

Borrelia miyamotoi detected in Canada

Wednesday, September 27, 2017

<http://danielcameronmd.com/borrelia-miyamotoi-cases-detected-in-canada/>

by Daniel J. Cameron, MD, MPH

To determine the prevalence of the disease, specifically in Manitoba, Canada, Kadkhoda and [his team tested randomly selected blood samples from 250 individuals living in that area](#), who had suspected or confirmed Lyme disease. Samples had been submitted to the Cadham Provincial Laboratory in Manitoba between 2011 and 2014.

The authors found that 10% of the 250 participants were seropositive for *B. miyamotoi*. That is significantly higher than the 3.9% incidence observed in a group of healthy individuals living in a Lyme disease-endemic area of the northeastern U.S., says Kadkhoda.

However, “The greater *B. miyamotoi* seroprevalence in our sample of Canadian participants,” he says “may be attributed, at least in part, to the fact that they had had recent tick exposure (as evidenced by a suspected or confirmed Lyme disease illness) whereas the American participants were healthy.”

Study participants who were positive for *B. burgdorferi* were more likely to also be infected with *B. miyamotoi*.

The researchers also found that the individuals who tested positive for *B. burgdorferi* were more likely to also be infected with *B. miyamotoi*. “Participants who were seropositive for *B. burgdorferi* were significantly more likely to be *B. miyamotoi* seropositive than those who were *B. burgdorferi* seronegative (20.3% v. 6.6%, respectively, Fisher exact analysis, odds ratio 3.6, 95% CI 1.5–8.5),” according to Kadkhoda.

Kadkhoda and colleagues urge clinicians in this region to be aware that a “febrile illness without an erythema migrans rash (and especially a recurrent febrile illness) in late spring, summer or early autumn may be due to *B. miyamotoi*.”

The team cites several lines of evidence highlighting the importance of recognizing *B. miyamotoi* in Canada.

- “Seroprevalence studies in New England suggest that *B. miyamotoi* infection may be as common as anaplasmosis and babesiosis.”
- “*B. miyamotoi* has been found in *I. scapularis* ticks in all Canadian provinces except Newfoundland and Labrador.”
- “Human cases are likely to be found wherever Lyme disease is endemic.”

- “*B. miyamotoi* may cause serious complications, including meningoencephalitis in immunocompromised hosts.”
- “A quarter of the cases in 1 large *B. miyamotoi* case series were admitted to the hospital.”
- “Several studies suggest that *B. miyamotoi* may be transmitted through blood transfusion, consistent with the high levels of spirochetemia that occur with *Borrelia* species that cause relapsing fever.”

Testing for *B. miyamotoi*

B. miyamotoi can be diagnosed by identifying spirochetes on blood smear or *B. miyamotoi* PCR, or a 4-fold rise in *B. miyamotoi* antibody in acute and convalescent sera, Kadkhoda says. In this study, “Sera that tested positive by *B. miyamotoi* ELISA were then tested by glycerophosphodiester phosphodiesterase (GlpQ) Western blot.”

Unfortunately, serological testing for *B. miyamotoi* is not available in Canada or elsewhere. “We hope that our report will accelerate the availability of such testing,” states Kadkhoda. “Polymerase chain reaction testing for *B. miyamotoi*,” he notes, “is available at the National Microbiology Laboratory.”

The authors did not design their study to address treatments or outcomes but do point out that “Patients infected with *B. miyamotoi* should be treated in the same manner as patients with Lyme disease.”

Related articles:

[Don't count on relapsing fever to diagnose *Borrelia miyamotoi*](#)

[The best antibiotics to treat *Borrelia miyamotoi*?](#)

References:

1. Kadkhoda K, Dumouchel C, Brancato J, Gretchen A, Krause PJ. Human seroprevalence of *Borrelia miyamotoi* in Manitoba, Canada, in 2011-2014: a cross-sectional study. *CMAJ Open*. 2017;5(3):E690-E693.

Borrelia miyamotoi detected in Canada - <http://danielcameronmd.com/borrelia-miyamotoi-cases-detected-in-canada/>