Reviewer’s report

Title: Lyme neuroborreliosis in HIV-1 positive patients successfully treated with oral doxycycline: case series and literature review

Version: 1 Date: 1 June 2011

Reviewer: Franc Strle

Which of the following best describes what type of case report this is?: Presentations, diagnoses and/or management of new and emerging diseases

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: No

Is this case worth reporting?: Yes

Is the case report persuasive?: Yes

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: Yes

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

This is an interesting report on the course and outcome of Lyme neuroborreliosis in patients infected with HIV.

I have only some minor, predominantly technical remarks:

Abstract
- Introduction, 3rd line: Areas are endemic for a disease (Lyme borreliosis) and not for the etiologic agent of the disease (Borrelia).
- Case presentations, 1st line: Proposal: Report on coinfection with two etiologic agents or concomitant presence of two diseases instead of coinfection of a virus and a disease (HIV-1 and Lyme neuroborreliosis).
- Conclusion, 2nd line: abbreviation LNB has not been explained.
4th line: ...more severe and atypical neurologic symptoms... - propose to add rather - ...more severe and rather atypical neurologic symptoms...

Introduction
- Last sentence of the first paragraph: Cranial nerve involvement usually does not manifest after longlasting disease. Proposal: More uncommon signs include deficits of other cranial nerves, ...

Method and Material
- 1st sentence: Report on a coinfection with two agents, development of LNB in a patient with HIV/AIDS, or concomittant presence of two diseases instead of HIV-1 and LNB coinfection.
- Last sentence: please include dosage for doxycycline.

Case reports
- Patient 1: "A CSF sample four weeks after admission showed markedly elevated levels of albumin and..." The time course is not clear - when was this patient admitted to hospital?
- Patient 2: "Two days before admission, the patient had experienced ..." Again, the time course is not clear - when was this patient admitted to hospital?
- Patient 2 was treated with doxycycline 200 mg bid for 19 days - is the duration of treatement in accordance with the guidelines mentioned in the last sentence of the Methods' section?
- Patient 4, line 5: Proposal: omit influenza-like symptoms; influenca is characterized by respiratory symptoms while Lyme borreliosis is not. This patient had fever and headache but not respiratory symptoms.

Discussion
- First paragraph: ...increased risk of contracting Borrelia infection (or Lyme borreliosis) and not .. increased risk of contracting Borrelia.
- Second paragraph: "Furthermore, all the patients displayed a rapid response to anti-Borrelia treatment." Had patient No 2 a rapid response to antibiotic treatment?
- Third paragraph: Are headache and myalgia really typical symptoms of LNB?
- Fourth paragraph: Do the authors have an explanation of the mechanisms of the immune impairment in patients with HIV/AIDS that could influence the course of Lyme borreliosis?
- Fourth paragraph: What does "posterior circulation" mean?
- Sixth paragraph: "Normal-pressure hydrocephalus caused by LNB is an even rarer manifestation, with only a few known cases." Proposal: omit "caused by LNB" and add "in adults" after a few known cases.
- Eight paragraph, 1st sentence: "... in the acute stage of Borrelia infection (Table
1). "From the report it is difficult to assess the duration of Borrelia infection; it seems that at least in patient No 3 the illness was rather long-lasting and not an "acute stage of Borrelia infection".

Conclusions
- Fourth sentence: What is the meaning of "atypical neurological symptoms" - atypical for HIV infection or atypical for LNB?

**Quality of written English:** Acceptable

**Declaration of competing interests:**

I declare that I have no competing interests.