

Don't Overlook Malaria Risk, Diagnostic Criteria

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CAMBRIDGE, MASS. — Increases in travel between the United States and developing countries, as well as immigration from developing countries to the United States, raises the potential for transmission of malaria within the United States, Dr. Elizabeth D. Barnett said at a conference on pediatric infectious diseases.

"In 1973, there were 22 reported cases of malaria in the United States," reported Dr. Barnett, director of the International Clinic at Boston Medical Center. "In 2003, there were 1,278 reported cases in the United States—mostly acquired in Africa—resulting in seven deaths." While this number is down from the 1980 high of 1,864 reported cases, U.S. physicians must be aware of the diagnostic and treatment criteria of the potentially fatal disease.

In terms of diagnosis, "malaria should always be in the differential of a febrile patient who has visited a malarial area," said Dr. Barnett at the meeting, sponsored by Boston University, PEDIATRIC NEWS, and FAMILY PRACTICE NEWS. Signs and symptoms are often nonspecific and include fever—which is almost always present but

may be periodic—headache, chills, sweating, back pain, myalgias, diarrhea, nausea, vomiting, and cough.

"A malaria diagnosis requires an examination of blood smears. Typically multiple smears are needed because the level of parasitemia can vary," she said. "If malaria is suspected [but not supported by initial smears], multiple smears over multiple days may be needed."

Because of the nonspecificity of symptoms, "it's important to maintain a high index of suspicion for malaria," Dr. Barnett said.

In addition to smears, lab tests should include complete blood count to identify anemia and/or thrombocytopenia, liver function tests to assess the degree of hemolysis and liver function impairment, glucose, blood urea nitrogen and creatinine, and urinalysis.

Treatment should be based on the severity of the condition and local drug resistance patterns. For uncomplicated malaria, "assume *Plasmodium falciparum* is the

species until this can be confirmed, and choose [an oral] drug regimen based on regional resistance patterns," said Dr. Barnett.

According to the Centers for Disease Control and Prevention, "chloroquine [Aralen] is the treatment of choice in regions where there is no chloroquine resistance,"

she said. In regions with chloroquine-resistant plasmodia, treatment options include quinine in combination with doxycycline, tetracycline, or clindamycin; atovaquone in combination with

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proguanil (Malarone); or mefloquine (Lariam), but only if it is not being used prophylactically.

More aggressive treatment is required for complicated malaria (coma, renal failure), which is almost always caused by *P. falciparum*, said Dr. Barnett. "These patients should be hospitalized and parenteral therapy initiated as soon as the diagnosis is suspected."

Some of the common features of fatal malaria in this country include lack of ad-

equate or any chemoprophylaxis; failure to associate symptoms with potential for malaria and seek medical care; failure of health care provider to consider a malaria diagnosis, to initiate prompt treatment, or to address potential for complications; and the assumption that severe malaria cannot occur in an immune host, said Dr. Barnett.

Physicians should be vigilant in recommending chemoprophylaxis for patients who will be traveling to malarial areas.

"The prophylactic drug of choice is chloroquine if travel will be to areas with no reported chloroquine resistance," said Dr. Barnett. "If travel will be to areas with chloroquine resistance, prophylactic options include mefloquine or atovaquone-proguanil. Doxycycline can be considered for children who are at least 8 years of age, and primaquine can be used in rare situations, such as when there are contraindications to all of the other alternatives. G6PD [glucose-6-phosphate dehydrogenase] deficiency must be ruled out before prescribing."

Ideally, malaria prophylaxis should begin 1-2 weeks prior to travel (2-3 days for Malarone) and should continue weekly during the trip and for 4 weeks (7 days for Malarone) after leaving the area. ■



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