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CORRESPONDENCE

Standardization of the measurement of transfer factor

To the Editor:

I have just received a copy of the European Respiratory Journal on Standardized Lung Function Testing [1]. I should like to challenge the statement that has been made on page 44 (3.1.3) relating to the transfer factor test, rebreathing method.

We published a paper in 1989, entitled Lung Function Testing and AIDS [2]. In this paper, which was not mentioned in your text, we described a carbon monoxide transfer capacity (TLCO) rebreathing method, which could be routinely used. Since we introduced this new technique in 1989, we have tested about 17,000 patients in our unit.

The rebreathing calculation is very straightforward and, as you can see from the paper, the regression equation enables the rebreathing result obtained to be amended to an equivalent single-breath value.

The other points that I should like to mention are that most of our patients, particularly the obstructed ones, find the rebreathing method easier to perform than the single-breath method. I think this is because they do not have to breathhold during the rebreathing manoeuvre.

The other advantage of using the rebreathing method is that you can test patients with vital capacities as low as 250 ml, whereas, with the single-breath technique the patient needs a considerably larger vital capacity to perform the manoeuvre. On the instrument that we use for single-breath testing, a vital capacity of at least 800 ml is required.

Finally, the major advantage of using the rebreathing method, is that it is a portable ultra-clean system, offering no risk of cross-contamination.

References

1. Cotes JE, Chinn DJ, Quanjer PhH, Roca J, Yernault J-C. – Standardization of the measurement of transfer factor (diffusing capacity). *Eur Respir J* 1993; 6 (Suppl. 16): 41–52.
2. Denison DM, Cramer DS, Hanson PJV. – Lung function testing and AIDS. *Respir Med* 1989; 83: 133–138.

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REPLY

From the authors:

We thank Dr. Cramer for drawing attention to a valuable publication [1] not cited in the standardization document. The paper summarizes the lack of evidence that human immunodeficiency virus (HIV) can be orally transmitted, but points out that some patients are apprehensive of cross-infection by lung function tests, and that, similarly, some respiratory technicians are cautious about conducting such tests on infected patients. Hygiene is indeed a matter of great concern, particularly in hospital dealing with immunocompromised patients. The quoted publication [1] also provides the valuable information that routine bacteriological examination of lung function equipment at the Brompton Hospital suggests that significant contamination by common organisms is rare.

A system is then described using either polyethylene or metal foil bags, which can be used for spirometry, measurement of transfer factor of the lung for carbon monoxide (TLCO) and total lung capacity (TLC) in a body plethysmograph. Spirometric measurements and those of TLC appear to be interchangeable with those obtained with conventional techniques: alveolar volume (VA), TLCO and the transfer coefficient (KCO) are systematically different from those obtained with recommended methods, but highly correlated to them. The paper by DENISON *et al.* [1] illustrates one method of minimizing the already remote risk of cross-infection *via* lung function equipment by using disposable bags. The provisions described are useful in testing patients with HIV infection or those at increased risk of infection due to a compromised immunological defence mechanism. However, the lack of evidence of cross-infection does not warrant the routine application of the preventive measures described by DENISON *et al.* [1] and the associated extra expenditure.

The described outfit with disposable bags does not at all preclude the use of well-established and standardized techniques of measuring VA, TLCO and KCO [2]. DENISON *et al.* [1] described a method of estimating VA from six forced rebreathings in a bag. The pitfalls of the forced rebreathing method are briefly discussed in the recommendations on measuring lung volumes [3], and in greater detail in references cited therein. From available evidence, eight breaths would be more appropriate in healthy subjects, but more breaths or a correction for uneven ventilation are required in the case of obstructive airways disease (see reference cited in [3]). It is probable that not everyone would agree on the clinical usefulness

of performing measurements of transfer factor in adults with a vital capacity as low as 250 ml.

Dr Cramer draws attention to a practical solution for minimizing the risk of contaminating lung function equipment; it can be applied without deviating from the recommended procedures [2, 3].

Cotes JE, Chinn DJ, Fabbri LE, Matthys H, Pedersen OF, Peslin R, Quanjer PhH, Roca J, Tameling GJ, Yernault J-C.

References

1. Denison DM, Cramer DS, Hanson PJV. – Lung function testing and AIDS. *Respir Med* 1989; 83: 133–138.
2. Cotes JE, Chinn DJ, Quanjer PhH, Roca J, Yernault J-C. – Standardization of the measurement of transfer factor (diffuse capacity). *Eur Respir J* 1993; 6 (Suppl. 16): 41–52.
3. Quanjer PhH, Tammeling GJ, Cotes JE, Pedersen OF, Peslin R, Yernault J-C. – Lung volumes and ventilatory flows. *Eur Respir J* 1993; 6 (Suppl. 16): 5–40.

AUTHOR CORRECTIONS

"Inhaled nedocromil sodium reduced histamine release from isolated large airway segments of asthmatic subjects *in vivo*". D.L. Maxwell, R.J. Hawksworth, T.H. Lee. *Eur Respir J* 1993; 6: 1145–1150.

The authors have requested an amendment to the Results section of their paper, the underlined numbers are the correct values.

Histamine release: The last sentence of 2nd paragraph should read: "The mean increase in histamine concentration associated with the hyperosmolar challenge was significantly greater on placebo day than on the day nedocromil sodium was given (mean±SEM change in histamine concentration on placebo day 18.4±6.2 nM; on the nedocromil sodium day 2.1±1.2 nM; $p<0.05$, Wilcoxon test), indicative of an inhibiting effect of the inhalation of nedocromil sodium".

PGD_2 release: The last two sentences of 2nd paragraph should read: "However, over all the subjects, the mean increase in PGD_2 concentration associated with the hyperosmolar challenge was not significantly greater on placebo day than on the day nedocromil sodium was given (mean±SEM change in PGD_2 concentration on placebo day 384±127 $pg \cdot ml^{-1}$; on the nedocromil sodium day 132±99.7 $pg \cdot ml^{-1}$, p=NS, Wilcoxon test).

CORRIGENDUM

Abstract No. 0632. "Upper airway inflammation and airway responsiveness in chronic sinusitis". Bucca *et al. Eur Respir J* 1993; 6 (Suppl. 17): 266s.

The underlined r values were incorrectly printed in the abstract book. The correct values are printed here.

"PC25MIF50 was closely related to $PC20FEV_1$ ($r=0.546$, $p<0.01$), to MB thickness ($r=0.604$, $p<0.01$) and inversely related to nerve fibres (r=0.427, $p<0.05$). $PC20FEV_1$ was closely related (r=0.449) to type of sinusitis (lowest threshold in pan-sinusitis), nerves ($r=0.761$, $p<0.001$) eosinophils ($r=0.42$, $p<0.01$) and to the sum of the scores ($r=0.518$, $p<0.01$).