



Anxiety is correlated with the RAMP1 rs3754701 AA genotype in patients with migraine

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Introduction

The most common neurovascular condition affecting people globally is migraine. Numerous areas of the neurological system are affected by migraine; headache symptoms are related to the activation of the trigeminal pathway. A crucial molecule in the progression of migraine is calcitonin gene-related peptide (CGRP), a potent vasodilator neuropeptide involved in nociception, motor function, secretion, and olfaction in the cranial vasculature, acting through interaction with its receptor. RAMP1 is an accessory protein, required for cell surface expression, ligand binding and signaling of CGRP receptor. A single nucleotide variant of RAMP1, called rs3454701 A>T, may impair protein expression, alter CGRP responses and modify migraine-associated symptoms.

Objectives

Investigate whether the RAMP1 rs3754701 genotypes contribute to the symptoms associated with migraine.

Methods

In a retrospective study, 177 migraine patients were genotyped using Taqman® allelic discrimination assay. Migraine-associated symptoms were assessed through scores: anxiety – STAI-Y1, STAI-Y2, GAD-7; depression – BECK; migraine disability – MIDAS; migraine impact – HIT6; allodynia – ASC-12; and hyperacusis – HQ. The relationship between a gene variation and symptoms was evaluated using correlation analysis.

Results

Most symptoms failed to demonstrate a correlation between RAMP1 rs3754701 and the outcomes of the study ($p > 0.05$). Otherwise, patients with the AA genotype showed higher scores on the GAD-7; RAMP1 rs3754701 was strongly associated with general anxiety ($\rho = -0.853$; $p = 0.031$).

Conclusion

These results suggested that RAMP1 rs3754701 gene variant might influence anxiety in patients with migraine.