

## The best antibiotics to treat *Borrelia miyamotoi*?

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In the United States, as many as 15.4% of the blacklegged ticks were found to be infected with *B. miyamotoi*, compared with up to 4% in Europe and Japan, according to Koetsveld from the Center for Experimental and Molecular Medicine, Academic Medical Center, Amsterdam, the Netherlands. [1]

Meanwhile, “Seroprevalence studies in New England suggest that *B. miyamotoi* infection may be as common as anaplasmosis and babesiosis,” write the authors of one study. The researchers randomly tested 250 individuals living in Manitoba, Canada and found that 10% were seropositive for *B. miyamotoi*. [2]

Although *B. miyamotoi* is characterized by relapsing fever, a case series published in the Annals of Internal Medicine reports that only 2 out of 50 patients infected with *B. miyamotoi* actually exhibited a relapsing fever. [3]

“Recurrent fever episodes have only been observed in 10% [of the cases] and spirochetemia is calculated to be low in patients infected with *B. miyamotoi*,” Koetsveld explains in *Antimicrobial Agents Chemotherapy*. [1]

Fever episodes last for three days and are accompanied by flu-like symptoms such as headache, chills, abdominal discomfort, arthralgia and myalgia.

So, how do we treat this difficult to diagnose condition?

Until now, there have been no treatment guidelines for *B. miyamotoi* and regimes have been empirically based on the treatment for Lyme disease. “The antimicrobial susceptibility of *B. miyamotoi* has not yet been elucidated, due to difficulties with cultivation of *B. miyamotoi* spirochetes *in vitro*,” according to Koetsveld.

“In this study we describe, to our knowledge for the first time, *in vitro* susceptibility of *B. miyamotoi* to the most commonly used antibiotics” in the treatment of *B. miyamotoi* and Lyme borreliosis.

The study authors demonstrated that *B. miyamotoi* is susceptible to doxycycline, azithromycin, and ceftriaxone but resistant to amoxicillin *in vitro*. The next step would be to show whether these drugs work in patients.

*Note: This article was originally published July 19, 2017. It has been updated with new content.*

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[Doctors face challenges in diagnosing \*Borrelia miyamotoi\*](#)

[Larval ticks may be a threat after all - insights based on study of Borrelia miyamotoi](#)

[Blood smear not reliable in diagnosing Borrelia miyamotoi disease](#)

**References:**

1. Koetsveld J, Draga ROP, Wagemakers A, et al. In vitro susceptibility of the relapsing fever spirochete Borrelia miyamotoi to antimicrobial agents. Antimicrob Agents Chemother. 2017.
2. 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.
3. Molloy PJ, Telford Iii SR, Chowdri HR, Lepore TJ, Gugliotta JL, Weeks KE, Hewins ME, Goethert HK, Berardi VP: Borrelia miyamotoi Disease in the Northeastern United States: A Case Series. Ann Intern Med 2015.

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