Disease/Medical Condition

CHIKUNGUNYA
(also known as “chikungunya fever”; caused by chikungunya virus [CHIKV])

Date of Publication: July 7, 2016

Is the initiation of non-invasive dental hygiene procedures* contra-indicated?  Yes, if the patient/client is febrile and/or has significant morbidity.

■ Is medical consult advised? Yes, if the diagnosis is uncertain and/or the patient/client is not already under medical care.

Is the initiation of invasive dental hygiene procedures contra-indicated?** Yes, if the patient/client is febrile and/or has significant morbidity.

■ Is medical consult advised? ……………………………………… See above
■ Is medical clearance required? …………………………………... No, unless severe bleeding tendency or severe immunosuppression is suspected.
■ Is antibiotic prophylaxis required? ……………………………… No
■ Is postponing treatment advised? ……………………………… Yes, while patient/client is acutely ill.

Oral management implications

■ Mode of transmission is primarily by bite of an infected mosquito (principally day-biting types that also transmit dengue virus; mosquitoes are infected by biting persons with viremia1). Vertical maternal-fetal transmission in infected pregnant women also occurs. The incubation period in humans (i.e., time from mosquito bite to clinical signs/symptoms) is 1 to 12 days, and usually 3 to 7 days. Because of viremia in infected persons (which usually coincides with the first week of illness), transmission is possible through exposure to infected blood. While blood-borne transmission is possible, transmission is highly unlikely in the dental hygiene setting with appropriate application of standard infection control precautions.

■ Although chikungunya fever is usually self-limiting, the diagnosis is important because of the similarity it has with dengue fever, the severe forms of which can be life-threatening. Hence, prompt medical referral is important for a traveller with fever returning from tropical or subtropical locales (where the differential diagnosis might also include malaria and bacterial infections). Acetaminophen should be used for initial fever and pain control until dengue is ruled out (NSAIDs and aspirin being contraindicated in dengue).

Oral manifestations

■ Most oral manifestations tend to last for 7 to 10 days and subside without any long-term sequelae.
■ Dysgeusia (altered taste) occurs in up to 85% of patients/clients.
■ While less common, aphthous-like ulcers may occur almost anywhere in the oral cavity, particularly on the tongue and palate. They may be accompanied by oral erythema.
■ Angular cheilitis, erosions, erythema, and crusted lesions at the angles of the mouth are sometimes seen. Crusted lesions may also occur on the lips.
■ More rarely, depigmented macules on the lips and oral mucosal pigmentation may occur.

1 In Africa, the virus is also maintained in a sylvatic cycle involving non-human primates and forest dwelling mosquitoes.

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Oral manifestations (cont’d)

- Submandibular lymphadenopathy sometimes occurs.
- Hemorrhagic findings are uncommon (in contrast to dengue). However, mild gingival bleeding can occur.
- Oral candidiasis may occasionally occur, perhaps linked to transient immunosuppression caused by CHIKV.
- Temporomandibular joint pain is occasionally seen as part of chikungunya’s characteristic polyarthralgia.

Related signs and symptoms

- Prior to 2013, chikungunya outbreaks occurred in tropical and subtropical countries primarily in Africa, Asia (particularly India), Europe (Italy and France), and the Pacific and Indian Oceans. Since 2013, local transmission of CHIKV has spread to Caribbean islands and most of Central and South America; cases have also occurred in the southern USA. Chikungunya often occurs as large outbreaks with high attack rates.
- Canadian travellers are at risk of contracting chikungunya in affected regions, especially in urban and suburban areas. The principal CHIKV mosquito vectors (Aedes species) are very common, and chikungunya is an increasing concern in the Americas. Depending on the timing of the bite of an infected mosquito, signs/symptoms may not manifest until the traveller has returned home. Currently, the Aedes mosquitoes that transmit CHIKV are not established in Canada.
- In most persons, chikungunya is an acute, self-limiting viral disease that elicits lifelong immunity. Acute symptoms usually resolve within 7 to 10 days.
- Infection with CHIKV is rarely fatal, but most infected people become symptomatic. Sudden onset of fever and polyarthralgia are the primary clinical findings, sometimes accompanied by maculopapular rash (which may be mildly pruritic in a minority of patients/clients.) Joint swelling and tenderness are usually symmetric and most often occur in the small peripheral joints (i.e., wrists, hands, ankles, and feet), although knees and shoulders can also be affected. The joint manifestations can be very severe and debilitating, and some patients/clients may have persistent joint pain for months to years. As well, some persons may have relapse of rheumatologic symptoms (polyarthralgia, polyarthritis, and tenosynovitis2) in the months following resolution of the acute illness.
- In some patients/clients, hyperpigmentation of the skin may occur after resolution of the acute rash. Xerosis (abnormal dryness of the skin) and associated scaling may also be seen, as may exacerbation of pre-existing dermatoses (e.g., psoriasis). Hemorrhagic manifestations are rare, with petechiae3 and ecchymoses (bruises) occurring occasionally.
- Other signs/symptoms include lethargy, headache, retro-orbital pain, photophobia, arthritis, myalgia (muscle aches), non-purulent conjunctivitis, nausea, vomiting, diarrhea or constipation, and lymphadenopathy (cervical or generalized).
- Lymphopenia (reduced lymphocyte white blood cell count) and thrombocytopenia (reduced platelet count) may be found on laboratory blood testing.
- Rare complications include retinitis, uveitis4, hepatitis, myocarditis, nephritis, vesiculobullous or ulcerative skin lesions, hemorrhage, myelitis (inflammation of the spinal cord), meningoencephalitis, cranial nerve palsies, and Guillain-Barré syndrome5.

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2 tenosynovitis = inflammation of a tendon and its sheath
3 Petechiae are red or purple spots on the mucosa or skin, which do not blanch to applied pressure, caused by extravasation of blood (i.e., hemorrhages). They are pinpoint to pinhead in size (i.e., 1 to < 3 mm in diameter).
4 Uveitis is inflammation of the uvea of the eye, the middle pigmented layer that lies between the inner retina and the outer fibrous layer composed of the sclera and cornea. It can cause permanent vision loss.
5 Guillain-Barré syndrome (GBS) is rapid onset of muscle weakness caused by the body’s immune system attacking the peripheral nervous system, often following an infectious illness.

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Related signs and symptoms *(cont’d)*

- Patients/clients at risk for severe disease include persons aged > 65 years, persons with underlying medical conditions (e.g., diabetes, hypertension, or cardiovascular disease), and neonates exposed intrapartum.
- While chikungunya’s signs/symptoms overlap with those of dengue, persons infected with CHIKV are more likely to have high fever, pronounced joint pain, arthritis, rash, and lymphopenia. Persons with DENV tend to have more bone and muscle pain, neutropenia, thrombocytopenia, and hemorrhagic manifestations.

References and sources of more detailed information

- U.S. Centers for Disease Control and Prevention
  [http://www.cdc.gov/chikungunya/pdfs/chikv_clinicians.pdf](http://www.cdc.gov/chikungunya/pdfs/chikv_clinicians.pdf)
- Medscape (via CDC)
  [http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2856378/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2856378/)
  [http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3633297/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3633297/)

* Includes oral hygiene instruction, fitting a mouth guard, taking an impression, etc.

** Ontario Regulation 501/07 made under *Dental Hygiene Act, 1991*. Invasive dental hygiene procedures are scaling teeth and root planing, including curetting surrounding tissue.