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ePoster Viewing
Lyme borreliosis

USEFULLNESS OF QUANTITATIVE IGG ASSAYS BORRELIA VLSE LIAISON® AND THE NEW VIDAS® LYME FOR SEROLOGICAL FOLLOW-UP OF PATIENTS WITH LYME BORRELIOSIS

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Objectives

Define new serological parameters for a better diagnosis of Lyme borreliosis and follow-up of patients. Since 2006, VLSE antigen has brought some new insights in the diagnosis of Lyme borreliosis. It has been shown that the quantitative Borrelia VLSE IgG LIAISON® assay decreases or even becomes negative after antibiotic treatment for patients with early Lyme borreliosis. Using the VIDAS® Lyme IgG, we observed a similar phenomenon. This assay is mainly constituted of a VLSE antigen. Our goal was to compare these 2 assays for the serological follow-up of patients at different stages of Lyme borreliosis.

Methods

Linearity range was determined for the VIDAS Lyme IgG assay, as well as the reproducibility. A total of 296 sera from 97 patients with early, disseminated and late symptoms of Lyme borreliosis were evaluated. Clinical data were collected for all the patients. A control group composed of 2 samples, 3 to 12 months apart from seropositive blood donors (N=30) was included. Concordance of both methods was calculated based on the patients and differentiated according to clinical stages.

Results

Linearity for the VIDAS assay was established between 0.4 and 4.0 TV (Test Value). The intra- assay variability of VIDAS was less than 10%, as for the LIAISON assay. Significant variations were considered if values differed within a time interval of 4 weeks by more than 20% for VIDAS and 30% for LIAISON assays. Follow-up sera from patients showed >50% increasing or decreasing values with time interval >3 months. Among blood donors no significant variation was observed for 91% of them. For the rest a seroconversion, a clear increasing value and an equivocal increase with both assays and 1 equivocal decrease with LIAISON were found. Usually patients with EM have LIAISON values <170 AU/ml and VIDAS values <2.0, except in case of a second EM. Patients with ACA or arthritis have values 500 AU/ml (LIAISON) or >50.0 (VIDAS). Patients with neuroborreliosis have a wide range of values going from <10 to 6’934 AU/ml (LIAISON) or <0.2 to 236 (VIDAS) depending on clinical stage. Both VIDAS and LIAISON assays demonstrated similar increases or decreases in antibody titers during the follow-up of patients at all stages of Lyme borreliosis. Results analysis showed 94,4% [86,4 - 98.5%] total agreement between VIDAS and LIAISON assays on the tested samples and a total agreement of 91.7% [82.7- 96.9%] based on the slope analysis when serial samples were available.

Conclusions

Quantitfication of IgG to *B. burgdorferi* sensu lato makes sense and gives useful laboratory results to the clinicians regarding activity of infection and effectiveness of treatment. Variations with these 2 assays were rapid, within a few weeks depending on clinical stages. Observed variations seem to reflect disease activity.