Reviewer's report

Title: Determinants of high-sensitivity cardiac troponin T during acute exacerbation of chronic obstructive pulmonary disease: a prospective cohort study

Version: 1 Date: 20 November 2011

Reviewer: Konstantinos Kostikas

Reviewer's report:

The study by Hoiseth et al has evaluated the possible determinants of high-sensitivity cardiac troponin T (hs-cTnT) during acute exacerbations of COPD (AECOPD). The authors have used sophisticated statistical analysis in a prospective cohort of patients admitted for AECOPD in a single hospital. The study is interesting and relatively novel (despite the fact that the same authors have evaluated the same outcome in a previous cross-sectional study). Overall, however, the study is too complicated for the practicing clinician that it is primarily addressed to. My specific comments are the following:

The fact that the authors have evaluated only the determinants of hs-cTnT without evaluating its prognostic value reduces the clinical impact of a prospective cohort study. One would expect from such a study design to evaluate clinically important outcomes (e.g. outcomes of AECOPD, survival, future AECOPD etc.)

The longitudinal design of the study includes patients with one and several AECOPD in the same analysis. Patients with several admissions for AECOPD represent a significant bias in such an analysis. The authors have attempted to overcome this by using LMMs, but the bias is still present, since we are talking about multiple inclusions of the same patients. The evaluation of repeatability and reproducibility of hs-cTnT on two consecutive AECOPD would be important information to include in the analysis.

Disease severity based on the spirometry data presented in the Methods section is unacceptable. The authors state that "Spirometry during stable phase, preferably post bronchodilatation measurements taken prior to inclusion, was recorded when available." Post-bronchodilator spirometry data would be required and disease severity according to FEV1 might be an important determinant of hs-cTnT that is not properly evaluated in this study.

A lot of information presented in the Results section would rather be presented in the Methods section (e.g. hs-cTnT values assigned to patients with levels below the detection limit, outliers, methods for GFR etc.)

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