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Criteria for Bronchodilator Response

To the Editor:

I read with interest the recent article by Newton et al (April 2002).1 In their “Material and Methods” section, it was not clear to me whether the authors determined the significance of the FVC response to bronchodilator according to the guidelines of the Intermountain Thoracic Society2 (which requires that the forced expiratory time [FET100%] not increase by >10%), or those of the American Thoracic Society3 (which do not set a specific FET100% criterion). In any case, there is no mention of what happened to the FET100% in responders and nonresponders, or among the former, in the flow responders vs the volume responders. It may be that a postbronchodilator increase was seen in residual volume. Dr. de la Hoz specifically focuses on one specific aspect of volume improvement, namely, that in FVC.

Regarding the criteria for bronchodilator response in FVC, we used the American Thoracic Society guidelines4 and thus did not consider forced expiratory time (FET100%). However, it is reasonable to assume that in patients with no significant improvements in flow, but with increases in FVC, FET100% should have increased as well.

We used functional criteria to exclude asthmatic patients from the analysis. Furthermore, only a minority of the 15 asthmatic patients of Paré et al5 had the degree of hyperinflation seen in our COPD patients. Thus, the two study populations were quite different. Nevertheless, the mechanisms underlying the volume effects could be similar. Although the results of the study by Paré et al5 are consistent with a volume response due to peripheral airway recruitment, our data do not support this relationship. To the extent that maximal forced expiratory flows at the midexpiratory phase (FEF25–75) and at 75% of vital capacity (FEF75) reflect the contribution of the peripheral airways, we found no significant correlations between these flow parameters and the improvements in our volume indices (Table 3 of Newton et al). ΔFEV1/FVC also did not correlate with ΔFEF25–75 and ΔFEF75 (unpublished data). Alternatively, FEF25–75 and FEF75 may not reflect the effects on peripheral airways in COPD patients, and the mechanism proposed by Paré et al5 does pertain. Further studies are required to elucidate this issue.

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