NAT2*7 allele is a potential risk factor for adult brain tumors in Taiwanese population.

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摘要

Abstract

Arylamine N-acetyltransferase-2 (NAT2) displays extensive genetic polymorphisms that affect the rates of acetylation of drugs and toxic compounds such as amine carcinogens. The association of NAT2 polymorphisms with adult brain tumors has been unclear. To investigate whether the NAT2 genotype is a risk factor of brain tumors, we determined the frequencies of three common polymorphisms in the NAT2 gene, NAT2*5 (T341C), NAT2*6 (G590A), and NAT2*7(G857A), in brain tumor patients and in age- and gender-matched control subjects (n = 27 in each group). Genotyping was carried out using PCR-RFLP and subjects were phenotyped as a fast or slow acetylator based on the genotypes. The odds ratio of NAT2*7 allele frequency was significantly higher in patients with brain tumor than in controls (odds ratio, 6.786; 95% confidence interval, 2.06-22.37; P = 0.003); in the mean time, NAT2*4/*7 genotype was significantly more common in the patient group than in controls (odds ratio, 6.19; 95% confidence interval, 1.68-22.79; P = 0.0039). The tumors in the patients with NAT2*7 allele tended to be high-grade astrocytoma or glioblastoma multiforme (P = 0.016). In conclusion, these data suggest that the presence of NAT2*7 allele might be a potential risk factor for the development of brain tumors in Taiwan.