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Pharmacogenetics: Advanced drug administration

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Adverse drug reactions are influenced by multiple factors, including health, environmental influences and genetic characteristics. Pharmacogenetics studies how inter-individual genetic variations may affect drug responses. It is the technology that researches the influence of genetic variation on drug response in patients by correlating gene expression or polymorphisms with a drug's efficacy or toxicity. It is well known that Adverse Drug Reactions (ADRs) are a relevant health matter, being the fourth cause of demise in hospitalized patients. Important drug agencies have demonstrated a great interest in the early detection of ADRs due to their high incidence and increasing health care costs. Pharmacogenetics aims to develop the means to optimize drug therapy with respect to the patients' genotype, to ensure maximum efficacy with minimal adverse effects. Pharmacogenetics is a research field still in development and therapy individualization remain a challenge for the future. It is important to appreciate that many genes may influence the response to drugs, and the genetic polymorphisms present ethnic variation, which complicates the identification of genetic variations which are most relevant. Clinical validation of genetic markers of the greatest clinical relevance is perhaps one of the major limiting factors in the use of genetic information when making treatment decisions.

Biography

Rozana Oliveira Goncalves is currently a Biology Teacher in the city of Salvador in Brazil. In 1997, she completed a course in Biological Sciences at Catholic University of Salvador. In 2001, she began her career in research as an intern in the Laboratory of Human Genetics and at Maternidade Climério de Oliveira. In 2006, she started her Master's degree in Biotechnology and Investigative Medicine at Gonçalo Muniz Research Center/Fiocruz. She has experience in Genetics, working mainly in the following subjects: Occupational exposure, bio-indicators, exchanges between chromatid sisters, and recurrent abortion.

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