

# New study replicates association between genetic variation and antidepressant treatment response

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Pharmacogenetics, the study of genetic variation that influences an individual's response to drugs, is an important and growing focus in all of medical research, including psychiatry. It is a complex field, however, revealed by the lack of consistent and replicable findings across multiple studies, but some encouraging results are beginning to emerge. A new study scheduled for publication in the June 15th issue of *Biological Psychiatry* evaluated genetic markers in the treatment response of antidepressants and this work implicates the same markers as found in a prior trial.

Lekman and colleagues, using clinical data and DNA samples from the largest depression treatment study to date, the STAR\*D study, compared individual treatment response (the reduction or remission of depressive symptoms) to individual genotypes. The researchers found that certain markers, or variations, in the FKBP5 gene are associated with treatment response to citalopram, a widely used antidepressant drug.

In other words, patients with a particular genotype tended to respond better to the antidepressant treatment than others. Silvia Paddock, Ph.D., corresponding author on this article, further explains: "Our results are encouraging, because they support earlier findings by a German group implicating the same gene. It is promising to see the same genetic markers to be associated with response in hospitalized patients in the German study, as well as non-hospitalized patients in our study."

John H. Krystal, M.D., Editor of *Biological Psychiatry* and affiliated with both Yale University School of Medicine and the VA Connecticut Healthcare System, explains some background of this important gene: "FKBP5 is a gene that codes

for a protein that influences the molecular actions of a class of stress hormones, the glucocorticoids. In prior studies, variation in this gene was associated with the emergence of dissociative symptoms in traumatized children and PTSD symptoms in adults who had been maltreated as children."

Childhood maltreatment has been previously reported to be a predictor of poor response to some antidepressants. Now that this current report has also implicated variation in the FKBP5 gene as related to antidepressant response, he adds that "we now need to close this apparent 'loop,' i.e., we need to understand how, at a molecular level and in the context of the developing brain, FKBP5 links childhood maltreatment and antidepressant response." Dr. Paddock agrees that further research is necessary, noting that it's needed "in order to confirm our results in further samples and understand the mechanism by which the genetic markers influence the chance of a depressed patient to respond to an antidepressant. This will, ultimately, allow us to develop new and better treatment strategies."

Source: Elsevier

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