External Otitis

External otitis is an infection of the external ear characterized by pain, itching, and drainage. The external ear is lined with epidermal tissue, which is susceptible to the same skin disorders that affect other parts of the body. External otitis is most often caused by *Pseudomonas aeruginosa* and *Staphylococcus aureus* organisms and may be treated with antimicrobial ear drops for approximately 7 to 10 days.

Anorectal Disorders

Hemorrhoids and anal fissures are common anorectal disorders characterized by pruritus, bleeding, and pain. Inflammation and infection may occur.

TYPES OF DERMATOLOGIC DRUGS

Many different agents are used to prevent or treat dermatologic disorders. Most agents fit into one or more of the following categories:

- **Antimicrobials** are used to treat infections caused by bacteria, fungi, and viruses (see Chaps. 33 through 41). When used in dermatologic infections, antimicrobials may be administered locally (topically) or systemically (orally or parenterally).
- **Antiseptics** kill or inhibit the growth of bacteria, viruses, or fungi. They are used primarily to prevent infection. They are occasionally used to treat dermatologic infections. Skin surfaces should be clean before application of antiseptics.
- **Astringents** (eg, dilute solutions of aluminum salts) are used for their drying effects on exudative lesions.
- **Corticosteroids** (see Chap. 24) are used to treat the inflammation present in many dermatologic conditions. They are most often applied topically, but also may be given orally or parenterally.
- **Emollients** or lubricants (eg, mineral oil, lanolin) are used to relieve pruritus and dryness of the skin.
- **Enzymes** are used to débride burn wounds, decubitus ulcers, and venous stasis ulcers. They promote healing by removing necrotic tissue.
- **Immunomodulators** are newer drugs with immunosuppressant and anti-inflammatory effects. They are not steroids, do not cause the adverse effects associated with corticosteroids, and may be used as corticosteroid substitutes. They are used to treat moderate to severe atopic dermatitis.

  Two of these drugs are currently available, tacrolimus (Protopic) ointment and pimecrolimus (Elidel) cream. Systemic tacrolimus is used to prevent organ rejection in kidney and liver transplantations. The topical drugs are considered safe and effective in adults and children as young as 2 years. They may cause increased burning and itching during the first week of use but they are not associated with significant systemic absorption or increased risk of infections.
- **Keratolytic agents** (eg, salicylic acid) are used to remove warts, corns, calluses, and other keratin-containing skin lesions.
- **Retinoids** are vitamin A derivatives that are active in proliferation and differentiation of skin cells. These agents are commonly used to treat acne, psoriasis, aging and wrinkling of skin from sunlight exposure, and skin cancers. Retinoids (eg, etretinate and isotretinoin) are contraindicated in women of childbearing potential unless the women have negative pregnancy tests; agree to use effective contraception before, during, and after drug therapy; and agree to take the drugs as prescribed. These drugs have been associated with severe fetal abnormalities.
- **Sunscreens** are used to protect the skin from the damaging effects of UV radiation, thereby decreasing skin cancer and signs of aging, including wrinkles. Dermatologists recommend sunscreen preparations that block both UVA and UVB and have a "sun protection factor" value of 30 or higher. These highly protective sunscreens are especially needed by people who are fair skinned, allergic to sunlight, or using medications that increase skin sensitivity to sunlight (eg, estrogens, tetracycline).

Application of Dermatologic Drugs

Most dermatologic medications are applied topically. To be effective, topical agents must be in contact with the underlying skin or mucous membrane. Numerous dosage forms have been developed for topical application of drugs to various parts of the body and for various therapeutic purposes. Basic components of topical agents are one or more active ingredients and a usually inactive vehicle. The vehicle is a major determinant of the drug's ability to reach affected skin and mucous membranes. Many topical preparations contain other additives (eg, emollients, dispersing agents) that further facilitate application to skin and mucous membranes. Commonly used vehicles and dosage forms include ointments, creams, lotions, aerosols, gels, otic solutions, and vaginal and rectal suppositories. Many topical drug preparations are available in several dosage forms.

Topical medications are used primarily for local effects; systemic effects are usually undesirable. Factors that influence percutaneous absorption of topical agents include the following:

- **Degree of skin hydration.** Drug penetration and percutaneous absorption are increased when keratin in the outermost layer of the epidermis is well hydrated.
- **Drug concentration.** Because percutaneous absorption occurs by passive diffusion, higher concentrations increase the amount of drug absorbed.
- **Skin condition.** Absorption from abraded, damaged, or inflamed skin is much greater than from intact skin.
- **Length of contact time.** Absorption is increased when drugs are left in place for prolonged periods.