Hepatocyte Growth Factor and Idiopathic Pulmonary Fibrosis

To the Editor:

It has been reported that hepatocyte growth factor (HGF) is a growth factor that may mediate human renal cyst formation. In idiopathic pulmonary fibrosis (IPF), the formation of a honey-comb lung is an important pathologic feature. As in renal cyst formation, the process of honey-comb lung formation also includes epithelial cell proliferation and a remodeling of the extracellular matrix. In the lung, HGF is synthesized and secreted by mesenchymal cells, such as macrophages, endothelial cells, and fibroblasts, and controls proliferation and morphogenesis of epithelial cells. It has recently been revealed that the lung has an endocrine function thus producing HGF for the regeneration of injured tissues or organs. HGF also acts as a pulmotrophic factor on lung regeneration after acute lung injury and is a potential paracrine growth factor for rat alveolar type II cells in primary culture. Therefore, we hypothesized that HGF may play important roles in regulating the growth of lung epithelium and in the regeneration of the lung as a paracrine or endocrine factor in IPF. Based on this background, we measured plasma HGF in 15 IPF patients (10 male/5 female, median age 56). The diagnosis of IPF was based on accepted criteria, which included either evidence of diffuse parenchymal infiltrates (peripheral and reticular nodular with a lower lobe predominance) on chest radiograph or restrictive lung function with an open lung biopsy demonstrating varying degrees of interstitial fibrosis and intra-alveolar inflammatory cells. HGF was measured by enzyme-linked immunosorbent assay with monoclonal and polyclonal antibodies against human HGF (Otsuka Assay Systems; Tokushima, Japan). Thirty age-matched normal smokers, and 30 age-matched lung cancer patients served as the control group. As a result, mean (SD) serum HGF concentration of the patients with IPF was 0.40 (0.12) ng/mL, which was significantly higher compared with normal smokers (0.16 [0.05], p<0.001), as well as patients with lung cancer (0.17 [0.05], p<0.001). Serum HGF in patients with IPF appeared to be higher compared with the patients with cystic renal disease (0.24 [0.08], data in Lancet). Immunohistochemical staining with rabbit polyclonal antihuman HGF antibody (gift from Dr. T. Nakamura; Osaka, Japan) showed that HGF was distributed to the

REFERENCES

Cardiac Troponin in the Diagnosis of Myocardial Contusion

To the Editor:

The excellent review article “Blunt Myocardial Injury” (CHEST 1996; 109:1673-77) by Drs. Feghali and Prisant merits additional