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MAOA, MTHFR, and TNF- β genes polymorphisms and personality traits in the pathogenesis of migraine.

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Source

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Abstract

Migraine is a multifactorial disease with various factors, such as genetic polymorphisms and personality traits, but the contribution of those factors is not clear. To clarify the pathogenesis of migraine, the contributions of genetic polymorphisms and personality traits were simultaneously investigated using multivariate analysis. Ninety-one migraine patients and 119 non-headache healthy volunteers were enrolled. The 12 gene polymorphisms analysis and NEO-FFI personality test were performed. At first, the univariate analysis was performed to extract the contributing factors to pathogenesis of migraine. We then extracted the factors that independently contributed to the pathogenesis of migraine using multivariate stepwise logistic regression analysis. Using the multivariate analysis, three gene polymorphisms including monoamine oxidase A (MAOA) T941G, methylenetetrahydrofolate reductase (MTHFR) C677T, and tumor necrosis factor beta (TNF- β) G252A, and the neuroticism and conscientiousness scores in NEO-FFI were selected as significant factors that independently contributed to the pathogenesis of migraine. Their odds ratios were 1.099 (per point of neuroticism score), 1.080 (per point of conscientiousness score), 2.272 (T and T/T or T/G vs G and G/G genotype of MAOA), 1.939 (C/T or T/T vs C/C genotype of MTHFR), and 2.748 (G/A or A/A vs G/G genotype of TNF- β), respectively. We suggested that multiple factors, such as gene polymorphisms and personality traits, contribute to the pathogenesis of migraine. The contribution of polymorphisms, such as MAOA T941G, MTHFR C677T, and TNF- β G252A, were more important than personality traits in the pathogenesis of migraine, a multifactorial disorder.

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