
High resolution computed tomography in chronic obstructive pulmonary disease patients: Do not forget radiation hazard

Sir,

We read with interest the original article titled “Correlation between clinical characteristics, spirometric indices and high-resolution computed tomography (HRCT) findings in patients of chronic obstructive pulmonary disease (COPD)” by Singh *et al.*^[1] In this study, the authors have rightly concluded that quantifying a complex and multisystem disease like COPD by spirometry alone is neither justified nor feasible in all cases. The authors further concluded that HRCT thorax may be used for holistic evaluation of COPD patients. However using HRCT in all COPD patients may not be appropriate.

First, the radiation hazard associated with HRCT is a well-established fact. COPD and smoking are known risk factors for lung cancer. Many previous studies point toward the possible radiation risk even with a low dose computed tomography scan done as a part of regular lung cancer screening program.^[2] Some studies further suggest a possible synergistic interaction between the risk from smoking and radiation exposure.^[3,4] Hence performing HRCT in all COPD patients will further add to the risk of lung cancer in these patients.

Second, performing HRCT for all COPD patients will not be cost effective. This financial aspect becomes particularly more important in a resource-limited setting like India where even after a diagnosis of COPD patients may not be able to afford the cost of treatment.

The author further concluded that HRCT can well be correlated with the spirometric and clinical features, and the level of obstruction can be indirectly derived from it by measuring the mean lung density (MLD). In this study, the authors have only recruited stable COPD subjects. However, during exacerbation of COPD, which are mostly infective, presence of new opacities like consolidation will change the MLD on HRCT. Hence, it is difficult to say that the MLD will correlate with the level of obstruction in COPD patients with exacerbation.

Therefore, we suggest that an alternative technique like impulse oscillometry that correlates well with spirometry and is free of radiation hazard be used in all COPD patients who cannot perform spirometry. Studies suggest that it can assess the COPD pathology even earlier than spirometry.^[5,6] Two-dimensional echocardiography is an excellent noninvasive screening tool to rule out pulmonary hypertension, especially in COPD patients who present with symptoms that are out of proportion to their disease and may help in the holistic management of COPD patients.^[7] HRCT should not be used in all COPD patients, and its role may be limited to ruling out alternative diagnoses and for presurgical assessment before lung volume reduction surgeries or bullectomy.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Access this article online	
Quick Response Code: 	Website: www.lungindia.com
	DOI: 10.4103/0970-2113.189006

How to cite this article: Purohit S, Dutt N, Saini L, Panwar R, Kumar S. High resolution computed tomography in chronic obstructive pulmonary disease patients: Do not forget radiation hazard. *Lung India* 2016;33:582-3.