Reviewer's report

Title: Exhaled nitric oxide and airway hyperresponsiveness in workers: a preliminary study in lifeguards

Version: 1 Date: 4 August 2009

Reviewer: Vicky C Moore

Reviewer's report:

- Major Compulsory Revisions

1. Methods paragraph 1: how was asthma diagnosed? - Physician diagnosis, from the questionnaire or other?

2. Methods FENO paragraph: what were the predicteds used? Travers discusses a mean level for asthmatics of 25.0ppb and for normals of 17.9ppb although the percent predicteds shown in this paper are not easily found to relate to these values.

3. Results: the number of asthmatics included in the study is not stated although in the methods it is written that asthmatics not in crisis without corticosteroids were included. This is important as in the discussion there is a comment about your population not being asthmatic when discussing the AHR.

4. Results in general: actual p values should be shown.

5. Atopy, smoking and FEV1 should be adjusted for to see if FENO and AHR are still related rather than the other way round. It is useful to see if these confounders have an effect on AHR separately though too.

6. Discussion: the low specificity of using a 70% predicted cut off should be discussed and the relevance of the sensitivity and specificity using a 70% predicted cut off.

7. Conclusion: The statement that “using a less than optimal cut off point for abnormal FENO we showed that high FENO values are associated with AHR while low FENO values tended to be associated with normal airway hyperresponsiveness” is not strictly true using the 70% predicted cut off. The latter is correct, but #70% predicted FENO picked out almost as many MBC-subjects as MBC+.

- Minor Essential Revisions

1. Methods, pulmonary function and airway hyper responsiveness paragraph: an “m” is missing from 3µm.

2. Was it the 2-min tidal breathing method used for the methacholine challenge?
The concentrations are slightly unusual. Has this technique been written up separately? The ATS guidelines paper uses different methacholine concentrations.

- Discretionary Revisions

1. figure 2: the data look very spread and the relationship minimal. What is it like as absolute FENO values?

2. Results Figures 1 and 2: although the percent predicted information is interesting, because there are such wide ranges in the Travers reference values, figures 1 and 2 would be better shown as absolute values.

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:

I declare that I have no competing interests