Factors affecting test results

Testing:

1.21 Differences in immune response or genetic makeup can affect test results

We conclude that the presence of chronic Lyme disease cannot be excluded by the absence of antibodies against B. burgdorferi and that a specific T-cell blastogenic response to B. burgdorferi is evidence of infection in seronegative patients with clinical indications of chronic Lyme disease (Dattwyler et al. 1988)

Source:

1) Our research provides additional evidence of a genetic predisposition for seronegativity in some individuals with Lyme disease. Seven of 18 seronegative LD patients had HLA-DR1, only 1 of 22 seropositive LD patients had HLA-DR1. These results suggest that the presence and or lack of production of specific antibody to Bb infection may be associated with particular HLA specificities of the Human leukocyte antigen (HLA) class II [this glycoprotein] plays an essential role in the regulation of antibody production (Wang & Hilton 2001)
2) Humans produce highly specific borreliacidal antibodies against outer surface protein C (OspC) shortly after infection with *Borrelia burgdorferi* sensu stricto. The authors noted the distinct absence of IgG OspC antibodies in sera from European patients and suggested the failure of the response to reach maturity was because the epitope induced antibodies in a T-cell-independent fashion. However, this is clearly not the case after infection with *B. burgdorferi* sensu stricto (Lovrich et al. 2005)
3) Early in the infection, patients with erythema migrans or meningitis commonly had weak to strong immunoglobulin M (IgM) responses to OspC and sometimes weak to moderate IgG responses. Months to years later, weak to strong IgG reactivity with this protein was often apparent in patients with arthritis, but this response was weak or absent in patients with chronic neuroborreliosis (Fung et al. 1994)
4) Serum from a patient with Bannwarth syndrome was seronegative by standard isotype-specific IgG ELISA and immunoblot and was positive by IgM ELISA. When the ICs [immune complexes]-and FAs [free antibodies] were used at equal concentrations of IgM, more Bb antigens were bound by IC derived IgM than by FA IgM, including the 23-, 30/31-, and 66-kDa bands. FA immunoblot reactivity would have been classified as negative, according to the manufacturer's instructions. One potential explanation for the absence of serological reactivity with OspA in standard serological assays in many patients with later manifestations of LD may be that anti-OspA antibodies are sequestered within ICs (Brunner & Sigal 2000)

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