Title of the larning unit: Pharmacogenetics

Importance of the learning unit:

Gaining the basic information about Pharmacogenetics and gene (genetic) polymorphisms.

Description of the learning unit:

Theoretical basis of Pharmacogenetics and Pharmacogenomics. Molecular-biological basis of gene (genetic) polymorphism, how the presence of variant alleles influence the encoded proteins. Genetic polymorphism with clinical impact on pharmacokinetic and pharmacodynamic parameters of the taken drugs. Information about Clinical Pharmacogenetics Implementation Consortium (CPIC).

Relevant terms:

pharmacogenetics

pharmacogenomics

gene polymorphism (genetic polymoprhism)

genotyping

- variant allele
- wild allele

phenotyping

- poor, intermediate and rapid metabolisers

common gene polymorphism

Outcomes:

Student describes the term pharmacogenetics, gene (genetic) polymorphism, and knows the molecular basis of these disciplines.

Student defines the diferences between pharmacogenetics and pharmacogenomics.

Student is aware of the clinical impact of the presence of variant alleles on the efficiency of the encoded proteins.

Student knows about the existence of population differences in the occurrence of variant alleles and explains the terms phenotyping, genotyping , slow, intermediate, rapid metabolisers, variant and wild allele.

Student gives examples of gene polymorphisms influencing the pharmacokinetics and pharmacodynamics of the drug with clinical impact.

Information sources:

Study materials for courses aVLFA0721p and aVLFA0721c.

Exam questions

General pharmacology: 31. Pharmacogenetics, influence of genetic polymorfisms on pharmacokinetics and pharmacodynamics of drugs