Reviewer's report

Title: Reduced rhinovirus-specific antibodies are associated with acute exacerbations of chronic obstructive pulmonary disease requiring hospitalisation

Version: 1 Date: 4 April 2012

Reviewer: Umadevi Sajjan

Reviewer's report:

General Comments: This is an interesting clinical study, in which authors examine the hypothesis that those COPD patients with a relatively lower circulating antibodies at baseline for specific viral and bacterial pathogens are at higher risk for COPD exacerbations. To test this hypothesis, authors recruited patients who are clinically stable and another cohort who experiences one or more exacerbations per year and determined the antibody levels for rhinovirus VP1 capsid protein, H. influenzae outer membrane protein, P6 and pneumococcal surface protein C. Out of three antibodies examined only antibodies to VP1 was significantly different between stable COPD and exacerbation-prone COPD groups. However the difference was # 0.5 logs. Similarly, there was also a small difference in IL-21, which is important for B cell development between two COPD groups.

Major comments
1. The antibody concentration may change significantly even with non-symptomatic infections. Have authors considered this scenario? This should be at least discussed.

2. The difference in VP1 antibody appears to be due to one patient who show antibodies below the detection limit, and who also happen to have 7 exacerbation in one year. If this one anomalous data point is excluded from the study would the difference still be significant between the two groups? Although authors briefly mention this in result section, does not discuss this anomaly.

3. There was also one patient who had high rhinovirus antibody titer, yet had 5 exacerbations. This is neither mentioned nor addressed in the discussion.

3. Minor Comments
1. Numbers in Y-axis in the figures are too small and are difficult to read. Please increase the font size.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.
Declaration of competing interests:

'I declare that I have no competing interests