

# Association of genetic variations in inflammatory and fibrogenic genes with progressive massive fibrosis in coal miners (35.51)

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J Immunol April 1, 2007, 178 (1 Supplement) S11;

## ABSTRACT

Progressive massive fibrosis (PMF) is a chronic interstitial lung disease with a complex etiology. Cytokines, growth factors and cell-surface adhesion molecules play crucial roles in the pathogenesis of pulmonary fibrosis by mediating inflammation, fibroblast proliferation, angiogenesis and collagen synthesis. We examined the influence of functional single nucleotide polymorphisms (SNP) in interleukin-1 and 6, tumor necrosis factor- $\alpha$ , transforming growth factor- $\beta$ , vascular endothelial growth factor, epithelial growth factor and intercellular adhesion molecule-1 genes on the development of PMF. A total of 648 ex-coal miners from the National Coal Workers Autopsy Study were examined in a case-control study. Genotype analysis was performed on genomic DNA using 5' nuclease PCR assay. There were no significant differences in the frequencies of individual SNPs between PMF and control groups. However, gene-gene interactions were found between TNF $\alpha$  -308/-238, VEGF+405 / ICAM-1+241 and VEGF+405 / ICAM-1+241 / IL-6+174 ( $p < 0.05$ ) variants. These data suggest that genetic variant of cytokine and fibrogenic genes may play role in individual susceptibility to PMF initiated presumably by coal dust.

Supported in part by the NIEHS-IAG (Y1-ES-0001).

The findings have not been formally disseminated by the NIOSH and should not be construed to represent any agency determination or policy.<

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