

SKIN DISEASES

BACTERIAL SKIN INFECTIONS

Superficial bacterial infections of the skin caused by pus producing organisms are called pyoderma. These are classified as primary and secondary pyoderma and common infective organisms are *Staphylococcus aureus* and *streptococci*.

SALIENT FEATURES

- Superficial infections can involve the skin or the hair follicle. Skin involvement present as impetigo contagiosa, bullous impetigo and ecthyma.
- Impetigo is a highly contagious superficial pyoderma common in infants and small children, glomerulonephritis can occur as a complication.
- Hair follicle involvement can lead to folliculitis, furunculosis or carbuncle. Clinically, a suppurative lesion of a hair follicle can be observed. A group of adjacent furuncles with subcutaneous involvement and multiple discharging sinuses is seen in a carbuncle. Diabetes is an important predisposing factor.
- Invasive infection presents as erythematous indurated well-defined plaque with raised edge or frank cellulitis with constitutional symptoms and regional lymphadenopathy.

Treatment

Nonpharmacological

Advise for proper hygiene and nutrition. Advise for removal of dirt, crusts and necrotic debris by washing with non-medicated soap and water and drainage of pus.

Pharmacological (furunculosis, folliculitis)

Majority of purulent lesions of skin structures do not need systemic antibiotic therapy. However, more extensive lesions with collection of pus require drainage and antibiotic. Cover lesions with clean dressing.

A. Mild and localized superficial infection

Give topical therapy with following, which should be applied locally twice a day as a thin film after thoroughly washing the affected sites with soap and water for 7-10 days.

Cream Framycetin sulphate 1% in base.

Or

Cream Sodium fusidate base 2%.

Or

Ointment Mupirocin base 2%.

B. Multiple site superficial pyoderma, invasive varieties and secondary pyoderma

Cap. Cloxacillin 250-500 mg 6 hourly for 5-7 days.

In children: 50-100 mg/kg in 4 divided doses for 5-7 days.

Or

Cap. Cephalexin 500 mg orally 6 hourly for 5-7 days.

In children: 30-50 mg/kg in 4 divided doses for 5-7 days.

Or

Tab. Cotrimoxazole (960 mg) 12 hourly for 5-7 days.

In children: 6 mg/kg/day of Trimethoprim in 2 divided doses for 5-7 days.

C. Impetigo

Cap. Cloxacillin or Cephalexin in same doses as above.

Or

Tab. Erythromycin stearate 250-500 mg every 6 hours for 7 days.

In children: Syr. Erythromycin 30-50 mg/kg/day in 4 divided doses for 7 days.

If no response to the above treatment within 48 to 96 hours, refer to a tertiary care level.

CELLULITIS AND ERYSIPELAS

Cellulitis and erysipelas are usually streptococcal or staphylococcal infections of the subcutaneous tissues, resulting from contamination of minor wounds.

SALIENT FEATURES

- Acute localized inflammation and oedema. Erysipelas is more superficial and has a well-defined, raised margin. Potentially fatal systemic toxæmia may supervene in patients who remain untreated.
- Recurrent cellulitis or erysipelas can result in chronic changes in affected skin and lymphatics.

Treatment

Patient may be treated depending on severity and presence (A) or absence (B) of systemic features, i.e. high grade fever and symptoms of endotoxic shock.

Regimen A

Cap. Cloxacillin 500 mg 6 hourly for 7 days.

In children: 50-100 mg/kg/day 6 hourly.

Or

Cap. Cephalexin 500 mg 6 hourly for 7 days.

In children: 25 mg/kg per day orally in 3 divided doses.

Regime B

Inj. Amoxicillin 500 mg plus Clavulanic acid 125 mg 3 times a day for 7-10 days.

In children: Amoxicillin 6.7 mg/kg plus Clavulanic acid 1.7 mg/kg 3 times a day for 7-10 days.

Once improved, patients may be switched to oral equivalent dosages.

If localized cellulitis

Cap. Amoxicillin 500 mg orally 8 hourly.

In children: 50 mg/kg/day in 3 divided doses.

Or

Cap. Cephalexin 500 mg orally 6 hourly.

In children: 50 mg/kg/day in 3-4 divided doses.

In patients hypersensitive to penicillin (or beta lactam), other class of antibiotic as per sensitivity of the organism may be used.

LEPROSY

Leprosy is a chronic granulomatous disease affecting skin and nerves caused by *Mycobacterium leprae*. Mode of spread is by respiratory droplet infection and close personal contact.

SALIENT FEATURES

- Cardinal signs of leprosy are hypopigmented, hypoaesthetic skin lesions and/or nerve involvement in the form of tingling sensation, paraesthesia or gross sensory or motor deficit, thickening of nerves and demonstration of AFB within the skin.
- Leprosy may be classified as paucibacillary (PB): Patient with less than 5 hypoaesthetic, hypopigmented lesions (including localized single nerve) (Fig. 14.1); Multibacillary (MB): Patient with 5 or more lesions including skin and nerves or more than one nerve trunk involvement.

- Baseline investigations before starting drugs include: haemogram, LFT, slit skin smear (if available), chest X-ray and tests to rule out G6PD deficiency.



Fig. 14.1. Erythematous well-defined lesion of borderline tuberculoid (BT) Hansen with thickened right greater auricular nerve.

Treatment

Complicated leprosy with or without drug reactions should be referred to a tertiary care centre. Blister packs for MB and PB are available at all health centres; each contains all medicines for 28 days. Treatment required for paucibacillary (PB) and multibacillary leprosy in children is shown in Table 14.1.

Blister pack for MB patients

Dosage (adult MB)

Supervised treatment on day 1. Following is a 28-day cycle which has to be repeated 12 times.

Day 1. Rifampicin (R): 600 mg, Clofazimine (C): 300 mg, and Dapsone (D): 100 mg. Domiciliary treatment for 2-28 days: C: 50 mg, D: 100 mg.

Dosage (children < 10 years)

Day 1. Supervised R: 300 mg, C: 100 mg, D: 25 mg.

Day 2-28 domiciliary: C: 50 mg twice a week D: 25 mg daily.

Duration: Patient has to take a total of 12 blister packs within 18 months.

Blister pack for PB patients

Dosage (adult PB)

Following is a 28-day cycle, which has to be repeated 6 times.

Monthly treatment

Day 1 (Supervised), R: 600 mg D: 100 mg.

Daily treatment: Day 2-28: D: 100 mg.

Dosage children < 10 years.

Day 1. (Supervised) R: 300 mg D: 25 mg.

Day 2-28. D: 25 mg.

Duration: 6 blister packs within 9 months

Adult (single dose therapy) for single skin lesion

Rifampicin: 600 mg, Ofloxacin: 400 mg, Minocycline: 100 mg.

Child (single dose therapy): Rifampicin: 300 mg, Ofloxacin: 200 mg, Minocycline: 50 mg.

Table 14.1. Regimen for paucibacillary (PB) and multibacillary (MB)

	< 30 kg	30-45 kg	> 45 kg
PB	Rif 300 mg po/mth Dapsone 25 mg/d	Rif 450 mg po/mth Dapsone 50 mg/d	Rif 600 mg po/mth Dapsone 100 mg/d
MB	Rif 300 mg po/mth Clofazimine 100 mg po/mth + 50 mg twice a week Dapsone 25 mg/d	Rif 450 mg po/mth Clofazimine 150 mg po/ mth + 50 mg alternate day, Dapsone 50 mg/d	Rif 600 mg po/mth Clofazimine 300 mg po/mth + 50 mg/d Dapsone 100 mg/d

If the treatment is interrupted for less than three months at a stretch, the regimen should be recommenced where it was left off to complete the full course. The patient should be reviewed in detail for persisting disease at the end of therapy.

Management of complications (acute or subacute inflammation)

Reversal reaction or type 1 reaction (Fig. 14.2) and erythema nodosum leprosum or type 2 reaction

If the reaction is mild (no nerve involvement): Bed rest and paracetamol. If there is nerve involvement or suspected neuritis or signs of nerve damage – refer to a tertiary care hospital.

Tab. Prednisolone 40-60 mg once a day and gradually reduced weekly or fortnightly and eventually stopped (12 week course).

Continue treatment with multidrug therapy (MDT) without interruption along with anti-reaction treatment.



Fig. 14.2. Erythematous, oedematous plaques with scaling of BB Hansen in type I reaction.

Patient education

- Treatment of leprosy with only one drug or incomplete treatment will result in drug resistance. Explain that the treatment for leprosy has to be carried out without default for many months to obtain complete cure. Also explain the dangers of inadequate or no treatment.
- Explain the side effects of dapsone which include dapsone syndrome, fixed drug eruptions, exfoliative dermatitis; Clofazimine can cause darkening and staining of the skin which is reversible on stopping treatment. Rifampicin can cause discolouration of sweat, tears, urine, skin.
- All patients who were earlier treated with dapsone monotherapy (prior to implementation of MDT programme) should be retreated with appropriate regime of MDT irrespective of disease activity.
- All patients who have either received irregular or doubtful treatment should also be given an appropriate MDT regime.
- Reassurance that the disease is completely curable and patients do not need segregation.
- All the members of the family in contact with the leprosy patient should be examined.
- Daily inspection for any injury/ulcers and sensory/motor changes and appropriate medical attention is a must to prevent long-term sequelae.
- Residual sensory and motor deficit despite may remain.

References

1. Leprosy. In: Textbook of Dermatology. Burns T et al (eds), 8th Edition, Blackwell Science Ltd., London 2010, pp. 32.1-32.19.
2. Leprosy. In: Dermatology in General Medicine. Fitzpatrick TB et al (eds), 7th Edition, McGraw Hill Company Inc., New York, 2008, pp. 1786-1796.

CUTANEOUS TUBERCULOSIS

Cutaneous tuberculosis affects skin and/or mucosa with or without underlying systemic involvement.

SALIENT FEATURES

- Commonly cutaneous tuberculosis presents as one of the following clinical disease entities:
 - Lupus vulgaris—granulomatous lesion with marginal activation central clearing and atrophy (Fig. 14.3a).
 - Scrofuloderma—granulomatous ulcer with fibrosis, atrophy, sinus formation and deeper structure involvement as the focus of suppuration (Fig. 14.3b).
 - Tuberculosis verrucosa cutis—verrucous plaque with or without atrophy.



Fig. 14.3a. Scrofuloderma (inguinal region) with tubercular dactylitis.



Fig. 14.3b. Hypertrophic lupus vulgaris lesion on knee.

Confirm the diagnosis with investigations, viz. haemogram with ESR, Mantoux test, chest X-ray, sputum examination and AFB staining and FNAC/skin biopsy, if available. If the facilities are not available, it is advisable to refer the patient to a higher centre to confirm the diagnosis before starting antitubercular therapy. Patient needs to be evaluated in details for co-existent systemic focus of tuberculosis.

Screen the patients for underlying immunosuppression, particularly, if extensive or multifocal disease is present.

Treatment

The drug regimen should ideally be a daily treatment regime in TB; however, it should conform to national TB management guidelines.

Treatment given in two phases:

1. Initial phase—2 EHRZ/2SHRZ (for details see section on Tuberculosis).
2. Continuation phase—4 RH.

In specialized situations like scrofuloderma with an underlying focus in a bone/joint, the regimen should be suitably prolonged in consultation with an orthopaedic specialist.

Patient education

- It is a curable disease.
- It shows excellent response to antitubercular therapy.
- Family members and contacts should be screened.

References

1. Antitubercular Therapy. Mycobacterial Infections. In: Textbook of Dermatology. Burns T et al. (eds), 8th Edition, Blackwell Science Ltd., London, 2010 pp. 31.26-31.28.
2. Tuberculosis and other Mycobacterial Infections. In: Dermatology in General Medicine-Fitzpatrick TB et al (eds), 7th Edition, New York, 2008 pp. 1768-1778.

SCABIES

A common skin infestation caused by arthropod mite (*Sarcoptes scabiei*) and transmitted by close personal contact after an incubation period of 3-4 weeks.

SALIENT FEATURES

- Nocturnal itching, excoriated papules, papulovesicles, burrows and excoriation, lesions seen on interdigital clefts of hands, wrist, axillary folds, breasts, periumbilical region, medial side of thigh and genitals (in males) (Fig. 14.4).
- Burrows are pathognomonic and a family/contact history of similar complaints invariably present.
- Common complications are secondary pyoderma, eczematization and glomerulonephritis (post-streptococcal).



Fig. 14.4. Lesions of scabies with secondary bacterial infection in the interdigital web spaces and over genitals in a male child.

Treatment

Nonpharmacological

Maintenance of adequate personal hygiene by daily bath with soap and water.

Pharmacological

Secondary bacterial infection, when present, should be treated with antibiotics before specific antiscabietic therapy.

1. Specific therapy

For infants, neonates, children, pregnant and lactating mothers.

Permethrin cream 5% to be applied generously, after bath, at bedtime, covering entire surface of the body below neck (except face). Minimum contact period 8-12 hours; single application required and is to be washed off next morning.

For children >5 years and adults. Permethrin cream 5% as outlined above.

Or

Gamma Benzene Hexachloride (GBHC) lotion 1%. Single overnight application below neck on entire body surface after a bath. Minimum contact period 8-12 hours, to be washed off next morning. Not to be used in the presence of extensive eczematization.

Or

Tab Ivermectin 200 mcg/kg as a single dose to be repeated after 2 weeks.

2. Supportive therapy

Tab. Cetirizine 10 mg at night for 10-15 days.

In children: 0.3 mg/kg/day single dose for 2 weeks.

Or

Tab. Pheniramine maleate 25 mg 3 times a day for 10-15 days.

In children: 0.5 mg/kg/day divided in 3 doses.

Follow up after one week, if problematic itching persists, a topical anti-pruritic such as crotamiton either alone or in combination with hydrocortisone may be advised after ensuring adequacy of antiscabetic treatment.

Patient education

- Disinfestation of bedding and clothing by ordinary laundering and/or sun exposure is required.
- In lactating mothers—before feeding, areola should be washed thoroughly with soap and water. After the feed, permethrin cream should be reapplied on breasts and hands.
- Itching will persist for a few days but usually resolves within 1-2 weeks. The overuse/repeated treatment with topical antiscabetic is not required for persisting itching alone.
- All family members and close physical contacts symptomatic or not should be treated simultaneously to prevent recurrences.
- Repeated topical application of GBHC or accidental ingestion may lead to adverse neurological effects such as seizures.
- Adequate contact period of 8-10 hours/overnight must be ensured.

References

1. Disease Caused by Arthropods and other Noxious Animals. In: Textbook of Dermatology. Burns T et al. (eds), 8th Edition, Blackwell Science Ltd., London, 2010 pp. 33.37-33.47.
2. Scabies and Pediculosis. In: Dermatology in General Medicine, Fitzpatrick TB et al (eds), 7th Edition, McGraw Hill Company Inc., New York, 2008; pp. 2283-2288.

PEDICULOSIS (LICE INFESTATION)

Two species of lice are obligate parasites in man namely: i) *Pediculus hominis* which has two variants: (a) *Pediculus humanus capitis*, the head louse; (b) *Pediculus hominis corporis*, the body louse and ii) *Phthirus pubis* (the pubic louse).

SALIENT FEATURES

- Severe itching, frequently followed by secondary bacterial infection with regional lymphadenopathy and eczematization, resulting in matting of hair.
- Transmission occurs by head to head contact, sharing of combs and caps, infested clothing of bedding and poor personal hygiene; transmission of pubic lice is by sexual contact.
- Blue grey maculae (maculae cerulea) of altered blood may be seen at the site of louse bite/feed.

Treatment

Nonpharmacological

Infested clothing and bedding should be washed properly in hot water and dried in sunlight. Cloths should be ironed from inside with special attention to seam line.

In pubic lice infestation, sex partner should be treated as well, and a search for other sexually transmitted infections (STI) should be undertaken.

Pharmacological

1. Specific therapy

1% Permethrin in surfactant rinse, single one hour application on the affected area.

Or

Lotion GBHC 1% to be applied on scalp (in head louse infestation), whole body including pubic region, thighs, buttocks (in pubic and body lice infestation) for a period of 12 hours to be washed off later on. For scalp lice repeat application after one week after surviving eggs have hatched.

2. Supportive therapy

If persistent itching,

Tab. Cetirizine 10 mg once daily at night for 7 days.

In children (2-6 years): 5 mg; (>6 years) 10 mg once daily.

Or

Tab. Pheniramine maleate 25 mg 3 times a day for 7 days.

In children: 0.5 mg/kg/day in 3 divided doses.

3. Treatment of the secondary infection

(see section on Bacterial Skin Infections).

Patient education

- Infested clothing and bedding should be washed properly in hot water and dried in sunlight.
- In case of pubic lice, shave the area, if possible, and ensure adequate personal hygiene.
- Daily bath with soap and water and change of clothing. To remove nits with the help of a fine toothed comb in head lice. Other family members and schoolmates, if infested, have to be treated simultaneously.

References

1. Diseases caused by Arthropods and other Noxious Animals. In: Textbook of Dermatology. Burns T et al. (eds), 8th Edition, Blackwell Science Ltd., London, 2010 pp. 38.26-38.47.
2. Scabies and Pediculosis. In: Dermatology in General Medicine. Fitzpatrick TB et al (eds) 7th Edition, McGraw Hill Company Inc., New York, 2008; pp. 2029-2037.

MYIASIS (MAGGOTS)

Myiasis is the infestation of body tissues of man and animals by the larvae of *Diptera* (two-winged flies). Clinically myiasis can be classified according to the part of the body affected: cutaneous myiasis, wound myiasis and furuncular myiasis (larvae penetrate and develop within the skin); nasopharyngeal myiasis, intestinal and urogenital myiasis.

SALIENT FEATURES

- The eggs or larva (maggots) can be seen in large numbers in the denuded or raw lesions.
- In the furuncular form, boil like lesions develop gradually over a few days; each lesion has a central punctum, which discharges serosanguineous fluid. Posterior end of the larva is usually visible in the punctum.
- Regional lymphadenopathy, mild constitutional symptoms and eosinophilia may be present.

Treatment

Treatment of secondary bacterial infection as in treatment of cellulitis and erysipelas (see section on Bacterial Skin Infections).

Liquid paraffin and turpentine oil application is followed by gentle removal of the larva with the help of a forceps. Sometimes the punctum needs to be enlarged by cruciate incisions in furuncular myiasis.

Patient education

- Explain the patient about personal hygiene and also explain about the proper care of the wound (not to allow flies to sit on raw/open wound).

Reference

1. Diseases caused by Arthropods and other Noxious Animals. In: Textbook of Dermatology. Burns T et al (eds), 8th Edition. Blackwell Science Ltd., London, 2010; pp. 38-11-38.12.

ONYCHOMYCOSIS

Invasion of the nail plate by *Dermatophytes*, *Scytalidium* or other non-dermatophytes moulds is called onychomycosis (*Tinea unguium*). Invasion of nail plate by *Candida* is regarded as candidal onychomycosis.

SALIENT FEATURES

- The nail plate may appear to be discoloured (yellow, green or black), disfigured or, in extreme cases, might be totally destroyed. The nail folds may also show swelling, and redness.
- Other causes of nail plate involvement should be ruled out, e.g. psoriasis, eczema, alopecia areata, lichen planus.

Treatment

Pharmacological

It is prudent to determine the type of organism causing onychomycosis.

Systemic therapy

Tab Griseofulvin (ultramicronized) 250 mg twice daily after fat containing meals (or with milk) for 4-6 months for finger nails and 18-24 months for the toe nails.

In children: 10-20 mg/kg twice daily as above.

Tab. Terbinafine 250 mg once a day for 6 weeks for finger nails and 12 weeks for toe nails.

In children <20 kg: 62.5 mg/day; <40 kg: 125 mg/day; >40 kg: 250 mg/day.

No role of topical treatment.

For candidal onychomycosis, Tab Fluconazole 150 mg once a week for 3-6 months for finger nails and 6-12 months for toe nail infections.

In children: Fluconazole 6 mg/kg/week for the same duration.

CANDIDIASIS

Candidiasis is an infection with protean clinical manifestations, caused by *Candida* species that are also part of normal skin/mucosal flora. The infections are usually confined to the skin, nails, mucous membrane (Fig. 14.5), and gastrointestinal tract but can be systemic and affect multiple internal organs. Various mechanical, nutritional, physiological, systemic and iatrogenic factors predispose to *Candida* infection.



Fig. 14.5. Velvety lesions of lichen planus of tongue with secondary candidal infection. Scraping in 10% KOH reveal pseudo-hyphae or budding yeast cells.

Treatments of oral candidiasis, vaginal and vulvovaginal candidiasis and balanitis or balanoposthitis are discussed in respective sections. Extensive candidiasis, resulting in internal organ involvement is an AIDS defining infection (See section on AIDS and Opportunistic Infections in Chapter 7).

Cutaneous candidiasis

- Intertrigo is the most common clinical presentation of candidiasis on glabrous skin.
- Common locations for the infection include the genitourinary, perineal, axillary, gluteal, interdigital and submammary areas and between the folds of skin of the abdominal wall.
- Pruritus, erythematous macerated areas of skin with satellite vesicopustules are characteristic features.

Candidal paronychia

It is common in individuals whose hands are chronically involved in wet work, e.g. housewives, bakers, fishermen, paan vendors, etc.

SALIENT FEATURES

- Redness, swelling and tenderness of the paronychial area with prominent retraction of cuticle toward the proximal nailbed. Occasionally, pus can be expressed from beneath this area. The nails might also be infected and discoloured.

Oral candidiasis

See section on gastrointestinal diseases.

Treatment**Nonpharmacological**

To keep the affected area dry and clean.

Pharmacological (candidal paronychia)

Cap. Fluconazole 3-6 mg/kg (maximum 150 mg) orally once a week depending upon the area affected for 4-6 weeks. In case nail plate is also involved, treat as onychomycosis. Griseofulvin is not effective in *Candida* infection.

Pharmacological (mucocutaneous candidiasis)

Topical 1% clotrimazole/ 2% miconazole nitrate or 1% ciclopirox cream gel or lotion twice daily for 14 days.

TINEA CAPITIS

Ringworm of the scalp in which the essential feature is invasion of hair shafts by a dermatophyte fungus. School going children (mostly prepubertal) are most commonly affected.

SALIENT FEATURES

Variable depending on the types of hair invasion, level of host resistance and degree of inflammatory host response.

- Gray scaly patch appears as patches of partial alopecia, often oval or circular in shape with fine scaling. Green fluorescence under the Wood's lamp is usual in *Microsporum* infection (Fig. 14.6).
- Kerion is a painful inflammatory condition, seen as hair follicles discharging pus, thick crusting and matting of adjacent hair (Fig. 14.7).
- Black-dot variety (relatively non-inflammatory type) of patchy alopecia—seen as black dots occur as the affected hair breaks at the surface of the scalp.
- Favus: Yellowish, cup-shaped crusts known as scutula. Adjacent crusts enlarge to become confluent and form a mass of yellow crusting.
- Diagnosis is confirmed by demonstration of spores and hyphae in KOH wet mount preparation of affected hair and/or brilliant green fluorescence in Wood's lamp examination.



Fig. 14.6. Multiple, erythematous, crusted lesions with patchy loss of hair in *T. capitis*.



Fig. 14.7. Erythematous boggy swelling of kerion (*T. capitis*) studded with pustules and broken hair.

Treatment

No role of topical therapy alone.

Systemic therapy

Tab. Griseofulvin 10-20 mg/kg in 2 divided doses for 4-6 weeks.

Patient education

- All siblings, children in contact should be screened and treated simultaneously, if required.

- Fomites such as combs and towels should be kept separate.
- Maintain scalp hygiene and oil application should be avoided.

TINEA CORPORIS AND CRURIS

SALIENT FEATURES

- Circular, sharply margined, itchy and scaly plaques with raised edges with papulovesicles at margins and central clearing.
- Laboratory diagnosis is made by KOH smear and culture.

Treatment

Topical treatment in localized disease (not for Tinea pedis)

1. Ointment/cream/gel/powder/spray
 - Clotrimazole 1% twice daily for 4-6 weeks
 - Or
 - Miconazole 2% twice daily for 4-6 weeks
 - Or
 - Terbinafine 1% once daily for 2 weeks
 - Or
 - Butenafine 1% once daily for 2 weeks
 - Or
 - Ciclopirox olamine 1% twice daily for 4-6 weeks.
2. Systemic treatment (in extensive lesions and for Tinea pedis)
 - Tab Griseofulvin 10 mg/kg for 4-6 weeks
 - Or
 - Tab Fluconazole 3-6 mg/kg/week for 4-6 weeks
 - Or
 - Tab Terbinafine 250 mg/day for 2 weeks
 - Or
 - Cap Itraconazole 100 mg once daily for 4 weeks

TINEA PEDIS/MANNUM AND INTERTRIGINOUS TINEA

SALIENT FEATURES

- Peeling, maceration, fissuring affecting the lateral toe clefts.
- Hyperkeratotic plaque (affected areas are pink and covered with fine silvery, white scales).
- Vesiculobullous lesions, particularly at periphery.

Treatment***Nonpharmacological***

Improvement of hygiene in swimming pools such as frequent washing of changing room floors and walkways, use of personal towel and footwear.

Use of antifungal dusting powder.

Pharmacological

Same as for *Tinea corporis*.

Reference

1. Mycology. In: Textbook of Dermatology. Burns T et al (Eds), 8th Edition, Blackwell Science, Oxford, pp 36.1-36.58.

DIAPER DERMATITIS

It is a very common problem in small infants. It is induced by the occlusion of the areas covered by impermeable diapers, often triggered by an episode of diarrhoea.

Treatment

Zinc oxide paste (petroleum jelly 50%, zinc oxide 50%) may prevent skin irritation due to diarrhoea.

Problematic cases to be referred to a specialist.

Parent education

- Avoid impermeable diapers.
- Keep the skin dry.
- Avoid use of topical antiseptics and medicated soaps.

ECZEMA AND DERMATITIS

Eczema is an “inflammatory skin reaction characterized by itching, redness, scaling and clustered papulovesicles, induced by wide range of external or internal factors acting singly or in combination.”

Customarily the eczemas are divided into:

- Endogenous (constitutional)—atopic dermatitis, seborrhoeic dermatitis, lichen simplex chronicus (LSC) and
- Exogenous (environmental)—contact allergic dermatitis, primary irritant dermatitis, photosensitive eczema, etc.

SALIENT FEATURES

- Itching and vesicular eruptions on erythematous skin with erosion and exudation in acute cases or thickening, accentuated skin markings, fissuring with pigmentation (described as lichenification) in chronic cases.

Treatment

A definitive diagnosis of the type of eczema is mandatory, as different varieties of eczema require different management strategies. However, at primary health care level, the aim is to provide relief of symptoms and signs, appropriate to the stage of dermatitis and, subsequent referral to a tertiary care centre for diagnosis and appropriate management strategy.

1. Local treatment

In acute exudative eczema:

Soak with dilute potassium permanganate solution (1:10,000) and 0.25% silver nitrate solution or 0.8% aluminium subacetate solution.

In long-standing situations:

- Acute/subacute—appropriate topical steroid (Table 14.2) in lotion/gel or cream base for 2-4 weeks.
- Chronic long-standing and/or lichenified lesions—appropriate topical steroid (Table 14.2) in ointment/emollient base for 2-4 weeks.

Table 14.2. Preparations of local corticosteroids available in the market as lotion, creams and ointments*

Group 1 (mild)	(Hydrocortisone acetate 1%, Desonide 0.05%) Generally safe for chronic application. Safest amongst steroids for use on face, under occlusion/bandage, in neonates/infants. Not expected to cause local or systemic side effects in the course of normal use.
Group 2 (moderately potent)	(Clobetasone butyrate 0.05%, Mometasone furoate 0.1%, Fluticasone propionate 0.01%, Betamethasone valerate 0.05-0.1%) Hydrocortisone butyrate 0.1% may be used on chronic dermatoses on extremities. Used for limited periods only on face and/or intertriginous areas of adults and children, under close supervision and follow-up. Potential for local side effects with prolonged use.
Group 3 (potent)	(Betamethasone dipropionate 0.05%, Halcinonide 0.025%-0.1%) To be used on recalcitrant chronic dermatoses of adult-elder children only. Can cause local or systemic side effects.
Group 4 (super potent)	(Clobetasol propionate 0.05%) To be used for limited period of time (2 week at a time) as the risk of side effect is highest. Use only in extremities and thickened skin lesions. To be used only when follow-up/supervision is good. Not to be used on face/flexures or in infants/neonates.

*Note: Lotion preparation of some salts at identical concentration is less potent than cream, which is less active than the ointment of the same salt at the same concentration.

2. Systemic treatment

Tab. Pheniramine maleate 25 mg 3 times a day till symptoms subside (about 7 days).

In children: 0.5 mg/kg/day in 3 divided doses.

(**Caution:** Side effect—dry mouth).

Or

Tab. Cetirizine 10 mg at bedtime till symptoms subside.

In children: Syr. Promethazine 1 mg/kg/day 3 times a day till symptoms subside (about 7 days) or Syr. Cetirizine 0.3 mg/kg/day once daily till symptoms subside.

If there is no response with topical steroids and antihistamines, or in case of extensive eczema (preferably under the supervision of a specialist) give,

Tab. Prednisolone 1 mg/kg (maximum 60 mg) as a single oral dose given in the morning after breakfast for 7-10 days. This should be tapered and withdrawn as early as possible after relief from symptoms and signs.

3. Secondary bacterial infection

It should be treated in the acute stage with systemic antibiotics (see section on Bacterial Skin Infections).

Patient education

- Common skin irritants are: overexposure to water or dry air, soaps and detergents, solvents, cleaning agents, chemicals, rubber gloves, or ingredients in skin and personal care products.
- Following local side effects can occur due to misuse or over use of corticosteroids: thinning of skin, striae distensae, increased facial redness and telangiectasia, purpura, tinea incognito, acneform papules and increased hair growth.
- Systemic side effects can occur due to prolonged use of systemic corticosteroids or local applications on large surface area.

References

1. Eczema, Lichenification, Prurigo and Erythroderma. In: Textbook of Dermatology. Burns T et al (eds), 8th Edition, Blackwell Science Ltd., London 2010; pp. 23.1-23.50.
2. Topical Glucocorticoids. In: Dermatology in General Medicine. Fitzpatrick TB et al (eds), 7th Edition, McGraw Hill Company Inc., New York, 2008; pp. 2102-2106.
3. Topical Therapy. In: Textbook of Dermatology. Burns T et al. (eds), 8th Edition, Blackwell Science Ltd., London; 2010; pp. 73.1-73.49.

MILIARIA

Miliaria is caused by obstruction of the sweat gland duct during hot humid summer seasons.

SALIENT FEATURES

- Itching, stinging and secondary infection can occur and lead to perioritis (multiple staphylococcal abscesses) superimposed on miliaria rubra in young children. Eczematization can occur.

Treatment

Nonpharmacological

- Avoid causal factors like heat and occlusion due to oils, creams, cosmetics, etc.
- Cool baths and aeration.

Pharmacological (miliaria rubra)

1. Emollients like anhydrous lanolin or Calamine lotion locally.
Or
Talc or any commercially available powders.
2. In case of secondary infection, see section on Bacterial Skin Infections.
3. For relief of itching, Tab. Pheniramine 25 mg 3 times a day.

Patient education

- Frequent cool bath and aeration.
- To stay in cool environment to minimize the body's need to sweat.
- No oil application over scalp and body.

ACNE VULGARIS

Chronic inflammatory condition of the pilosebaceous glands of the face, neck and upper back. Usually occurs in adolescents and young adults.

SALIENT FEATURES

- Two types of lesions—non-inflammatory (comedones: blackheads or white heads) and inflammatory: pustules, nodules, cysts and abscesses.

Acne can be secondary to mechanical friction/occlusion, detergents/chemicals, ultraviolet exposure, occupational, associated hirsutism/virilism exogenous, other climate/factor and drugs, namely, steroids topical or systemic, INH, rifampicin, phenytoin, lithium, halogenated drugs—bromides/chlorides, cosmetics/oils/petroleum/cream applications.

Treatment

Nonpharmacological

Washing/cleaning of face to keep skin non-sticky, dry and dirt free; shampooing to keep scalp non-greasy.

Pharmacological

Non-inflammatory acne. Retinoic acid cream/gel (0.025%; 0.05%) usually applied once a day—at bedtime or alternate day. A therapeutic response appears characterized by redness and scaling within 3-6 weeks. Treatment is usually continued for at least 3 months.

(**Caution:** Not to apply near/into eye/mouth; contraindicated in pregnancy and lactation)

Gel Retinoic acid, if not tolerated may be substituted by Adapalene 0.1% gel (usage and precautions same as above).

Or

Cream/gel Azelaic acid 20% applied once or twice a day after face-wash.

Inflammatory acne. Inflammatory acne treatment may need to be combined with treatment for non-inflammatory acne.

Mild cases. As above.

Clindamycin gel 1% to be applied twice a day (or more) for 4-6 weeks.

Or

Erythromycin gel/lotion 2%; 4% (safe in pregnancy) to be applied twice a day (or more) for 4-6 weeks. Begin with the lower strength.

Or

Benzoyl peroxide gel 2.5%, 5% (safe in pregnancy) to be applied to clean skin initially once daily on alternate days then twice a day (or more) for 4-6 weeks.

Moderate to severe cases should be referred to a specialist preferably without treating with systemic antibiotics.

1. Topical therapy as above (same drug should not be used topically as well as systemically as no extra-therapeutic benefit will result).
2. Cap. Doxycyclin 50-100 mg once daily for 4-12 weeks. The dosage can be reduced in accordance with the clinical response and discontinued.

Or

Tab. Minocycline 50-100 mg twice daily for 6-8 weeks.

Or

Tab. Azithromycin continuous or pulse therapy 250-500 mg daily for 6-8 weeks or 500 mg daily for 5-7 days every 4 weeks.

Treatment may need to be continued for up to 6 months. Severe and unresponsive cases should be referred to a tertiary care hospital.

Patient education

- Redness and scaling with retinoic acid indicates a therapeutic response. Gels are less irritating. Lasting benefit only after long duration use of comedolytic agents, usually for more than 6 months. Concentration and frequency of application can be adjusted to minimize problematic side effects.
- Avoid oil application on the scalp and wash scalp on alternate days.
- Not to use occlusive applications: oils, creams, pomades, foundation makeup, occlusive topical medications; if at all required, use preferably a gel or lotion.
- Avoid offending drugs.

References

1. Disorders of the Sebaceous Glands. In: Textbook of Dermatology, Burns T et al. (eds), 8th Edition, Blackwell Science Ltd., London, 2010; pp. 42.34-42.88.
2. Disease of the Sebaceous Glands. In: Dermatology in General Medicine. Fitzpatrick TB et al (eds), 7th Edition, McGraw Hill Company Inc., New York, 2008; pp. 687-709.

ALOPECIA AREATA

Alopecia areata is presumed to be an immunologically mediated disorder characterized by non-scarring patchy loss of hair.

SALIENT FEATURES

- In two-thirds of the cases, partial or complete re-growth of hair occurs within 5 years.
- Rule out patchy loss of hair secondary to tinea capitis and syphilis.

Treatment

1. Topical agents may stimulate localized hair growth. Hydrocortisone acetate ointments or cream 1% applied 1 to 4 times or Fluticasone propionate 0.1% applied once a day as thin film; frequency of application is reduced when response is observed. Application is stopped as soon as lesions resolve.
See Table 14.2 in section on eczema; use Group 2 and 3 topical steroids.
2. Retinoic acid 0.5%
Or
Intralesional Triamcinolone 10 mg/ml 0.2-0.5 ml per patch every 3 weeks (should be treated by a specialist).
PUVA therapy is sometimes effective in unresponsive cases. In patients with extensive hair loss, a wig or partial hairpiece provides a more satisfactory solution.

Reference

1. Drugs used in Skin Diseases, WHO Model prescribing information WHO, Geneva, 2008.

PITYROSPORUM INFECTIONS OF THE SKIN

Tinea versicolor and Pityriasis capitis (Dandruff)

Tinea versicolor is an infection of the skin caused by the dimorphic fungus—*Malassezia furfur*. Pityriasis capitis (Dandruff) is caused by *Pityrosporum ovale*.

SALIENT FEATURES

- Tinea versicolor is characterized by superficial, scaly, hypo- or hyperpigmented, irregular macules, most often occurring on the trunk and proximal extremities (Fig. 14.8).
- Pityriasis capitis (dandruff) presents as diffuse itchy lesions over the scalp with hair loss; may be associated with erythema, scaly lesions over eyebrows, eyelashes and nasolabial fold.



Fig. 14.8. Hypopigmented discrete and coalescing macules of *T. versicolor* over upper back. KOH scraping from the lesion reveal both hyphae and spores.

Treatment

To avoid oil application.

Pharmacological

1. Topical 2.5% Selenium sulfide lotion/shampoo.
Or
Topical Ketoconazole 2% lotion with or without Zinc Pyrithione 1% (shampoo in dandruff), apply once for 15 minutes before taking bath on affected areas daily till controlled then reduced to 2-3 times per week,
Or
Fluconazole 2% lotion in shampoo base 3 times per week.

2. In facial lesions (Tinea versicolor),
Topical Miconazole 2% cream apply twice daily for several weeks.
Or
Topical Clotrimazole 1% cream.
3. Tab. Fluconazole 400 mg as a single dose (can be combined with topical therapy for faster relief). Tab. Fluconazole 150 mg weekly for 4-6 weeks may be given to prevent early relapse.

Patient education

- Avoid oil application
- Frequent head wash and wash comb after each head wash.

PITYRIASIS ALBA (PATCHY HYPOCHROMIA)

Pityriasis alba affects over 80% children, its aetiology is obscure.

Treatment

1. The topical preparations (emollients) should be applied at night and washed off in the morning. The treatment is maintained for 4-6 weeks.
2. Hydrocortisone -17 butyrate ointment or cream 0.1% apply thin layer of cream on the affected skin twice daily until symptoms resolve.

ACUTE URTICARIA

Urticaria (hives) is a nonspecific vascular response to a wide variety of stimuli. Acute urticaria presents with erythematous wheals, which may be associated with swelling of loose connective tissue (angioedema) affecting lips, face, scrotum, larynx and trachea.

Treatment

Nonpharmacological

Soothing applications—cold water sponging and clearance of airway in case of laryngeal oedema.

Pharmacological

Tab. Pheniramine maleate 25 mg 3 times a day for 1-2 weeks.

In children: 0.15 mg/dose in 3 or 4 times a day. The dosage should be adjusted according to response and tolerance.

Or

Tab. Hydroxyzine 10-25 mg 3 times a day.

Or

Tab. Cetirizine 10 mg once daily.

In children: 5 mg once daily.

In severe cases, antihistaminics can be started intravenously and once controlled, patient is maintained on oral preparations as above.

Angioedema of the larynx is a medical emergency

Inj. Hydrocortisone acetate 100 mg IV should be given immediately.

Inj. Epinephrine in 0.5-1.0 ml of 1:1000 IM. Patients with severe airway obstruction may have to be intubated immediately (for details see section on Anaphylaxis in Chapter 2).

Patient education

- Identify and avoid precipitating factors.

CUTANEOUS REACTIONS TO DRUGS

Drug eruptions may follow the use of topically or systemically administered drugs. A drug reaction should be suspected whenever there is a sudden worsening of dermatitis at a time when the patient should be improving.

Treatment

Stop the suspect drug, particularly if the drug eruption is severe. In some mild drug reactions, it may be possible to continue the drug, if it is medically necessary. Treatment is symptomatic in a mild case. However, in severe drug eruptions such as exfoliative dermatitis and generalized bullous reactions, systemic corticosteroids may be required.

CHICKENPOX OR VARICELLA

Varicella is the primary infection caused by *Varicella zoster virus* (VZV). It is highly infectious and is transmitted by droplet infection (Fig. 14.9). The incubation period is about 14 days. Reactivation of disease results in Herpes zoster or Shingles.



Fig. 14.9. Polymorphic (vesicular, pustular and crusted) lesions with surrounding erythema of chickenpox.

Treatment of varicella is discussed in Chapter 19.

HERPES ZOSTER (SHINGLES)

Herpes Zoster occurs due to reactivation of VZV which lies dormant in sensory nerve root ganglion following primary infection as chickenpox.

SALIENT FEATURES

- Grouped vesicular lesions on an erythematous base in a dermatomal distribution with severe localized pain.
- Thoracic segment and trigeminal nerve area is more commonly involved; involvement of ophthalmic division of trigeminal nerve (eruptions in the ophthalmic area including tip of nose) may lead to corneal ulcers and scarring.
- Post-herpetic neuralgia defined as persistence of pain for more than 1 month after healing of zoster, motor nerve involvement leading to paralysis of facial muscles, ocular muscles and bladder can occur.
- Lesions in immunocompromised and HIV patients may involve multiple dermatomes and course of the disease is painful and prolonged.

Treatment

Nonpharmacological

Rest and isolation alone in case of mild disease in an otherwise healthy person.

Pharmacological supportive therapy

1. Tab. Ibuprofen 400 mg 3 times a day till resolution of symptoms
In children: 10 mg/kg/day.
Or
Tab. Nimesulide 100 mg 2 times a day in adults till resolution of symptoms
2. Tab. Pheniramine 25 mg 2 times a day till resolution of symptoms
In children: 0.5 mg/kg/day every 8 hours.
3. Calamine lotion topically till resolution of symptoms.

Pharmacological definitive therapy

When patient reports within 24-72 hours or has disseminated lesions

Tab. Acyclovir 800 mg 5 times a day for 5-7 days.

In children: 80 mg/kg/day in 5 divided doses.

Or

Tab. Famcyclovir 250 mg three times a day or 750 once daily for 7 days.

Refer immediately to a tertiary care hospital in case of hearing defect and facial palsy, immunocompromised patient (HIV/AIDS and patients with chronic debilitated disease), involvement of ophthalmic division, and non-responders for following treatment:

Inj. Acyclovir 10 mg/kg IV 8 hourly for 5-7 days.

HERPES SIMPLEX

Herpes simplex is the commonest infection caused by DNA virus, *Herpes virus hominis* (HSV). Type 1 classically associated with facial infections and type 2 is typically genital. Following primary infection, virus remains latent in sensory nerve ganglia and its reactivation under various circumstances is responsible for recurrent episodes. Transmission occurs by direct contact or droplets from infected secretions. Incubation period is 4-5 days. Diagnosis is supported by Tzanck smear made from a vesicle, on Giemsa staining it shows multinucleated giant cells and ballooning degeneration of keratinocytes.

SALIENT FEATURES

- Grouped vesicular lesions on erythematous base are present on lips (herpes labialis—Fig. 14.10) or tongue, palate and buccal mucous membranes (herpetic gingivostomatitis) or anywhere else on the body.
- Primary episode is painful and associated with regional tender lymphadenopathy. Recurrent episodes are relatively asymptomatic.
- Complications include disseminated herpes simplex in debilitated and immunosuppressed patients, herpetic encephalitis or meningitis, eczema herpeticum in patients with atopic dermatitis and erythema multiforme.



Fig. 14.10. Grouped, vesicular lesions over erythematous background in herpes labialis.

Treatment

Supportive therapy in herpes labialis

Identify and avoid precipitating factors in recurrent herpes labialis like sun exposure, febrile illness and alcohol intake.

Specific therapy in herpes labialis

- A. Mild case is self-limiting (5-7 days) and no specific therapy is required.
- B. Moderate to severe case. Tab. Acyclovir 200 mg 5 times a day for 7 days.

Prophylaxis (recurrent episodes more than 6 per year, refer to a specialist)

Tab. Acyclovir 400 mg 2 times a day Or 200 mg 3 times a day for 6 months to 1 year and, in addition, continue supportive therapy.

Patient education

- It is an infectious condition transmitted by direct contact/droplet infection. Therefore, the patient should avoid contact until all the lesions get crusted.
- Herpes simplex 2 is transmitted via sexual route, so patient should take proper precautions (See section on Genital Ulcers).

References

1. Viral Infections. In: Textbook of Dermatology. Burns T et al. (eds), 8th Edition, Blackwell Science Ltd, London, 2010; pp 33.14-33.37.
2. Herpes Simplex. In: Dermatology in General Medicine. Fitzpatrick TB et al (eds), 7th Edition, Mc Graw Hill Company Inc., New York, 2008; pp. 1873-1899.

MOLLUSCUM CONTAGIOSUM

A common pox virus infection of early childhood, transmitted by contact. In adults, infection can be transmitted sexually. Incubation period varies from 14 days to 6 months.

SALIENT FEATURES

- Lesions are usually multiple and distributed on exposed areas and individual lesion is shiny, pearly white, hemispherical papule with central umbilication. Central core contains a cheesy material.
- Untreated lesions usually get cleared following local inflammation in 6 to 24 months.

Treatment***Nonpharmacological***

Do not share towels/clothing.

Pharmacological for extensive lesions

Extirpate molluscum body and touch the central core with Trichloroacetic acid (TCA) 10 to 20%.

Adult patients with genital molluscum or extensive molluscum should be screened for STD and immunosuppression.

Patient education

- Avoid any kind of direct contact with the infected persons.
- Avoid swimming pools, communal baths and contact sports.
- Partner education for prevention of this disease.

References

1. Viral Infections. In: Textbook of Dermatology. Burns T et al (eds), 8th Edition, Blackwell Science Ltd, London, 2010; pp 33.11-33.14.
2. Molluscum Contagiosum. In: Dermatology in General Medicine. Fitzpatrick TB et al (eds), 7th Edition, McGraw Hill Company Inc., New York, 2008; pp. 1907.

VIRAL WARTS

Human papilloma virus (HPV) causes viral warts. Transmission occurs by inoculation of infected material in breaches in skin or mucous membranes. Incubation period varies from 1 to 4 months.

SALIENT FEATURES

- It can present in different clinical patterns viz., common warts (*verruca vulgaris*—Fig. 14.11), palmoplantar warts, plane warts (*verruca plana*) and filiform warts commonly found in the beard area of an adult male.
- Lesions are asymptomatic except plantar warts, which may be painful.
- Genital wart is a sexually transmitted disease.



Fig. 14.11. Multiple coalescing lesions of *verruca vulgaris* (common warts) in periungual region.

Treatment

1. *Verruca plana*—10-20% Trichloroacetic acid (TCA), electrocautery.
2. *Verruca vulgaris*—pairing of lesion followed by application of 25-50% TCA or electrocautery/cryosurgery.

3. Plantar warts—paring of the lesion and application of 25-50% TCA, electrocautery/cryosurgery.

For genital warts (to be given by the treating physicians)

Podophyllin 20-25% in Tr. Benzoic Co. applied locally (after covering the surrounding normal skin with vaseline) weekly till complete resolution. To wash the affected area after four hours.

Or

Electrocautery/cryosurgery.

Patient education

- Avoid contact with the infected patients. Transmission occurs via contact with breach in the skin and mucous membrane.
- Education on safe sex in case of genital warts.

References

1. Warts. In: Dermatology in General Medicine. Fitzpatrick TB et al (eds), 8th Edition, McGraw Hill Company Inc., New York, 2010; pp. 1915-1923.
2. Viral Infections. In: Textbook of Dermatology. Burns T et al. (eds), 8th Edition, Blackwell Science Ltd., London, 2010; pp. 33.39-33.57.

LICHEN PLANUS

Lichen planus is a symptom complex of itching and self-limited eruptions which can involve the glabrous skin, mucous membrane, hair and nails. The natural history is variable with a usual course of 9-18 months. Oral and hypertrophic lesions run chronic course. Diagnosis is usually clinical, however, should be confirmed by a specialist.

SALIENT FEATURES

- Violaceous polygonal papules, intensely pruritic plaques over the skin and grayish white streaky (Lacy pattern) mucous membrane lesions (Fig. 14.5).
- Drugs causing lichenoid eruptions are—captopril, allopurinol, beta-blockers, gold, tetracycline, arsenic, penicillamine, NSAIDs, INH, chloroquine, carbamazepine, sulphonylureas.
- Koebner phenomenon

Treatment

1. Topical corticosteroids (Group 4: superpotent; for details see Table 14.2 in section on Eczema and Dermatitis) ointment.

Or

In hypertrophic lesions: intralesional Triamcinolone acetonide injections given every 2-3 weeks till the lesions flatten.

2. In case of extensive lichen planus interfering with the patient's normal life, nail atrophy and pterygium formations, extensive ulcerative lesions of mucous membrane, follicular lichen planus of scalp and bullous lichen planus: Tab. Prednisolone (1 mg/kg) maximum 60 mg daily as single dose in the morning for 6 weeks and thereafter gradually tapering over a period of another 6 weeks.

Or

Tab. Dapsone 100 mg once a day.

3. If itching: Tab. Pheniramine 25 mg 3 times a day.

Duration of the treatment is usually 3-6 months.

Patient education

- Lichen planus is noninfectious disease and noncancerous. It is neither inherited nor related to nutrition and is self-limiting.
- Recurrences may occur.

Reference

1. Textbook of Dermatology. Burns T et al. (eds), 8th edition, Blackwell Science Ltd., London; 2010; pp. 41.1-41.19.

PSORIASIS

Psoriasis is a common, genetically determined, inflammatory and proliferative disease of the skin characterized by chronic, red scaly plaques, particularly on the extensor prominences and on the scalp.

SALIENT FEATURES

- Asymptomatic erythematous, well-defined, dry scaly papules and plaques of various sizes (Fig. 14.12).
- Grattage (Scratch) test: Scales can be removed in layers (similar to one scratching a wax candle).
- Auspitz sign: When the scales are completely scraped off, multiple bleeding points are seen.
- Koebner phenomenon—lesion produced at trauma sites.



Fig. 14.12. Erythematous well-defined plaques with silvery white scale on lower back in psoriasis vulgaris.

Treatment

Investigate for baseline parameters and counselling about chronicity of the disease.

Nonpharmacological

Identify and avoid triggering factors.

Pharmacological

Patient suffering from less than 10% body involvement may only be treated at a primary care level. Patient having greater than 10% body involvement should be referred to a tertiary care level for initiation of therapy; management thereafter may be continued under primary care physician.

Avoid systemic corticosteroids.

1. Tar (6% in white vaseline)—applied topically at bedtime except face and flexures followed by sun exposure next morning.

Or

Group 4 potent topical corticosteroids applied once daily, with or without occlusion till improvement occurs (Table 14.2).

2. Salicylic acid (3%) in white vaseline, a thin layer is applied daily which the lesions have resolved.
3. Tab. Erythromycin 500 mg 4 times a day for 1 week.
Or
Cap Amoxicillin 250-500 mg 8 hourly for 1 week.
4. Cap. Vitamin A 50,000 units to 1 lac units daily for 3 weeks followed by one week break.
5. Tab. Pheniramine maleate 25 mg 3 times a day or any suitable alternative.

Refer to a tertiary care centre, if patient shows no improvement in 6-8 weeks or develops pustular psoriasis, psoriatic arthropathy or erythroderma.

In scalp psoriasis, oil application/Tar shampoo to be used daily at night.

Face and Flexural psoriasis Group 1 or 2 topical steroid (see section on Eczema and Dermatitis).

Patient education

- It is a chronic disease characterized by remissions and relapses and prognosis is variable.
- Trauma, streptococcal throat infection, pregnancy, hypocalcaemia, winter, emotional stress, alcohol, AIDS and drugs like beta blockers, NSAIDs, lithium, chloroquine and rapid withdrawal of corticosteroid therapy can exacerbate psoriasis.

References

1. Psoriasis. In: Textbook of Dermatology. Burns T et al (Eds.), 8th Edition. Blackwell Science Ltd., London, 2010; pp. 20.1-20.54.
2. Psoriasis. In: Dermatology in General Medicine. Irwin M. Freedberg et al (eds), 7th Edition, McGraw Hill Company Inc., pp. 169-192.

VITILIGO

Vitiligo is a pigmentation disorder in which melanocytes in the skin, and mucous membranes die. The cause of vitiligo is not known. It is more common in people with certain autoimmune diseases including hyperthyroidism, adrenocortical insufficiency, alopecia areata and pernicious anaemia. Vitiligo may also be hereditary.

SALIENT FEATURES

- Depigmentation of the skin and hair is common in sun-exposed areas, including hands, feet, arms, face, and lips (Fig. 14.13). Other common areas for white patches to appear are the armpits and groin and around the mouth, eyes, nostrils, umbilicus, and genitals.
- There is no way to predict, if vitiligo will spread. Some people have reported additional depigmentation following periods of physical or emotional stress.



Fig. 14.13. Depigmented macules of vitiligo on knee showing perifollicular re-pigmentation.

Treatment

To be treated at a tertiary care centre.

Pharmacological

Therapy for vitiligo takes a long time—it usually must be continued for 6 to 18 months. The choice of therapy depends on the number of white patches and how widespread they are and on the patient's preference for treatment. Each patient responds differently to therapy, and a particular treatment may not work for everyone.

1. Topical Group 2-4 steroid for 4 to 6 months depending on the sites involved (for details see Table 14.2 in a section on Eczema and Dermatitis).

Or

Topical psoralen photochemotherapy.

Or

Tab. Methoxsalen (10 mg) 0.4-0.6 mg/kg administered 2 hours before exposure to ultraviolet radiation. 12-24 sessions are usually necessary. The sessions should be given 2 or 3 times weekly (at least 48 hours apart).

2. Depigmentation of the unaffected area, if greater than 90% area is already affected to get uniformity in colour.
3. Surgical therapies (at tertiary care level)
 - Autologous skin grafts, skin grafts using blisters, micropigmentation (tattooing), autologous melanocyte transplants.
 - Cosmetics that cover the white patches improve their appearance and help patients to feel better about them.

Patient education

- Counselling and reassurance as it can cause a lot of emotional stress.
- Talking with other people who have vitiligo may also help a person to cope up.
- The National Vitiligo Foundation can provide information about vitiligo and refer people to local chapters that have support groups of patients, families, and physicians. Family and friends are another source of support.

MELASMA

Melasma often appears during pregnancy in women living in dry, sunny climates, but is most frequently seen in those taking oral contraceptives. Melasma of pregnancy usually resolves in few months after delivery but, otherwise, spontaneous remission is rare.

Treatment

Modified Kligman's formula containing hydrocortisone 1%, hydroquinone 2% and Tretinoin 0.025% in commercial preparation for bedtime application.

Or

Depigmenting agent hydroquinone 5% lotion/cream once daily topically

Or

Glycolic acid 6-12% cream once daily

Or

Azelaic acid 10-20% cream once daily

Sunscreens containing either cinnamates or benzophenones with a sun protection factor (SPF) rating of at least 15,

Or

Topical preparations containing Calamine, Zinc oxide, Titanium dioxide or other constituents which reflect incident light (physical sunblock) can also provide useful protection when they are applied carefully.

ALBINISM

Albinism is an autosomal recessive inherited disorder. Patients are at risk of skin damage from sunlight and usually develop cutaneous malignancies at an early stage.

Treatment

There is no effective therapy other than total avoidance of direct sunlight from early childhood.

Sunscreens to be given under the supervision of a specialist.

Reference

1. Drugs used in skin diseases, WHO Model Prescribing Information WHO, Geneva, 1997.

DERMATOLOGICAL EMERGENCIES

A quick assessment of the condition of the patient can be made by assessing whether eruptions involve large areas of skin or blisters and erosions present or does patient appear ill?

Serious emergencies involve blisters and erosions covering large areas of skin with toxic symptoms like fever, tachycardia, tachypnoea and dehydration. These patients require urgent referral to a specialist centre.

Three broad groups are:

Group I. Extensive blistering and erosions, e.g. pemphigus, toxic epidermal necrolysis, Stevens-Johnson syndrome.

Group II. Extensive skin involvement without blisters—erythroderma, viral exanthems, drug rashes.

Group III. Localized skin lesions—cellulitis, necrotizing fasciitis.

Treatment

Group I

To be treated at a tertiary care level (pemphigus, toxic epidermal necrolysis, Stevens-Johnson syndrome)

Nonpharmacological (general)

1. Identify the causative factor and stop exposure immediately.
2. Dressing (see section on Burns in Chapter 2).
3. IV fluid replacement as per grade III burns depending on the area affected (see section on Burns).
4. Care of eye and mucous membranes: Clean eye lesions by irrigation with normal saline and frequent change of position in bed (see section on Eye Infections in Chapter 13).

5. If oral candidiasis, see section on Acute Oropharyngeal Candidiasis in Chapter 6.

Pharmacological

Systemic antimicrobial therapy may be needed for patients with secondary infections (see section on Bacterial Infections).

Topical applications with Povidone iodine cream/lotion.

Or

Silver sulfadiazine cream.

Or

Silver nitrate sol 0.5% compresses soaked in a 1:100 dilution of the stock solution are applied every 4 hours.

For erosions in mucosa. Povidone iodine mouth wash.

For erosions in eye. Antibiotic eyedrops (e.g. Ciprofloxacin eyedrops 6 hourly).

Specific measures. Systemic immunosuppressive therapy to be decided by the specialist.

Group II

Non-bullous skin eruptions (erythroderma, viral exanths, drug rash)

Nonpharmacological

Bath with soap and water, high protein diet and to maintain normal body temperature and hydration.

Pharmacological

1. Tab. Pheniramine maleate 25 mg 3 times a day for duration of symptoms.
2. Emollients like white vaseline or coconut oil.

After initiating the above therapy, patient may be referred to a specialist for further management.

Group III

Localized skin lesions (cellulitis, necrotizing fasciitis)

For management of cellulitis (see section on Cellulitis and Erysipelas) and irritant dermatitis (see section on Eczema and Dermatitis).

SEXUALLY TRANSMITTED INFECTION (SYNDROMIC APPROACH)

Syndromic approach is designed to follow diagnostic logic and provide readymade tool to health workers. For treatment of respective syndrome kits are supplied (Table 14.3).

All sexually transmitted infection (STI) patients should be assessed for risk factors.

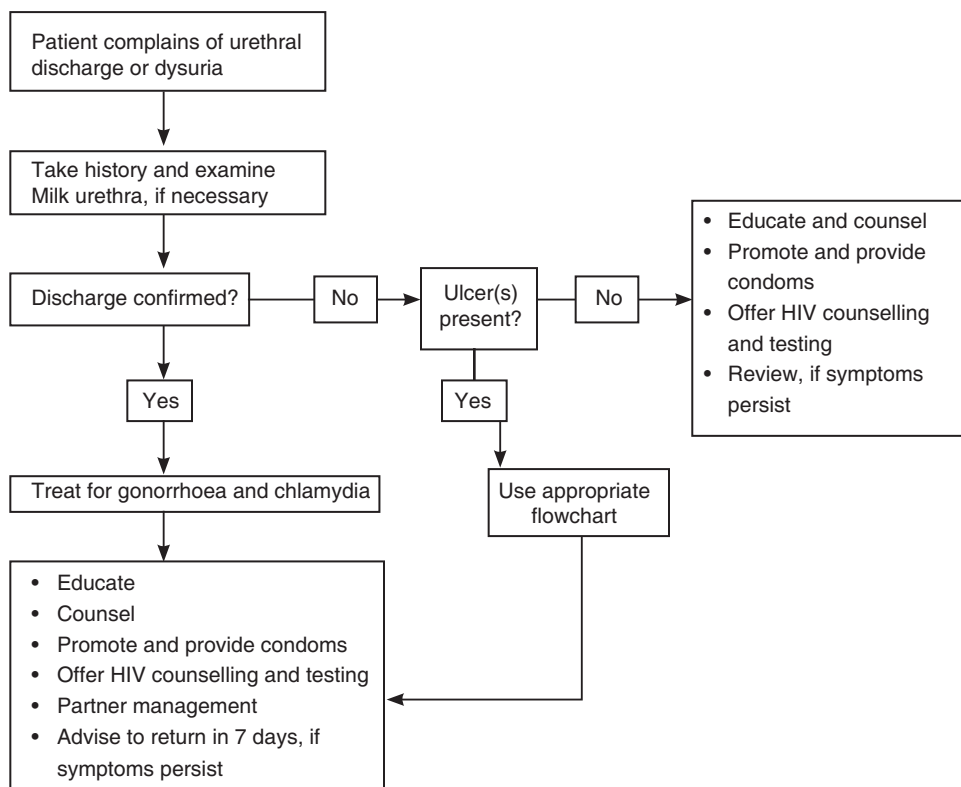
Risk factors for STI/HIV transmission are:

- Symptomatic partner.
- Recent new partner.
- Multiple partners.
- Spouse returning home after a long stay away.

All patients should be educated and counselled for prevention of STIs

- Cure your infection
- Do not spread STI
- Help your sexual partner to get treatment
- Come back to make sure you are cured
- Stay cured with condoms
- Keep safety by staying with just one sexual partner
- Protect yourself against AIDS and protect your baby—attend ANC during pregnancy.

I. Urethral Discharge



Flowchart 14.1. Algorithmic approach to urethral discharge.

Table 14.3. Syndromes, kits for treatment of syndromes and their contents.

Kit no.	Syndrome	Colour	Contents
Kit 1	Urethral discharge, anorectal discharge, cervical discharge	Grey	Tab. Azithromycin 1 g (1) and Tab. Cefixime 400 mg (1)
Kit 2	Vaginal discharge	Green	Tab. Secnidazole 2 g (1) and Tab. Fluconazole 150 mg (1)
Kit 3	Genital ulcer disease—non-herpetic	White	Inj. Benzathine penicillin 2.4 MU (1) and Tab. Azithromycin 1 g (1) and Disposable syringe 10 ml with 21 gauge needle (1) and Sterile water 10 ml (1)
Kit 4	Genital ulcer disease—non-herpetic, for patients allergic to penicillin	Blue	Tab. Doxycycline 100 mg (30) and Tab. Azithromycin 1 g (1)
Kit 5	Genital ulcer disease—herpetic	Red	Tab. Acyclovir 400 mg (21)
Kit 6	Lower abdominal pain	Yellow	Tab. Cefixime 400 mg (1) and tab. Metronidazole 400 mg (28) and Cap. Doxycycline 100 mg (28)
Kit 7	Inguinal bubo	Black	Tab. Doxycycline 100 mg (42) and Tab. Azithromycin 1 g (1)

Treatment

Uncomplicated gonococcal urethritis

Tab. Azithromycin 2 g orally as a single dose (for both gonococcal and chlamydial infections).

Or

Tab. Cefixime 400 mg orally as a single dose

Or

Inj. Ceftriaxone 250 mg IM as a single injection

Chlamydial urethritis or cervicitis

Tab. Azithromycin 2 g orally as a single dose (for both gonococcal and chlamydial infections).

Or

Cap. Doxycycline 100 mg orally twice daily for 7 days.

(**Caution:** Doxycycline is contraindicated during pregnancy).

Or

Tab. Erythromycin base/erythromycin stearate 500 mg orally 8 hourly for 7 days

Treatment of cervical discharge (cervicitis)

A. Treatment of gonococcal cervicitis and chlamydial cervicitis

Same as in urethral discharge.

B. Trichomoniasis

Tab. Secnidazole 2 g orally in a single dose.

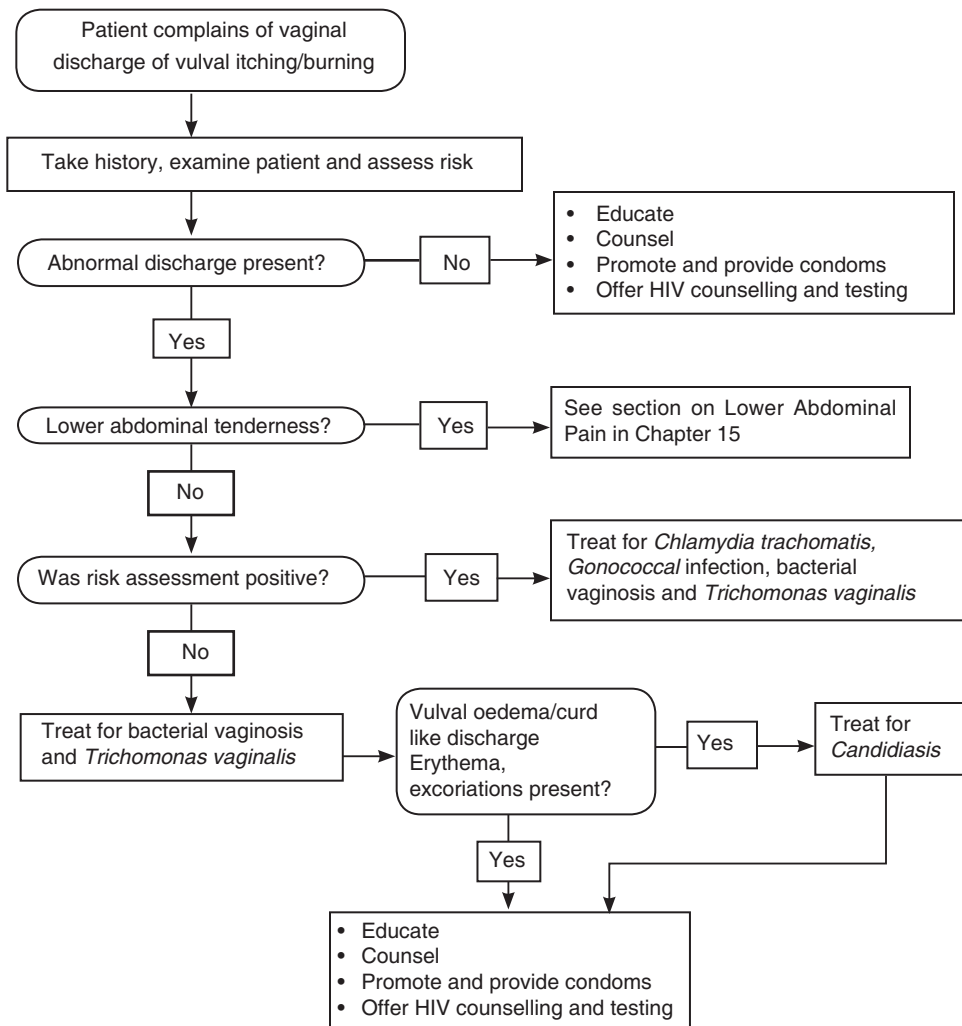
Or

Tab. Metronidazole 2 g orally in a single dose/metronidazole 400 mg orally twice daily for 7 days.

Or

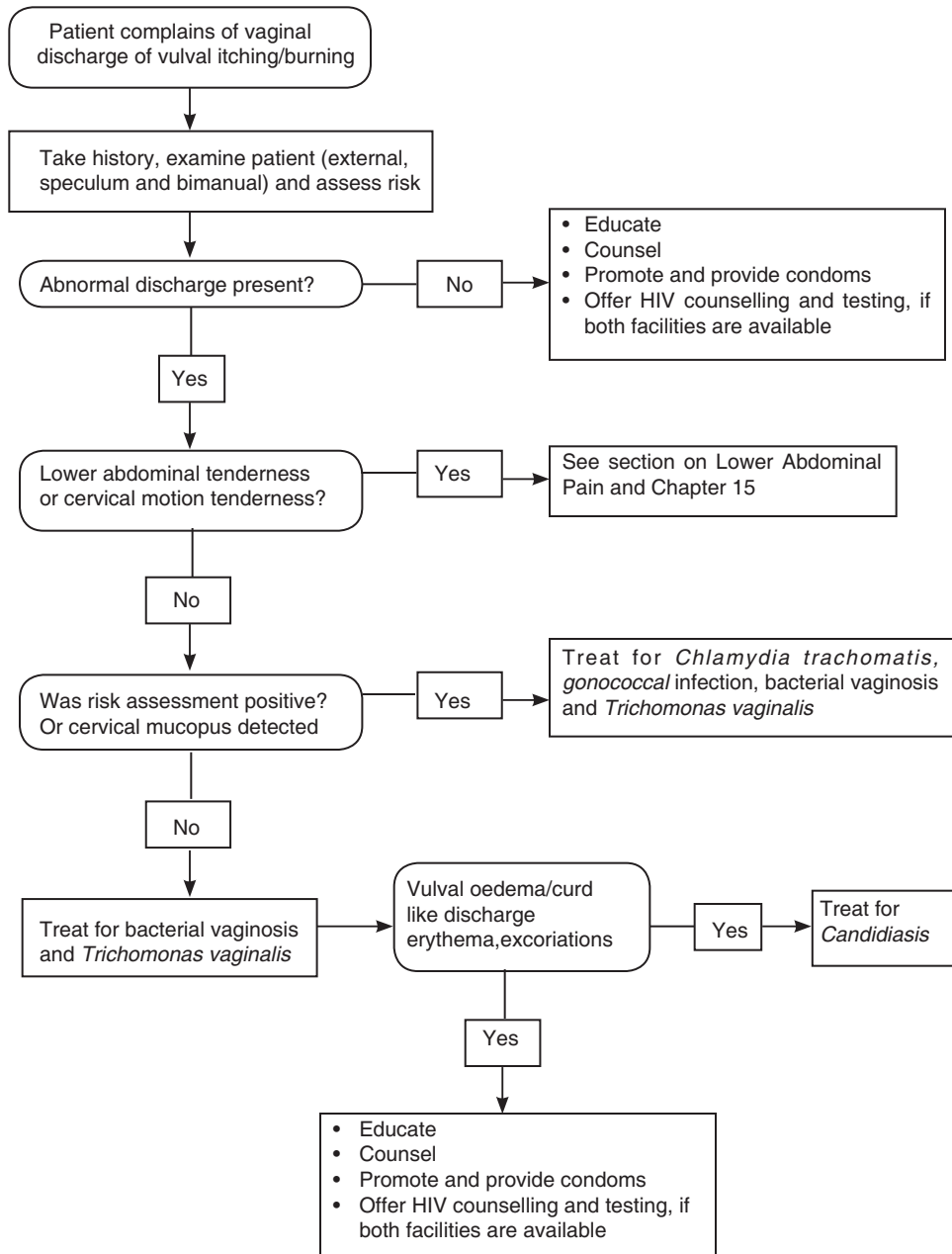
Tab. Tinidazole 2 g orally in a single dose.

II. Vaginal Discharge



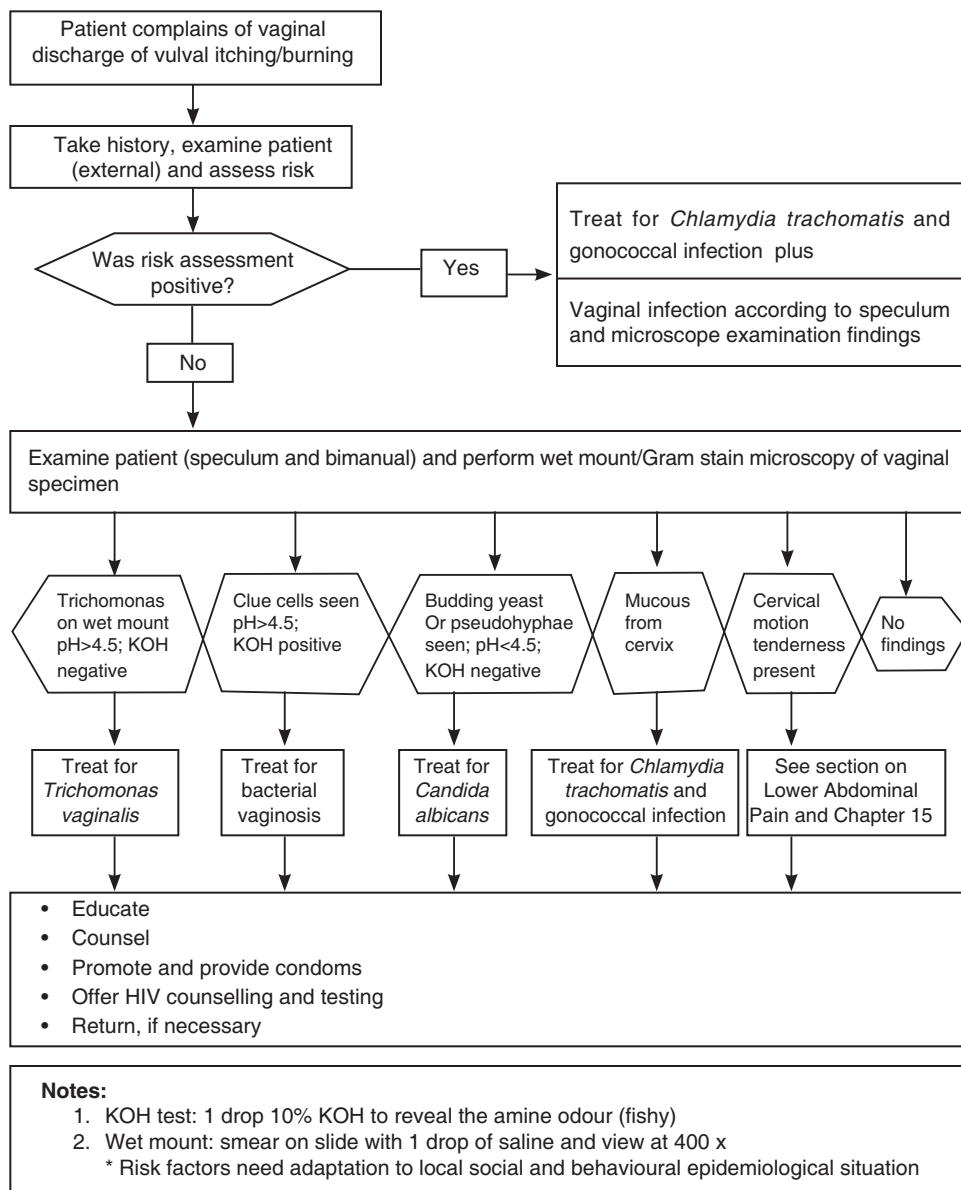
Flowchart 14.2. Algorithmic approach to vaginal discharge without facilities for pelvic/speculum examination.

Vaginal discharge using speculum and bimanual examination



Flowchart 14.3. Algorithmic approach to vaginal discharge using speculum and bimanual examination.

Vaginal discharge using speculum and microscope examination



Flowchart 14.4. Algorithmic approach to vaginal discharge using speculum and microscope examination.

C. Bacterial vaginosis

Tab. Secnidazole 2 g orally in a single dose.

Or

Tab. Metronidazole 2 g orally in a single dose/ metronidazole 400 mg orally twice daily for 7 days.

Or

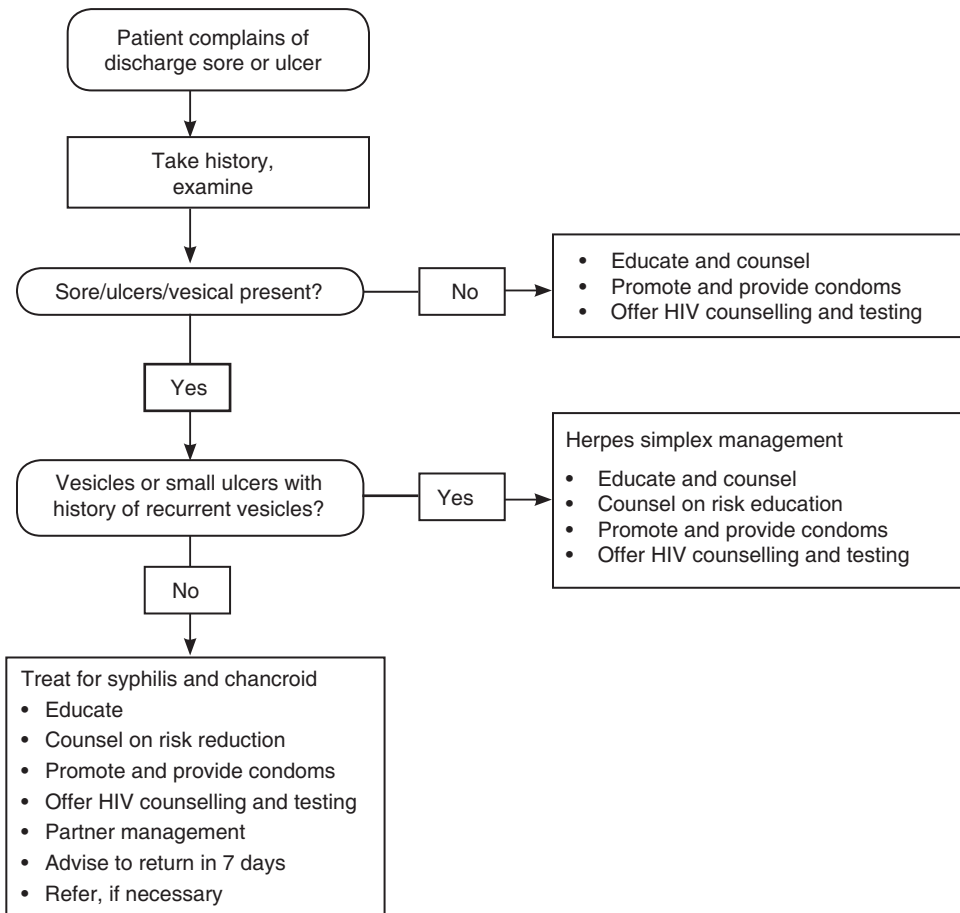
Tab. Tinidazole 2 g orally in a single dose.

However, in symptomatic woman, in the first trimester and those intolerant to metronidazole/tinidazole, imidazole pessaries/cream may be given for 7 days.

D. Vulvovaginal candidiasis

Cap. Fluconazole 150 mg orally as a single dose.

(**Caution:** Safety in pregnancy is not established).

III. Genital Ulcer

Flowchart 14.5. Algorithmic approach to genital ulcer.

Or

Clotrimazole 500 mg vaginal pessary intravaginally as a single dose.

Or

Miconazole/Clotrimazole 100 mg vaginal pessary intravaginally daily for 6 days.

Treatment of common aetiologies of genital ulcer

A. Genital herpes (first clinical episode)

Tab. Acyclovir 200 mg orally five times a day for 7 days or Tab. Acyclovir 400 mg orally 3 times daily for 7 days.

Recurrent infections

Tab. Acyclovir 200 mg orally 5 times daily for 5 days or Tab. Acyclovir 400 mg orally 3 times daily for 5 days or Tab. Acyclovir 800 mg orally twice daily for 5 days.

Suppressive therapy

In patients with six or more recurrences per year.

Tab. Acyclovir 400 mg orally twice a day continuously for at least 6 months to 1 year.

B. Syphilis

Early syphilis (includes primary, secondary and early latent infection up to 2 years duration).

Inj. Benzathine benzylpenicillin, 2.4 million IU deep IM in a single session (two equally divided doses in each buttock) after intradermal sensitivity test for penicillin.

Or

Inj. Procaine benzylpenicillin, 1.2 millions IU (3 vials, each having combination of 1 lakh units of benzyl penicillin G sodium plus 3 lakh units of procaine benzylpenicillin) IM once daily for 10 days.

Alternative regimes for penicillin hypersensitive, non-pregnant patients

Cap. Doxycycline 100 mg orally twice daily for 15 days.

Or

Cap. Minocycline 100 mg orally twice daily for 15 days.

Or

Tab. Azithromycin 1 g orally as a single dose.

Or

Tab. Tetracycline 500 mg orally 4 times a day for 15 days.

C. Chancroid

Tab. Azithromycin 1 g orally as a single dose.

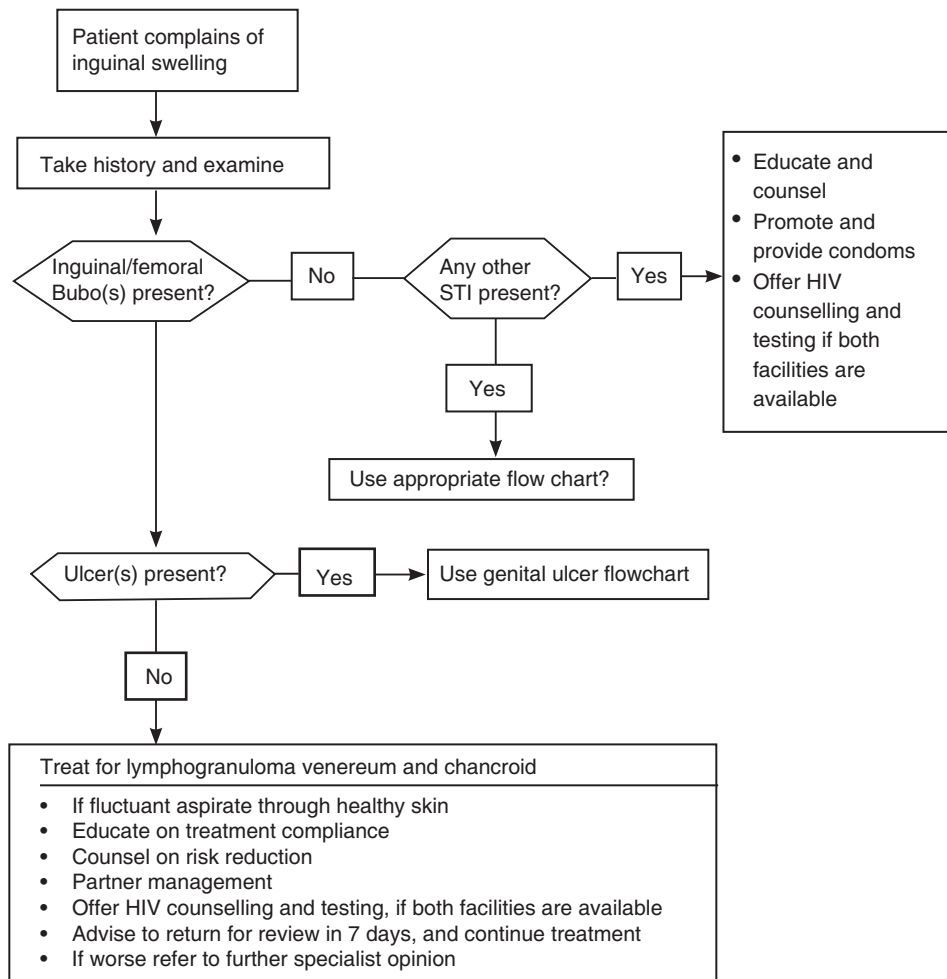
Or

Inj. Ceftriaxone 250 mg IM as a single dose.

- Or
- Tab. Ciprofloxacin 500 mg orally twice a day for 3-5 days or till clearance of lesions
- Or
- Cap. Doxycycline 100 mg orally twice daily for 7 days.
- Or
- Or
- Tab Erythromycin stearate base 500 mg 4 times a day for 7 days.

IV. Inguinal Bubo

Lymphogranuloma venereum (LGV)



Flowchart 14.6. Algorithmic approach to lymphogranuloma venereum (LGV).

D. Candidal balanitis/balanoposthitis

If presents as well defined irregular erythematous erosions over glans and prepuce; may be associated with itching and whitish discharge which can easily be scraped off.

For treatment see Candidiasis.

A. Treatment of LGV (chlamydial infection)

Cap. Doxycycline 100 mg orally twice daily for 21 days

Or

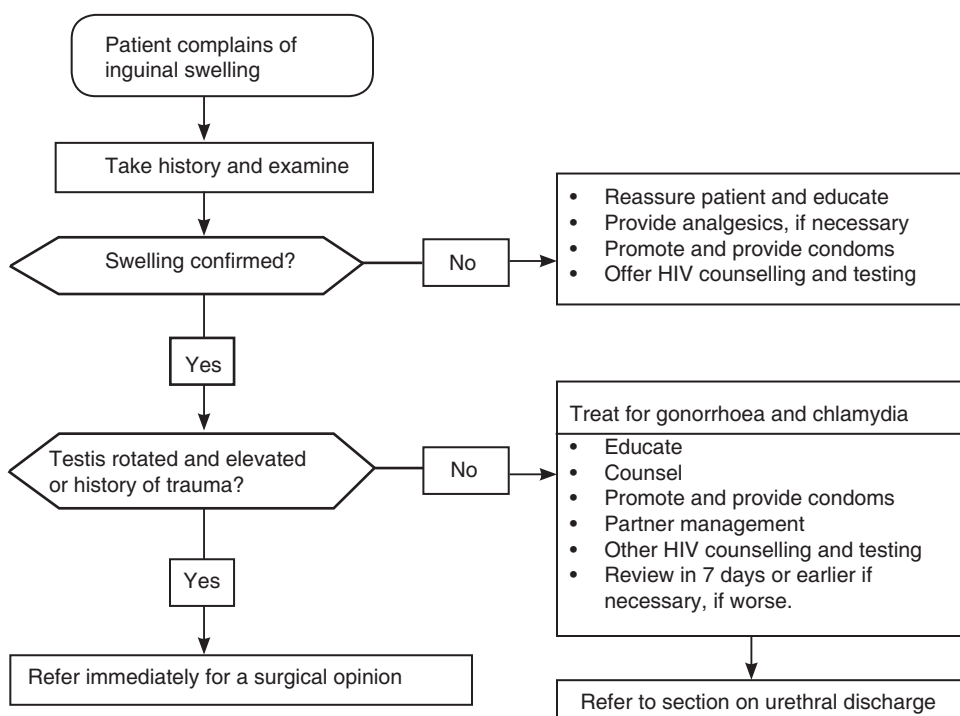
Cap. Tetracycline 500 mg orally 4 times a day for 21 days

Or

Tab. Erythromycin stearate or base 500 mg orally 4 times a day for 2 weeks.

B. Treatment of chancroid, see genital ulcer treatment

For treatment of epididymorchitis see Chapter 18.

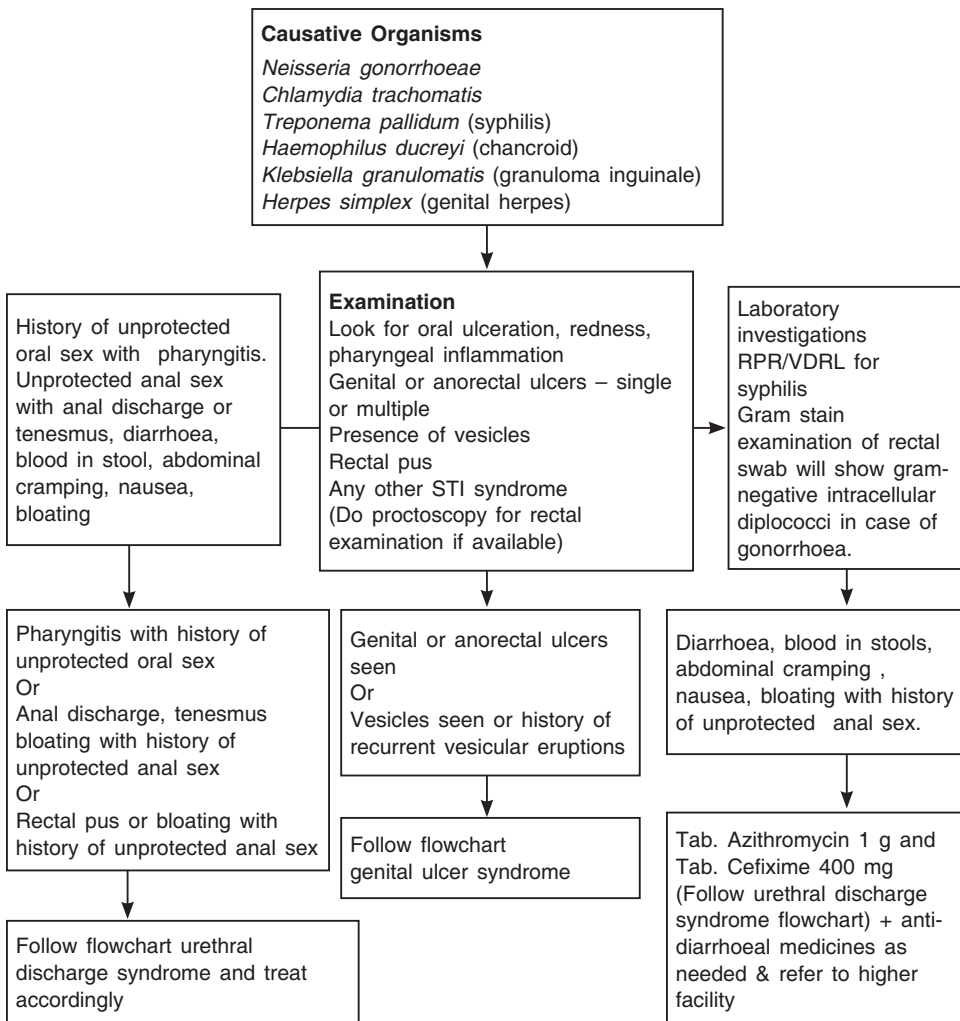
V. Scrotal Swelling

Flowchart 14.7. Algorithmic approach to scrotal swelling.

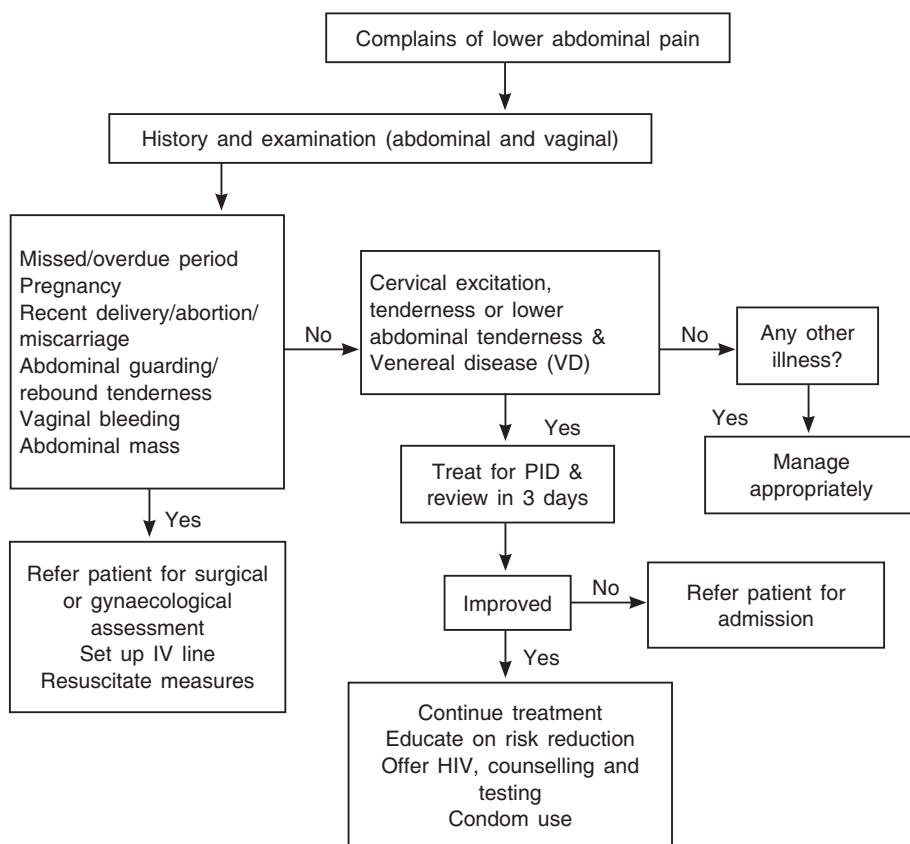
Patient education

- Education and counselling for patients
 - Cure your infection
 - Do not spread STD
 - Help your sexual partner to get treatment
 - Come back to make sure you are cured
 - Stay cured with condoms
 - Keep safety by staying with just one sexual partner
 - Protect yourself against AIDS and protect your baby—attend ANC during pregnancy.

Management of oral and anal STI



Flowchart 14.8. Algorithmic approach to management of oral and anal STI.

Lower abdominal pain

Flowchart 14.9. Algorithm for management of patients presenting with lower abdominal pain.

See section on Pelvic Inflammatory Disease (PID) in Chapter 15.

References

1. WHO. Guidelines for the management of sexually transmitted infection 2001, Geneva. WHO/RHR/01.10.
2. Centers for Disease Control and Prevention. Workowski KA, Berman SM. Sexually transmitted disease treatment guidelines 2006. MMWR Recomm Rep 2006; 55 (RR-11): 1-94.
3. NACO Operational Guidelines for Strengthening STI/RTI Services 2007.
4. National Guidelines on Prevention, Management and Control of Reproductive Tract Infections Including Sexually Transmitted Infections. NACO 2007.