Reviewer’s report

Title: Annual decline in forced expiratory volume and airway inflammatory cells and mediators in a general population-based sample

Version: 1 Date: 18 Jul 2018

Reviewer: Wassim Labaki

Reviewer's report:

I appreciate the author's work on a revised manuscript and thank them for their replies to my comments. However, I still have some concerns that I recommend addressing prior to potential publication.

- I again think that a multivariable model including confounders that could affect the association between cell counts and FEV1 decline should be included in the manuscript. It is fine (even desired) to show the univariate analyses, but it is equally important to determine what happens to the association after accounting for basic confounders. It looks like the author did build a multivariable model based on their reply to my comment. However, I did not see it included in the manuscript. Instead, on page 19, line 20, it is mentioned that "the data did not allow for multivariate analyses." This is confusing and should be clarified as the raw data should be available to conduct such analyses.

- I am still not sure about the ACO terminology the way it is used in the manuscript. Although a positive spirometric reversibility test is a common feature of ACO, some smokers with and without COPD may show reversibility and still not have asthma.

- Minor typo in Table 1: The percentage of never smokers in the no follow-up visit should be 48%, not 52%.

- For Table 2, the authors stated in their reply to my comment that they used log-transformed blood counts in a one-way ANOVA test. I recommend they explicitly mention in the manuscript that blood counts were log-transformed and that all other data was normally distributed so the reader does not question their use of an ANOVA test (especially given the overall small sample size).

- Typos in Table 2: a) The percentage of males should be 47% (not 45%) in the < 25 ml/yr group and should be 50% (not 53%) in the 25-38 group. b) The percentages displayed between parentheses next to actual counts in the "Smoking History" section of the table are calculated based on row% whereas the rest of the table show column%; this should be fixed for consistency. c) For monocytes, the values for each group are 0.4, 0.4 and 0 respectively.
Therefore, it would be expected to be between 0 and 0.4 for the entire cohort, but it is being shown as being 0.4 in the table (unless this is due to rounding). d) The standard deviation for macrophages in the entire group is shown as 1 in the table, which seems to be too low given that standard deviations for each of the subgroups were 20, 18 and 12, respectively. Please clarify.

- Typo in Table 3: The number of individuals in each subgroup is shown as 20, 19 and 23, respectively, whereas it was 19, 20 and 23, respectively, in Table 2.

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If not, please specify what is required in your comments to the authors.

No

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Yes

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