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[Association of cystathionine β-synthase gene polymorphisms with essential hypertension in ethnic Uyghurs and Hans from Xinjiang].

[Article in Chinese]

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Abstract

OBJECTIVE: To investigate the cystathione beta synthase (CBS) gene T833C, G919A, 844ins68 polymorphisms and plasma homocysteine (Hcy) levels in ethnic Uyghur and Han patients with essential hypertension (EH) in Xinjiang.

METHODS: Four hundred twenty nine cases including 211 Uyghur and 218 Han EH patients were recruited, whilst 410 healthy individuals including 210 Uyghurs and 200 Hans were used as the controls. Amplification refractory mutation system (ARMS) was adopted to analyze the CBS gene polymorphisms including T833C, G919A and 844ins68. Enzymoimmunoassay was applied to determine the plasma level of Hcy. Chemiluminescence was applied to determine the plasma folic acid and vitamin B12.

RESULTS: Compared with the controls, the plasma Hcy level was significantly higher in the EH group in both ethnic Uyghurs and Hans ($P < 0.05$). Plasma levels of Hcy in T833C, G919A genotypes (for both heterozygotes and homozygotes) were statistically higher than wild types ($P < 0.05$). A significant difference was detected in G919A polymorphism between the EH patients and controls in both Uyghur and [CM(144.5mm] Han ethnics (Uyghur: $x^2 = 10.264$, $P < 0.01$; Han: $x^2 = 23.075$, $P < 0.01$), and in T833C between the EH patients and controls in ethnic Uyghurs ($x^2 = 40.254$, $P < 0.01$). Logistic regression analysis indicated that age (OR=1.151, P=0.047, 95% CI = 1.002-1.323), T833C (CC) (OR = 1.078, P = 0.003, 95% CI = 1.043-1.114), obesity (OR = 1.284, P = 0.021, 95% CI = 1.038-1.590), hyperhomocysteine (OR = 3.296, P = 0.016, 95% CI = 1.244-8.733) were independent risk factors for EH among ethnic Uygurs, while age (OR = 1.162, P = 0.007, 95% CI = 1.042-1.297), obesity (OR = 3.501, P = 0.003, 95% CI = 1.521-8.060), hyperhomocysteine (OR = 1.046, P = 0.031, 95% CI = 1.011-1.459) were independent risk factors for EH in ethnic Hans after adjusting for confounding factors.

CONCLUSION: Plasma level of Hcy is associated with ethnic Uyghur and Han patients with EH in Xinjiang. CBS gene T833C CC genotype may be associated with the EH among Uyghur ethnics.

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