

S010 Novel mechanisms and pathways in fibrotic lung disease
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Idiopathic Pulmonary Fibrosis (IPF) is a chronic progressive disease of unknown aetiology. IPF is characterised by excessive collagen deposition within the lung. Recent evidence suggests that the lung epithelium is playing a key role in driving the fibrotic response. The current paradigm suggests that following epithelial injury there is impaired epithelial proliferation, enhanced epithelial migration and apoptosis. This in turn promotes lung fibrosis through impaired basement membrane repair and increased epithelial-to-mesenchymal transition. Furthermore, fibroblasts are recruited to the wounded area, adopting a myofibroblast phenotype and with upregulation of matrix synthesising genes and downregulation of matrix degradation genes. There is compelling evidence that transforming growth factor β (TGF β) plays a central role in this process. In normal lung TGF β is maintained in an inactive state that is tightly regulated spatially and temporally. Both the inflammatory response and coagulation cascade may lead to TGF β activation, and in the setting of pulmonary fibrosis it would appear that many of these pathways involve integrins. Following lung injury a number of pathways can be activated that lead to changes in cell shape that induce the $\alpha v \beta 6$ integrin in epithelial cells, and other RGD binding integrins in mesenchymal cells, to activate TGF β and promote lung fibrosis. These pathways, and possible therapeutic strategies to inhibit them will be discussed.