Reviewer's report

Title: Cardiopulmonary involvement in Puumala hantavirus infection

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Reviewer: Per Wollmer

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This manuscript reports measurements of pulmonary and cardiac function in subjects infected with Puumala hantavirus. Quite comprehensive measurements have been made in a reasonable number of subjects. Even if the information is not entirely new, the wide range of variables studied in the same group of subjects is of interest. There are, however, a number of problems with the manuscript in its present form.

Major compulsory revisions

1. The authors report symptoms, blood biomarkers, lung function tests, echocardiography and computed tomography in the manuscript. A lot of information needed to appreciate the results is missing. Assessment of symptoms is not described at all. In a prospective study, one would expect standardised questionnaires to be used. Subjects are grouped as having or not having “impaired condition” at follow-up. What does this mean? Subjects are also grouped according to needing or not needing oxygen therapy. We are not told what indications were used for oxygen therapy. Oxygen saturation on breathing air is reported to be 92-96 %, figures hardly making oxygen therapy necessary. “Respiratory tract symptoms” are reported to occur in 67 % of the subjects. What were the specific symptoms and how were they assessed? Lung function is said to have been measured according to “clinical praxis”. What does that mean? Were current guidelines followed or not? Similarly, blood biomarkers are said to have been measured according to “hospital routine”. What does this mean?

2. The authors draw very far-reaching conclusions from their echocardiography studies. Pulmonary vascular resistance is estimated by echocardiographic estimation of pulmonary arterial pressure and cardiac output together with a mere assumption of a left atrial pressure of 10 mmHg. I am not sure this assumption is necessarily valid in subjects with abnormal left ventricular function and pulmonary oedema detected by computed tomography. Considering the uncertainties involved, I find the conclusions overstated.

3. The discussion is far too long and very speculative.

4. Lung function variables are not abbreviated according to current standards. Please supply a reference to the predicted values.

Level of interest: An article whose findings are important to those with closely related research interests
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.