Reviewer's report

Title: Epidemiological and Clinical Characteristics of the Autumn-Winter Type Scrub Typhus Patients in Northern China

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Reviewer: Hwa-Jen Teng

Reviewer's report:

General comments
The authors describe epidemiology and clinical characteristics of scrub typhus based on the data collected in Feixian County, south of Shandong province, China over a 11-year period. Although the study was well designed and statistically analyzed, there are several questions and comments to improve the manuscript. The details are shown below. This paper should be a valuable addition to the literature on this field and will of interest to readers of BMC infectious diseases.

- Major Compulsory Revisions

Materials and Methods
1.(Page 7 lines 20-21 and Page 9 lines 11-13) In “Confirmatory diagnosis”, IFA was used for detecting IgM and IgG antibodies against pooled Karp, Kato, and Gilliam strains of O. tsutsugamushi antigens. However, in Results (Cases of scrub typhus), the genotypes of O. tsutsugamushi were similar, but distinct from Kawasaki strain. Therefore, you need to clarify that these antibodies can also detect other strains as well.

Results
2. The distribution map of the cases in the study areas will be highly attracted the readers of the journal. Please add the information.

Discussion
3.(Page 14 Lines 6-8) This statement “In addition, 5.2% of cases contracted infections from housework suggesting that farmers working in the field may bring infected chiggers into home together with crops or their clothes” was not supported by the data and this is only speculated. Discuss more in detail or delete.

4.In Japan , 2 peaks of scrub typhus cases, one was in spring and the other in October (Autumn-winter type) were found from 2000 to 2005. Here, only one peak on October and during the study period, no cases were found in other seasons. Please add the explanation to the discussion.


-Minor Essential Revisions
Title
1. (Page 1) Northern China in the topic should change to a smaller scale, for example, south of Shandong province, China.

Materials and Methods
2. (Page 7) In “The study site and population”, no population information was mentioned. Additionally, add the description of the weather, especially temperature, and annual precipitation.
3. (Page 8 line 16) In “data collection”, it stated activities at the time of infection. Please define the time of infection. For example, ? time before the day of onset.
4. (Page 9 Lines 1-2) In Statistical analyses, it stated that Statistical analyses were performed using Chi-square test (or Fisher’s exact test) for categorical percentages. However only Chi-square tests were mentioned in text or tables. Specify where Fisher’s exact test was used or delete. Additionally, change categorical percentages to categorical data.

Results
5. (Page 10 Line 2) The cases occurred exclusively every year between 11-20 September to 1-10, December changed to between…. and or from …..to.
6. (Page 12 line 4, 23-25, 27 ) All x2 change to its correct symbol
7. (Page 23-25) The results of statistical test were stated in the footnotes of Table 2, 3, and 4, but did not mention in the text. Please explain these test results in the text.
8. (Page 27) In Table 6, only P values were stated, please add what statistical test was used.

Discussion
9. (Page 15 Lines 13-14) In our study, 88.5% of cases had eschars. Still, this is higher than the usually reported figure (?). Please specify the reported figure.

References
10. (Pages 18-21) The format in References was not consistent for each reference and do not followed the format of BMC infectious diseases. For example, reference 9, 10, 11, 13, 16, and 17 used the full names of the authors (reference 9: Huang Yong, Jiang You-Hai). Please double check the format used in the references.

Level of interest: An article of importance in its field

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