Correlating between chronic obstructive pulmonary disease assessment test and emPHasis score in Group III pulmonary hypertension patients

Sir,

It is important to assess the health status of patients to understand the impact of a disease and an intervention. Chronic obstructive pulmonary disease (COPD) assessment test (CAT) is one such simple and accepted measurement scale framed on eight selected domains concerning the health status of a COPD patient.\(^1\) CAT (introduced in 2009) has been successfully utilized in other respiratory conditions as diffuse parenchymal lung diseases (DPLD), bronchiectasis, and destroyed lung for tuberculosis.\(^2\)\(^-\)\(^4\) Later, we have observed the advent of emPHasis score (introduced in 2014) for the measurement of health-related quality of life of the patients with pulmonary hypertension (PH).\(^5\) As both the conditions (COPD and PH) possess some of the common symptom domains, we have been following our Class III PH patients with CAT score for some time, and we introduced the emPHasis score afterward following appropriate validation in the local language (Bengali) in collaboration with the original authors. We decided to look for the comparison of these two scoring systems to appreciate the role of CAT in measuring the health status in PH.

The job was done following ethical approval with proper consent. Both the two scoring systems (emPHasis and CAT) were applied to a cohort of our patients with Class-III PH been diagnosed on a clinico-radiological screening protocol practiced at the institute.\(^7\) The etiological evaluation\(^7\) for PH was done on a modified but defined algorithm borrowed from the international guideline.\(^8\)

The measurement of CAT and emPHasis scoring was done by a single trained research fellow entrusted to assist and collect the responses from the patients on a single day with a gap of about 30 min between procurement of the two scoring systems. Any patients with a history of exacerbation in the preceding 6 weeks were excluded. Both the scores were plotted and computed statistically using GraphPad Prism 7.0 software. We have also tested the correlation separately for our COPD and non-COPD participants.

A total of 75 patients of PH (mean systolic pulmonary artery pressure as 51.9 ± 12.4 mm of Hg) with different lung diseases (COPD-30, DPLD-12, long-standing asthma-16, obstructive sleep apnea-5, and others-12) were included. The “others” group included bronchiectasis, ABPA, CTEPH, PAH, and one hemodialysis associated PH. The mean CAT score and EmPhasis score were 12.5 ± 5 and 10.7 ± 5.4, respectively. A strong correlation between CAT and emPHasis was observed (\(r = 0.81, P \leq 0.0001\)). This co-relationship is unlikely affected by the COPD patients in the cohort as the calculated co-relation separately for the condition was found to be lower (\(r = 0.67; P \leq 0.0001\)). It also suggests that the comparison (between CAT and emPHasis) is better for non-COPD patients with PH [Figure 1].

The result deduced is encouraging and may help a clinician to understand the health status of patient of PH through using the existing CAT scoring system which is far more popular than emPHasis. Individual etiology-specific

![Figure 1: Correlation between chronic obstructive pulmonary disease assessment test and emPHasis (a) overall; (b) for chronic obstructive pulmonary disease participants \((n = 30)\); (c) for nonchronic obstructive pulmonary disease participants \((n = 45)\) ]
assessments of the CAT and the emPHasis would be worthwhile to see in future.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

Sayoni Sengupta, Debkanya Dey, Parthasarathi Bhattacharyya
Department of Pulmonary Medicine, Institute of Pulmocare and Research, Kolkata, West Bengal, India
E-mail: parthachest@yahoo.com

REFERENCES
1. Jones PW, Harding G, Berry P, Wiklund I, Chen WH, Kline Leidy N, et al. Development and first validation of the COPD assessment test. Eur Respir J 2009;34:648-54.
2. Jones PW, Tabberer M, Chen WH. Creating scenarios of the impact of COPD and their relationship to COPD assessment test (CAT™) scores. BMC Pulm Med 2011;11:42.
3. Someya F, Nakagawa T, Mugii N. The COPD assessment test as a prognostic marker in interstitial lung disease. Clin Med Insights Circ Respir Pulm Med 2016;10:27-31.
4. Somea F, Nakagawa T. Application of the COPD assessment test (CAT) to patients with interstitial lung disease. Health 2014;6:2562-9.
5. Bhattacharyya P, Saha D, Bhattacharjee PD, Das SK, Bhattacharyya PP, Dey R. Tuberculosis associated pulmonary hypertension: The revelation of a clinical observation. Lung India 2016;33:135-9.
6. Yorke J, Corris P, Gaine S, Gibbs JS, Kiely DG, Harries C, et al. emPHasis-10: Development of a health-related quality of life measure in pulmonary hypertension. Eur Respir J 2014;43:1106-13.
7. Task Force for Diagnosis and Treatment of Pulmonary Hypertension of European Society of Cardiology (ESC); European Respiratory Society (ERS); International Society of Heart and Lung Transplantation (ISHLT); Galié N, Hoeper MM, Humbert M, et al. Guidelines for the diagnosis and treatment of pulmonary hypertension. Eur Respir J 2009;34:1219-63.
8. Mathai SC, Suber T, Khair RM, Kolb TM, Damico RL, Hassoun PM. Health-related quality of life and survival in pulmonary arterial hypertension. Ann Am Thorac Soc 2016;13:31-9.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online
Quick Response Code:
Website: www.lungindia.com
DOI: 10.4103/lungindia.lungindia_71_18

How to cite this article: Sengupta S, Dey D, Bhattacharyya P. Correlating between chronic obstructive pulmonary disease assessment test and emPHasis score in Group III pulmonary hypertension patients. Lung India 2019;36:86-7.