

Poster presentation

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Personalization of treatment: using pharmacogenetics and pharmacogenomics in the treatment of psychiatric disorders

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from International Society on Brain and Behaviour: 2nd International Congress on Brain and Behaviour
Thessaloniki, Greece. 17–20 November 2005

Published: 28 February 2006

Annals of General Psychiatry 2006, **5**(Suppl 1):S265 doi:10.1186/1744-859X-5-S1-S265

Background

The prevalence of psychiatric disorders is increased in children and adults with intellectual disability. Brain damage or dysfunction interacts with social and family factors to increase susceptibility to mental illness. Current concepts in drug therapy often attempt treatment of large patient populations as groups, irrespective of the potential for individual, genetically-based differences in drug response.

Materials and methods

This article aims to give an overview of the exciting discoveries made so far in the field of psychiatry, as well as to mention some of the more recent findings.

Results

Clinical outcome to psychiatric drug therapy varies widely among patients, and is complicated by variability in individual response to psychotropic drugs. The activity of psychiatric drugs can also be influenced by genetic alterations affecting the drug target molecule. These include the dopaminergic and serotonergic receptors, neurotransmitter transporters and other receptors and enzymes involved in psychiatric disorders.

Association studies investigating the relation between genetic polymorphisms in metabolic enzymes and neurotransmitter receptors on psychiatric treatment outcome provide a step towards the individualization of psychiatric treatment through enabling the selection of the most beneficial drug according to the individual's genetic background.

Discussion

New developments in molecular biology, human genomic information, statistical methods, and bioinformatics are ongoing and could pave the way for the next generation of pharmacogenetic studies in psychiatry. Knowledge from these studies will ultimately lead to the individualization of psychiatric drug treatment, while providing new insights into the etiology of these disorders and their future treatment.