Reviewer's report

Title: Epidemiology and clinical presentation of the four human parainfluenza virus types

Version: 2 Date: 7 October 2012

Reviewer: Robin Brittain-Long

Reviewer's report:

The manuscript has improved following initial revision. Several issues pertaining to the methodology has been clarified, although some still remains to be elucidated. My main concern remains in the conclusions drawn from the analysis of clinical manifestations, and the methods used to achieve this analysis.

Major Compulsory Revisions

1a. Please clarify the retrospective study design in the MS. A suggestion would be to include in the third paragraph, Methods section: "Clinical presentations were collected and categorized RETROSPECTIVELY into the following six groups from the patients’ medical records using designed presentation cards..."

1b. The reason for excluding some patients (n=308) is not clarified in the MS. Please amend.

1c. OK

1d. OK

1e. OK

1f. OK (see suggestion in 1a)

1g and 2. Please clarify definitions used for the various diagnosis (and clinical syndromes) more clearly in the MS. This is still not clear. What is for example the definition of pneumonia in this study, and how does it differ from bronchopneumonia? Please state if only one symptom is required for a patient to be designated into either of URTI, LRTI, Influenza-like illness etc? This distinction is important since the authors conclude (Discussion; paragraph 5) that "...LRTI was the significant presentation of HPIV-positive patients...". This would be a controversial finding since previous studies support that the vast majority of HPIV infections are URTI and not LRTI. I suspect that patients on retrospective analysis may have been classified wrongly into the LRTI group, but if this is not the case then this interesting finding should be elaborated on. I also struggle to find the data in the tables or in the MS to support this claim in the discussion (!)

If the analysis and findings of clinical manifestations are to remain in its current format then I would at least suggest clarifying the limitations of the study. Enclosed should be that the HPIV-negative group is potentially very
heterogenous, that analysis for respiratory bacteria are lacking in both groups and that little is known of co-existing illnesses etc from both groups.

Minor essential revisions:

1. OK

2. Please present median age instead of mean, and interquartile range instead of standard deviation

3. OK

4. OK. Please add bacteria as well "...Not only HPIV, but also respiratory pathogens untested in this study (e.g. human rhinovirus and common bacterial pathogens) can cause..."

5. OK

6. See Major compulsory revision, 1g and 2 above. Please also change the last sentence of the last paragraph. It is not grammatically correct. Please explain what is meant by "...therapeutic clue...".

7. OK

8. OK

9. OK

10. OK.

11. OK

12. OK

13. OK, see comment 1g and 2 under Major Compulsory Revisions

Further minor essential revisions:

- Table 2. Explanation below table. " * Data are No..... .... some patients had more than xxx diagnosis." I presume the word ONE is missing

- Results; 4th paragraph. First sentence, beginning with "Sixty-six.... " does not make sense. Please amend.

- Discussion, paragraph 5, last sentence, beginning with "This result suggests..." Please rephrase. A suggestion could be writing ...may differ by patient age as previously shown for HBoV {19}.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published
**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