

Is Lyme disease prevention faulty?

April 11, 2011

By Matt Hrodey

A new paper published in the [Wisconsin Medical Journal](#) challenges what is a commonly-accepted method for prevented Lyme disease – a single dose of an antibiotic given to a patient bitten by a deer tick in a region with a high incidence of the illness. Wisconsin is one of several states where the disease, believed to be on the rise, is most common.

The paper by Elizabeth Maloney, a former family physician who now works in the Minneapolis area as a Lyme disease trainer for doctors, says patients should strongly consider a 20-day course of antibiotics, not the one-dose approach espoused by the [Infectious Diseases Society of America](#).



deer tick feeding (photos by uw)

Maloney says the IDSA’s recommendation “has some serious limitations” and that animal studies show a longer regimen of medication would nearly eradicate any chance of contracting the illness.

Lyme disease is notoriously difficult to diagnose. Most cases are identified by the characteristic bullseye-shaped rashes that form around bites, but according to the U.S. Centers for Disease Control, some 20 to 30 percent of patients never develop such a rash. In its early stages, Lyme presents symptoms similar to other infectious diseases, such as influenza – fever, headache, fatigue, muscle and joint pain – but if left untreated, the disease, after several months, can cause cardiac, neurological and often severe joint pain and arthritis.

Lyme cases are most common in the Northeast and Upper Midwest. According to 2009 CDC data, the most recent available, the incidence of Lyme in Wisconsin was ninth highest in the nation (behind several Northeastern states) but topped Midwestern states. (Minnesota is also rife with Lyme.) In recent years, in Wisconsin and elsewhere, the number of Lyme cases reported to

the CDC have generally increased. Maloney says this due to both an increase in actual cases as deer tick populations expand their reach and better physician awareness.

IDSA's recommendation applies to patients who visit a doctor within 72 hours of removing a deer tick that was attached for more than 36 hours. The patient must also reside in an area where more than 20 percent of deer tick carry the disease.

The single-dose guideline was formulated in 2006 and confirmed in 2010 after a lengthy review process. "No guidelines can replace a doctor's judgment, but these guidelines are the best information science can provide to the wide range of physicians who might treat a patient with Lyme disease," says an IDSA document describing the recommendation.



wood tick (left) and deer tick (right)

According to Maloney, the single-dose approach only stops about half of Lyme cases, whereas a full 20-day course of antibiotics, although it carries with it additional risks of reactions such as diarrhea, would nearly eliminate the risk of getting Lyme.

Some doctors are already using this approach. "In Minnesota and Wisconsin, there is quite a spectrum in what doctors are doing. Doctors generally want to conform; they don't want to be outliers," she says. "But when the evidence is iffy, that's when you're going to see a lot of variation."

Maloney faults the IDSA recommendation for requiring doctors to check data on the prevalence of Lyme in ticks that inhabit the region in which the patient lives. The process for determining which patients would receive the preventative treatment is overly complicated, she argues. The paper says doctors "should fully explain each strategy and consider the patient's goals and values before making (a) selection."

Some patients who suffer persistent symptoms for months or even years after a Lyme infection say there are "Lyme literate" doctors more capable than others at identifying and treating the illness, as reported in a [Milwaukee Magazine story](#). Some patients travel across the country to visit doctors with reputations for helping Lyme sufferers.

Blood tests can identify antibodies produced by the body to fight the illness, but even this method has its limits. If a patient is given an early yet incomplete course of antibiotics, allowing the disease to survive, albeit in a weakened form, the patient's immune system could stop responding to the invader – thwarting later attempts at diagnosis when the illness rebounds months later.

“It shows up in so many different ways. It does not look the same patient to patient,” Maloney says. “This is not a black and white illness.”

Both the CDC and the IDSA remain skeptical on the existence of a “chronic” form of Lyme, which many patients claim to suffer from. According to the CDC, “There is some evidence (these cases) result from an autoimmune response in which a person's immune system continues to respond even after the infection has been cleared.”