Reviewer's report

Title: Non-emphysematous chronic obstructive pulmonary disease is associated with diabetes mellitus

Version: 2 Date: 24 July 2014

Reviewer: Philip Diaz

Reviewer's report:

General Comments

The study of Hersh and colleagues utilizes quantitative high resolution chest CT (HRCT) to describe an association between non-emphysematous COPD and both diabetes as well as metabolic syndrome. The study has a number of strengths. The study is well written, the research question is appropriately defined, the data appear sound and the methods and results are clearly presented. The study includes a large cohort of COPD subjects who have been carefully characterized by HRCT and have extensive clinical data available. Another important strength is validation of the study results by using the ECLIPSE database, which supports the relationship between non-emphysematous COPD and diabetes. While the clinical implications are somewhat overstated in the manuscript, the study advances our understanding of COPD as well as the relevance (and lack of relevance) of various COPD phenotypes. The results suggest the possibility that smokers predisposed to develop non-emphysematous airways disease may have shared pathogenesis with certain diseases linked to systemic inflammation.

Discretionary Revisions

In the current study, the authors infer the presence of airways disease in the non-emphysematous COPD group by the presence of air-flow obstruction combined with a paucity of low attenuation lung voxels. In a previous smaller study, this group incorporated direct airway measurements to describe COPD subjects with predominant airways disease and found a relationship between airways disease and the presence of diabetes (Han, reference 33). It would be interesting to include an analysis in this larger study utilizing CT assessment of the airways to phenotype subjects. Such an analysis would more directly investigate the relationship between diabetes and metabolic syndrome and airways disease.

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