



**FREQUENCY OF *BORRELIA BURGdorFERI* WESTERN BLOT AND LTT POSITIVITY
AMONG MULTIPLE SCLEROSIS PATIENTS FROM TURKEY**

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ABSTRACT

In Turkey, *Borrelia burgdorferi* infections are not well known among physicians and almost completely overlooked. On the other hand, a small number of seropositivity studies (%3.3-%73) show that *Borrelia burgdorferi* is common in Turkey. There is no diagnostic biological marker in multiple sclerosis (MS). Only several clinical criteria used for diagnosis. These criteria are also compatible with other diseases. Lyme disease is currently among them. In the chronic phase of Lyme, demyelination can form and this can be confused with MS. In this study 126 patients, between ages 17 and 66, with a definite diagnosis of multiple sclerosis was evaluated, and were found according to be found positive *Borrelia burgdorferi* western blot and LTT test results 108 (%85.72). Only 18 (%14.28) patients have negative test results. The results show that LYME disease is very common in Turkey and LYME patients with neurological symptoms are misdiagnosed with multiple sclerosis.

KEYWORDS: Lyme, *Borrelia burgdorferi*, Multiple Sclerosis, Turkey.

INTRODUCTION

Multiple sclerosis (MS) is a chronic disease of the central nervous system characterized by chronic inflammation and demyelination. Apart from its devastating impact on individuals and their families, multiple sclerosis creates a huge economic burden for society by mainly afflicting young adults in their most productive years. Although effective strategies for symptom management and disease modifying therapies have evolved there exists no curative treatment yet.

Multiple sclerosis affects at least 2.8 million people worldwide. MS has a unique geographic distribution, temperate zones have a low prevalence and more northerly areas have a prevalence more than ten times that in warmer climates.^[1]

Worldwide, MS prevalence parallels the distribution of the Lyme disease pathogen *Borrelia burgdorferi*, and in America and Europe, the birth excesses of those individuals, who later in life develop MS exactly mirror the seasonal distributions of *Borrelia* transmitting Ixodes ticks. In addition to known acute infections, no other disease exhibits equally marked epidemiological clusters by season and locality, nurturing the hope that prevention might ultimately be attainable. As minocycline, tinidazole and hydroxychloroquine are reportedly capable of destroying both the spirochaetal and cystic L-form of *B.burgdorferi* found MS brains, there emerges also new hope for those already afflicted.^[2-3]

Multiple sclerosis (MS) is the most common cause of neurological disability in young adults worldwide and approximately half of those affected are in Europe.^[4]

According to Microbiologist Dr. Tom Grier^[5-6], who is an expert in *Borrelia* and earlier in 1978, had some health problems, was mistakenly diagnosed with MS in 1990, finally proven to have "Lyme Encephalitis" in 1991. MS is only one symptom of Lyme disease, not a disease in itself! Since then, he has been working on Lyme disease and writing books.

One of the world's leading Lyme disease specialists and Associate professor of applied Neurobiology, Dr Dietrich Klinghardt MD PhD, states, 'We never had in the last five years a single Multiple Sclerosis, ALS (Motor neuron disease) or Parkinson's patient who did not test positive for *Borrelia burgdorferi*. Not a single one.'^[7]

According to the one of the most effective scientific papers, which had written by 4 Norwegian scientists, at the 10 of with 10 MS patients have also been identified as a cyst form of the *Borrelia* spirochete bacteria. No bacteria were found in a control group. The cysts turned into spirochetal bacteria when cultured. The studies conclude that all ten MS patients have been infected with a spirochete. Concludes that MS could very well be a chronic infection.^[8]

Since 1911, more than the past one hundred years,

several older but also recent autopsy findings linked to in many articles found that all deceased MS patients' brains harbored living Lyme spirochetes. Even when tests, notorious for their large percentage of false negatives were used on living MS patients, staggeringly many tested positive for active Lyme borreliosis.^[9]

"Spirochetes in MS" (Buzzard, E.F.), Published in the famous Lancet magazine in 1911, revealed the presence of Lyme spirochetes in the brains of MS patients. *Over a period of more than a century, more than 50 international scientific papers proving the MS-Lyme relationship have been published in prestigious medical journals.*^[16-111]

If you follow the European Medical Literature concerning Multiple Sclerosis from 1911 to 1939, you may find that in France, Germany and England, there were independent researchers all observing similar things and coming to similar conclusions:

1. Spirochetes are often found in conjunction with the lesions in the brains of patients who have died with MS.
2. These spirochetes can be isolated and can infect many mammalian animal models; including: mice, rats, hamsters, guinea pigs, rabbits, dogs, and primates.
3. The spirochetes could be re-isolated from the brains of the infected animals and be inoculated into more un-infected animals and re-isolated from their brains.
4. Multiple sclerosis may often be associated with *Borrelia* infection.
5. Points out that a considerable body of clinical evidence supports the concept that cystic L-forms of *Borrelia burgdorferi* may cause MS.

Lyme disease is a chronic multi-system infectious disorder and the most frequent infectious arthropod-borne disease found both Europe and United States. *Borrelia burgdorferi* is the causative agent of Lyme disease, which affects an estimated 329,000 people annually in the United States. In August 2015, CDC researchers revised their estimates upwards once again, showing a 320% increase in Lyme cases in the past 20 years.^[10]

According to World Health Organization (WHO) reports, Lyme disease are in 117 countries and is endemic (lasting and common) in 63 countries. Tens of thousands of scientific studies in the world, especially in the last 30 years, reveal that Lyme is a worldwide epidemic.

Especially in the last 10 years, hundreds of scientists in many countries of the world have been making great efforts to understand this disease, there are thousands of scientific publications on these issues. As of July 2013, the Medline database lists more than 25,000 published peer-reviewed articles about tick-borne diseases.

On June 18, 2018 the World Health Organization (WHO) issued the 11th revision of the International Classification of Diseases or ICD11. According to this revision; 1C1G.2 Congenital Lyme borreliosis, 6D85.Y Dementia due to Lyme Disease, 8A45.0Y Central nervous System demyelination due to Lyme borreliosis. It is the first time in over 25 years that these serious complications have been officially recognized by the WHO.

ICD is used by national health systems and program managers, data specialists, policy makers and others who allocate health resources and track national and global health. Thirty-one countries undertook ICD11 field testing and all Member States are to adopt ICD11 for disease reporting and morbidity and mortality statistics in 2022.^[11]

15 November 2018, MEPs have adopted, for the first time, a resolution on Lyme disease, or Lyme borreliosis, an infectious bacterial disease in humans and in various species of domestic and wild animals, caused transmitted to humans through the bite of a tick. The resolution adopted by MEPs have called for on the European Commission to draw up a plan to combat Lyme disease, to accompany mandatory reporting in all Member States, better Exchange of best practice, additional funding of the methods for diagnosing and treating Lyme disease and the promotion of research efforts (*European Parliament resolution of 15 November 2018 on Lyme disease (Borreliosis)(2018/2774(RSP)*).

Multiple sclerosis affects at least 50,000 people in Turkey.^[12] Reported MS prevalence rates vary between 33.9 and 101.4 per 100,000 in two different regions of the western part of Turkey (13-14). A more recent study in a rural area near Istanbul found this rate to be 51 per 100,000, probably a more accurate rate for the Turkish population.^[15]

RESULTS

In this study, 126 patients, between ages 17 and 66, with a definite diagnosis of multiple sclerosis were evaluated, and was found to be Lyme positive according to *Borrelia burgdorferi* western blot and LTT test results in 108 (%85.72) of them. Only 18 (%14.28) patients have negative test results. The test results which are belong to 80 female (%63.49) and 46 male (%36.51) patients. According to scientific studies conducted on Ms, the ratio of women to men is 2-3 / 1.

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