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COURSE TITLE: SYSTEMIC PHARMACOLOGY IN NURSING PRACTICE

ASSIGNMENT TITLE: CHEMOTHERAPY OF MALARIA PARASITES

QUESTION

Classify the antimalarial agents and state the mechanism of action of each classes of drugs listed.

Answers

1. Tissue schizonticides for Causal Prophylaxis:
   These drugs act on the primary tissue forms of the plasmodia which after growth within the liver, initiate the erythrocytic stage. By blocking this stage, further development of the infection can be theoretically prevented. Pyrethamine and primaquine have this activity. However, since it is impossible to predict the infection before clinical symptoms begin, this mode of therapy is more theoretical than practical.
2. Tissue schiconticides for Preventing Relapse:
   These drugs act on the hypnozoites of P. vivax and P. ovale in the liver that cause relapse of symptoms on reactivation. Primaquine is the prototype drug; pyrimethamine also has such activity.
3. Blood schizonticides:
   These drugs act on the blood forms of the parasite and thereby terminate clinical attacks of malaria. These are the most important drugs in anti-malarial chemotherapy. These include chloroquine, quinine, mefloquine, halofantrine pyrimethamine, sulfadoxine, sulfones, tetrac. These include chloroquine, quinine, mefloquine, halofantrine pyrimethamine, sulfadoxine, sulfones, tetracyclines e.t.c
4. Gametocytocides:

These drugs destroy the sexual forms of the parasite in the blood and thereby prevent transmission of the infection to the mosquito. Chloroquine and quinine have gametocytocidal activity against P.vivax and P. malariae, but not against P. falciparium. Primaquine has gametocytocidal activity against all plasmodia, including P.falciparum.

5. Sporontocides:

These drugs prevent the development of oocytes in the mosquito and thus ablate the transmission. Primaquine and chloroguanide have this action.