

Treating Lyme Disease with Modern Chinese Medicine

Qingcai Zhang, Lic. Ac., M.D. (China) and Yale Zhang
Zhang's Health Clinic
20 East 46th Street, Suite 1402
New York, NY 10017

Introduction

Lyme disease occurs worldwide and it is the most common tick-borne disease in the United States. In 1981 Burgdorfer identified a bacteria, *Borrelia spirochete*, in the stomach of ticks was named *Borrelia burgdorferi* (Bb). The disease is now referred to as either LD or Borreliosis. In 19th century in Europe similar tick borne disease had been documented, therefore it might have existed for more than hundred years. In the United States LD epidemical areas are in the Northeast, Midwest, and Pacific coast. Canada, Europe, and some Asian countries have reported the epidemic. In China it was first reported in 1985 and now more than 18 provinces reported LD cases.

Once infected, Bb disseminates via tissue and the bloodstream and getting into cardiovascular, musculoskeletal, and central nervous system. The spirochete divides slowly in every 8 to 12 hours. It invades fibroblasts and lymphocytes, bind with host proteins, and triggers the secretion of cytokines and antibodies, which causes inflammation. Because the tick may transmit multiple pathogens, such as Babesia, Bartonella, mycoplasma, and Ehrlichia. LD often has multiple co-infections. In the Northeast, about 66% of cases are co-infected with babesiosis, a malaria-like disease. Bartonella, Human Monocytic Ehrlichiosis (HME), Human Granulocytic Ehrlichiosis (HGE), Rocky Mountain Fever, Mycoplasma, etc. also common co-infections. These co-infections make the symptoms patterns of LD vary widely and the treatment of LD more difficult. In treating chronic LD, the treatment must be able to cover these pathogens. During long-term antibiotics treatment, iatrogenic (medication-caused) problem are fungal infections and liver enzyme elevation. All these problems make chronic LD a difficult to treat disease.

Acute LD is mainly treated with antibiotics, which was usually not sufficient because the limited CDC definition made the treatment course too short. It can suppress most patients' symptoms, but could not eradicate the spirochete and co-infections in many patients and render the LD became chronic. Chronic LD is an extremely complex and recurrent illness that is still poorly understood. It may be accompanied with brain foggy, cognitive problem, fever, fatigue, arthritis, cardiovascular problem, fibromyalgia, and malaise. It is a disease involving multiple body system damages, which are the consequence of inflammation and immune dysfunction.

In tradition Chinese medicine (TCM), LD is considered as a syndrome of toxic dampness heat, which has a symptom-pattern: water retention, M.S.-like symptoms, and rheumatoid-like arthritis, vasculitis, peripheral neuritis, and encephalitis. It is resemble the symptom patterns of syphilis and leptospirosis, which are spirochete diseases. TCM has accumulated abundant experiences on treating these two spirochetal diseases. The treatment principle is "heat-clearing, damp-drying, and toxic-resolving." The herbal remedies we have developed for LD were found from herbs with these features. Their

phytopharmacological data has also used to confirm their actions of anti-pathogens, regulating immunity, anti-inflammation, and promoting tissue repair.

Dilemma of Conventional Medicine in Treating Chronic LD

One reason why patients turn to alternative medicine for LD treatment is because conventional medicine has some deficiencies in its treatment. It focuses on anti-pathogen and mainly uses antibiotics (ABX). From my clinical practice I have found that ABX treatment for LD has some problems, which made it not so effective:

The worldwide extensive use and abuse of ABX has breed ABX-resistant bacteria and created Antibiotics-resistant LD. I have seen patients have used ten even more kinds of ABX treatments in a rotation. None of each one has been used in sufficient course and this kind of practice only encouraging resistance to develop. Resistance made ABX as whole less effective.

ABX is design for short-term use, mostly use for two to three weeks. Because Bb dividing slowly and it has a dormant cyst form, plus disseminated chronic infection, LD needs long-term treatment. The chronic LD treatment course needs half year or longer. ABX is not suitable for long-term use, it will inevitably cause damages in the liver, hearing, and the kidney.

ABX is extracted from fungi and it can suppress bacteria but could encourage fungi overgrow. Long-term use ABX can cause fungal infection, such as urinary tract and vaginal yeast infections and causes flora imbalance in the body.

ABX usually has bigger molecular weight, which made it difficult to penetrate the blood-brain-barrier. Majority of chronic LD patients have center nerve system infections, so the remedies used for treating CNS infection, must be able to go through the BBB. Larger the molecule, the less able to go through the BBB.

ABX is only effective in suppress bacteria, but LD is a multiple pathogen co-infection, therefore it is impossible to deal with non-bacterial pathogens, such as Babesia, mycoplasma, and Rickettsia. The anti-microbial spectrum of ABX is not wide enough to deal with those non-bacteria microbial.

In chronic LD host's inadequate immune reactions, such as autoimmunity caused vasculitis and circulatory immune complex, play important roles in pathogenesis and healing. ABX is not an immune regulatory agent. So use ABX as a sole therapy to treat chronic LD is obviously insufficient.

The conventional medical community is aware the dilemma of the ABX usage in LD. The following is a quotation from an article written by eminent LD specialists: " Relapses following use of potent antibiotics and detection of the Lyme organism or its DNA following treatment likewise demonstrates an inability to completely eradicate the pathogen and permanently halt the pathologic process with current methods of treatment in some patients. This is a problematic situation because intensive antibiotic treatment is costly, ... and carries associated risk for the patient. ... For some patients however, this may be the only presently available alternative to progressive neurologic deterioration. In view of this dilemma , the international biomedical research community must give high priority to the development of improved and /or alternate methods of treatment that can definitively cure persisting Bb infections responsible for neurologic and other manifestations of chronic Lyme diseas

e.” (Kenneth B. Liegner et al., Lyme disease and the Clinical Spectrum of Antibiotic Responsive Chronic Meningoencephalomyelitides, Proceedings of Lyme & Other Tick-borne Disease: A 21st Century View, Nov 10,2001, p.72)

Over the past six decades, the results of the use of antibiotics in conventional medicine have made us appreciate the importance of the philosophy of TCM. Many Chinese medicinal herbs are composed of “active ingredients” that are ABX in nature. For example, *Coptis chinensis* is an herb commonly found in formulas for diseases that are often described in modern medicine as bacteria infections, which western medicine treats with ABX. The strategic principle of western medicine for infectious diseases is to identify and eradicate the pathogen with anti-microbial drugs. Misusage of this stratagem has resulted in a worldwide crisis, as people realize that over the past 60 years we have conducted a worldwide breeding program of ABX-resistant strains of bacteria. Yet despite the presence of ABX ingredients in TCM formulas that have been in continuous use for thousands of years, no such iatrogenic catastrophe has ensued in China.

In order to avoid these problems of ABX, we have been researching herbal remedies with no resistance strings have developed, virtually non-toxic to be able to use for long term safely, to suppress fungi simultaneously to avoid yeast infections, with a small molecular weight to penetrate the BBB easily, with wide anti-microbial spectrum suitable for suppressing multiple pathogens. These are the principles guiding us to search effective active herbal ingredients to develop our herbal anti-pathogen remedies. More importantly we have developed immune regulatory and supportive treatment to strengthen the anti-pathogen actions and promote the healing process.

Modern Chinese Medicine Approach on LD

An infectious disease consists of two sides, the invading pathogen and the body’s reaction to the invasion. TCM’s view of an infectious disease is quite different from WM. It holds that determining a disease happen or not is decided by internal cause, the body’s immunity. Its theory of pathogenesis of an infection disease is “Zheng xu xie shi”, literally translation is “body resistance weakened while pathogenic factors prevailing.” In a LD epidemical area, most people expose to tick bites, but not every body develop LD. For those developed LD the severity is quite different. TCM holds that the determine cause of LD is the body’s internal factor; Bb is just a condition. Therefore, only rely on ABX to eradicate the bacteria without enhancing the body’s immunity and repairing the damaged tissue is an incomplete strategy of treatment. Therefore the conventional allopathic medical approach has only partial efficacy.

To treat the LD, Western medicine (WM) dependent on ABX alone and does not count body’s healing power. In WM, the human body just like a testing tube, it idly stays there doing nothing and letting the ABX does the job. TCM considers the body is the major healing force and drugs, herbs can only help the body to heal, but cannot take over the role of healing. Because these philosophical differences when design a treatment strategy, WM is mainly focus on the eradicating the infectious agents (the external cause) by ABX (the external intervention). WM paid little attention to regulate the body’s immune reactions and to promote damaged tissue repair. In WM, external factors are the decisive causes of disease and healing. This way of thinking is not correctly reflecting the truth. Therapies designed based on this way of thinking will not be very effective. It can only be workable when the external factor is extremely powerful and overwhelm the internal factors. This explains

why WM use such strong, heroic ABX and caused so many side effects, but still can't fulfill its job.

TCM's treatment strategy is termed as "Fu zheng qu xie", which can be translated as "expelling the evil (the invading pathogen) by strengthening the righteous Qi (the immunity)." In TCM the eradication of the infectious agent is done by the body's defense and medical treatment can only help to strengthen the defense. So in TCM theory not only the disease is mainly determined by the internal factors and the healing is also done through strengthening the internal factors. The eventual eradication of the pathogens is the role of the defense system of the body; ABX and herbal remedies can only be a help to the body in accomplishing this task. MCM as an integrated TCM and WM uses WM's pathophysiological and pharmacological knowledge on LD to guide its research on new treatment methods and remedies in TCM. It also uses TCM principle to design a holistic comprehensive treatment strategy.

MCM Herbal Protocols for Chronic LD

Based on the pathogenesis of LD and TCM's holistic philosophy, MCM herbal protocol consists of two major sections: anti-pathogen and constitutional (immune regulatory, supportive treatments) treatments.

MCM Anti-Spirochete and Co-Infection Treatment

In anti-pathogen section of the MCM use herbal remedies, which avoids the shortcomings of ABX treatment. For anti-Bb and co-infections other than Babesia, we have developed four herbal remedies: Allicin Capsule, Coptis Capsule, HH Capsule, and formula R-5081 Capsule. Allicin and HH together used as the first line of the treatment. If a patient can't tolerate the first line or not respond to the first line well, then use Coptis and R-5081 together as the second line. Some times, other combination of these four herbal remedies used as second line of therapy. The advantage of using Allicin Capsule is its active ingredient, allitridi, which has an extremely small molecular weight, (162.27) making it very penetrative to penetrate the BBB, which makes it very suitable for CNS infections. It has very wide spectrum of anti-microbial effects, it anti bacteria, mycobacteria, fungi, protozoa, and certain viruses. Likewise, the active ingredients of both Coptis and HH have small molecu-

lar weight and wide spectrum anti-microbial effects. All of these three herbs have very low or virtually no toxicity and can be used safely for long term. They have been effectively used for treating leptospirosis in China. R-5081 is a TCM formula used for treating syphilis for more than hundreds of years and even for late stage of syphilis, it has more than 50% of cure rate. Because Allicin Capsule, HH Capsule, and Coptis Capsule have wide anti-microbe spectrums. When used for anti-spirochete treatment, they can also suppress fungi, so the treatment will not cause fungal overgrowth, avoiding antibiotics' side effects. Their wide-anti-microbial spectrum made them suitable for treating co-infections of LD. They also suppress Bartonella, mycoplasma, and Ehrlichia.

MCM Anti-Babesiosis Treatment

Babesiosis is a cosmopolitan domestic and wild animal infection caused by protozoa, Babesia microti. Human Babesiosis is commonly a co-infection of LD. Babesia is transmitted by ticks, and multiply in red blood cells. It can cause febrile hemolytic anemia and hemoglobinuria. Its pathology closely resembled malaria. Clinically, the patients experienced a prolonged illness characterized by the insidious onset of fever, chills, sweating, myalgia, and mild to moderate hemolytic anemia. Symptoms mixed

with the symptoms of LD. Co-infections changed clinical symptom patterns, decreased the reliability of diagnostic test and created chronic, persistent infections.

Conventional treatments for this parasite are similar to that of malaria. Chloroquine and Quinine have been used for symptomatic improvement. It is not sure whether they can eradicate the pathogen. Clindamycin and Quinine combination was used but found the combination was difficult to tolerate because severe side effects. Mepron and azithromycin combination has also been used for treating this infection and was considered the most effective therapy. It needs a four months or longer treatment course. The side effects are quite severe, including diarrhea, mild nausea, and sometimes, yellowish discoloration of the vision. And during the treatment, liver function and blood counts have to be monitored regularly.

For this co-infection, herbal treatment is very effective. For this intra-erythrocyte (red blood cell) protozoal parasite conventional Western medicine using anti-malaria medications and Chinese medicine also use anti-malaria herbal remedies. Artemisiae Capsule, in which artesunate is the main ingredient, is the main herbal formula used to eliminate Babesia and this formula is also an anti-malaria herbal product. Compared to conventional treatment, the herbal treatment has a shorter treatment course and is much less expensive and causes almost no side effects.

MCM Constitutional Supportive Treatments

Patients with chronic LD, the symptoms may represent ongoing persistent infection; or a sequel damage of past infection; or a self-perpetuating autoimmune response to the Bb infection. For this, the conventional treatment is still repeat antibiotics. This is obviously insufficient. Treatment scheme should fit the pathogenesis of the disease. Antibiotics are only to killing of suppressing the infectious agents, it has no effects to suppress the inflammation, to promote the repair of the damaged tissue, and to modulate the immunity, especially to suppress the autoimmune response.

When an infectious disease become chronic and has been persisted for years, the importance of etiological factor, the pathogens, become not the leading factor in the disease progression. The pathogenesis factors play much more profound roles in determine the diseases progress. In this stage of the disease, only focus on eradicating the pathogens is not sufficient, the pathogenesis factors can have more profound effects on disease progression than the etiologic factor (the pathogens). But conventional treatment is focused on only the etiologic factor and does not address complicated pathology of the chronic disease. What can be done about the pathological damage that has already been done by chronic LD? The clinical symptoms are signs of brain, muscle, and joint damages. Conventional treatments do not address this problem.

This section of MCM treatment includes immune-regulatory therapies, anti-inflammatory, improving microcirculation, and treating LD-related symptoms to improve life quality.

For patient with joint pain, muscle aches, fibromyalgia, skin rashes, allergies, vasculitis, and severe Herxheimer reaction, AI #3 Capsules should be used. Fatigue is one of the most common complaints of LD patients and Cordyceps Capsule can be used to improve the energy level and up regulate immunity, especially cellular immunity.

Mental clarity usually decreases during the course of chronic LD. If difficulty in concentration, cognitive problems, memory loss, difficulty in finding words are major problems, Puerarin Capsule should be used.

Circulation P Capsule is a necessity for all patients. In order to increase blood infusion to the tissues, promote the repair of the inflammation-damaged tissues, and promote the phagocytosis of macrophages for removal of the deposited circulatory immune complex in inflamed tissues, this formula should be used for every patient.

Duration of chronic LD treatment course is at least six months or longer.

Herxheimer's Reaction

Both anti-spirochete and anti-Babesia herbal treatment will induce the Herxheimer's reaction during the first few weeks of treatment. A Herxheimer reaction is part of the immune system response to the die off of the spirochete or the babesia. The symptoms will worsen temporarily. It may indicate that the treatment is working. If the reaction becomes hard to tolerate, then the dose of anti-infection herbs should be reduced to half or even less to build up tolerance gradually. After the reaction period is over, the patient will experience gradual and steady improvement. One herbal remedy, AI #3 Capsule has the effect of reducing the strength of Herxheimer reaction.

Conclusion

Chinese herbal treatments for LD are effective, safe, and affordable. The cost is much less than that of conventional treatments.

Because the diagnosis and monitoring tests for LD are generally not accurate, so it is difficult to set up an end point of treatment.

To date, I have treated more than 1000 cases of LD at different chronic stages. Most patients of mine have been able to taper off antibiotics and still control their symptoms. After approximately six months or longer of herbal treatment more than 60% of them have completely stopped the treatment and manage to remain symptom free.