Correlation analysis between the delayed rectifier potassium channel KCNE1 (G38S) polymorphism and atrial fibrillation among the senior Uygur population in Xinjiang

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ABSTRACT. Current resources to support genetic screening among the Uygur population in Xinjiang territory for atrial fibrillation (AF) have not been well established and large-scale epidemiological analyses are needed. Using patients from the Xinjiang Uygur population as subjects, and the delayed rectifier potassium channel KCNE1 and its associated polymorphism G38S (rs1805127) as the candidate gene, we analyzed the correlation between the G38S polymorphism and AF among the senior Uygur population in Xinjiang Province. Peripheral blood from AF Uygur patients (patient group) or non-AF Uygur patients (control group) from Xinjiang territory was collected (70 patients each). DNA was purified and tested by polymerase chain reaction-restriction fragment length polymorphism for the genotype and allelic distribution of KCNE1 (G38S). Correlation analysis between AF and multiple health-related factors was performed by logistic regression. Among patients with the KCNE1 G38S polymorphism, the genotypes AA, AG, and GG were present at frequencies of 17.14, 27.14,

and 55.71%, respectively, in the patient group, compared with 24.29, 50, and 25.71%, respectively, in the control group. The difference between these two groups was shown to be statistically significant ($P < 0.05$), and the frequency of the G allele was significantly higher in the patient group ($P < 0.05$). Logistic regression showed that the GG genotype is correlated with the incidence of AF in Uygur seniors ($P < 0.05$). The incidence of AF among the senior Uygur population in Xinjiang territory was correlated with the KCNE1 (G38S) polymorphism, which may be an independent risk factor for Uygur AF patients.

Key words: Atrial fibrillation; Gene polymorphism; KCNE1 (G38S); Uygur population

