

Lyme-like syndrome in Brazil is still a problem

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The existence of *Borrelia burgdorferi s.s.* in Brazil was recently confirmed by polymerase chain reaction (PCR) testing, [writes Miziara in the journal Clinics \(Sao Paulo\)](#). [1] The *Amblyomma* and *Rhipicephalus* genera ticks can transmit the bacteria to humans through the bite of an infected tick. In the U.S., *Borrelia burgdorferi s.s.* is transmitted by *Ixodes scapularis* and in Europe, by the *Ixodes ricinus complex* tick.

While there are slight differences between the diseases, BYS and Lyme disease share similarities on many fronts. The following features have been reported in patients with BYS, otherwise known as the Brazilian Lyme-like syndrome:

Clinical manifestations

- An erythema migrans (bull's-eye) rash occurs at the tick bite in approximately 50% of the cases.
- The main clinical presentations involving the nervous system include the triad of meningitis, cranial neuritis and peripheral neuropathy.
- Psychiatric complaints are described in 20% of patients.
- Patients report eye problems including diplopia, eyelid ptosis, optical nerve damage, papilledema, uveitis and chorioretinitis.
- Some patients suffer from encephalitis, either alone or associated with meningitis.
- Arthritis of large joints (mainly of the knee) occur in 30% - 35% of patients.
- There are different degrees of atrium-ventricular block, but the use of a pacemaker is generally unnecessary.

Microbiologic findings

- Multiple forms of *Borrelia burgdorferi s.s.* were identified in culture. "When cultured under adverse conditions of pH or temperature, or in the presence of antibiotics, *Borrelia* bacteria develop morphological alterations similar to elongated bacteria (bacteroids), dense bodies suggestive of Chlamydia bacteria or the appearance of bacteria deprived of cell walls resembling Mycoplasma (8-11)," writes Miziara.
- An analysis of BYS patients' blood revealed the presence of non-motile structures, similar to those reported as spirochetes in cystic forms.
- Using PCR testing, *B. burgdorferi* spirochete can be identified in the skin or blood of BYS patients for months or years after disease onset, even after antibiotic treatment, suggesting a persistent and active infection.
- There is evidence of neuro-immune-endocrine axis activation, possibly triggered by "hidden" *Borrelia* or the presence of spirochete outer membrane surface proteins.

Diagnostic issues

- Diagnosis is difficult in the absence of an EM rash, the distinguishing feature of BYSS.
- Most cases are diagnosed on an epidemiological and clinical basis, after exclusion of other diseases. Serological tests can be helpful. But alone, blood tests do not provide a diagnosis of BYSS.
- Symptoms can mimic other diseases, including chronic fatigue syndrome (CFS). Manifestations include physical and mental fatigue persisting longer than 6 months that does not improve with rest, and potentially involve myalgia, arthralgia, lymphadenomegaly, neuro-cognitive symptoms, headache, sore throat, and sleep disturbance.
- It is common for symptoms to wax and wane and re-occur.

The authors question “the frequency of patients treated as presenting idiopathic CFS or autoimmune diseases, when in fact they represent undiagnosed cases of *Borrelia burgdorferi* infection.”

Treatment approach

- Patients in the acute stage of BYSS, exhibiting the presence of a localized EM rash without evidence of disease dissemination, are treated with antibiotics for a short period of time (generally less than one month).
- It is recommended that treatment for BYSS start early on. A delay in treatment longer than 3 months after the onset of symptoms can result in further difficulties in about 75% of the cases. This may include disease recurrence or the appearance of reactive symptoms.
- Longer treatment may be necessary. If dissemination of bacteria is noted, including flu-like symptoms, antibiotics should be continued for an additional 3 months.
- A delay in the diagnosis of BYSS in its early stage can lead to serious, sometimes irreversible manifestations, which include chronic untreatable neuroborreliosis (encephalomyelitis, ataxia) and erosive arthritis.
- In general, patients with neuroborreliosis are initially treated with ceftriaxone or penicillin G sodium, administered intravenously for 15–30 days, followed by an additional oral antibiotic schedule to complete three months of therapy.

Autoimmune concerns

- The authors discuss the possibility of a *Borrelia burgdorferi* [infection triggering an autoimmune response](#) in some patients. These individuals would require a different regimen of treatment. Researchers in the [U.S. have also described the same possibility](#).
- BYSS patients may exhibit symptoms associated with those found in autoimmune diseases. They may develop arthritis; Raynaud’s disease; cutaneous lesions (similar to those observed in systemic lupus erythematosus); scleroderma; symptoms of sicca syndrome; myositis; thrombosis; vasculitis.
- Individuals with BYSS may develop allergic manifestations related to food, drugs, or insect bites.

Related Articles:

[Brazil faces the same problems with Lyme disease as seen in the USA](#)

[Confirmation of *Borrelia burgdorferi* in South America](#)

References:

1. Miziara C, Gelmeti Serrano VA, Yoshinari N. Passage of *Borrelia burgdorferi* through diverse Ixodid hard ticks causes distinct diseases: Lyme borreliosis and Baggio-Yoshinari syndrome. *Clinics (Sao Paulo)*. 2018;73:e394.

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