



SCN1A IVS5N+5 G>A polymorphism and response to drug treatment in epilepsy: A cohort study and a meta- analysis

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Objective: The *SCN1A* IVS5N+5 G>A polymorphism has been proposed to be involved in response to antiepileptic drugs (AEDs) in epilepsy, but research data have been inconclusive. The purpose of the current study was to investigate the association between the *SCN1A* IVS5N+5 G>A polymorphism and response to AEDs in a cohort study and a meta-analysis.

Methods: The *SCN1A* IVS5N+5 G>A locus was genotyped in 643 epilepsy patients (47% drug-resistant) who were on carbamazepine (CBZ) or sodium valproate (VPA) monotherapy and 564 controls. Meta-analysis of 1486 subjects (528 of whom were drug-resistant) from related studies, including this cohort study, was performed under alternative genetic models.

Results: Data from study of the tri-ethnic Malaysian patients indicated that the G allele carriers in the Indians and Malays with generalized seizure were more resistant to VPA than the A allele carriers. Moreover, Malay patients with GG genotype and affected by idiopathic generalized epilepsy (IGE) were more prone to VPA resistance compared to other genotypes. However, meta-analysis did not show any allelic and genotypic association with response to AEDs under alternative genetic models.

Conclusions: Our study indicated that the G allele was a risk factor for resistance to VPA in the Indians and Malays with generalized seizure. Malays with IGE and GG genotype were more resistant to VPA. However, meta-analysis data did not verify any association of this locus with response to AEDs.