Sustained Reversal Of Established Pulmonary Fibrosis With Pegylated Interferon Alpha Treatment For Hepatitis C Virus Infection

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Introduction Idiopathic Pulmonary Fibrosis (IPF) is a devastating, progressive condition for which there are no effective treatments, the aetiology remains unknown and the prevalence is increasing. A link between IPF and viral infections including Hepatitis C virus (HCV) is established. The combination of pegylated interferonα (P-IFNα) and ribavain is widely used as treatment for HCV, effective at clearing the virus in between 50-75% of patients. To date, this combination has not been reported to improve respiratory symptoms or pulmonary physiology in patients with co-existent IPF and HCV. IFN has both anti-viral and anti-fibrotic properties that limit the damage caused by HCV infection in the liver. A closely related interferon (IFNgamma1b) has demonstrated efficacy in certain patients with IPF. Herein, we report a case where a patient with steroid unresponsive IPF had a progressive and sustained improvement in symptoms and lung function following the addition of P-IFNα and ribavarin. We suggest that IFN may play a role in reversing fibrosis, particularly in cases where the fibrosis is associated with chronic viral infections. **Case report** One year after diagnosis with HCV infection a 63-year-old non-smoking male patient developed progressive breathlessness that severely impaired his exercise capacity. A high resolution CT scan of the thorax demonstrated extensive peripheral and basal sub-pleural fibrosis, with coarse reticulation, traction bronchiolectasis and areas of honeycombing, consistent with usual interstitial pneumonia (UIP). A clinical diagnosis of IPF with associated HCV was made. No improvement in respiratory symptoms or lung function was observed following an empiric trial of prednisolone. A gradual improvement in respiratory symptoms occurred following the addition of P-IFNα and ribavirin. At the conclusion of antiviral treatment, exercise tolerance had returned to near baseline and improvement in the lung function continued after completion of therapy. Similarly, the CT appearances, while still consistent with UIP, were noted to be much improved. **Discussion** To the best of our knowledge this is the first description of a patient with IPF having a clear and sustained improvement in respiratory symptoms, physiology and radiology following treatment with P-IFNα plus ribavarin for chronic HCV infection. The pathological pattern of IPF found in association with HCV is often UIP, which is usually aggressive and unresponsive to treatment; making the improvement observed in this case notable. Where pulmonary fibrosis is associated with a chronic viral infection it is intriguing to speculate that IFN may have play a valuable role in reversing the pulmonary fibrotic reaction.

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