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Antibiotic Commonsense

"An investment in knowledge always pays the best interest." Benjamin Franklin

Lyme Disease Treatment*

More than 98% of all US cases of Lyme Disease are found in coastal New England, the Mid-Atlantic States, Wisconsin, Minnesota and Northern California. Most Washington State physicians will never see a locally acquired case because it occurs here at a very low level.

What is Lyme disease?

Lyme disease is a spirochetal illness which is caused by *Borrelia burgdorferi* in the United States. It is transmitted by the bite of the tick species *Ixodes scapularia* in most of it's endemic territory, and by *Ixodes pacifica* in the western United States. (*I. pacificus* ticks are rarely infected with *B.burgdorferi*.)

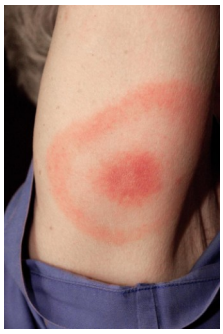
Western black-legged tick *(I. pacifiicus)*. Photo courtesy of James Gathany, CDC

Research suggests that the tick has to be attached to the skin for 36 hours or more to transmit Lyme Disease.

Early Lyme disease is generally characterized by a rash, erythema migrans (EM), and a disseminated febrile illness. Late Lyme disease does develop in some individuals and usually presents as a relapsing joint arthritis.

How is Lyme disease diagnosed?

"Erythema migrans is the only manifestation of Lyme disease in the United States that is sufficiently distinctive to allow clinical diagnosis in the absence of laboratory confirmation." [1] Serological testing is not sensitive enough during the first two weeks of infection to be helpful diagnostically.



"Bulls eye" erythma migrans Photo courtesy of James Gathany, CDC

When there is diagnostic uncertainty, serological testing should be carried out following the 2-tier testing algorithm recommended by the Centers for Disease Control and Prevention (CDC) and the Association for State and Territorial Public Health Laboratory Directors.[1] Untreated patients who have continuing symptoms for 6-8 weeks, but remain seronegative, are unlikely to have Lyme disease and other diagnoses should be considered.

How is Lyme disease treated?

Treatment usually consists of 10 to 28 days of oral antibiotics and is very effective. When Lyme disease is promptly diagnosed and treated, 95% of patients are cured within weeks.[2]

What about the people who are not immediately cured?

Likely these people never had Lyme disease and received the wrong treatment or they had Lyme disease and another infection at the same time and were only treated for Lyme disease or they have contracted a new illness with similar symptoms or they have again been bitten by the tick that causes Lyme disease.

Is there evidence to support a diagnosis of "chronic" Lyme disease?

According to the Clinical Practice Guidelines developed by the Infectious Diseases Society of America, an extensive review of studies was conducted and there is no convincing biological evidence to support a diagnosis of chronic Lyme disease.

Is long-term antibiotic therapy ever needed to treat Lyme disease?

Antibiotic therapy has not proven to be useful and is not recommended for patients with chronic subjective symptoms after administration of recommended treatment for Lyme disease.[1]

How should referrals for "chronic" Lyme disease be handled?

Physicians purporting to specialize in Lyme and other tick-borne illnesses may ask local physicians to participate in the treatment of patients they have diagnosed with Lyme disease. These physicians are often located in other states, and have no training in the diagnosis and treatment of infectious diseases. They attract patients, sometimes from long distances, who are suffering from a variety of problems and are seeking either an explanation of their undiagnosed symptoms, or an alternative to a diagnose they are reluctant to accept. Often, Lyme disease has been suggested to these patients as a diagnosis.

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Lyme Disease Treatment (continued)

Unaccepted methods for diagnosis may be used and specimens may be sent to labs specializing in the diagnosis of Lyme and other vector-borne infections where positive test results are very common. Testing should *only* be done in qualified labs that follow the CDC-recommended, evidence-based guidelines on immunoblot interpretation.

"Lyme" physicians prescribe antibiotics in very long courses, often intravenously, and sometimes in irrational combinations. These physicians often recruit local physicians to help in the treatment they recommended to patients. You should be suspicious of any Lyme disease diagnosis made by an out-of-state physician, especially if prolonged treatment is recommended.

The Infectious Disease Society of America's Lyme disease treatment guidelines call for a short course of antibiotics, usually oral, for all forms of Lyme disease. The longest recommended course of therapy is four weeks. The use of oral drugs other than amoxicillin or doxycycline or intravenous therapy other than ceftriaxone, and any combination therapy should raise questions.

Patients treated by "Lyme" physicians may come to harm from adverse effects of the medications prescribed, from the IV lines employed, or from failure to address their actual health conditions. They may be charged large sums for the treatments prescribed, which in addition to antimicrobials may include a multiplicity of "alternative" methods, which may be supplied directly by the "Lyme specialist".

If you encounter a case of "chronic Lyme disease" you should be circumspect about accepting it. You should ask for serologic testing on the patient by the accepted two tier process. You should send the sample to the lab you use routinely, and neither accept results provided by a "Lyme specialist", nor send specimens to labs s/he recommended.

The two tier testing method involves an initial enzyme-linked immunoassay (ELISA). If this is positive a Western blot test is done, both IgG and IgM for patients in the first month of illness, and IgG only beyond a month. Western blots should not be done on patients with negative ELISA tests. The Western blot interpretation provided by the lab should be accepted; reactivity on a minimum number of bands is required to meet the criteria for positivity. The presence of reactivity to one or more bands in the Western blot is common in patients without Lyme disease and should not be over-interpreted. If the serologic testing does not meet the criteria for positivity or if prolonged or combination therapy is recommended, you should be wary of participating and should discuss the case with an infectious disease specialist.

Resources

1. Wormser GP. Dattwyler ED. Shapiro JJ. et al. The Clinical Assessment, Treatment, and Prevention of Lyme Disease, Human Granulocytic Anaplasmosis, and Babesiosis: Clinical Practice Guidelines by the Infectious Diseases Society of America. *CID* 2006:43 (1 November)1089-1133.
2. Lyme Facts from Infectious Disease Specialists. www.idsociety.org/PrintFriendly.aspx?id=3970. Downloaded 03/03/10.

Lyme Disease Incidence Rates by Selected States, 2004-2008*

	2004	2005	2006	2007	2008
Connecticut	38.5	51.7	51.0	87.3	78.2
District of Columbia	2.9	1.7	10.7	19.7	12.0
Maine	17.1	18.7	25.6	40.2	59.2
Minnesota	20.1	17.9	17.7	23.8	20.0
Oregon	0.3	0.1	0.2	0.2	0.5
Washington	0.2	0.2	0.1	0.2	0.3

*Centers for Disease Control and Prevention (CDC), Division of Vector-Borne Infectious Diseases. Incidence-confirmed cases per 100,000 persons, calculated using July 1st population estimates for each year.

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