

Chikungunya: Information for health care providers

Etiology and epidemiology

Chikungunya virus (CHIKV) infection is a febrile illness caused by the chikungunya virus, transmitted by *Aedes aegypti* or *Aedes albopictus* mosquitoes. CHIKV is endemic in Mexico, the Caribbean, and Central/South America and parts of Africa and Asia. *Aedes* mosquitoes are not established in Canada, so the disease cannot be transmitted locally. A map of affected countries can be accessed at: www.cdc.gov/chikungunya/geo/.

Clinical Presentation

Symptoms of CHIKV develop 2-12 days after being bitten by infected mosquitoes. Common symptoms include:

- high fever
- polyarticular joint pain (severe, symmetrical and localized to the limbs),
- rash, headache, myalgia, and nausea may also occur.

Most recover from acute illness within 7 days, but some people will experience persistent fatigue, malaise and joint pain for weeks to months. Patients with underlying joint problems are at highest risk for chronic joint pain.

Rare complications include meningoencephalitis, uveitis, myocarditis, hepatitis, and bleeding dyscrasias. There is greater risk for patients at extremes of age or with underlying comorbidities.

Dengue fever and **Zika virus** infections are also transmitted by the *Aedes* mosquito and present with similar symptoms, so should be considered in the differential diagnosis, especially in women/men of reproductive age and pregnant women, given risks of congenital Zika syndrome.

Diagnosis

To ensure appropriate laboratory testing, travel history, symptoms, dates of symptom onset and sample collection need to be included. Incorrect submissions may not be tested. Information on CHIKV patient testing can be found on the [Chikungunya testing information page](#).

Chikungunya and dengue virus PCR and serology testing will be routinely performed on symptomatic pregnant patients undergoing Zika virus PCR testing to rule out alternative or concurrent diagnoses in these instances.

Treatment

Treatment for CHIKV infection is supportive and symptomatic as no effective antiviral medications exist.

- **Acetaminophen** can be used for acute fever and joint pain.
- **Non-steroidal anti-inflammatory drugs (NSAIDs) or narcotics** can be used for severe pain, and arthralgia (only if dengue is ruled out).
- **NSAIDs, oral or injected corticosteroids, methotrexate**, and other drugs have been used to treat chronic arthralgia, though there is little evidence to support a particular regimen.

Prevention

There is currently no vaccine to prevent CHIKV infection. Personal precautions should be taken to avoid mosquito bites in endemic areas:

- Wear long sleeves and pants.
- Apply DEET or icaridin-containing insect repellents to exposed skin.
- Stay indoors at dawn and dusk.
- Choose accommodations with air conditioning, doors and window screens. A bed net can be used where mosquitoes are found indoors.
- Seek advice from health care providers and contact the place of accommodation about local mosquito activity and protection prior to travel.

CHIKV can be transmitted through **blood-to-blood contact**. Symptomatic patients should avoid blood or organ donation.

Sources

1. Burt FJ, Rolph MS, Rullu NE, Mahalingam S, Heise MT. Chikungunya: a re-emerging virus. *Lancet*, 2012;379(9816):662-71.
2. Centers for Disease Control and Prevention. Chikungunya virus: geographic distribution [Internet]. Atlanta, GA: US Department of Health and Human Services; 2015 [cited 2015 May 7]. Available from: <http://www.cdc.gov/chikungunya/geo/>
3. Centers for Disease Control and Prevention. Chikungunya virus: clinical evaluation and disease [Internet]. Atlanta, GA: US Department of Health and Human Services; 2015 [cited 2015 May 13]. Available from: <http://www.cdc.gov/chikungunya/hc/clinicalevaluation.html>
4. Public Health Agency of Canada. Statement on personal protective measures to prevent arthropod bites [Internet]. Ottawa, ON: Public Health Agency of Canada; 2012 [cited 2015 May 7]. Available from: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/12vol38/acs-dcc-3/assets/pdf/acs-dcc-3-eng.pdf>
5. Pan American Health Organization, World Health Organization. Countries/territories with autochthonous transmission or imported cases of chikungunya in the Americas, EW 49, 2013 – EW 17, 2015 [Internet]. Washington, DC: Pan American Health Organization; 2015 [cited 2015 May 7]. Available from: http://www.paho.org/hq/images/stories/AD/HSD/IR/Viral_Diseases/Chikungunya/CHIKV-Data-Caribe-2015-EW-17.jpg
6. Pan American Health Organization, Centers for Disease Control and Prevention. Preparedness and response for chikungunya virus: introduction in the Americas. Washington, DC: Pan American Health Organization; 2011. Available from: http://www1.paho.org/hq/dmdocuments/CHIKV_English.pdf
7. Waymouth HE, Zoutman DE and Towheed TE. Chikungunya-related arthritis: case report and review of the literature. *Semin Arthritis Rheum*. 2013;43(2):273-8.
8. Weaver S C and Lecuit M. Chikungunya virus and the global spread of a mosquito-borne disease. *N Engl J Med*. 2015;372(13):1231-9.