Reviewer’s report

Title: Occupational exposures, smoking and airway inflammation in refractory asthma

Version: 2
Date: 3 November 2014

Reviewer: Sebastian Johnston

Reviewer’s report:

Minor Essential Revisions
This is an interesting manuscript describing a study of 66 participants with refractory asthma and the relationships between occupational exposures, smoking and airway inflammation. The authors conclude that sputum neutrophils are elevated in refractory asthma when subjects are exposed to occupational asthmagens. The work is interesting. I have the following comments for revision:

1) Abstract line 21: I suggest “ex/passive smoking” rather than just passive smoking here.

2) Abstract line 28: you state “exposure to active and passive cigarette smoke was determined by questionnaire” however I believe active smoking was an exclusion criterion; please clarify.

3) Abstract line 37 to 38: the phrase “who were with asthma younger than 30 years of age” does not make sense to me; please clarify.

4) Abstract line 41: I suggest delete “be a key” and just say “exposure may contribute to the presence of neutrophilic asthma.” And then in the next sentence: “This may in part explain” or “may help explain” as it is unlikely to be a complete explanation.

5) Page 5 line 103: please explain how “50 macrophages were randomly selected”.

6) Page 7 line 152: poorly controlled asthma is normally defined as an ACQ score of #1.5, please clarify whether this was an ACQ or a different asthma controlled questionnaire. If it is a different one please provide a reference justifying the classification of poor asthma control as having a score of >1

7) Page 7 line 158 to 160: Please indicate were this data is to be found.

8) Page 7 line 170: 45% of what?

9) Page 8 line 188 to 193: in this paragraph you state “data not shown” twice, please do show the data as this is an important analysis since both age and occupational exposure were related to neutrophil presence. Please justify in greater detail your conclusion that it is occupational exposure rather than age that is the important relationship. Does your multiple logistic regression analysis
have sufficient power/robustness to conclude as boldly as you do that it is exposures rather than age that is important?

10) Page 12 line 292 to 294: Please provide a reference for the recommendation by Papadopoulos and please rephrase “stands out as widely required” as this is unclear to me.

No further comments.

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

**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