Reviewer's report

Title: Inflammation and corticosteroid responsiveness in ex-, current- and never-smoking asthmatics

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Reviewer: Charles McSharry

Reviewer's report:


This is a useful report describing the relationship of smoking to blood and sputum biomarkers in adult atopic asthma patients. The authors are appropriate well-respected clinical researchers in this field.

Novelty: several reports already describe the beneficial short-term steroid response in non-smokers with asthma compared with smokers. The long term effects are less well reported (although their reference 21 describes this substantially) and this paper addresses this aspect as well as ex-smokers.

1. Is the question posed by the authors well defined? Their question in not particularly precisely define. It seems descriptive so the answer is equally descriptive
2. Are the methods appropriate and well described? Yes
3. Are the data sound? Yes
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes
5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes
6. Are limitations of the work clearly stated? Yes
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes – mostly published
8. Do the title and abstract accurately convey what has been found? Title broadly descriptive, and abstract conclusion could be more focussed.
9. Is the writing acceptable? Yes

Minor essential revisions and Discretionary revisions are recommended.

The manuscript would be improved with greater clarity:

The main message of the manuscript is not precisely clear. The abstract conclusion appears non-committal about whether 1-year steroids improve asthma equally in smokers, and the ‘Conclusion’ section concentrates on the
suggestion that the steroid response is inflammation related rather than specifically smoking.

Points of clarity:
Abstract: In the methods: put the n= number in brackets corresponding to the 2-week and 1-year components. This will help recap when the study structure is eventually understood later. In the last sentence of Results it should state if ‘no differences’ related to cells and/or lung function.

Introductions: third paragraph, first sentence: one of the comparisons presumably was intended to mean ex-smokers.

Study design: can the ‘step-down’ aspect be removed. If these patients are not studied at the latter stage then mentioning this creates unnecessary confusion.

Methods section: can you briefly explain ‘b’ for Table 2. Most readers are likely to better understand r (rho) correlation coefficient.

For all table, it’s clearer to use a comma instead of a hyphen when describing a range thus avoiding confusion with the minus sign.

Table 1: could the steroid doses be additionally as beclometasone-equivalent on another line for easier comparison.

Table 1: Can the authors comment on the surprising finding that the FeNO at baseline was no different between the smoking groups, which is inconsistent with most literature.

The legend for Figure 2 could provide more information in particular to explain how the magnitude of the response was calculated. The authors could comment on whether the findings by others reporting improvement only among non-smokers might be interpreted differently if the magnitude of the response was used.

Could the authors add a comment in discussion on whether there was an effect of asthma severity in their analysis and if there was any attempt to monitor steroid compliance over the year.

**Level of interest:** An article of importance in its field

**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'