PHG 478 : Pharmacogenomics and personalized medicine

This course will teach the students the basic principles of human genetics and how it contributes to inter-individual variation in treatment strategies. They will apply the principles of molecular and cellular biology to understand how genetic variability in genes encoding drug metabolizing enzymes, drug transporting proteins, and drug receptors (targets) can contribute to variability in drug disposition and action. Accordingly the genetic makeup of an individual will lead to major changes in pharmacokinetics, pharmacodynamics, and clinical outcome. They will be able to discuss the impact of pharmacogenomics in different therapeutic areas, using case studies reporting the clinical consequences of pharmacogenomics on therapeutic efficacy or toxicity. They will apply pharmacogenomics concept to a particular drug therapy to solve relevant problems in pharmaceutical care. The societal and ethical implications of genetic testing and the resultant individualization of drug therapy will be covered in this course. By the end of this course, the students will be equipped to critically evaluate the current and future literature in the area of pharmacogenomics.

Credits 2