Article: 2098
Topic: 305 - Core Symposium: Treatment of Depression and Anxiety in Adult, Children and Adolescent Populations. An Update.

THE USE OF GENETICS IN PHARMACOLOGICAL AND PSYCHOTHERAPEUTIC TREATMENTS

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Evidence suggests that genetic factors contribute for about 50% of the antidepressant response therefore the knowledge of the patient genetic profile may lead to an individualized therapy in the next years.
A growing number of evidence has been reported for the functional polymorphism in the upstream regulatory region of the serotonin transporter gene (5-HTTLPR), particularly l allele has been associated with a better response in Caucasian. A significant number of replication findings are present in literature also for 5-HT2a, 5-HT1a, BDNF, COMT, MAOA, NET, Gbeta3, FKBP5, Pgp, TPH, ACE and GSK-3β variants, although an high number of failure of replication is reported for these genes. Furthermore new candidate genes have been recently identify through the genome-wide scan approach and multi-sites projects like STAR*D and GENDEP. Among these the more promising are GRIK4, GRIK2 and DTNBP1. We also performed a pathway analysis on STAR*D dataset to investigate possible pathways involved in resistant depression with interesting findings on glutamate gene variants and early response.
Some preliminary evidence suggest also a modulatory effect of gene variants on psychotherapy efficacy. There is therefore increasing evidence of a genetic modulation on treatment response, both directly and through a modulation or an interaction with clinical variables that could influence the response to antidepressant, like personality and social modulators.

https://doi.org/10.1016/S0924-9338(13)76996-7 Published online by Cambridge University Press