JOURNAL CLUB

Pulmonary arterial enlargement and acute exacerbations of COPD

This multicentre observational trial used data from the COPDGene Study to investigate whether pulmonary vascular disease is associated with acute exacerbations of chronic obstructive pulmonary disease (COPD). Although severe pulmonary hypertension is a well recognised late complication of the disease, the study questioned whether earlier radiological changes could be used as a predictor for exacerbations. CT was used to provide a measure of pulmonary artery (PA) enlargement, using the ratio of PA diameter as compared with the diameter of the aorta (A).

The study population included 3464 patients with a diagnosis of Global Initiative for Chronic Obstructive Lung Disease (GOLD) stage II–IV COPD. These patients were longitudinally followed up for a median duration of 2.1 years, as was an external validation cohort from the US ECLIPSE trial. Multivariate logistic regression analysis demonstrated a significant association between those with PA enlargement (PA:A ratio >1) and a history of severe exacerbations at enrolment. The association with future severe exacerbations was also significant, as was that of the external validation cohort.

This study is limited by its observational design as a causal relationship between an elevated PA:A ratio and severe exacerbations cannot be conferred. The results do however suggest that CT-detected PA enlargement can be used as a predictor of future acute exacerbations of COPD. These study findings have clear clinical significance as not only has an elevated PA:A ratio as a predictor of exacerbations outperformed many other established risk factors but it uses routine imaging to provide this calculation.

► Wells JM, Washko GR, Han MK, *et al*, Pulmonary arterial enlargement and acute exacerbations of COPD, *N Engl J Med* 2012;367:913–21.

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