruptions

Papules may be found in the skin anywhere in the body and they may be found on the mucous membranes as well. Common causes include **secondary syphilis**, **molluscum contagiosum virus**, **scabies** and **pruritic**

papular dermatosis. The lesion of **Kaposi's sarcoma** is also a papule. The lesion is purplish in colour and is not painful and feels firm to touch.

Warty skin lesions

Warty lesions (also known as papillomatous lesions) are caused by the **human papilloma virus**. The virus causes the common skin warts (*verruca vulgaris*) and genital warts (*condylomata acuminata*).

Pustular skin eruptions

A pustule is any superficial skin lesion that contains pus. Vesicles may become infected and then become pustules. Any of the following conditions may lead to the development of pustules: **acne, boils, furuncles, pyoderma and impetigo**. The lesions of **chicken pox** start off as vesicles but soon become pustules.

Squamous skin eruptions

Squamous lesions are scaly, dry lesions. In squamous rashes the skin overlying the lesions becomes loose and is shed. Squamous eruptions are found in **eczema, seborrhoeic dermatitis, pruritic papular dermatosis, fungal skin infections, late secondary syphilis** and in **drug reactions**.

Oral manifestations of HIV infection

These are described in the chapter on oral manifestations of HIV.

21.3 Principles of management of skin conditions

Persons presenting with skin conditions should be assessed carefully because

- The skin condition may be an indication of serious underlying illness
- Some skin conditions lead to psychological problems because of the unsightly nature of lesions
- Many skin conditions cannot be cured but simply controlled with available medications

A thorough history should be taken from all patients presenting for care of skin conditions. The history should include a family and drug history. All patients should be examined carefully in a well-lit room in private. The skin condition should be accurately described noting specifically the type of lesions, the pattern of distribution of the lesions and whether or not lesions appear on the mucous surfaces in the mouth and on the genitals. It may be necessary to perform a skin biopsy and histological examination of tissue before an accurate diagnosis can be made.

The general principles of managing patients with skin conditions are summarised in Table 21.3:

Table 21.3: Principles of management of skin conditions	
Diagnosis of the skin condition	Diagnosis based on history and clinical examination and results of laboratory tests and skin biopsy
Non-drug related treatment	All patients should be educated in general principles of good personal hygiene including hand washing and washing of the body parts that are affected by the skin condition. Simple use of soap and water to keep the affected area clean should be advocated. Open sores and lesions that are oozing blood or pus should be kept covered with gauze bandages that are replaced frequently.
Special requirements	Room where patient can be interviewed and examined in private; examination couch; light source; disposable gloves
Provide education	All patients should be provided with education regarding the nature of the condition and good personal hygiene
Counseling	Counseling should be provided on how to live with a chronic skin condition and on treatment compliance and side effects of medications. If there are factors that lead to exacerbation of the condition, then patients should be counselled on how they may avoid trigger factors.
Treatment compliance	All patients should be counselled on treatment compliance and adherence to treatment
Nursing requirements	No special nursing is required for most skin conditions. However in the situation where the patient has chronic, indolent, necrotic, fungating lesions that tend to become

	infected, regular dressings may be necessary and a patient's individual needs should be worked out.
Follow-up plan	Arrange to review patient regularly
Social services support	Drugs for terminally ill patients and those with fungating malignancies may not be affordable by all patients and should be provided
First line treatment	Is the recommended treatment given when the patient makes first contact with the health facility
Second line treatment	Is the recommended when the patient returns with symptoms and signs after having been given first line treatment
Third line treatment	Is given after consultation with a specialist

21.4 Differential diagnosis of skin conditions

Most skin conditions produce easily recognizable lesions. It is therefore important to describe the lesions and their distribution accurately. This will assist in making a specific diagnosis. Table 21.4 summarises the commoner skin conditions and their causes.

Table 21.4: Differential diagnosis of skin conditions	
Type of skin lesion	Causes of condition
Vesicular lesions	Herpes simplex, varicella, herpes zoster, drug reactions, insect bites, dermatitis herpetiformis, pompholyx
Macular lesions	Secondary syphilis, measles, drug reactions, leprosy
Papular lesions	Secondary syphilis, HIV infection, scabies, drug reactions, acne, folliculitis
Erythematous	Eczema, atopic dermatitis, seborrhoeic dermatitis, contact dermatitis, lupus erythematosus, fixed drug eruption
Erythroscamous	Seborrhoeic dermatitis, eczema, psoriasis, contact dermatitis, discoid lupus erythematosus, tinea capitis, tinea corporis, tinea cruris, pityriasis versicolor, mycosis fungoides, intertrigo, acanthosis nigricans, lichen planus

Pustular	Acne vulgaris, acne rosacea, staphylococcal folliculitis, varicella, zoster
Bullous lesions	Bullous impetigo, staphylococcal scalded skin syndrome, bullous erythema multiforme, toxic epidermal necrolysis, burns, contact dermatitis, drug eruptions, dermatitis herpetiformis, bullous pemphigoid, porphyria cutanea tarda, pemphigus, epidermolysis bullosa, linear IgA disease, renal failure, diabetes

21.5 Bacterial infections

21.5.1 Impetigo

A superficial bacterial infection causing rapidly spreading blisters and pustules. It occurs commonly in children, usually starting on the face, especially around the mouth or nose. Often due to *Staphylococcus aureus*, but may also be the result of infection with Group A streptococci. Impetigo is contagious and measures should be implemented to prevent transmission to household and school contacts, and to other patients and carers. Keep infected areas clean and prevent spread to others (care with towels, clothes, bedding; change frequently and wash clothes separately). Streptococcal infection of the skin with nephritogenic streptococci of the Lancefield group A may lead to glomerulonephritis.

Mild or localized disease

First line treatment of mild or localized disease is to soak off the crusts with frequent soap and water washes or by soaking lesions with potassium permanganate:

Severe disease

If disease is extensive and severe, or if there are systemic symptoms, systemic antibiotic treatment will be necessary in addition to soaking:

First line treatment for severe impetigo						
	Codes		Adult dose	Route	Frequency	Duration
Erythromycin	C	V	500mg	PO	QID	7 to 10 days
OR						
Cloxacillin	B	V	500mg	PO	QID	7 to 10 days

Paediatric doses:

- Erythromycin 25mg/kg/day in 2 divided doses orally
- Cloxacillin 50mg/kg/day in 4 divided doses orally

Second line treatment for severe impetigo						
Drug	Codes		Adult dose	Route	Frequency	Duration
Cephalexin	S	N	250mg	PO	QID	10 days

Paediatric dose:

- Cephalexin 25mg/kg (maximum 250mg) PO QID for 10 days

NOTE:

If the recommended first line and alternative drugs are not available refer the patient to the next level;

If the patient fails to respond to treatment, refer him/her to a level where microbiology services are available.

21.5.2 Folliculitis

This is a common condition and patients present with mildly itchy pustules on an erythematous base. It is a superficial infection causing small pustules, each localised around a hair. It is usually caused by *Staphylococcus aureus*. *Pseudomonas aeruginosa*, *Pityrosporum* species, dermatophytes, and herpes simplex virus may also cause folliculitis. A variant known as eosinophilic folliculitis occurs in HIV infected persons. Deep follicular inflammation often occurs in hairy areas. Staphylococcal folliculitis often occurs in nasal and perineal carriers of the organisms and in recurrences it may be necessary to clear the carrier state.

Mild or localized disease

First line treatment of mild or localized disease is to bathe and remove crusts and clean the skin with frequent soap and water washes or by soaking lesions with potassium permanganate:

First line treatment for mild folliculitis						
	Codes		Adult dose	Route	Frequency	Duration
Soap and water washes	C	V		Local wash	2 times daily	Till healed
OR						
Potassium permanganate 1:4000 (0.025%) solution	B	N		Local soak	Once daily	Till healed

Severe disease

If the disease is extensive and severe, or if there are systemic symptoms, systemic antibiotic treatment will be necessary in addition to soaking:

First line treatment for severe folliculitis						
	Codes		Adult dose	Route	Frequency	Duration
Erythromycin	C	V	500mg	PO	QID	7 to 10 days
OR						
Cloxacillin	B	V	500mg	PO	QID	7 to 10 days

Paediatric doses:

- Erythromycin 25mg/kg/day in 2 divided doses orally
- Cloxacillin 50mg/kg/day in 4 divided doses orally

Second line treatment for severe folliculitis

Drug	Codes	Adult dose	Route	Frequency	Duration
Cephalexin	S N	250mg	PO	QID	10 days

Paediatric dose:

- Cephalexin 25mg/kg (maximum 250mg) PO QID for 10 days

NOTE:

If the recommended first line and alternative drugs are not available refer the patient to the next level

If the patient fails to respond to treatment refer him/her to a level where microbiology services are available

21.5.3 Furunculosis, boils and carbuncles

These conditions are deep forms of folliculitis and are usually painful and tender. They are in fact abscesses and often require incision and drainage, depending on their size and location. They are most frequently caused by *Staphylococcus aureus*. Furunculosis usually resolves by itself, but may be improved by placing frequent hot compresses until the small abscess localizes and ruptures. Review the patient after 2 days and if not improving, consider surgical incision and drainage. If the boil causes swollen lymph nodes and fever, consider systemic antibiotics:

First line treatment

Drug	Codes	Adult dose	Route	Frequency	Duration
Cloxacillin	B V	500mg	PO	QID	7 to 10 days

Paediatric doses:

- Cloxacillin 50mg/kg/day in 4 divided doses orally

Second line treatment						
Drug	Codes		Adult dose	Route	Frequency	Duration
Cephalexin	S	N	250mg	PO	QID	10 days

Paediatric dose:

- Cephalexin 25mg/kg (maximum 250mg) PO QID for 10 days

NOTE:

If the recommended first line and alternative drugs are not available refer the patient to the next level;

If the patient fails to respond to treatment refer him/her to a level where specialist services are available

21.5.4 Paronychia

Paronychia is infection of the nail fold. It may be acute or chronic. Acute paronychia is painful and is caused by bacterial (usually staphylococcal) or viral (usually herpes simplex virus) infection. Chronic paronychia is painless and is the result of trauma followed by secondary infection by *Candida albicans*. Patients with acute paronychia present with painful red swellings of the nail fold. Acute paronychia is commoner in persons who have the habit of biting their nails.

Acute Paronychia

Tenderness and presence of visible pus requires incision and drainage and systemic treatment with antibiotics:

First line treatment of acute paronychia						
Drug	Codes		Adult dose	Route	Frequency	Duration
Phenoxymethylpenicillin	C	E	500mg	PO	QID	5-7 days

Paediatric doses:

- Phenoxymethylpenicillin 10mg/kg (maximum 500mg) PO QID for 5-7 days

**Second line
treatment of
acute
paronychia**

Drug	Codes		Adult dose	Route	Frequency	Duration
Cloxacillin	B	V	500mg	PO	QID	10 days

Paediatric doses:

Cloxacillin 50mg/kg/day in 4 divided doses orally for 10 days

Persons with acute paronychia caused by herpes simplex virus infection need to be treated with acyclovir once the diagnosis has been confirmed. In adults acyclovir is given in a dose of 200mg PO five times a day for 7 to 10 days and in children acyclovir is given in a dose of 5mg/kg (maximum 200mg) 5 times a day PO for 7 to 10 days.

Chronic Paronychia

This is usually caused by trauma followed by infection with *Candida albicans*. It is commoner in persons engaged in wet work, e.g., washing clothes and dishes, bar workers and food handlers. Infected persons with chronic paronychia should avoid prolonged and excessive contact with water, detergents and soaps and should protect the area from trauma. Treatment is with applications of topical imidazoles and if there is secondary bacterial infection then systemic antibiotics may be used as described for acute paronychia:

**Treatment of
chronic
paronychia**

Drug	Codes		Adult dose	Route	Frequency	Duration
Griseofulvin	B	N	500mg	PO	OD	6 weeks

1.6 Fungal Infections

21.6.1 Tinea

Tinea (“ring worm”) is caused by the dermatophyte species of fungi. Any part of the skin, hair and nails can be affected. Typically lesions are itchy, scaly, and erythematous, and have an annular or geographic shape that tends to clear in the centre. Lesions expand gradually and may sometimes be pustular.

Body Ringworm (Tinea Corporis)

Round, expanding lesions with white, dust-like scales and distinct borders, found on the body, face or limbs. Treat as follows:

First line treatment of tinea corporis						
Drug	Codes		Adult dose	Route	Frequency	Duration
Benzoic acid compound ointment	C	E	Apply	Local	2 – 3 times a day	4 weeks
OR						
Imidazole cream (miconazole 2%)	B	N	Apply	Local	2-3 times a day	For 7 days after resolved

Second line treatment of tinea corporis						
Drug	Codes		Adult dose	Route	Frequency	Duration
Imidazole cream (miconazole 2%)	B	N	Apply	Local	2-3 times a day	For 7 days after resolved

Tinea Pedis (Fungal / Athlete's Foot)

This is a very common fungal infection and is often the source of infection at other sites. Keep the feet as **dry** as possible, and as far as possible avoid

wearing socks / closed-in shoes. Treat any bacterial superinfection first, then treat the fungal infection as follows:

First line treatment of tinea pedis						
Drug	Codes		Adult dose	Route	Frequency	Duration
Imidazole cream (miconazole 2%)	B	N	Apply	Local	2-3 times a day	For 7 days after resolved

Second line treatment of tinea pedis						
Drug	Codes		Adult dose	Route	Frequency	Duration
Griseofulvin	B	N	500mg	PO	OD	4 weeks

Tinea Capitis (Scalp Ringworm)

In tinea capitis the fungus has usually grown down into the hair follicle and hence topical treatment is unlikely to be effective. Treat as follows:

First line treatment of tinea capitis						
Drug	Codes		Adult dose	Route	Frequency	Duration
Griseofulvin	B	N	500mg	PO	OD	4 weeks

21.7 Parasitic infections of the skin

21.7.1 Scabies

Scabies is a parasitic infection of the skin caused by the mite *Sarcoptes scabiei*. Infection is transmitted by skin-to-skin contact, including sexual intercourse. Household contacts of infected persons may become infected through close body contact. If untreated it spreads to all members of the household. The main symptoms of infection are itchiness and a rash. The itch becomes worse at night and after a hot bath. Usually there is an itchy,

excoriated, non-specific rash on the trunk, associated with scaly burrows in the web spaces of the fingers, on the wrists and on the ulnar margins of the forearms and on the buttocks, periumbilical and genital areas, axillae and inner aspects of the feet.

All close contacts in the same household, especially children and the elderly should be treated at the same time. Sexual contacts of persons with scabies should also be treated. Clothing and bedding should be washed pressed and left to dry in the sun. The following treatment should be given:

1. Treatment of scabies in adults

After normal bathing, apply:

First line treatment of scabies - adults						
Drug	Codes		Adult dose	Route	Frequency	Duration
Gammabenzene hexachloride lotion (1%)	C	V	Apply from neck down to toes	Local	Apply once and wash off after 24 hours	Single application

2. Treatment of scabies in children

After normal bathing, apply:

First line treatment of scabies – children						
Drug	Codes		Adult dose	Route	Frequency	Duration
Gammabenzene hexachloride lotion (1%)	C	V	Apply from neck down to toes	Local	Apply once and wash off after 12 hours	Single application

CAUTIONS: Hot baths and scrubbing should be avoided to prevent systemic absorption.

3. Treatment of scabies in pregnant women, in lactating women and in children less than 6 months of age

Treatment of scabies in pregnant women, lactating women, and children < 6 months of age						
Drug	Codes		Adult dose	Route	Frequency	Duration
Benzyl benzoate emulsion (25%)*	B	N	Apply from neck down to toes	Local	Apply nightly for and wash off after 12 hours	3 nights and repeat in 10 days if necessary
OR						
Sulphur ointment 5-10% (for infants)	B	N	Apply from neck down to toes	Local	Twice daily	10-14 days

- For children dilute benzyl benzoate with one part water 1:1
- For infants dilute benzyl benzoate with 3 parts water 1:3
- If there is secondary bacterial infection ("septic sores"), treat as for impetigo for 4-5 days. Only apply scabicide once lesions are closed.
- Advise that the itch may continue for several weeks. This can be relieved by applying:

Treatment of itch in scabies						
Drug	Codes		Adult dose	Route	Frequency	Duration
Calamine lotion	C	N	Apply	Local	As needed	As required
OR						
Chlorpheniramine maleate	C	E	4mg	PO	TID	3 days

Paediatric doses:

Chlorpheniramine maleate 0.1mg/kg PO TID for 3 days

Alternative treatments include,

- lindane, 1% lotion or cream, rubbed gently but thoroughly into the infested area and adjacent hairy areas and washed off after 8 hours. Lindane must not be used during pregnancy or lactation
- Permethrin 1%, applied as above
- Crotamiton 10%, lotion, applied to the entire body from the neck down, nightly for 2 nights and washed off thoroughly 24 hours after the second application; an extension (crotamiton has the advantage of an antipruritic action).
- Sulphur 6%, in petrolatum applied to the entire body from the neck down, nightly for 3 nights; patients may bathe before reapplying the product and should bathe 24 hours after the final application.

21.8 Viral infections

21.8.1 Herpes Simplex Virus

Herpes simplex virus infections are extremely common. The virus causes vesicles, usually around the lips or around the mouth and also on the genitals. The first attack is usually extensive and may last up to 2 to 3 weeks. Recurrences occur in more than half of the patients who have had a primary attack and are usually localized and last 4 to 7 days. Recurrences are often associated during times of decreased well-being (incubation time

of infectious diseases, menses, mental stress, febrile illnesses). No specific medication; keep the lesions dry. Immunosuppressed persons with HIV infection, tend to develop frequent, extensive and persistent recurrent attacks of herpes simplex virus infections.

Treatment of mild attack of herpes simplex infection

Drug	Codes	Adult dose	Route	Frequency	Duration
Wash well and frequently with soap and water					
OR					
Povidone iodine	C V	Apply	Local	3 times a day	Till resolved

Treatment of severe primary or recurrent attack of herpes simplex virus infection

Drug	Codes	Adult dose	Route	Frequency	Duration
Acyclovir	B E	400mg	PO	TID	7 days
OR					
Famciclovir	S N	125mg	PO	BID	7 days

21.8.2 Varicella (chickenpox) and Zoster (shingles)

Varicella and zoster are caused by the herpes virus varicella-zoster. Persons exposed to the virus for the first time often develop no symptoms or signs of the infection. Children, and adults, may develop disseminated infection known as chickenpox or varicella after the initial exposure. This will resolve though the virus remains in the body indefinitely. With immunosuppression and other aggravating stress factors, viral replication may occur and then patients develop symptoms limited to the cutaneous distribution of dermatomal nerves resulting in an attack of zoster or shingles.

Chickenpox

The incubation period for chickenpox is 12-21 days after exposure. Macules appear first on the trunk, then spread to the face and scalp. Within a few days these develop into papules, vesicles and crusts. Lesions in all stages of maturity are seen in persons with chickenpox. Specific treatment is not indicated. Patients should be advised to keep the lesions dry with frequent washes with soap and water or saline and by applying zinc oxide preparation. For itching patients may be given:

Treatment of zoster						
Drug	Codes		Adult dose	Route	Frequency	Duration
Acyclovir	B	E	800mg	PO	5 times a day	7 days
OR						
Famciclovir	S	N	250mg	PO	TID	7 days

Paediatric doses:

Acyclovir 20mg/kg (maximum 800mg) PO 5 times a day for 7 days

Famciclovir 6mg/kg (maximum 250mg) PO TID for 7 days

Treatment of post-herpetic neuralgia

For post-herpetic neuralgia amitriptyline, carbamazepine or phenytoin may be used:

Treatment of post-herpetic neuralgia						
Drug	Codes		Adult dose	Route	Frequency	Duration
Amitriptyline	B	E	75mg	PO	Once nightly	As required
OR						
Carbamazepine	B	E	200mg	PO	Once nightly	As required
OR						
Phenytoin	B	V	100-200mg	PO	Once nightly	As required

21.8.3 Warts

Warts are caused by the Human papilloma virus. They are seen in all ages but most commonly in children.

1. Common skin warts (verruca vulgaris) and plantar warts

Common warts (verruca vulgaris) occur mostly on the hands, feet and extensor surfaces. Common skin warts often resolve spontaneously and in most cases, especially in children, should not be treated. There is no reliable specific treatment for warts if treatment is necessary then chemical or physical removal may be attempted. Common skin warts and plantar warts should not be treated with podophyllin and if extensive patients should be referred for excision, cryotherapy or cauterization.

2. Genital warts (Condylomata acuminata)

Genital warts are caused by the human papilloma virus (HPV). A large number of different strains of the virus are known to cause disease in humans. Some HPV strains are associated with cervical cancer and anogenital cancers.

Treatment of genital warts

Treatment of external genital and perianal warts

First line treatment for external genital and perianal warts						
Drug	Codes		Adult dose	Route	Frequency	Duration
Podophyllin paint 20%	B	N	Apply to warts and wash off after 4 hours	Apply to warts	Once weekly	3 weeks

CAUTIONS: For external use only. Do NOT use podophyllin in pregnancy. Do not apply to the cervix, urethra or anal mucosa.

Treatment of cervical, urethral and vaginal warts:

These should not be treated with podophyllin. Patients should be referred for electrocautery, cryotherapy or surgical excision

21.8.4 Molluscum Contagiosum

Molluscum contagiosum is caused by the molluscum contagiosum virus. The infection is not always acquired sexually, commonly being transmitted through contaminated towels. The lesions of molluscum contagiosum may occur on any part of the body. The condition presents as papules with a central umbilication. The contents of the papules when expressed are seen as a white cheesy material.

Treatment of molluscum contagiosum

The lesions of molluscum contagiosum may resolve spontaneously. If not, then each lesion should be pricked with a sharpened "orange-stick" or needle and the contents of the lesion expressed. This alone may be sufficient, or each lesion can then be touched carefully with liquefied phenol.

Lesions of molluscum contagiosum may become extensive and large in immunosuppressed persons with HIV infection. If the lesions are very extensive and are very large then the patient should be referred for specialist attention.

REFER TO THE CHAPTER ON SEXUALLY TRANSMITTED DISEASES

21.9 Urticaria

Allergic urticaria may be caused by: drugs (e.g. penicillin) infection, contact with plants, pollen, insect bites, or foodstuffs (e.g. fish, eggs, citrus fruits, nuts, strawberries, tomatoes.)

Physical urticaria may be caused by mechanical irritation, cold, heat, sweating.

Exclude drug reaction (e.g. penicillin), or infection (bacterial, viral or fungal).

Give antihistamine by mouth [never use topical antihistamines]:

Treatment of itching in eczema						
Drug	Codes		Adult dose	Route	Frequency	Duration
Chlorpheniramine	C	E	4mg	PO	TID	3 days
OR						
Promethazine	B	N	25-50mg	PO	Once at night	As required

Paediatric dose:

Chlorpheniramine 0.1mg/kg PO TID for 3 days

Promethazine **DO NOT USE IN CHILDREN LESS THAN 2 YEARS OF AGE**

If no improvement after 1 month or chronic problem, refer.

21.10 Management of skin conditions in persons with HIV infection

The flowchart on the next page gives guidance on the management of skin conditions in persons with HIV infection.

21.10.1 Flowchart for the management of skin conditions in adults and children with HIV infection

