

## Women with chronic Lyme disease may suffer from a severe immune response triggered by the disease

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According to a study by Wormser and colleagues, from New York Medical College, "Patients with chronic Lyme disease were significantly more likely to be female than were patients diagnosed with either Lyme disease or with post-Lyme disease syndrome."

"This finding," says Wormser, "suggests that illnesses with a female preponderance, such as fibromyalgia, chronic fatigue syndrome, or depression, may be misdiagnosed as chronic Lyme disease." [1]

However, it may be that women with chronic symptoms of Lyme Disease suffer instead from a severe immune response brought on by the illness.

A study by Aucott and colleagues from Johns Hopkins University School of Medicine states, "Individuals with ideally treated early Lyme disease have a greater than 12-fold higher risk of developing PTLDS [Post-Treatment Lyme Disease Syndrome] by six or twelve months post-treatment if their CCL19 [chemokine] level is higher than 111.67 pg/ml at one month post-treatment." [2]

High CCL19 chemokine elevations have been reported in immune illnesses. "Based on this, we speculate that elevated CCL19 levels may reflect an ongoing, immune-driven reaction at sites distal to secondary lymphoid tissue," says Aucott.

Such high CCL19 chemokine levels may be the result of a persistent infection. "Studies using rodent and primate models," states Aucott, "have suggested that the persistence of bacteria and/or spirochetal antigens after antibiotic therapy may drive disease." [2]

The article entitled [CCL19 as a Chemokine Risk Factor for Post-Treatment Lyme Disease Syndrome: A Prospective Clinical Cohort Study](#) suggests several approaches to managing the elevated levels of CCL19 chemokine. Aucott points out that some physicians are electing to re-treat patients who are still symptomatic. "The use of short-term antibiotic retreatment in the early, post-treatment phase of Lyme disease has yet to be formally tested, although it may be widely applied in clinical practice."

Other approaches included prescribing medications used to treat depression in an effort to decrease cytokine levels, behavioral interventions to help cope with pain and fatigue and cognitive rehabilitation.

References:

1. Wormser GP, Shapiro ED. Implications of gender in chronic Lyme disease. J Womens Health (Larchmt), 18(6), 831-834 (2009).
2. Aucott JN, Soloski MJ, Rebman AW et al. CCL19 as a Chemokine Risk Factor for Post-Treatment Lyme Disease Syndrome: A Prospective Clinical Cohort Study. Clin Vaccine Immunol, (2016).

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