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Potential of nintedanib in treatment of progressive fibrosing interstitial lung diseases

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Nonclinical studies suggest that nintedanib, an approved treatment for idiopathic pulmonary fibrosis, may have anti-fibrotic effects in other interstitial lung diseases with a progressive fibrosing phenotype http://bit.ly/2NiCAYx

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ABSTRACT A proportion of patients with fibrosing interstitial lung diseases (ILDs) develop a progressive phenotype characterised by decline in lung function, worsening quality of life and early mortality. Other than idiopathic pulmonary fibrosis (IPF), there are no approved drugs for fibrosing ILDs and a poor evidence base to support current treatments. Fibrosing ILDs with a progressive phenotype show commonalities in clinical behaviour and in the pathogenic mechanisms that drive disease worsening. Nintedanib is an intracellular inhibitor of tyrosine kinases that has been approved for treatment of IPF and has recently been shown to reduce the rate of lung function decline in patients with ILD associated with systemic sclerosis (SSc-ILD). *In vitro* data demonstrate that nintedanib inhibits several steps in the initiation and progression of lung fibrosis, including the release of pro-inflammatory and pro-fibrotic mediators, migration and differentiation of fibrocytes and fibroblasts, and deposition of extracellular matrix. Nintedanib also inhibits the proliferation of vascular cells. Studies in animal models with features of fibrosing ILDs such as IPF, SSc-ILD, rheumatoid arthritis-ILD, hypersensitivity pneumonitis and silicosis demonstrate that nintedanib has anti-fibrotic activity irrespective of the trigger for the lung pathology. This suggests that nintedanib inhibits fundamental processes in the pathogenesis of fibrosis. A trial of nintedanib in patients with progressive fibrosing ILDs other than IPF (INBUILD) will report results in 2019.