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Association between the rs189037 single nucleotide polymorphism in the *ATM* gene promoter and cognitive impairment

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ABSTRACT. The aim of this study was to explore the existence of a relationship between the rs189037 single nucleotide polymorphism (SNP) of the ataxia telangiectasia mutated (*ATM*) gene and cognitive impairment in the elderly (aged 60 years and above). In a cohort, 505 residents of Suinung City were consecutively recruited and their cognitive function was measured using a 30-point Mini-Mental State Examination (MMSE). The subjects were divided into cognitive impairment group and control group on the basis of MMSE scores. Presence of the rs189037 SNP variant was examined using polymerase chain reaction-restriction fragment length polymorphism. The prevalence rates of cognitive impairment were 32.7% in the whole

sample. The genotype frequencies of the rs189037 polymorphism were 33.5% (CC), 50.7% (CT), and 15.8% (TT); the C and T allele frequencies were 58.8 and 41.2%, respectively. No significant differences in the frequency distributions of the CC, CT and TT genotypes were observed between cognitively impaired and control groups. We found that the rs189037 SNP was not directly correlated with cognitive impairment among the elderly Chinese Han population.

Key words: Ataxia telangiectasia mutated gene; rs189037; Cognitive impairment; Single nucleotide polymorphism

