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DOI: 10.1183/09031936.00032507

From the authors:

In the last few years, exhaled breath condensate (EBC) sampling has generated rapidly increasing interest, facilitated by the continuous international discussion of different methodological issues surrounding this sampling method under the framework of the European Respiratory Society/American Thoracic Society Task Force [1]. The measurement of different biomarkers has the potential to detect previously unseen processes of the airways, including airway acidification and its change with other disease markers [2, 3], the dynamics of mediator changes during exercise-induced bronchospasm [4] and others, but poses several methodological questions for even the most robust and easy-to-perform test in EBC, such as pH measurement. Our proposal for methodological standardisation of EBC pH measurement was rather simple: provide the EBC pH value at a fixed partial EBC carbon dioxide tension (PCO_2), in order to exclude the uncertainty deriving from differing CO_2 content. In our hands, this mode of standardisation was faster, cheaper and six times more precise than the determination of pH in argon-deaerated samples, although it required multiple measurements and the use of a blood-gas analyser instead of a pH meter [5].

We were eager to see, therefore, some comments on our approach. The letter of S. Dodig and co-workers, instead of commenting on our approach, shows an “original CO_2 saving” attempt by overlining EBC samples with argon. The problem with this approach is still the fact that during EBC sampling the PCO_2 content may change, so the saving attempt may only slow this process down. There are no data provided by S. Dodig and co-workers on the pH of raw EBC samples, so it is hard to evaluate the effect of argon overlining. Looking at the data provided (only the mean can be estimated from figure 1 in the letter of S. Dodig and co-workers), pH and PCO_2 values seem to be in the range of those in raw EBC samples [5, 6], so it is hard to appreciate that the method actually saved some CO_2 in the samples. At the same time, S. Dodig and co-workers demonstrated a lower degree of change by argon-deaeration

(instead of ~ 1 log order of change described by most groups, they found ~ 0.5 log order increase), which is probably the result of a higher end PCO_2 level in their samples after deaeration, compared with the results of others. Therefore, according to the observable data, we are even more convinced that to read EBC pH at fixed PCO_2 is a worthy approach that excludes the potential confounding effect of CO_2 . Of course, the reading of pH in native samples immediately after collection or after argon deaeration (even without PCO_2 measurement) may provide useful information, but when small changes are expected an improvement in reproducibility enhances our potential to determine those changes.

Therefore, work on any area of developing newer, more reproducible methods for exhaled breath condensate biomarkers are most welcome in the field, because they can help us to establish the real usefulness of this sampling technique.

I. Horvath

Institute of Human Physiology and Clinical Experimental Research, Semmelweis University, Budapest, Hungary.

STATEMENT OF INTEREST

None declared.

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DOI: 10.1183/09031936.00037007