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Association between plasminogen activator inhibitor-1-675 4g/5g insertion/deletion polymorphism and chronic obstructive pulmonary disease

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Molecular pathology of chronic obstructive pulmonary disease (COPD) is still being investigated to discover relationships with disease pathogenesis. Evidence of plasminogen activator inhibitor-1 (PAI-1) overexpression in the sputum and the blood of COPD patients is growing. We aimed to investigate the potential relation between PAI-1 promoter 4G/5G insertion/deletion polymorphism and COPD development. In a case-control study, we genotyped 117 COPD patients and 160 control subjects for PAI-1 promoter 4G/5G polymorphism by an allele-specific polymerase chain reaction analysis. All subjects were male smokers. In the co-dominant model, there was a significant difference in the distribution of 5G/5G, 4G/5G and 4G/4G genotypes between COPD patients and controls (p=0.002). In the recessive model, carriers of 4G/4G genotype were significantly higher in COPD patients than controls (p=0.01). Carriers of 4G/4G genotype were at higher risk to develop COPD than those carrying 5G/5G or 4G/5G genotypes (crude odds ratio (OR)=2.10, 95% confidence interval (CI)=1.19-3.73, adjusted OR=2.5, 95% CI=1.22-3.99). PAI-1 4G/5G genetic variations are associated with COPD development in males.

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