

# An association study between various monoamine transporter gene polymorphisms and treatment response to mirtazapine in major depression

Hong Choi

From 1<sup>st</sup> International Congress on Neurobiology and Clinical Psychopharmacology and European Psychiatric Association Conference on Treatment Guidance Thessaloniki, Greece. 19-22 November 2009

## Background

Genetic differences may contribute to the inter-individual differences in treatment response to antidepressants among patients suffering from major depression. This study investigated a possible association of various monoamine transporter genetic polymorphisms with treatment response to mirtazapine in major depressive patients in elderly.

## Materials and methods

In this study, three genetic polymorphisms were selected: serotonin transporter 5-HTTLPR, serotonin transporter 5-HTT intron 2 VNTR, and norepinephrine transporter NET(G1287A). The patients with major depression diagnosed by DSM-IV were recruited to a 6-week naturalistic mirtazapine treatment study in Samsung Medical Center. Treatment response to mirtazapine was defined as  $\geq 50\%$  decrease in HAMD-17 scores at 6 weeks, and the genotypes in the patients were determined using the polymerase chain reaction.

## Results

Our results showed that ss allele carriers were included more in responder group(ss allele in responder vs. non responder group; 69.4% vs. 40.0%). In addition, l-allele (sl/ll) carriers were included less in responder group(sl/ll allele in responder vs. non responder group; 30.6% vs. 60.0%). Multiple logistic regression analyses showed the 5-HTTLPR polymorphism as an predictor of the

mirtazapine response (5HTTLPR ss allele carrier vs. l-allele (sl/ll) carrier; odds ratio: 3.81; 95% confidence interval [CI], 1.32-11.0;  $P = 0.013$ ). However, 5-HTT intron 2 VNTR l/s ( $P = 0.33$  by multiple logistic regression; [OR], 0.53; 95% [CI], 0.15-1.88), and NET (G1287A) G/A ( $P = 0.68$  by multiple logistic regression; [OR], 1.25; 95% [CI], 0.44-3.53) showed no statistical significant influences on response rate.

## Conclusions

In conclusion, 5HTTLPR polymorphism may predict treatment response to mirtazapine in major depressive patients in elderly.

Published: 22 April 2010

doi:10.1186/1744-859X-9-S1-S203

**Cite this article as:** Choi: An association study between various monoamine transporter gene polymorphisms and treatment response to mirtazapine in major depression. *Annals of General Psychiatry* 2010 9(Suppl 1):S203.