Reviewer's report

Title: Moraxella catarrhalis acquisition, airway inflammation and protease-antiprotease balance in chronic obstructive pulmonary disease

Version: 1 Date: 30 June 2009

Reviewer: Nestor Soler

Reviewer's report:

In the present study, Parameswaran and colleagues have performed a prospective study to determine the effects of acquisition of a new strain of pathogenic bacteria -M. catarrhalis- in COPD patients on the airway inflammatory pattern. During 1994-2000 period, 50 patients acquired a new strain of M. catarrhalis (120 acquisitions). The authors analyze changes in protease-antiprotease balance in bacterial colonization as well as exacerbation. Seventy-six acquisition samples (34 associated with exacerbation, 42 with colonization), with available pre-acquisition samples, were included and analyzed for IL-8, TNF-alpha, alastase and secretory leukoproteinase inhibitor (SLPI). All changes were compared in paired samples from each patient. Specifically, they reported that IL-8, TNF-alpha and elastase were significantly increased after acquisition of M. catarrhalis in colonization and exacerbation. In contrast, SLPI was significantly lower after acquisition. They suggest that acquisition of M. catarrhalis in COPD increased airway inflammation. The worsening of the protease-antiprotease imbalance could contribute to progression of airway disease. The study is scientifically accurate, show original findings and its contents are complete and appropriate. However, there are concerns that require further clarification.

1. Discretionary revisions

The major concern about this manuscript is the reability of sputum cultures in clinically stable. The authors have to provide data about the quality of the samples and the number of them that could not be obtained. I understand, that only 76 pre-acquisition samples were used for a total of 120 new acquisitions. With respect of bacteriological data, how authors can explain the differences between acquisition samples in episodes of exacerbation versus colonization during clinical stable period?. Would have been convenient that the authours clarify this point and the results should be better structured.

In summary, I have 3 minor problems:

1-Is sputum culture a reliable, reproducible, and comparable respiratory sample for this type of study? Authors have to give convincing reasons about this point.

2-The study have a limitations to reach his major conclusion:

- The absence of cellular inflammation (sputum neutrophilia and eosinophilia)in
respiratory samples.
- The lack of information of inflammation charge and severity of airway obstruction.
- The investigation of a single pathogen species clearly limit to generalize the results.

3. The information reported by the authors does not permit conclude that the protease-antiprotease imbalance could contribute to progression of airway disease in COPD.

**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 in relation to the paper.