

Health
Public Health and Primary Health Care
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Santé
Santé publique et Soins de santé primaires
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July 29, 2010

Dear Colleague:

Re: Tick-borne diseases in Manitoba:

- Lyme disease is a tick-borne infection caused by the spirochete Borrella burgdorferi and transmitted in Manitoba by Ixodes scapularis, the blacklegged tick.
- Exposure to an infected tick can occur anywhere in Manitoba, but the risk is likely highest in the southeast corner of Manitoba. Other areas of possible increased risk are under investigation, including the area around the Stanley Trail near Morden.
- Early treatment based on clinical diagnosis is important to prevent late complications, including cardiac, neurologic or arthritic conditions.
- Clinical cases of Lyme disease are reportable using the attached form.
- Blacklegged ticks in Manitoba have also been found to carry Anaplasma phagocytophilum, the agent responsible for Human Granulocytic Anaplasmosis (HGA),
- On rare occasions, blacklegged ticks can also carry other infectious agents, such as Babesia microti or Powassan virus.

Epidemiology

- The southeastern corner of Manitoba has an established population of infected blacklegged ticks and has been
 determined to be an endemic area for exposure to Lyme disease. Blacklegged ticks, however, have been
 submitted to the surveillance program from all over Manitoba. Birds are believed to deposit them throughout
 Manitoba. Surveillance efforts have also identified a probable established blacklegged tick population around
 the Stanley Trail near Morden. Some other areas in southern Manitoba are currently under investigation.
- Exposure to blacklegged ticks can occur from early spring to late fall.
- In 2009, 14 per cent of the blacklegged ticks submitted through the surveillance program were positive for
 Borrelia burgdorferi and about five per cent of the ticks were positive for Anaplasma phagocytophilum, the
 bacteria that can cause HGA. Two percent of submitted ticks had both infectious agents. Testing for presence
 of Babesia microti (protozoa responsible for Babesiosis) in ticks began in 2009. However, no positive ticks were
 identified.
- in 2009, under the new national case definitions, Manitoba had 1 confirmed case and 4 probable cases of Lyme disease reported. Six additional reports not meeting the national surveillance definitions were also received. The surveillance definition is more stringent than clinical criteria used for initiating treatment for presumed Lyme disease. HGA and Babesiosis are currently not reportable diseases in Manitoba.

Clinical Presentation:

Lyme disease: Early symptoms

Erythema migrans (EM) appears in 70 to 80 per cent of patients within three to 30 days after exposure to an
infected tick. EM is an expanding erythematous skin lesion, usually more than five cm in diameter, non-tender
and non-pruritic and occurring at the site of the tick bite. EM skin lesions can vary in appearance. Some are
homogeneously erythematous, whereas others have prominent central clearing or a target appearance; rarely
vesicles or pustules can be present (<5%).

 The rash of EM is specific to Lyme disease and if recognized, is sufficient for a clinical diagnosis and initiation of treatment for Lyme disease. Additional early symptoms of Lyme disease may include rash other than EM, fatigue, chills, fever, headache, muscle and joint pain, and swollen lymph nodes in untreated infection, multiple EM lesions which may be less than 5 cm may occur later, and are believed to be secondary to hematogenous spread.

For information on other symptoms of disseminated or late Lyme disease, please see the 2006 clinical practice guidelines of the Infectious Disease Society of America (http://www.iournals.uchicago.edu/doi/full/10.1086/508667 and http://www.idsociety.org/Content.aspx?id=16499) or consult an infectious disease physician.

HGA

Human granulocytopathic anaplasmosis (HGA), formerly known as human granulocytic ehrlichiosis (HGE), is a bacterial disease transmitted to humans by *Ixodes scapularis*. Onset of illness usually occurs within 5 to 10 days after exposure to an infected tick. Common signs and symptoms include fever, chills, headache, arthralgia, nausea and vomiting, often in association with leukopenia, thrombocytopenia and/or increased liver enzymes. Severe manifestations, such as pulmonary infiltrates, bone marrow hypoplasia, DIC and renal failure can rarely occur. Acute and convalescent serum samples are required for diagnosis.

Co-infections have been described and may be a consideration in patients who present with initial symptoms which are more severe than commonly observed with Lyme disease, especially when a high fever is present.

Other Tick-borne Infections

Most Babesiosis infections are asymptomatic. The clinical spectrum of symptomatic infection ranges from mild and self-limited to serious and prolonged. Severe infections are most common in patients who have had a splenectomy or are otherwise immunosuppressed. A gradual onset of illness may include: malaise, anorexia, and fatigue followed more acutely by fever, chills, myalgias, arthraigias, nausea and vomiting. The incubation period ranges from one week to several months. The risk of exposure in Manitoba is anticipated to be very low.

Encephalitis is reportable to Manitoba Health but, no reports of encephalitis due to Powassan virus have been made.

Laboratory Investigation and Treatment for Lyme disease:

- For acute Lyme disease, both acute and convalescent serum samples (four weeks post diagnosis) are recommended. Serologic tests for Lyme disease may be negative early in the infection, and some individuals who are treated early for Lyme disease may not seroconvert.
- For the diagnosis of late manifestations of Lyme disease, one serum sample is sufficient.
 - The serum specimens (serum or serum separator tube), should be sent to Cadham Provincial Laboratory (CPL). The volume should be five to ten cc for adults and two to three cc for children.
- Serologic testing involves a two-tier approach to measure antibodies: 1) ELISA (enzyme-linked immunosorbent assay); if positive, then 2) A Western Blot test is performed to confirm a positive test for Lyme disease.
- Travel history should be noted on the requisition. For example, travel to Europe or Asia requires a different test kit.

Treatment Recommendations for Lyme disease:

Early treatment is important to prevent development of late complications. Treatment should be initiated based on clinical suspicion of disease. Late stage disease requires lengthier treatment. Consultation with an infectious disease specialist is recommended.

Erythema Migrans* Adults:

Doxycycline¹ 100mg PO BID for two to three weeks OR

- Amoxicillin 500mg PO TID for two to three weeks OR
- Cefuroxime axetil 500mg PO BID for two to three weeks can be used for patients with penicillin allergies or who
 are unable to take tetracyclines

Children

- Amoxicillin 50mg/kg/day in three divided doses (max. 500mg/dose) for two to three weeks
 - For more information see IDSA guidelines http://www.journais.uchicago.edu/doi/full/10.1086/508667
 - 1 Contra-indicated in pregnant or lactating women or children < eight years old.

Reporting of Lyme disease:

- Suspected cases of Lyme disease are to be reported using the Lyme disease clinical case report form (www.gov.mb.ca/health/lyme) and submitted by fax to the Environmental Infectious Disease Unit at (204) 948-2190 (secure fax line).
- All cases with positive serology or other positive laboratory tests (such as PCR, biopsy or culture results) are reportable to Public Health.
- Public health practitioners may contact physicians/clinicians for further information on reported cases.

Tick Surveillance:

 Suspected blacklegged ticks should be sent to Dr. T. Galloway (Department of Entomology, University of Manitoba, R3T 2N2) for identification and testing. Further information can be found on the Manitoba Health website at www.qov.mb.ca/health/iyme.

Further Information:

- Patient information, surveillance information, the clinical report form and management protocol for Lyme disease
 can be found on the Manitoba Health website at www.gov.mb.ca/health/lyme.
- · For furtner information on clinical care, contact an infectious disease physician.

Thank you for your anticipated cooperation.

Sincerely,

Susan Roberecki, MD, FRCPC, MSc Medical Lead - Environmental Health

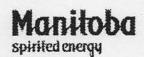
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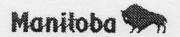
Public Health and Primary Care Division,

Manitoba Health

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Lindsay Nicolle, MD, FRCPC Infectious Disease Consultant Public Health and Primary Care Division, Manitoba Health





<u>Manitoba Health</u> <u>Lyme Disease Clinical Report Form</u>

Patient's name:	yy/mm/dd) Age:	st Name)	Physician: Phone number: Address:
Onset of symptoms: History of Erythema Migrans? (exp Did you (physician) observe Erythema Other symptoms (fever, headache, etc Antibiotic treatment: Yes □ No □, if y	(yyyy/mm/dd) anding lesion(s) 2-30 da a Migrans? Yes No	ays after tick bite, 5	cms in diameter) Yes □ No □
*	Tick Expo	sure History	
Did patient/physician remove an attack	hed tick within 30 day	s of symptom ons	set? Yes 🗆 No 🗆
(Ticks can be sent for testing c/o 2N2. Please send in a sealed con	T. Galloway, Dept. of tainer with a moist co	Entomology, United to ball).	versity of Manitoba, Winnipeg, MB R3T
Travel history 30 days prior to ons	et of symptoms: (ir	nclude specific lo	ocation and dates of travel both within
and outside Manitoba):			
*			
	Laboratory	Investigation	
Specimen type: Serology □	CSFD	Tissue □	Other D:
Test ordered:			

Please inform patients that a Public Health Nurse may contact them.

Further information and provincial Lyme disease protocol can be accessed on the Manitoba government website: http://www.gov.mb.ca/health/lyme/

Completed forms should be faxed to (204)948-2190 (secure fax line)