

Clinical Application of Pharmacogenetics: What is the future?

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Genetically controlled polymorphisms of drug-metabolizing enzymes, drug transporters, and drug receptors cause significant differences in human subjects in the efficacy and safety of many drugs. The inherited basis for these large interindividual variations is being elucidated at the level of the human genome by the field of pharmacogenomics. This new knowledge can be used not only to guide new drug discoveries but also to individualize drug therapy. For example, adverse drug reactions are a leading cause of death and are often attributable to differences among subjects in drug response. Through the application of the principles of pharmacogenetics and pharmacogenomics these high morbidity and mortality rates could possibly be reduced.