



Association of the *CYP1A1* *Msp*I and TNF α -308 polymorphisms with chronic obstructive pulmonary disease in Inner Mongolia

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ABSTRACT. Chronic obstructive pulmonary disease (COPD) is a progressive lung disease characterized by persistent airflow limitation. Smoking, occupational exposures, air pollution, and genetics are all risk factors. In the present study, we detected the cytochrome P4501A1 gene (*CYP1A1*) *Msp*I polymorphism and the tumor necrosis factor alpha (TNF α)-308 single nucleotide polymorphism in COPD patients, and investigated their associations with smoking and COPD susceptibility in Inner Mongolia. A total of 101 COPD patients and 80 controls were enrolled in the study. The polymorphisms were analyzed using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). *CYP1A1* *Msp*I allele frequencies were significantly different between COPD patients and controls ($P = 0.033$). COPD susceptibility was higher in subjects with the m2 allele compared to subjects with the m1 allele [odds ratio (OR) = 2.531, 95% confidence interval (CI) = 1.297-4.940, $P = 0.006$]. Significant differences were observed in the TNF α -308

genotype and allele distributions between COPD patients and controls ($P = 0.006$ and $P = 0.003$, respectively). Compared to subjects with the GG genotype, subjects with GA+AA genotypes had higher COPD risk (OR = 3.639, 95%CI = 1.576-8.403, $P = 0.002$). The TNF α -308 polymorphism differed between smoking and non-smoking COPD patients and controls ($P = 0.047$ for genotype and $P = 0.030$ for allele). In conclusion, the *CYP1A1 MspI* and TNF α -308 polymorphisms were associated with COPD susceptibility. Furthermore, of the two polymorphisms, only TNF α -308 may exert an interaction with smoking.

Key words: CYP1A1; TNF α ; Polymorphism; Chronic obstructive pulmonary disease