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| **‘Expected’ KCO correlates more accurately with ILD CT changes** |
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| **Introduction/Aim:**  Alveolar volume (VA) and rate of uptake of alveolar carbon monoxide (KCO) have a complex relationship. A reduced VA due to loss of alveolar units should cause KCO to increase. Interstitial lung disease (ILD) patients can present with low VA and normal KCO. This could be viewed as ‘inappropriately normal’ given the KCO should increase. Calculations allow estimation of the ‘expected’ KCO and DLCO for a given VA.  The aim was to assess if there are clinical correlates for ILD patients who have greater differences between the measured and ‘expected’ KCO.  **Methods:**  Pulmonary function tests (PFTs) of adult patients with ILD were retrospectively reviewed. Using the earliest PFTs available, the ‘expected’ KCO and DLCO was calculated using a formula published by Hughes et al.1 The most recent PFTs were reviewed to assess decline in lung function over time. Computed tomography (CT) scans of the chest were also reviewed.  **Results:**  36 patients with idiopathic pulmonary fibrosis (IPF) and 14 with connective-tissue disease related ILD (CTD-ILD) were included in the analysis. 72% were male with a mean age of 68 years. In all patients, the ‘expected’ KCO was higher than what was measured. When ‘expected’ KCO was used as the denominator, measured KCO as percentage predicted decreased from 85% to 64% and more accurately reflected diffuse changes seen on CT imaging. Equivalent figures for DLCO increased from 57% to 66%. Differences between measured and ‘expected’ KCO did not correlate with changes in lung function over time. This remained the case when IPF and CTD-ILD patients were analysed separately.  **Conclusion:**  Using the ‘expected’ KCO to calculate percentage predicted correlates more closely with CT changes in ILD patients. Using the ‘expected’ DLCO may allow previously ineligible patients become eligible for anti-fibrotics. Differences between observed and ‘expected’ KCO does not correlate with changes in lung function over time.  **Reference**   1. Hughes JM et al, American Journal of Respiratory and Critical Care Medicine, 2012, 186, 132-139     **Grant Support:** Nil |
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