Reviewer’s report

Title: Risk of Acute Exacerbations in Chronic Obstructive Pulmonary Disease Associated with Biomass Smoke Compared with Tobacco Smoke

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Reviewer: Carlos Ramos

Reviewer's report:

COMMENTS TO THE EDITOR and AUTHORS

Manuscript
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Title

Risk of Acute Exacerbations in Chronic Obstructive Pulmonary Disease Associated with Biomass Smoke

MAJOR COMMENTS

Authors present the manuscript ´Risk of Acute Exacerbations in Chronic Obstructive Pulmonary Disease Associated with Biomass Smoke´, which shown evidences that patients with COPD caused by biomass smoke have not difference with those with COPD caused by tobacco smoking in the risk of suffer exacerbations, independently of the gender, the age and the characteristics of the exposure to biomass smoke or tobacco smoking, suggesting that patients with COPD caused by biomass smoke should be treated actively.

The manuscript is clear and easily understandable, showing an interesting and novelty in the COPD pathophysiology study; however there are some aspect, especially in the purity and homogeneity of the grouping that seems difficult the statistical analysis; which I indicate right away:

About the title:

1. The title: ´Risk of Acute Exacerbations in Chronic Obstructive Pulmonary Disease Associated with Biomass Smoke´ As a suggestion the tittle maybe would include the term ´compared with tobacco smoking´
2. In introduction section

Although the information content in the introduction is clear and enough to delimit the context of the manuscript; it is recommendable that authors propose a hypothesis to justify the analysis performed.

3. In Materials and methods section

The methods used are consistent with the study presented, however it is not clear the exclusion criteria used to stabled the four groups, but mainly characteristic of the Less Tobacco-Less Biomass group (n=107), about the origin of the COPD; although actually is it not really a good reference (maybe control group), because have history of exposure to tobacco and biomass as is establishes in table 2.

In any case authors included this group, and therefore authors must explain widely why use this group whose patients have history of exposure to biomass exposure and tobacco smoking, in place of use a group without history of exposition to tobacco or biomass smoke; and also must define what is the cause of the COPD in this group.

4. In results section

Newly the Less Tobacco-Less Biomass group (n=107), seems result controversial, because include 32 former smokers and 5 current smokers, with an index of tobacco smoke in pack-years of 1.7 ± 2.9; and additionally a history of biomass smoke exposure of 8.9 ± 7.9 years. In this way, if this is the reference group, their subjects should not have a history of either tobacco or biomass smoke at any time in their lives, and if their COPD were from a source other than biomass smoke or tobacco smoke, it would have to be explained; maybe it was COPD by genetic origin, but it is not indicated. Therefore within the context of the results of this study, the Less-tobacco less-biomass group should include perhaps only subjects who are never exposed to tobacco or biomass smoke, but with COPD.

The questions here is:

What are the exclusion criteria to establish each group?

Authors must explain it widely in the method section.

5. It is not clear why include in the four study groups subjects with history of biomass smoke exposure and also with tobacco smoking history; maybe the groups must be more pure about the
population included; because there are several variables that seems difficult the statistical analysis; this is maybe include in the Less Tobacco-Less Biomass (n = 107) only subjects non exposed to tobacco or biomass smoke; Less Tobacco-More Biomass (n = 40) include only subjects exposed to biomass smoke; in the group More Tobacco-Less Biomass (n = 631), considerate only smokers; and in the group More Tobacco-More Biomass (n = 255) include subjects exposed to biomass and tobacco smoke. Also the four groups included former or current smokers; which affect the purity and homogeneity in the study groups.

The question is here, as a suggestion, whether it is possible, depending the study population:

What difference should be in the analysis if only were included only the subjects never-smoker and never-exposed to biomass smoke in the group Less Tobacco-Less Biomass; subjects never-smoker but exposed to biomass smoke in the Less Tobacco-More Biomass; smokers never-exposed to biomass smoke in the group More Tobacco-Less Biomass, and; smokers and exposed to biomass smoke in the group Tobacco-More Biomass?

6. It is not well establish why the four study include history of exposure to biomass smoke in years: Less Tobacco-Less Biomass 8.9 ± 7.9; Less Tobacco-More Biomass 35.5 ± 8.3; More Tobacco-Less Biomass 5.9 ± 7.5, and; More Tobacco-More Biomass 37.9 ± 11.2 (<0.001). Author must explain widely why perform the grouping in this way?, especially because this fact seems difficult the statistical analysis

6. It is not clear why separate the age limit of 60 years when the standard deviation of the age is near to 10 %. Authors must explain why the limit was established, which seems not be statistically necessary, especially in the group Less Tobacco-More Biomass (n = 40).

7. In the four study groups subjects with history of biomass smoke exposure and also with tobacco smoking history; maybe the groups must be more pure about the population included; because there are several variables that seems difficult the statistical analysis; this is maybe include in the Less Tobacco-Less Biomass (n = 107) only subjects non exposed to tobacco or biomass smoke; Less Tobacco-More Biomass (n = 40) include only subjects exposed to biomass smoke; in the group More Tobacco-Less Biomass (n = 631), considerate only smokers; and in the group More Tobacco-More Biomass (n = 255) include subjects exposed to biomass and tobacco smoke.

8. As a suggestion; authors must discuss their results taking in consideration the two different phenotypes of COPD; by biomass smoke exposure damaging preferment airway than lung parenchyma, and COPD by tobacco smoking affecting mainly lung parenchyma than airways; also that the biomass smoke exposure women, and that women are more susceptible to develop damage to men to tobacco smoking and biomass smoke exposure.
9.

Given the differences between parameters such as age, Post-bronchodilator FVC% and FEV1/FVC%, BMI, blood eosinophils, the authors should discuss which are the possible population, genetic, epigenetic, biochemical and physiological causes related to the different conditions in the quality and duration of exposures to tobacco smoke and biomass, which factors are responsible for the presence of COPD, and the fact of the absence in the frequency of exacerbations between groups.

MINOR COMMENTS

10.
In Table 2 t is not indicated between what of the groups are the statistical P<

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

Yes

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

No

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 recommend additional statistical review

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