Reviewer's report

Title: Lung inflammation in healthy and asthmatic children in a contaminated city.

Version: Date: 14 May 2014

Reviewer: Joerg Mattes

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Major compulsory revisions

1) The novelty of the findings is significantly compromised by ref 18 and 19 but the authors argue that their study shows data from children living in an area with high ambient air pollution. To elucidate the modulatory effect of air pollution on an inflammatory marker in EBC then appears to be the primary aim of this study. However this is not really addressed. Therefore, the association between exposure to air pollution (e.g. average/peak 24hr/3d/1 week prior to measurement) and the inflammatory EBC marker needs to be determined.

2) Related to 1) were is the evidence to suggest that exposure to ambient air pollution was higher in this cohort as compared to ref 18 and 19? What exactly was the difference? It appears an unsubstantiated suggestion that the main reason for differences in EBC markers would be differences in air pollution levels.

3) Define "normal" and "abnormal" as well as "mixed", "obstructive" etc spirometry

4) Which reference value equations were used? GLI equations are recommended

5) provide p-values with OR and 95%-CI

6) Fig 1 was does "A" and "S" mean? add to legend

7) "FEV1%/FVC" do the authors mean "FEV1/FVC %”?

8) There is no difference in FEV1/FVC% between asthma and non-asthma, yet asthmatics seem to have more an obstructive pattern. This is counterintuitive and requires discussion as well as see 3)

9) the sentence in the discussion starting with "So it seems......" is unclear, please rephrase

10) Re power calculation, the difference that can be detected is often expressed as difference in STD, can the authors provide this information in addition/rather than "10%" difference

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
None