

Acetaldehyde dehydrogenase 2 SNP rs671 and susceptibility to essential hypertension in Mongolians: a case control study

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ABSTRACT. Mongolians are known as heavy drinkers, and they have a high incidence of essential hypertension, which may be an associated pathology. We examined a possible association of essential hypertension and polymorphism of the aldehyde dehydrogenase 2 (ALDH2) gene in Mongolians from Inner Mongolia. Single nucleotide polymorphism rs671 of ALDH2 was detected by TaqMan PCR in 91 essential hypertensive patients (44 males and 47 females) and 70 healthy Mongolians (37 males and 33 females). Frequencies of the ALDH2*1/1 genotype and the ALDH2*1 allele in patients (91.2 and 95.6%, respectively) were significantly higher than in controls (78.6 and 89.3%; $P < 0.05$), while frequencies of ALDH2*1/2 genotype and ALDH2*2 allele in patients (8.79 and 4.4%) were much lower than in controls (21.4 and 10.7%; $P < 0.05$). Frequencies of ALDH2*1/1 genotype and ALDH2*1 allele in female patients (95.8 and 94.9%) were higher than in female controls (70.0

and 84.9%; $P < 0.05$); frequencies of the ALDH2*1/2 genotype and the ALDH2*2 allele in female patients (4.25 and 2.13%) were lower than in female controls (30.3 and 15.2%, $P < 0.05$). There was no significant difference in male subjects. ALDH2*2/2 was not found in any of the subjects. We conclude that ALDH2 polymorphism is associated with essential hypertension in Mongolians, especially in female Mongolians. ALDH2*2 was found to be a negative risk factor for essential hypertension in Mongolians from Inner Mongolia.

Key words: Aldehyde dehydrogenase 2; Single nucleotide polymorphism; Mongolian nationality; Essential hypertension