PNEUMOPROTEINS IN INTERSTITIAL LUNG DISEASE

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September 13th, 2006

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The interstitial lung diseases (ILDs) are a diverse group of pulmonary disorders that compromise over 100 different diseases. The major abnormality in ILDs is disruption of the lung parenchyma. The purpose of this thesis was to evaluate the usefulness of pneumoproteins in ILDs, especially in sarcoidosis and in hypersensitivity pneumonitis. We emphasized on the pneumoprotein encoding genes and their relationship with serum pneumoprotein levels, and disease susceptibility.

The result of this study showed that KL-6 and SP-D can help to differentiate bacterial pneumonia from ILD. Moreover, pneumoproteins can be useful to monitor ILD activity and assess disease severity. In sarcoidosis, CC10 and KL-6 reflected disease severity, since both biomarkers significantly correlated with radiologic stage and pulmonary function impairment. While SP-D did not seem to be useful as serum marker in sarcoidosis, in bird fanciers' lung (hypersensitivity pneumonitis), KL-6 and SP-D correlated with disease activity.

Concentrations of pneumoproteins in blood may be regulated by genetic polymorphisms influence resulting in interindividual differences in protein production. A correlation between serum CC10 and SP-D, and their encoding genes had already been described. We confirmed the CC10 gene-protein association in a Dutch Caucasian population of healthy controls and sarcoidosis patients. Previous studies found a similar association for CC10 in Japanese sarcoidosis patients, and Australian asthmatic children. Furthermore, we were the first to demonstrate that serum KL-6 levels are influenced by a mucin 1 gene polymorphism, and we calculated genotype-specific reference intervals.

We conclude that serum pneumoproteins are useful biomarkers for the monitoring of ILD patients. Using genotype-specific reference intervals might improve their clinical value.