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Effect of a pre-microRNA-149 (miR-149) genetic variation on the risk of ischemic stroke in a Chinese Han population

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ABSTRACT. Clinical and experimental data have demonstrated that genetic factors play an important role in determining the susceptibility to ischemic stroke (IS). The present study was performed to clarify the association between the pre-microRNA-149 (miR-149) single nucleotide polymorphism rs71428439 and the risk of IS in the Jiangsu Han population. Polymerase chain reaction and restriction fragment length polymorphism were performed to identify the genotypes of the miR-149 single-nucleotide polymorphism rs71428439 in 730 unrelated subjects (IS, 348; healthy controls, 382). Plasma levels of homocysteine were determined using a radioassay kit. Compared to healthy controls, IS patients had a lower frequency of GG genotype distribution of the hsa-mir-149 polymorphism (11.5 *vs* 16.0%) and a higher frequency of TT (46.6 *vs* 39.0%). The risk of IS was significantly

lower among subjects carrying the GG genotype than subjects carrying the AA genotype (odds ratio (95% confidence interval): 0.603 (0.382-0.952), P = 0.030) or at least carrying the G allele than patients carrying the A allele (odds ratio (95% confidence interval): 0.769 (0.620-0.954), P = 0.019). Levels of folate were statistically higher in patients with the TT genotype (8.59 ± 7.75 ng/mL) than in those with the CC genotype (6.32 ± 5.97 ng/mL) in IS patients. Our results suggest that the miR-149 single nucleotide polymorphism rs71428439 influences plasma levels of homocysteine and is associated with IS risk in the Jiangsu Han population.

Key words: Ischemic stroke; miR-149; Polymorphism

