Reviewer’s report

Title: High hemoglobin is associated with increased in-hospital death in patients with chronic obstructive pulmonary disease and chronic kidney disease: A retrospective multicenter population-based study

Version: 0 Date: 20 Mar 2019

Reviewer: Spyridon Fortis

Reviewer's report:

This study/manuscript examined the association of Hg levels with mortality in COPD patients with CKD and no-CKD. My main concern is why hospital mortality was chosen as the main outcome. Authors need to explain that. The manuscript will benefit from English language editing.

Major comments:

Introduction

- There are studies have shown that polycythemia is a poor prognostic factor. Those need to be discussed in the introduction (e.g. PMID:16162707). Regardless that, the introduction does not give a clear message. I would write that the studies examined association of Hg and mortality in COPD showed conflicting results. We wanted to examine the association of Hg and mortality in COPD. However, Hg can be affected by CKD, which is common, and Hg can also affect mortality in CKD. therefore we examined separately the association of Hg with mortality in non-CKD and CKD patients.

There are also contradictory statements: page 4 line 83 "Hemoglobin (Hb) abnormalities including anemia and polycythemia are common in the COPD population" and then at line 87 "However, the prevalence of comorbid polycythemia is low, which contributes to the widespread prescription of long-term oxygen therapy". I think that the authors meant to write that recent studies have shown that polycythemia prevalence rates are lower compared to those in earlier studies likely due to widespread oxygen use.

- Page 4 line 97"In contrast to COPD, a high Hb concentration is an adverse factor in several chronic conditions, one of which is chronic kidney disease (CKD)" needs to be rephrased.

- Last paragraph in the introduction needs to include clear objectives and should be rewritten
Methods
- Did the study include only COPD patients hospitalized for AKI (this was an AKI registry)? That needs to be clarified.
- What missing in excluded subjects---> Hg, creatinine
- "Clinical index determination"---> should "Definitions and outcome". The whole paragraph need to be rewritten.
- "In-hospital death was defined as the adverse event"---> should be "In-hospital death was the main outcome"
- Authors do not need to explain why the stratified groups into those Hg strata. They can just mention those groups: Hg<9, Hg 9-10, etc based on clinical judgement and preliminary analysis

Results
- "The lowest death rate was among patients with Hb levels within the 15-16 g/dL interval at 0.5%, and the highest death rate was among those with Hb levels above 15-16 g/dL at 0.7%"---> ?
- "However, in the CKD group, the death rate showed a typical U-shaped distribution pattern with increases in Hb"---> should be "However, in the CKD group, the death rate showed a typical U-shaped distribution pattern with changes in Hb"
- Authors should report the number of subjects in each group/statum. It is possible that the higher mortality rate in Hg>17 is due to small sample size. They can add a table with n for each strata in the supplement and report that in the results as well.

Discussion
- Another limitation of the study is that more than 50% of participants were excluded

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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