ILD MDT since 2002. We have reviewed all cases of PPFE discussed in ILD MDT meetings in 2021 and 2022, with a definite (with lung histology) or probable (MDT consensus opinion) diagnosis. We have categorised them into those with at least one first degree relative affected with fibrotic ILD, a definite CVD, a history of occupational or para-occupational asbestos exposure, HP and others (idiopathic). 5/22 patients had a significant history of asbestos exposure >20 years before presentation; of whom 3 patients were in high exposure categories (2 carpenters and one bricklayer); one patient was an office worker who for 13 years mixed Artex (containing asbestos) in her garage every morning for her husband who was an Artex plasterer; one patient worked in a building while asbestos lagging was being stripped. 16/22 were lifelong non-smokers, and a further 2/22 had smoked <1 pack year, different from the prevalence of smokers with IPF, suggesting that the aetiology of PPFE differs from IPF, and that asbestos exposure be added to the causes of PPFE.

P195 LUNG TEXTURE ANALYSIS IN PULMONARY FIBROSIS AND EMPHYSEMA

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Abstract P195 Figure 1 Global Graph of abnormal lung texture.
Aims Computed Tomography (CT) has a pivotal role in the diagnosis of Interstitial Lung Disease (ILD). Visual evaluation of ILD by CT is prone to high rates of inter-reader variability. The co-existence of emphysema and fibrosis can make the estimation of the extent of fibrosis difficult. Lung texture analysis (Imbio™) is a digital technology that analyses standard chest CT images and maps the presence of abnormal lung textures. We aim to interrogate the value of Lung Texture Analysis to assess disease burden in patients with pulmonary fibrosis and emphysema.

Methods Clinical data from 63 patients including demographics, diagnosis and pulmonary function tests at time of CT evaluation were captured. Patients were stratified by diagnosis: Combined Pulmonary Fibrosis (CPFE), Idiopathic Pulmonary Fibrosis (IPF), Rheumatoid Arthritis – Interstitial Lung Disease (RA_ILD), and Fibrotic Sarcoidosis (FS). Lung Texture Analysis was performed on CT images providing visualization and quantification on lung textures reporting percentage Hyperlucency, Ground Glass Opacity (GGO), Reticulation, and Honeycomb change (HCC) as well as Pulmonary Vascular Volume (PVV) and total lung volume. An assessment of inter-reader agreement was performed in novice reporters with regards to diagnosis and burden of disease. Quantification values were correlated to pulmonary function tests.

Results The study population consisted of 35 CPFE, 10 IPF, 10 RA-ILD and 8 FS. There were significant differences between diagnostic strata for predicted spirometry (%) as well as Hyperlucency, reticulation and lung volume on LTA providing a fingerprint of characteristic features represented on global graphing (figure 1). Correlation between reticulation% and uncorrected transfer factor was found -0.351 (p 0.012). A stronger correlation was seen in total LTA score and uncorrected DLCO -0.370 (p 0.007). Review of the visualisation increased diagnostic accuracy by 3–16% in Novice reporters.

Conclusions LTA provided objective quantification of lung textures that are key to identifying Interstitial Lung Diseases. Visualization of the abnormalities through colour coded images provided were useful in identifying the underlying disease. Given the technological advances in image processing and analysis it is likely some form of quantitative CT will be incorporated into routine ILD care.

Interstitial lung disease (ILD) is the most common cause of death in patients with systemic sclerosis (SSc), although disease behavior is highly heterogeneous. While a usual interstitial pneumonia (UIP) pattern is associated with worse survival in other ILDs, its significance in SSc-ILD is unclear. We used the Systematic Objective Fibrotic Imaging analysis Algorithm (SOFIA), a convolution neural network algorithm which provides probabilities of a UIP pattern, to assess its associations with disease severity and progression in patients with SSc-ILD. Patients with SSc-ILD, first seen in our Unit between 1990 and 2019, were included if HRCT images, concomitant lung function tests, and follow-up data were available. Of 736 patients, 214 were excluded because of unavailable/poor quality images or lung function, leaving 522 patients. The SOFIA