Annals of General Psychiatry

BioMed Central

Poster presentation

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Psychiatric pharmacogenetics: a way to enhance the efficacy of pharmacotherapy in neurology and psychiatry

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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):S263 doi:10.1186/1744-859X-5-S1-S263

Background

The pharmacotherapy of psychiatric disorders exhibits wide variability in therapeutic response with little scientific guidance for treatment on a patient-by-patient basis. Drug treatment of psychiatric disorders is troubled by severe adverse effects, low compliance and lack of efficacy in about 30% of patients.

Materials and methods

This article aims to review the implications of pharmacogenetics for clinical psychiatry; these are discussed in the context of environmental and sociocultural factors.

Results

Pharmacogenetics and pharmacogenomics deal with the genetic basis underlying variable drug response in individual patients. The individual differences in therapeutic and adverse effects of psychotropic drugs are largely determined by genetic factors. Recent advances in pharmacogenetics have highlighted the potential utility in predicting metabolic phenotypes, risks for side-effects and likelihood of drug response for the individual patient. This approach has clear implications for the discovery of psychiatric disease-associated genes as well as for the development of safer, more efficacious psychiatric drugs. Although the advances of pharmacogenetics may have many benefits in clinical practice, the importance of non-genetic factors must also be considered as cultural and environmental factors significantly impinge on response to medications.

Discussion

Current pharmacotherapies for psychiatric disorders are generally incompletely effective. Many patients do not respond well or suffer adverse reactions to these drugs, which can result in poor patient compliance and poor treatment outcome. All of this will lead to novel approaches in drug discovery, an individualized application of drug therapy, and new insights into disease prevention.