Arkansas Sees its First Chikungunya Virus Case

Arkansas recently reported its first case of chikungunya infection in a patient who had traveled to Saint Martin in the Caribbean. We would like to make you aware of this so that chikungunya is considered as a possible diagnosis for patients with appropriate travel history and symptoms.

Chikungunya (pronunciation: chik-en-gun-ya) fever is a viral disease transmitted to humans by the bite of infected mosquitoes. Chikungunya virus is a member of the genus Alphavirus, in the family Togaviridae. It was first identified in Tanzania in 1952. In the Kimakonde language of Mozambique, chikungunya translates to “that which bends over” – a clear reference to the stooped posture often exhibited by patients who develop the disease’s classic manifestation of severe joint pain.

The virus is transmitted from human to human by the bites of infected female mosquitoes. Most commonly, the mosquitoes involved are Aedes aegypti and Aedes albopictus, two species which can also transmit other mosquito-borne viruses, including dengue. These mosquitoes can be found biting throughout daylight hours, though there may be peaks of activity in the early morning and late afternoon. Both species are found biting outdoors, but Ae. aegypti will also readily feed indoors. Both mosquito species are present in Arkansas.

According to the World Health Organization (WHO), since 2005, nearly two million cases have been reported in India, Indonesia, the Maldives, Myanmar and Thailand. An epidemic hit Northern Italy in 2007, and in 2006 thousands were sickened in Réunion, a French island east of Madagascar.

In December 2013, the WHO reported local transmission of chikungunya in Saint Martin in the Caribbean. Local transmission means that mosquitoes in the area have been infected with chikungunya and are spreading it to people. This was the first time that local transmission of chikungunya has been reported in the Americas.

Local transmission of chikungunya is now being reported in other countries in the Caribbean. As of February 5, 2014, the following Caribbean countries have reported cases of chikungunya:

- Saint Martin (French)
- Sint Maarten (Dutch)
- Martinique
- Guadeloupe
- Saint Barthelemy
- British Virgin Islands
- Dominica
- French Guiana
- Anguilla
- Saint Kitts

Clinical findings and course
Chikungunya virus infection can cause a debilitating illness, most often characterized by fever, headache, fatigue, nausea, vomiting, muscle pain, rash, and joint pain. Acute chikungunya fever typically lasts a 7-10 days, but as with dengue. West Nile virus and other arboviral fevers, some patients have prolonged fatigue lasting several weeks. Additionally, some patients have reported debilitating joint pain, or arthritis which may last for months or even years. The prolonged joint pain associated with chikungunya virus is
not typical of dengue. The incubation period can be 2-12 days, but is usually 3-7 days. “Silent” chikungunya virus infections (infections without illness) do occur, but how commonly this happens is not yet known. Chikungunya virus infection (whether clinically apparent or silent) is thought to confer life-long immunity. Rare complications include uveitis, retinitis, myocarditis, hepatitis, nephritis, bullous skin lesions, hemorrhage, meningoencephalitis, myelitis, Guillain-Barré syndrome, and cranial nerve palsies. Persons at risk for severe disease include neonates, exposed intrapartum, older adults (e.g., > 65 years), and persons with underlying medical conditions (e.g., hypertension, diabetes, or cardiovascular disease). Some patients may have relapse of rheumatologic symptoms (e.g., polyarthritis, polyarthralgias, tenosynovitis) in the months following acute illness. Clinical laboratory findings can include lymphopenia, thrombocytopenia, elevated creatinine, and elevated hepatic transaminases. Fatalities related to chikungunya virus are rare.

**Diagnostic testing**

Presumptive diagnosis of an arboviral disease is often based on the patient's clinical features, places and dates of travel (if the patient is from a non-endemic country or area), activities, and epidemiologic history of the location where infection occurred.

Laboratory diagnosis of chikungunya, as with most arboviral infections, is generally accomplished by testing of serum or cerebrospinal fluid (CSF) to detect virus-specific IgM and IgG antibodies. IgM antibody levels are highest three to five weeks after the onset of illness and persist for about two months. Samples collected during the first week after the onset of symptoms should be tested by both serological and direct virological methods, such as via Reverse Transcriptase Polymerase Chain Reaction (RT-PCR).

The virus may be isolated from the blood during the first few days of infection. Several RT–PCR methods are available but are of variable sensitivity. RT–PCR analysis of clinical samples may also be used for genotyping of the virus, allowing epidemiological comparisons with virus samples from other geographical sources.

Only a few state laboratories or other specialized laboratories, including those at Centers for Disease Control and Prevention (CDC), are capable of doing this specialized testing. The ADH laboratory does not perform these tests. But if you have a patient who is seropositive, we would be happy to help coordinate specialized testing upon request.

**Treatment**

Currently, there is no vaccine or specific antiviral treatment available for chikungunya fever. Treatment is symptomatic and includes rest, fluids, and medicines to relieve symptoms of fever and pain such as non-steroidal anti-inflammatory drugs including: ibuprofen, naproxen, acetaminophen or paracetamol. Aspirin should be avoided. Infected persons should be protected from further mosquito exposure (staying indoors in areas with screens and/or under a mosquito net) during the first few days of the illness so they can not contribute to ongoing transmission.

Please feel to contact either of us if we can be of assistance.

Susan Weinstein, DVM, MPH  
Dirk Haselow, MD, PhD  
State Public Health Veterinarian  
State Epidemiologist  
susan.weinstein@arkansas.gov  
dirk.haselow@arkansas.gov

If you have any questions or concerns about your receipt of this letter or know someone who would like to be added to the distribution list please feel free to contact Cathy Flanagin at 501-661-2474 or cathy.flanagin@arkansas.gov

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