

Static lung volume should be used to confirm restrictive lung disease

Shweta A Rasam
Nitin V Vanjare

Department of Pulmonary Function
Laboratory, Chest Research
Foundation, Pune, Maharashtra, India

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 [FEV_1/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 FEV_1/FVC normal and $FEV_1 < 80\%$, 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 FEV_1 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.

Correspondence: Shweta A Rasam
Department of Pulmonary Function
Laboratory, Chest Research Foundation,
Chest Research Foundation, Marigold
Complex, Kalyani Nagar, Pune 411014,
Maharashtra, India
Tel +91 9881133834
Fax +91 20 2703 5371
Email shweta@crfindia.com

Disclosure

The authors report no conflicts of interest in this communication.

References

1. Park HJ, Leem AY, Lee SH, et al. Comorbidities in obstructive lung disease in Korea: data from the fourth and fifth Korean National Health and Nutrition Examination Survey. *Int J Chron Obstruct Pulmon Dis*. 2015; 10:1571–1582.
2. Aaron SD, Dales RE, Cardinal P. How accurate is spirometry at predicting restrictive pulmonary impairment? *Chest*. 1999;115(3):869–873.
3. Zammit C, Liddicoat H, Moonsie I, Makker H. Obesity and respiratory diseases. *Int J Gen Med*. 2010;3:335–343.
4. Anderson GH. Effect of age on hypertension: analysis of over 4,800 referred hypertensive patients. *Saudi J Kidney Dis Transpl*. 1999;10(3): 286–297.
5. Anastos K, Charney P, Charon RA, et al. Hypertension in women: what is really known? The Women's Caucus, Working Group on Women's Health of the Society of General Internal Medicine. *Ann Intern Med*. 1991; 115(4):287–293.
6. Burt VL, Whelton P, Roccella EJ, et al. Prevalence of hypertension in the US adult population. Results from the Third National Health and Nutrition Examination Survey, 1988–1991. *Hypertension*. 1995;25(3): 305–313.

Dove Medical Press encourages responsible, free and frank academic debate. The content of the International Journal of Chronic Obstructive Pulmonary Disease 'letters to the editor' section does not necessarily represent the views of Dove Medical Press, its officers, agents, employees, related entities or the International Journal of Chronic Obstructive Pulmonary Disease editors. While all reasonable steps have been taken to confirm the content of each letter, Dove Medical Press accepts no liability in respect of the content of any letter, nor is it responsible for the content and accuracy of any letter to the editor.

International Journal of COPD

Publish your work in this journal

The International Journal of COPD is an international, peer-reviewed journal of therapeutics and pharmacology focusing on concise rapid reporting of clinical studies and reviews in COPD. Special focus is given to the pathophysiological processes underlying the disease, intervention programs, patient focused education, and self management protocols.

Submit your manuscript here: <http://www.dovepress.com/international-journal-of-chronic-obstructive-pulmonary-disease-journal>

Dovepress

This journal is indexed on PubMed Central, MedLine and CAS. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.