Reviewer's report

Title: Diagnostic challenges of early Lyme disease: Lessons from a community case series

Version: 1 Date: 7 February 2009

Reviewer: Brian Fallon

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RE: Diagnostic challenges of early Lyme disease – Lessons from a community case series.

This is a well-written retrospective case review of patients seen in a community physician's office for the evaluation of possible early Lyme disease. The goals included characterizing the patients for possible early Lyme disease, determining how many met CDC criteria, and characterizing the pattern of care. The methods are sound, the results clearly presented, and the discussion reasonable. The following comments are discretionary or minor essential revisions. The one major compulsory revision is adding a statement to the discussion regarding the potential limitation of not having culturing the atypical rashes.

The following specific comments are suggested for consideration:

1. If available, it would be helpful to provide a photograph of one typical Lyme rash and 2 atypical Lyme rashes.

2. The discussion section should add a few sentences addressing a key limitation of this study. The limitation is that each rash was not cultured to confirm that it was indeed a Lyme rash. This would be a particular issue in those patients with atypical rashes. How can the authors be certain that these were truly Lyme rashes? Serology alone would not answer that question.

3. Throughout the manuscript it was a bit unclear when the authors used the word “initially” such as in the abstract “54% were initially misdiagnosed”. That makes it sound like the authors misdiagnosed the patients initially. I would recommend substituting the word “previously”. Suggest this same change on page 7 first sentence of 2nd paragraph.

4. In the 3rd sentence of the results in the abstract, for clarification add “Among those with a rash, the diagnosis of EM was initially missed in 23%....”

5. Page 3. The figure of 27,000 new cases was a marked increase from earlier years. Recommend simply stating reported “in 2007”.... For clarification, the authors might consider adding a sentence indicating that the CDC has estimated that the actual number of cases of Lyme disease is likely 10 times higher than the reported number of cases.

6. Page 4. Bottom of 3rd paragraph. It’s unclear how the authors got to 13,000
new cases if the incidence of new cases is 5-15%.

7. bottom of page 5. What is the duration of “short” in a short course of antibiotics?

8. Page 7. Last sentence of 2nd paragraph. Suggest writing: “Fourteen (70%) of those patients with EM who were misdiagnosed with another illness had positive….”

Suggest last sentence on this page would be clearer if written: “Prior diagnoses given to these misdiagnosed patients included…”

9. bottom of pg 9. Suggest: “highlights this discrepancy, with the majority of these seropositive patients (54%) developing only non-specific….” Ie, add seropositive and move the word only.


11. Figure 1 has a superscript at 15.2% and at 16. What do these refer to?

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.