

addition to the intense discomfort associated with pruritus, scratching is likely to cause skin excoriation with secondary bacterial infection and formation of vesicles, pustules, and crusts.

- They are treated with many of the same topical medications.

ANTIPARASITIC DRUGS

Antiparasitic drugs include amebicides, antimalarials, other antiprotozoal agents, anthelmintics, scabicides, and pediculicides. Their descriptions are in the following text and are also listed in Drugs at a Glance: Antiparasitics.

Amebicides

Chloroquine (Aralen) is used primarily for its antimalarial effects. When used as an amebicide, the drug is effective in extraintestinal amebiasis (ie, hepatic amebiasis) but usually ineffective in intestinal amebiasis. The phosphate salt is given orally. When the oral route is contraindicated, severe nausea and vomiting occur, or the infection is severe, the hydrochloride salt can be given intramuscularly. Treatment is usually combined with an intestinal amebicide.

Iodoquinol (Yodoxin) is an iodine compound that acts against active amebae (trophozoites) in the intestinal lumen. It may be used alone in asymptomatic intestinal amebiasis to decrease the number of amebic cysts passed in the feces. When given for symptomatic intestinal amebiasis (eg, amebic dysentery), it is usually given with other amebicides in concurrent or alternating courses. Iodoquinol is ineffective in amebic hepatitis and abscess formation. Its use is contraindicated with iodine allergy and liver disease.

Metronidazole (Flagyl) is effective against protozoa that cause amebiasis, giardiasis, and trichomoniasis and against anaerobic bacilli, such as *Bacteroides* and *Clostridia* (see Chap. 37). In amebiasis, metronidazole is amebicidal at intestinal and extraintestinal sites of infection. It is a drug of choice for all forms of amebiasis except asymptomatic intestinal amebiasis (in which amebic cysts are expelled in the feces). In trichomoniasis, metronidazole is the only systemic trichomonicide available and it is more effective than any locally active agent. Because trichomoniasis is transmitted by sexual intercourse, partners should be treated simultaneously to prevent reinfection.

Metronidazole is usually contraindicated during the first trimester of pregnancy and must be used with caution in patients with central nervous system (CNS) or blood disorders. Patients should also avoid all forms of ethanol while on this medication.

Tetracycline and **doxycycline** are antibacterial drugs (see Chap. 36) that act against amebae in the intestinal lumen by altering the bacterial flora required for amebic viability. One of these drugs may be used with other amebicides in the treatment of all forms of amebiasis except asymptomatic intestinal amebiasis.

Antimalarial Agents

Chloroquine is a widely used antimalarial agent. It acts against erythrocytic forms of plasmodial parasites to prevent or treat malarial attacks. When used for prophylaxis, it is given before, during, and after travel or residence in endemic areas. When used for treatment of malaria caused by *P. vivax*, *P. malariae*, or *P. ovale*, chloroquine relieves symptoms of the acute attack. However, the drug does not prevent recurrence of malarial attacks because it does not act against the tissue (exoerythrocytic) forms of the parasite. When used for treatment of malaria caused by *P. falciparum*, chloroquine relieves symptoms of the acute attack and eliminates the parasite from the body because *P. falciparum* does not have tissue reservoirs. Concern about chloroquine-resistant strains of *P. falciparum* has developed in many areas.

Chloroquine is also used in protozoal infections other than malaria, including extraintestinal amebiasis and giardiasis. It should be used with caution in patients with hepatic disease or severe neurologic, GI, or blood disorders.

Hydroxychloroquine (Plaquenil) is a derivative of chloroquine with essentially the same actions, uses, and adverse effects as chloroquine. It has also been used to treat rheumatoid arthritis and lupus erythematosus.

Chloroquine with primaquine is a mixture available in tablets containing chloroquine phosphate 500 mg (equivalent to 300 mg of chloroquine base) and primaquine phosphate 79 mg (equivalent to 45 mg of primaquine base). This combination is effective for prophylaxis of malaria and may be more acceptable to clients. It also may be more convenient for use in children because no pediatric formulation of primaquine is available.

Halofantrine (Halfan) is indicated for treatment of malaria caused by *P. falciparum* or *P. vivax*, including chloroquine- or multidrug-resistant strains.

Mefloquine (Lariam) is used to prevent *P. falciparum* malaria, including chloroquine-resistant strains, and to treat acute malaria caused by *P. falciparum* or *P. vivax*.

Primaquine is used to prevent the initial occurrence of malaria; to prevent recurrent attacks of malaria caused by *P. vivax*, *P. malariae*, and *P. ovale*; and to achieve “radical cure” of these three types of malaria. (Radical cure involves eradicating the exoerythrocytic forms of the plasmodium and preventing the survival of the blood forms.) The clinical usefulness of primaquine stems primarily from its ability to destroy tissue (exoerythrocytic) forms of the malarial parasite. Primaquine is especially effective in *P. vivax* malaria. Thus far, plasmodial strains causing the three relapsing types of malaria have not developed resistance to primaquine. When used to prevent initial occurrence of malaria (causal prophylaxis), primaquine is given concurrently with a suppressive agent (eg, chloroquine or hydroxychloroquine) after the patient has returned from a malarious area. Primaquine is not effective for treatment of acute attacks of malaria.

Pyrimethamine (Daraprim) is a folic acid antagonist used to prevent malaria caused by susceptible strains of plasmodia.

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