Reviewer's report

Title: Guillain-Barre syndrome associated with hemorrhagic fever with renal syndrome in China: a case report

Version: 0 Date: 12 Nov 2017

Reviewer: Danielle Vuichard

Reviewer's report:
The authors report that so far only 5 cases of GBS associated with Hantavirus Infection (HFRS) have been described. This is a very interesting observation that deserves attention. However, the case report has some limitations and inconsistencies the authors need to address.

Major issues:
1. The diagnosis of Hantavirus infection (HFRS) has been made by clinical presentation, laboratory changes and by serological detection of antiviral IgG (page 4, line 79). However, by the time a patient develops symptoms, antiviral antibodies of the IgM class are almost uniformly present indicating recent infection, and shortly later most patients have antibodies of the IgG class. Seroprevalence of Hantavirus IgG in the Chinese population is very high and, therefore, evidence of Hantavirus IgG could also represent past infection unless there was a documented fourfold rise in titers of anti-hantavirus IgG, which the authors cannot prove. Have the authors ruled out other differential diagnoses, e.g. Leptospirosis, Malaria or Dengue fever (outbreaks of Dengue fever in southern coastal area of China described by Xia Jin and colleagues, Emerging Microbes and Infections (2015)). Malaria and Dengue fever are also associated with neurological complications such as Guillain-Barré-Syndrome.

2. In this case report, the diagnosis of Guillain-Barré-Syndrome relies on electromyography (EMG) studies only. Unfortunately, the authors failed to obtain consent from the patients' daughter to perform a lumbar puncture to show evidence of cerebrospinal fluid albuminocytologic dissociation.

Did the authors look for the presence of specific antibodies associated with acute motor sensory axonal neuropathy, e.g. Anti-GM1, anti-GM1b, and anti-GD1a IgG?
Could the authors graphically show the particular EMG changes?

3. Page 5, lines 98-102: the time relation of the sodium level increase is not exactly documented and at the first glance it is unclear why the authors mention it. At a second glance it becomes clear that they were looking for differential diagnosis for the flaccid paralysis. This section would need to be rephrased starting e.g. with "Since we noted a marked increase of the serum sodium level an MRI was performed but the suspected osmotic demyelination syndrome as a potential differential diagnosis of...". The MRI showing no lesions is probably not important for the reader. Besides, the authors could mention that the syndrome of inappropriate antidiuretic hormone secretion (SIADH), can be a complication of GBS.

4. Overall the whole case report lacks a fundamental discussion of the potential underlying pathophysiology and mechanism why Hantavirus infection should trigger GBS.

5. The report needs to be extensively re-edited because of typos and low quality of written English.

Minor issues:
Abstract: the authors use abbreviations (e.g. AMSAN) that have not been introduced, instead GBS should be introduced at first mention. To the best of my knowledge the expression "dyskinesia" is not appropriately used in this context because it represents "involuntary repetitive movements" which is not a feature of GBS.
Page 3, line 46: the syndrome of hantavirus infection found predominantly in North and South America is typically described as Hantavirus cardiopulmonary syndrome.
Page 3, line 62: "intermittent fever" is a specific fever pattern usually associated with malaria, and, unless there were spiking temperatures every 24 hours, it is hard to catch an intermittent fever pattern within 4 days as described in this patient.
Page 5, lines 91-95: Abbreviations such as MCVN or SNAP are unnecessary since it does not occur in the text anymore.
Page 9, line 193: "AMSAN" is incorrectly spelled out: the word "sensory" is missing

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
No
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
No

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.
Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:
Not suitable for publication unless extensively edited

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?
4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?
5. Do you have any other financial competing interests?
6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.
I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.