Letters to the Editor

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This series is coordinated by Kenny Lin, MD, MPH, Associate Deputy Editor for *AFP* Online.

Primary Amebic Meningoencephalitis as Cause of Headache and Fever

TO THE EDITOR: When seeing patients with headache and fever, particularly in warmer months, physicians in the United States should consider the diagnosis of primary amebic meningoencephalitis (PAM). Careful history, special laboratory testing, and special treatment may be urgently needed to save the lives of these patients.

PAM is caused by *Naegleria fowleri*, a thermophilic free-living ameba that occurs naturally in warm freshwater. Risk factors for infection include participation in freshwater-related activities such as swimming underwater, diving, and head-dunking; other similar activities that could cause water to go up the nose; and nasal irrigation for medical or religious purposes. *N. fowleri* has also been detected in public drinking water supplies. Recently, the geographic range of PAM has expanded, with cases identified as far north as Minnesota and Indiana since 2010.

Although effective treatment and cure might be possible without residual sequelae, rapid diagnosis is essential.[1] The first step is identifying at-risk patients: those presenting with fever, headache, and recent freshwater exposure. A preliminary diagnosis can be made by observing motile amebae in a wet mount of cerebrospinal fluid (CSF) or visualization of the organisms on CSF Wright or Giemsa stain.

Treatment consists of immediate administration of a combination of systemic and intrathecal antibiotics including oral miltefosine, which is available from the Centers for Disease Control and Prevention (CDC).[2] If you have a patient with a suspected infection, you are urged to call the CDC's 24/7 emergency consultation telephone number (770-488-7100) for diagnostic and treatment recommendations. Laboratory confirmation is not necessary before consultation and shipment of the medication. Equally important is the management of cerebral edema, which is typically severe and requires critical care management. Strategies to reduce intracranial pressure include: steroids, CSF drainage, hyperventilation, hyperosmolar therapy, mannitol, and hypothermia.[1,2]

Currently, only three states specifically require reporting of PAM cases (Florida, Louisiana, and Texas). State chapters of the American Academy of Family Physicians can influence state public health reporting procedures and improve surveillance and scientific understanding.

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