

10 Olive JT Jr, Hyatt RE. Maximal expiratory flow and total respiratory resistance during induced bronchoconstriction in asthmatic subjects. *Am Rev Respir Dis* 1972; 106: 366–376.

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From the authors:

We would like to thank D. Stanescu for giving us the opportunity to clarify the definition of airflow obstruction recently given in the interpretative strategies document from the American Thoracic Society/European Respiratory Society (ERS) Task Force [1]. The document states that in most cases a ratio of forced expiratory volume in one second (FEV₁) to vital capacity (VC) below the lower limits of normality is the parameter that best and most frequently embodies the concept of airflow obstruction with few exceptions. However, in some cases, a low FEV₁ with a normal FEV₁/VC may also be consistent with an obstructive pattern if total lung capacity is normal. This pattern has been observed after exposing the airways to a constrictor agent [2, 3] or in natural respiratory diseases [4], reproduced in healthy subjects [5, 6], and has already been interpreted as consistent with airway narrowing in the 1993 ERS guidelines on lung function testing [7]. The fact that this may be caused by a patchy collapse of the small airways on early expiration or expiratory flow limitation that, in turn, would cause an increase in residual volume was suggested by OLIVE and HYATT [2] in 1972 and then by other investigators in the years that followed [3, 5, 6]. However, this hypothesis still needs confirmation, especially after the demonstration that even the large airways may close with induced bronchoconstriction [8], thus suggesting that the small airways are not the only ones that may contribute towards the generation of air trapping and an increase in residual volume.

As previously mentioned in an editorial [9], the recent papers by STANESCU and co-workers [10, 11] merely confirm once again that this pattern exists and must be correctly identified in our daily clinical practice. Yet, neither of the papers bring any evidence that small airways closure is the underlying mechanism, as claimed by the author, thus leaving the field open to further evidence or alternative hypotheses [12]. If we accept that closure or extreme flow limitation are the probable mechanisms for the decrease in forced expiratory volume in one second with normal forced expiratory volume in one second/vital capacity ratio and total lung capacity, then we should also accept that they are the extreme forms of airway narrowing. In this sense, this pattern should be interpreted as obstructive in nature until disproved.

R. Pellegrino*, V. Brusasco[#], R.O. Crapo[†] and G. Viegi[‡]

*Azienda Ospedaliera S. Croce e Carle, Cuneo, [#]University of Genoa, Genova, and [†]CNR Institute of Clinical Physiology, Pisa, Italy. [‡]LDS Hospital, Salt Lake City, UT, USA.

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Inhaler technique blind spot

To the Editors:

The paper by LAFOREST *et al.* [1] in a recent issue of the *European Respiratory Journal* is an important reminder of the poor overall management of patients with asthma. A large number of

French patients were studied, but one can assume that similar results would have been found in any country in Europe. The message that this paper clearly sends to all concerned with the management of asthma is that patients under the supervision of specialists do better than those under the care of general

practitioners. The main conclusion reached by LAFOREST *et al.* [1] appears to be that there is a need to improve the management of asthma in primary care. However, only 52% of the patients looked after by specialists were properly controlled in the previous 4-week period compared with 26.4% in the general practitioner group. Surely it would be complacent to accept that there is not considerable room for improvement in the management of asthma generally, and not just in those supervised in general practice?

In such a comprehensive review of asthma management, why was there no mention whatsoever of inhaler technique? This is not the first important contribution to the literature on management of asthma in Europe that has completely ignored inhaler misuse as a potential major cause of lack of disease control [2].

Many healthcare professionals involved in the management of patients with asthma and chronic obstructive pulmonary disease appear to have a blind spot as far as inhaler use is concerned, which I find very difficult to understand. There is now evidence that poor inhaler technique is associated with poor asthma control [3–5]. Problems with inefficient use of the pressurised metered-dose inhaler were reported as long ago as 1976 [6, 7]. More recently, COCHRANE *et al.* [8] summarised all papers describing inhaler technique and concluded that the frequency of efficient inhalation technique ranged 46–59%. It would, therefore, seem appropriate for all assessments of asthma management and control to at least include a mention of inhalation technique in the patients studied. Sadly, this is not the case and I cannot understand the reasons behind this important omission. An assessment of inhalation technique in Europe will soon be published [9], and I can only hope that this will result in clinicians and all healthcare workers concerned with the management of asthma becoming more aware of this major problem, which, in my view, may be the most important cause of poor asthma symptom control in Europe today.

G.K. Crompton

14 Midmar Drive, Edinburgh, EH10 6BU, UK.

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From the authors:

We would like to respond to G.K. Crompton's excellent remarks.

First, indeed, although the quality of asthma care was better in patients supervised by specialists, it was far from being optimal. This point was mentioned in the discussion of our article: "Though improved outcomes were observed regarding asthma management in patients exclusively supervised by specialists, asthma control and patients' quality of life could also be improved in this group." [1].

Secondly, we also agree that the quality of use of inhaler devices by patients is a major determinant of asthma control. Unfortunately, for practical reasons, we could not study this issue in our survey. Indeed, studying patients' ability to use their inhaled devices would have required, for example, having dummy devices for each inhaled controller therapy and providing pharmacies with sufficient numbers of these devices, besides active training in the use of devices, which was beyond the objective of the study. Also, to our knowledge, our effort was a "première" in France owing to its active involvement of community pharmacists in the assessment of quality of care. Additional questions of interest, such as the use of inhalers, will be performed in a later phase.

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E. Van Ganse and L. Laforest

Unit of Pharmacoepidemiology, CHU Lyon Sud, Pierre-Benite, France.

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