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Exertional Desaturation as a Predictor of Rapid Lung Function Decline in COPD: Consider Pulmonary Embolic Disease and Pulmonary Hypertension Too

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Dear Editor,

Kim et al. [1] report the potential predictive value of exertional desaturation in chronic obstructive pulmonary disease (COPD) patients for decline in lung function. There was no noted difference in exacerbations to account for the decline in lung function. The desaturator group had a lower baseline gas transfer, resting saturation, FEV₁ and body mass index and a higher BODE index and St George's Respiratory Questionnaire (SGRQ) score. Therefore, two of the other diagnostic possibilities to consider in the desaturator group would be pulmonary embolic disease and secondary pulmonary hypertension (with or without secondary atrial arrhythmias or P-wave dispersion), which would not be apparent on the volumetric CT scan unless the emboli were large and proximal or the pulmonary hypertension was severe, as suggested by the ratio of the pulmonary artery to the aorta.

Pulmonary embolic disease or secondary pulmonary hypertension due to COPD might partially account for the lower baseline gas transfer, elevated SGRQ score and even the spirometric decline. Restrictive ventilator defects with reduction in both FEV₁ and forced vital capacity have been reported in pulmonary em-

bolic disease and pulmonary hypertension by mechanisms that are not yet clear (although secondary localized fibrosis has been postulated in chronic thromboembolic pulmonary hypertension) [2–4]. Finally, P-wave dispersion (independent of lung function) can occur as an early phenomenon in pulmonary hypertension in COPD, causing atrial arrhythmias. Pulmonary hypertension can also result in similar atrial arrhythmias without right atrial dilatation. Both of these sequelae could potentially lead to an increase in SGRQ score [5, 6]. Can the authors exclude these potential confounding factors as an explanation for at least part of the spirometric and SGRQ-based decline? Did patients undergo electrocardiography, Holter monitoring, echocardiography and CT pulmonary angiography?

References

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