

Static lung volume should be used to confirm restrictive lung disease

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Dear editor

We read the study by Hee Jin Park et al¹ with great interest. The authors have investigated the prevalence of comorbidities in Korean chronic obstructive pulmonary disease (COPD) population. We raise our concern regarding the definition of COPD in this study. The study defines COPD as airflow limitation (only pre-spirometry forced expiratory volume in 1 second/forced vital capacity [FEV₁/FVC] <70%) in subjects aged ≥40 years. To differentiate, between asthma and COPD, it is essential to do a post bronchodilator spirometry. It would have been wise to report the findings as prevalence of comorbidities in obstructive airway diseases rather than specifically calling it as COPD.

In this study, the authors have compared the prevalence of comorbidities between three groups: normal, restrictive, and obstructive. There is a discrepancy in defining restriction on the basis of spirometry values. Here, restriction is defined as FEV₁/FVC normal and FEV₁ <80%, but the actual criteria is FVC <80% predicted. However, it is important to note that restriction should be confirmed with static lung volumes rather than just relying on spirometry indices. Aaron et al have reported that out of the total number of subjects with low FVC on spirometry, only 41% had restriction when confirmed with lung volume measurements.²

It is likely that in this study restriction is overestimated due to the lack of static lung volume measurements. We assume that most of the subjects showing restriction on spirometry but otherwise having normal static lung volumes would have been then added to the normal group. Probably, this may have resulted in no significant differences in the comorbidities between the two groups (normal and obstructive). It would have been interesting to know the mean FVC and FEV₁ values in the restrictive group. Apart from restriction, there are several reasons for reduced FVC. One of the reasons for reduced FVC in the restrictive group is obesity³ because 52.1% of the subjects in this group have body mass index (BMI) ≥23.0 kg/m².

The study concludes that hypertension is a common comorbidity in COPD compared to the normal group. However, this finding is confounded by factors such as age and sex. There is a significant difference in the mean age between normal and obstructive group. Anderson et al have reported that increased age is associated with significant increase in the prevalence of hypertension after 60 years of age.⁴ The male:female ratio is different in both the groups. There are more number of males in the obstructive group (68%) as compared to normal (38.4%). It is known that the incidence of hypertension is greater in men than that in women.^{5,6} A proper grouping, sex-, and age-matched analysis would have given a true estimate of the prevalence of comorbidities in different groups.

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Disclosure

The authors report no conflicts of interest in this communication.

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