



LYME DISEASE: NEW OPTIONS FOR TREATMENT

Lyme disease prevalence is on the rise, arguably more now than any time in human history. Millions of people have been diagnosed with this debilitating illness, while millions of others are suffering from a myriad of mysterious symptoms without a definitive diagnosis. With more sensitive and specific diagnostic testing, one can first identify the problem, then start the process of recovery. This article will explain some of the basics of Lyme disease including prevalence, symptoms, diagnosis, and new options for treatment.

PREVALENCE

Every year there are more people being diagnosed with Lyme disease. According to the Center for Disease Control's estimate, there are approximately 300,000 new cases per year. Cases of Lyme disease more than doubled from 2004 to 2016. These estimates may be low due to the current limitations in diagnostic methods. In addition, the number of infected ticks is increasing at an alarming rate in many areas of the U.S. and Canada, including Manitoba.

STANDARD TESTING

Currently the testing for a diagnosis of Lyme is often inadequate based on the technology that is primarily used. The ELISA test (a blood test used for Lyme disease screening) has a very low sensitivity. In addition, the body does not always produce antibodies early enough or in high enough numbers in the blood to be detected with a screening (ELISA) test. More sophisticated equipment is now being utilized with higher sensitivity and specificity.

CAUSES

Lyme disease is caused by an infection with a type of bacteria called *Borrelia*. There are many species of *Borrelia* that are transmitted to humans via the bite of a tick. Additionally, these ticks can also transmit many other bacteria, viruses, and parasites, known as co-infections.



Borrelia, along with co-infections such as *Babesia*, *Bartonella*, *Ehrlichiosis*, and an emerging group of viruses and other microbes, account for the extremely diverse array of symptoms found in Lyme patients.

SYMPTOMS

No two patients with Lyme disease display the exact symptoms, however, some of the more common symptoms associated with Lyme disease include:

Fatigue

Sleep impairment (too much, too little, poor quality)

Muscle and/or joint pain

Depression

Concentration issues, memory loss, cognitive impairment, “brain fog”

Nerve pain, numbness/tingling, paralysis, muscle twitching

Mobility issues (balance)

Headaches

Heart palpitations, rhythm disturbances

Itchy skin

Muscle weakness

ACUTE VS CHRONIC (PERSISTENT) LYME

Should someone receive a tick bite and develop a classic bulls-eye rash (Erythema migrans), a diagnosis of Lyme and subsequent antibiotics are normally prescribed. Unfortunately, the bulls-eye rash only occurs in 27-47% (according to 3 studies) of individuals with Lyme disease. Early antibiotics can be very effective in eradicating Lyme disease; however, up to 50% of people taking short term antibiotics in acute Lyme disease will go on to develop chronic or persistent Lyme. Most of the patients seen at the Centre for Natural Medicine have chronic or persistent Lyme.

PRESENTATION

While symptoms vary from patient to patient, a common presentation occurs in those with persistent Lyme disease. At the onset, there is usually a flu-like illness that is extremely memorable due to the intensity of the symptoms. The duration may vary, with symptoms either periodically going away and returning, or not going away at all. More often than not, patients will experience an increasing number of



symptoms along with the original symptoms, eventually leading to chronic or persistent Lyme disease.

Many patients are frustrated in their journey with Lyme disease. It is not uncommon for patients to have seen many medical practitioners, leading to no definitive diagnosis. Lyme patients have often undergone dozens of lab tests and imaging, most of which are negative or inconclusive.

DIAGNOSIS/TESTING

If the journey above sounds familiar to you or someone you know, it is prudent for you to do more testing and/or seek appropriate treatment. Due to the variety of species of *Borrelia* and the several different co-infections that may be causing one's symptoms, conducting an ELISA (blood) test (which is known to have low sensitivity) to diagnose or rule out Lyme disease is often not enough. Furthermore, the ELISA test does not test for the multiple species of *Borrelia*. Some labs merely check for *Borrelia burgdorferi*. Several other species of *Borrelia* (*B.*) such as *B. californiensis*, *B. garinii*, *B. mayonii*, *B. afzelii* can cause Lyme symptoms. The more species of *Borrelia* a lab checks the better, particularly if they are endemic to the area in which the patient suspects exposure to Lyme disease occurred. With more advanced testing including Western blot, PCR, Immunoblot or ELISpot, patients may finally have an answer to their suffering and begin the journey back to health.

TREATMENT

While treating acute Lyme disease is relatively straight forward with the prescription of antibiotics (primarily doxycycline, amoxicillin, and/or cefuroxime), treating persistent Lyme disease is another matter. It is not uncommon for chronic Lyme patients to be prescribed up to 5 different antibiotics at one time. Clinically, antibiotic treatment for persistent Lyme works well for some patients in the long term. For others, once antibiotics are withdrawn, symptoms often return. Furthermore, elevation of liver enzymes, white and red blood cells, and platelets can be negatively affected from taking numerous antibiotics.

What works for one patient may not necessarily work for another, despite having confirmed infection with the same organisms by blood testing. Many doctors that have been treating Lyme disease for many years have found that a positive



outcome is not necessarily all about treating the organism as a typical acute infection. Certainly, decreasing the amount of *Borrelia* and the co-infection numbers are important. However, many of the symptoms associated with Lyme disease are due to an over-reaction of the immune system and the consequent inflammation. The imbalanced immune system is a specific characteristic of chronic or persistent Lyme disease. As such, the treatment for persistent Lyme disease differs tremendously from the treatment of acute Lyme disease.

Treating Lyme disease often requires a multifaceted approach. The following is a partial list of issues and/or treatment considerations for a Lyme patient:

- A balanced immune system is crucial to a successful outcome. Rebalancing the Th1 and Th2 parts of the immune system with various nutrients and **ozone therapy**. Ozone therapy is one of the most effective treatments for Lyme disease.
- Balancing T regulatory cells, another part of the immune system that is often dysfunctional in Lyme patients. **LDI** or low dose immunotherapy is often utilized for this purpose.
- Decreasing inflammation with **ozone therapy** and various nutrients/herbal medications.
- Addressing biofilm, a substance that is formed in Lyme patients. Biofilm is a consortium of microorganisms within a polysaccharide material. This allows the bacteria to replicate and evade immune detection. There are various natural substances that can break down (or poke holes in the armour) biofilm, thus allowing the immune system to detect and destroy the bacteria.
- Endocrine imbalances are common in Lyme patients. It is crucial to address any endocrine issues, such as thyroid and/or adrenal dysfunction.
- Mitochondrial dysfunction is best addressed with **ozone therapy** and various natural medications. The mitochondria are where we make ATP, our primary energy source.
- Detoxification is also an area that may need to be addressed. *Borrelia* and the co-infections can cause a lot of damage to tissues. Various cytokines (proteins secreted by the immune system) are produced, many of which cause inflammation and waste products that have to be cleared by the body.



- Diet is also an area that is of utmost importance in treating Lyme disease. Anti-inflammatory diets, along with an elimination or major restriction of various foods, is often recommended. Sugars and sweets, trans-fats, fried foods, dairy, and gluten are some of the foods that are problematic in many Lyme patients.
- Many herbal medications are used as antimicrobials, to address inflammation and to address endocrine issues.

Clinically, the 3 most effective natural treatment modalities in the treatment of Lyme disease include: ozone therapy, LDI, and herbal medications. Again, lowering the count of *Borrelia* and the co-infections with antibiotics and/or natural antimicrobials is important in the initial stage of treatment. Antimicrobials may be necessary during the entire treatment period, however, balancing the immune system is vital to each and every Lyme patient. Once the immune system is balanced, the body can then deal with Lyme disease, or other microorganisms that may come along.

In many Lyme patients, the journey to health can often be a long and arduous one, but thanks to the many options for treating Lyme disease, the timeframe to wellness is often significantly shortened. The key is to find the most appropriate treatment for the patient which can restore the quality of life one had prior to the diagnosis of Lyme disease.

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