Reviewer's report

Title: Cardiopulmonary involvement in Puumala hantavirus infection

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Reviewer: Greg Mertz

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The authors report the results of a prospective study of cardiopulmonary manifestations of Puumala hantavirus (PUUV) infections in 27 hospitalized patients who were evaluated with pulmonary function tests, high resolution chest CT HRCT, echocardiography and measurements of cardiac biomarkers (NT-ProBNP and troponin T) during hospitalization and at follow up at 3 months. Age- and sex-matched control volunteers acted as controls for echocardiography data. Significant findings included respiratory symptoms in 2/3 of patients, impaired diffusion capacity in most patients with correlation of persistent diffusion capacity at follow up with persistent complaints at follow up, and increased NT-ProBNP concentrations, and pleural effusions or pulmonary edema in almost half. Compared to controls, echocardiography data revealed increased pulmonary vascular resistance and pulmonary artery pressure, lower LVEF and impaired left atrial myocardial motion.

The methods and study design are appropriate and clearly described, the results are clearly described and appropriate, and the figure and tables are clear and appropriate. The thoughtful discussion is clearly written, and appropriate, relevant references are included. There are minor limitations that are described clearly. Although invasive monitoring using a pulmonary artery catheter would have allowed more accurate data on cardiopulmonary function and would have allowed more direct comparison with the data from patients with hantavirus cardiopulmonary syndrome (see Hallin et. al, reference 5), invasive monitoring with a pulmonary artery catheter would rarely be clinically justified in patients with PUUV infection.

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.