Reviewer's report

Title: Host and environmental predictors of exhaled breath temperature in the elderly

Version: 1 Date: 5 September 2013

Reviewer: Andreas Rembert Koczulla

Reviewer's report:

The authors Bijnens et al. describe in their manuscript titled “Host and environmental predictors of exhaled breath temperature of the elderly” the method of exhaled breath temperature as a promising method to detect and monitor pathological processes in the respiratory system. The need for non-invasive diagnostics is mandatory from my point of view but the manuscript raises some questions.

1. Is the question posed by the authors well defined? yes
2. Are the methods appropriate and well described? Some details are needed see comments
3. Are the data sound? See comments
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? Need some additional questions addressed see comments
6. Are limitations of the work clearly stated? Need some additional limitations addressed -see comments
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Nothing stated
8. Do the title and abstract accurately convey what has been found? yes
9. Is the writing acceptable? yes

Major revisions

1. What is the clinical goal of temperature sampling of the exhaled air- what would this technique ease in clinical set ups? Please comment.

2. Did you take the breath frequency? Does the breath pattern have an influence? Since you measured also asthmatics and COPD patients I would expect different breath patterns and frequencies.

3. What is the role of food intake, coffee, coke and other beverages-a poster in regard to exhaled breath temp. available at the www. describes a relevance – so
where the patients fasting?

(P3492-Effect of energy food intake on exhaled breath temperature in healthy Subjects, Tanya Kralirnarkova, Roxana Mincheva, Ryan Kadavil, Jasmine John-

http://www.xhalo.com/pdfs/Abstracts%20&%20Posters/Effect%20of%20energy%20food%20intake%20on%20EBT%20in%20healthy%20subjects.%20Eur%20Respir%20J%202012;%2040-Suppl.%2056,%20631s.pdf

4. Does the season make a difference? You describe quite stable conditions but ambient temperature was described as possible confounder. Please provide data about the study duration, start and end?

Minor revisions

1. Were all subjects measured at the same time- might the circadian rhythm have an influence on the breath temperature?

2. How would you judge the "self reported" exercises? Do you think is valuable in regard to your regression analysis?

3. Does the wind direction have a role in the residential traffic related pollution exposures? Did you measure the pollution or respirable dust which would make sense, if you write about the influence of residential traffic.

4. Please give explanations/hypothesis, why the exhaled temperature of women differs compared to man.

5. Since the blood flow in the lung is about 4-7l/min and the diffusion barrier is about extremely thin don’t you think the exhaled breath temperature also display systemic disorders?- Please comment

Kind regards

Rembert Koczulla

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

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests: no competing interests