



## PIC QUESTION OF THE WEEK: 5/14/07

Q: What are the current recommendations for the *treatment* of malaria?

A: Malaria is a protozoal disease characterized by episodes of high fever, chills, sweating, and prostration that is transmitted to humans from the bite of an infected female *Anopheles* mosquito. There are 350 to 500 million cases of malaria reported yearly with at least one million deaths attributed to the disease. Malaria is worldwide in scope, but primarily found in poverty-stricken areas of the tropics. The majority of infections and deaths occur in sub-Saharan Africa. Those with underdeveloped or compromised immune systems as well as children, pregnant women, and migrant travelers may be more susceptible to contracting malaria. The Pharmaceutical Information Center often receives questions related to malaria *prophylaxis*; however, on rare occasion, the issue of malaria *treatment* does arise. Treatment is based on the type of infecting *Plasmodium* species, susceptibility to antimalarials (determined by geographic location of initial infection), and the severity of illness. Treatment regimens are also dependent on whether the patient is experiencing an *uncomplicated* or *severe* episode. Severe episodes are associated with impaired consciousness, coma, renal failure, jaundice, acidosis, parasitemia (greater than 5%), seizures, pulmonary edema, severe anemia, ARDS, circulatory collapse, hemoglobinuria, abrupt bleeding, or disseminated intravascular coagulation. The accompanying table includes the designated drugs for each species of malaria. Selection of the appropriate drug(s) is dependent on severity of disease, probable source of infection, and consideration of possible resistance.

Species	Uncomplicated*	Severe*
<i>P. falciparum</i>	-chloroquine phosphate -hydroxychloroquine -quinine sulfate PLUS doxycycline, tetracycline, or clindamycin -atovaquone-proguanil -mefloquine	quinidine gluconate PLUS doxycycline, tetracycline, or clindamycin
<i>P. malariae</i>	-chloroquine phosphate -hydroxychloroquine	quinidine gluconate PLUS doxycycline, tetracycline, or clindamycin
<i>P. vivax</i>	-chloroquine phosphate PLUS primaquine phosphate -hydroxychloroquine PLUS primaquine phosphate -quinine sulfate PLUS doxycycline, tetracycline, or clindamycin -mefloquine PLUS primaquine phosphate	quinidine gluconate PLUS doxycycline, tetracycline, or clindamycin
<i>P. ovale</i>	-chloroquine phosphate PLUS primaquine phosphate -hydroxychloroquine PLUS primaquine phosphate	quinidine gluconate PLUS doxycycline, tetracycline, or clindamycin

\* For specific dosages and details, including pregnancy guidelines, please visit the CDC website or contact the PIC.

### References:

- CDC. Guidelines for treatment of malaria in the United States. <http://www.cdc.gov/malaria/pdf/clinicalguidance.pdf> (accessed 2007, May 9).
- CDC. Health information for international travel – malaria. <http://www.cdc.gov/travel/diseases.htm> (accessed 2007, May 9).

Kay J. Mehalko and Pamela A. Gradisek, Pharmacy Clerkship Students

The PIC Question of the Week is a publication of the Pharmaceutical Information Center, Mylan School of Pharmacy, Duquesne University, Pittsburgh, PA 15282 (412.396.4600).