Reviewer's report

Title: Borrelia Infection and Risk of Celiac Disease

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Reviewer: Yves Hansmann

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Borrelia infection and risk of celiac disease

General features

The problematic of relationship between celiac disease and Lyme borreliosis is an interesting topic. For both diseases they are a lot of question about patho physiological mechanisms that are not precisely understood. The aetiology of celiac disease is not well known and a lot of hypotheses are proposed.

The second interesting fact is that author tries to respond to this question looking for the presence of both diseases in same patients, and this approach is possible because of the presence of exhaustively data in Sweden.

For these reasons, I think that this study gives arguments for answering to the question of the Borrelia's role in celiac disease and should be published.

However some comments to precise some data can be made:

Methods

The author used the data from a computerized biopsy report in Sweden from 28 pathology departments. However we do not know the representativity of these departments. Could the author precise how many departments are present in Sweden?

The "sweden patient register" is the tool of the analyse of Lyme disease diagnosis in patients. Is this register representative of the incidence of Lyme disease ? Are there data about the relationship of Lyme incidence, based on epidemiological data and this register. (for example : comparison of the prevalence of disease and the number of patients having the diagnosis of Lyme disease in this register)
To explore the association between Lyme borreliosis and celiac disease the author choose to study the events occurring one year before the diagnosis of celiac disease. However celiac disease is a chronic disease, and the relationship could be anterior. This point could be discussed.

Discussion

In the introduction and in discussion the author emphasized about the immunological importance in celiac disease. They write also, that Lyme borreliosis can be associated to auto immune manifestations. To discuss the immunological relationship between Lyme disease on one hand and celiac disease on the other hand, could they give precisely other reference about that, especially the effectiveness of immuno modulator on some articular manifestations succeeding to treated Lyme borreliosis ? (The reference is a general article, without precisions about this fact).

In the same order, author could discuss about the role of other infections (not only Lyme borreliosis) in triggering celiac disease. Lyme borreliosis could have only a non specific role in the same order than other infections.

What is the explanation about the increasing of Lyme borreliosis between main analysis and prospective analysis in both group (control and patients with celiac disease) ?

I would only talk about « Lyme borreliosis » and not « Lyme disease » to avoid the discussion on the role of other pathogens in Lyme disease.

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.

Yes
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.

I am able to assess the statistics

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