Lyme Disease (LD) is an infectious disease caused by *Borrelia*. The most common sign of this infection is an area of redness on the skin, and some symptoms like fever, headache, and tiredness usually could be present. Long term symptoms could include facial palsy; joint pain, severe headaches, heart palpitations and others. In addition to these symptoms, patients with LD could have some cognitive impairment (neuroborreliosis). These cognitive manifestations involve: memory impairments, problems with language comprehension and expression, lack of efficacy in visual processing, lack of speed of processing and problems with abstract reasoning. We hypothesized that the qEEG patterns of these patients would be different to healthy volunteers qEEG patterns. Comparisons were established between two groups (LD group and healthy volunteers). Significant differences were found in qEEG patterns. The differential qEEG patterns in LD could be a tool for early detection of neuroborreliosis or cognitive impairments in these patients.

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