

Impaired immunity increases risk of disseminated Lyme disease

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Their study features 7 patients with an EM (erythema migrans) rash who were diagnosed with Lyme borreliosis. All of the patients were receiving Rituximab for another underlying medical condition. Out of the 7 patients, 4 were also being treated with additional immunosuppressant drugs (e.g., corticosteroids, methotrexate, and bortezomid).

“Rituximab is the anti-CD20 monoclonal antibody that influences B cells and consequently impairs secretion of antibodies, antigen presentation, and secretion of cytokines,” writes Maraspin and colleagues.

Rituximab is used for non-Hodgkin lymphoma, rheumatoid arthritis, chronic lymphocytic leukemia, and granulomatosis with polyangiitis (Wegener granulomatosis).

The authors found that signs of disseminated Lyme borreliosis were unusually high (43%) in the 7 patients when compared with immunocompetent individuals (8%) who had EM diagnosed at the same institution.

The isolation rates of *Borrelia* from blood before antibiotic treatment were also unusually high (40%) when compared with immunocompetent patients (<2%).

"Impaired immunity might be an explanation for the complicated course of LB (signs of disseminated LB or unfavorable outcome after antibiotic treatment) present in 57% of our patients but rarely seen in immunocompetent adult patients with EM, of whom only about 8% have disseminated disease and approximately 10% have treatment failure, most often the presence of LB-associated symptoms," the authors write.

In their study, 3 of the patients with multiple EM rashes were treated with IV antibiotics. The remaining individuals received oral antibiotics.

One patient, a 65-year-old woman, failed initial treatment. “Her skin lesion persisted for >2 months after the start of treatment with doxycycline,” explains Maraspin.

“However, it disappeared after retreatment with amoxicillin and the subsequent clinical course was uneventful.”

At their 1-year follow-up, none of the patients had any objective (or physical) signs of Lyme borreliosis. However, the authors did not mention the presence of other symptoms, such as fatigue, pain, and cognitive problems.

Editors note: *The increased chance of disseminated Lyme disease in patients with impaired immunity needs further study. I would also address the risk of treatment failure on other outcome including fatigue,*

pain and cognitive problems.

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References:

1. Maraspin, V., et al. (2019). "Erythema Migrans: Course and Outcome in Patients Treated With Rituximab." *Open Forum Infect Dis* 6(7): ofz292.

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