Clinical Microbiology and Infection 24 (2018) 210

Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Letter to the Editor

To test or not to test? Laboratory support for the diagnosis of Lyme borreliosis

Dessau *et al.* [1], in their analysis of testing for Lyme borreliosis, address important testing issues for borreliosis testing, but several problems with establishing a diagnosis remain. Formal serology in patients presenting with presumptive Lyme disease symptoms is not sufficient to definitively rule out Lyme disease for the following reasons.

First, positive serology can be delayed in early Lyme or remain negative in late Lyme disease [2]. This may be explained by inherent limitations of the tests (lack of 100% sensitivity), where a proper comparative study between an established Lyme disease population and a negative control group is mandatory.

Second, many serotypic variants of *Borrelia* species exist which may vary on a regional scale, and which differ regarding their clinical manifestations (*Borrelia garinii* and neuroborreliosis, for example). Some of those species could not be detected by commercial serology test kits [3].

Third, false-negative serologic results could be attributed to antibiotic therapy, the sequestration of *Borrelia* antibodies in immune complexes and/or location within the intracellular compartment, with inactive cystic forms of *Borrelia* [4].

Finally, the European Centre for Disease Prevention and Control reported a sensitivity of the enzyme immunoassay/immunoblot of 0.77 (95% confidence interval, 0.67–0.85) in the diagnosis of neuroborreliosis, and warned that the results should be interpreted with caution. This was due to a large heterogeneity in the sensitivity and specificity, with a considerable risk of bias [5]. A broader laboratory panel approach, such as including a PCR or enzyme-linked immunospot test, can be more sensitive and specific [6], as well as evaluating inflammatory chemokine levels early in the disease process, before antibodies are produced.

Otherwise, Lyme neuroborreliosis may only consist of peripheral neuropathy. In such cases, the search for production of intrathecal antibodies may not be essential to the diagnosis.

Transparency Declaration

All authors report no conflicts of interest relevant to this article.

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12 September 2017
Available online 10 October 2017

Editor: L. Leibovici

https://doi.org/10.1016/j.cmi.2017.09.015