Reviewer's report

Title: Diagnostic behaviour of general practitioners when suspecting Lyme disease: a database study from 2010-2015

Version: 0 Date: 07 Sep 2017

Reviewer: François Milord

Reviewer's report:
This manuscript studies diagnostic behaviour of GP regarding Lyme disease. The description of links between specific symptoms and serology requests are particularly interesting. Physician's practices are often different from available guidelines. It is thus useful to measure the gap between practices and guidelines.

Comments are presented for each section.

Abstract
Line 34: Replace database study by descriptive study.
Line 43: Specify that tests turned out to be positive by immunoblot, if this is true (see line 121).

Background
Lines 62-65: Apart from previous infection with LB, other reasons for false-positive results should be mentioned, like false-positive ELISA due to autoimmune disorder or other infections and false positive immunoblot due to cross-reactivity between spirochetes, particularly with IgM antibodies (see Reference 23).

Methods
Lines 80-81: More details should be provided about those practices. For example, state if the practices have all been opened since 2010 and the least and highest number of patients in those practices. Is it possible to distinguish practices based on some other characteristics? (see also line 138).
Line 86: Correct Contacts not related to LB…
Lines 96-97: The distinction is still not clear because in Table 2, many terms are used: Sting bite, recent insect sting, insect bite and tick bite. Use less terms if possible.

Lines 104-105: The use of 95%CI should be mentioned. I suggest that CI be computed also in Table 2 (see line 132).

Results
Line 120: Add the number of episodes (n=2619).
Line 121: Add that it is a positive immunoblot test result.
Line 125: It would be interesting to mention other signs/symptoms associated with LB, even if none of them were found in the review. For example, facial palsy, memory loss, arthritis or swollen joint. This could be added in the text even if it does not appear in the Table.
Line 132: Calculation of the percentage of serological testing for patients with 1 contact vs those with more than 1 contact would be important. It would also be important to see 95%CI in Table 2 for the percentages of serological testing and of positive test results. It would help to judge what differences are statistically significant.
Lines 138-139: More details on serological testing by general practices are needed to be able to support discussion and conclusion (lines 184-186, 203-204). Although numbers may be small, information on serological testing over time for each practice would be helpful. Numeric information could be given about rates: practices could be divided in 2 or 3 groups based on testing rates and positive tests rates given for each group to support the idea that practices with higher testing rates had lower positive tests rates. These results could be presented in the text or in a Table according to what is more appropriate. If it is possible to distinguish practices by other characteristics, comparison of serological testing could be done based on those characteristics.

No results are provided about antibiotic treatment although this variable was collected. What was the frequency of treatment? Did treatment rates vary by symptom category? Was treatment prescribed more frequently in patients with positive test results vs in those with negative test results?

Discussion
Line 180: Add missing word: 64.2% of patients presenting with fatigue...
Line 189: Modify: Hopefully, our study will contribute to the...
Line 197: Replace database study by descriptive study.

Tables
Table 1: Modify title to Characteristics of patients and contacts related to Lyme Borreliosis.
Table 2: Modify 3rd column title to Positive immunoblot test result.
Include 95%CI for all percentages computed in this Table.
Clarify terms about bite and sting (see lines 96-97).
Table 3: Information about referral could be presented in text format if a new Table is created for data about practices (see lines 138-139).

References

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
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