



A Brief Note on Lyme Disease

Jeremy Walton*

Department of Medicine, University Paris-Sud, Orsay, France

ABOUT THE STUDY

Lyme disease, commonly known as Lyme borreliosis is a tick-borne disease caused by the *Borrelia* bacterium and spread by Ixodes ticks. The most frequent symptom of infection is a spreading red rash called erythema migrans which emerges about a week after the tick bite. In most cases, the rash is neither itchy nor painful. A rash appears in about 70–80 percent of affected patients. Fever, headaches and exhaustion are some of the other early symptoms. Symptoms include the inability to move one or both sides of the face, joint discomfort, and severe headaches with neck stiffness and heart palpitations, if left untreated. Shooting pains or tingling in the arms and legs may occur on occasion. Despite receiving appropriate treatment, 10% to 20% of people affected experience joint pain, memory issues and exhaustion for at least six months. Lyme disease is spread to people through the bites of infected Ixodes ticks. Ticks of concern in the United States are mainly *Ixodes scapularis* which must be attached for at least 36 hours before the bacterium can spread. Ticks carrying the *Ixodes ricinus* bacteria may spread the bacteria more quickly in Europe. *Borrelia burgdorferi*, *Borrelia bissettiae*, and *Borrelia mayonii* are the microorganisms that cause Lyme disease in North America. *Borrelia afzelii*, *Borrelia garinii*, *Borrelia spielmanii* and four more species cause the disease in Europe and Asia [1].

Lyme disease affects a variety of body systems and causes a wide range of symptoms. Not everyone with Lyme disease experiences all of the symptoms and many of them are not unique to Lyme disease and can also occur in other disorders. In most cases, the incubation period between infection and manifestation of symptoms is one to two weeks but it can be much shorter (days) or much longer (weeks) (months to years). Because the nymphal stage of the tick is responsible for the majority of cases, Lyme symptoms are most common in the northern hemisphere from May to September. Asymptomatic infection does exist however it affects less than 7% of infected people in the United States. Infected people in Europe may be significantly more likely to be asymptomatic [2].

Spirochetes, spiral bacteria from the genus *Borrelia* cause Lyme disease. Peptidoglycan and flagella as well as an outer membrane similar to Gram-negative bacteria enclose *Spirochetes*. *Borrelia* bacteria are frequently misidentified as Gram negative due to their double-membrane envelope, despite the fact that their envelope components differ significantly from Gram-negative bacteria. *Borrelia burgdorferi* (sensu lato) is the term given to the Lyme-related *Borrelia* species which have a lot of genetic variation [3].

Symptoms observable are clinical evidence (such as Erythema Migrans (EM) rash, facial palsy or arthritis), a history of probable tick bites and sometimes laboratory tests are used to diagnose Lyme disease. People with early Lyme disease symptoms should have a total body skin examination for EM rashes and be questioned if they've had EM-type rashes in the last 1–2 months. Lyme can be diagnosed based on the presence of an EM rash and recent tick exposure (i.e., going outside in a likely insect habitat where Lyme is common within 30 days of the formation of the rash). Laboratory confirmation is not required or advised [4].

Most people who get sick don't recall being bitten by a tick and the EM rash doesn't have to appear like a bull's eye nor does it have to be accompanied by any other symptoms. Lyme disease is most frequent in New England and the Mid-Atlantic States as well as sections of Wisconsin and Minnesota although it is spreading to other parts of the country. Lyme disease is also a serious problem in certain Canadian border communities. Lyme diagnosis is dependent on test confirmation in the absence of an EM rash or a history of tick exposure. The bacteria that cause Lyme disease are difficult to see directly in bodily tissues and growing them in the lab is complicated and time-consuming. Instead, the most often used tests check for antibodies to certain germs in the blood. A positive antibody test does not indicate active infection. Rather, it can confirm an infection that has been suspected based on symptoms, objective findings and a person's history of tick exposure [5].

The most common treatment is antibiotics. The best way to utilize them depends on the person who is affected and the stage of the disease. Oral doxycycline is usually suggested as the first

Correspondence to: Dr. Jeremy Walton, Department of Medicine, University Paris-Sud, Orsay, France, E-mail: jeremy@walton.ulf.edu

Received: 01-Feb-2022, Manuscript No. JBP-22-15827; **Editor assigned:** 03-Feb-2022, PreQC No. JBP-22-15827 (PQ); **Reviewed:** 15-Feb-2022, QC No. JBP-22-15827; **Revised:** 17-Feb-2022, Manuscript No. JBP-22-15827 (R); **Published:** 23-Feb-2022, DOI: 10.35248/2155-9597.22.S14.001

Citation: Walton J (2022) A Brief Note on Lyme Disease. J Bacteriol Parasitol. S14: 001.

Copyright: © 2022 Walton J. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

line of treatment for most patients with early localized infection as it is effective against not only *Borrelia* bacteria but also a variety of other tick-borne infections. Sun exposure should be avoided by anyone taking doxycycline since they are more likely to get sunburned. Amoxicillin, cefuroxime axetil and azithromycin are alternatives to doxycycline which are contraindicated in children under the age of eight and women who are pregnant or breastfeeding [6].

REFERENCES

1. Lochan H, Pillay V, Bamford C, Nuttall J, Eley B. Bloodstream infections at a tertiary level paediatric hospital in South Africa. *BMC Infect Dis.* 2017;17(1):750.
2. Muro F, Reyburn R, Reyburn H. Acute respiratory infection and bacteraemia as causes of non-malarial febrile illness in African children: a narrative review. *Pneumonia (Nathan).* 2015;6(1):6-17.
3. Zenebe T, Kannan S, Yilma D, Beyene G. Invasive bacterial pathogens and their antibiotic susceptibility patterns in Jimma university specialized hospital, Jimma, Southwest Ethiopia. *Ethiop J Health Sci.* 2011;21(1):1-8.
4. Fleischmann-Struzek C, Goldfarb DM, Schlattmann P, Schlapbach LJ, Reinhart K, Kissoon N. The global burden of paediatric and neonatal sepsis: a systematic review. *Lancet Respir Med.* 2018;6(3):223-230.
5. Labi A-K, Obeng-Nkrumah N, Bjerrum S, Enweronu-Laryea C, Newman MJ. Neonatal bloodstream infections in a Ghanaian Tertiary Hospital: Are the current antibiotic recommendations adequate?. *BMC Infect Dis.* 2016;16(1):598.
6. Liu L, Oza S, Hogan D, Chu Y, Perin J, Zhu J, et al. Global, regional, and national causes of under-5 mortality in 2000-15: an updated systematic analysis with implications for the sustainable development goals. *Lancet.* 2016;388(10063):3027-3035.