Group II Phospholipase A₂ and Pulmonary Histiocytosis X

To the Editor:

It has been reported that human group II phospholipase A₂ (II-PLA₂) has a mitogenic effect on fibroblasts. While studying II-PLA₂ expression in bronchoalveolar lavage fluid (BALF) of patients with various interstitial pulmonary fibrosis, we noticed that BALF from patients with pulmonary histiocytosis X (HX) contained markedly larger amounts of II-PLA₂ than that of other pulmonary fibroses, including usual interstitial pneumonia (UIP), bronchiolitis obliterans organizing pneumonia (BOOP), and histiocytic pneumonitis (HP).

We measured the II-PLA₂ concentration in serum and BALF by a specific radioimmunoassay in 25 Japanese patients with diffuse pulmonary fibrosis (18 men and 7 women, median age 56). As a result, immunoreactive II-PLA₂ in serum ranges from 1.4 to 3.4 ng/mL, which is within the limits of healthy individuals as previously determined (1.4 to 4.2). The mean[SD] II-PLA₂ concentration of the patients with HX (n=5) was 5.53[3.12] ng/mL, which was significantly higher compared with patients with other diffuse pulmonary fibrosis (UIP, n=8, 0.27[0.09]; p=0.008; BOOP, n=8, 0.25[0.11]; p=0.006; HP, n=4, 0.21[0.58]; p=0.025). When II-PLA₂ levels were expressed as ng/mg of protein, the significant difference between HX (58.9[28.7]) and other diseases persisted (UIP, 3.44[1.02]; p=0.003; BOOP, 2.86[1.56]; p=0.014; HP, 3.69[1.88]; p=0.031), indicating that differences between HX and others were not due to leakage of nonspecific protein into the airway. As all these patients were smokers, 20 age-sex-matched nonsmokers with UIP (n=8), BOOP (n=8), and HP (n=4) served as the control group. In any of these diseases, there were no differences in II-PLA₂ concentrations of BALF between smokers and nonsmokers, indicating that the II-PLA₂ elevations in patients with HX did not merely reflect common smoking habits in HX patients. Immunohistochemical staining of open-lung biopsy specimens from patients with HX revealed intense staining in alveolar epithelial cells (Fig 1).

Pulmonary HX is an etiology-unknown disease in which focal granulomatous lesions are associated with a diffuse fibrosis and irregular alveolitis. The separation of HX from other infiltrative diseases is important, since most patients with HX have an excellent prognosis and a significant frequency of spontaneous remissions without treatment. Despite the new diagnostic techniques, including high-resolution CT studies of the chest, in most cases of HX, the diagnosis is not apparent until an open-lung biopsy is performed. We have started a prospective study to determine whether II-PLA₂ levels in BALF may be a diagnostic aid in HX.

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REFERENCES