UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Farmacologia

2122-2-I0303D034-I0303D082M

Aims

The aim of the course is to provide students with the basic principles of general pharmacology and the mechanism of action of some of the major drugs and of basic principles of radiopharmacology

Contents

The fundamental concepts of the principles of pharmacokinetics (fate of drugs in the body) and of pharmacodynamics (molecular targets of drugs); signs of drug-receptor interaction and pharmacological response variability; classification of adverse drug reactions.

Fundamental s of radiopharmacology related to kinetics of biodistribution and mechanism of action of diagnostic and therapeutic radiopharmaceuticals.

Detailed program

Introduction: discovery and drug development; study of drugs. Preclinical phase. Clinical research. Pharmacovigilance.

Pharmacokinetics: routes of drug administration; mechanisms of drug absorption; drug distribution and transport; biotransformation of drugs; elimination: main (renal-biliary) and secondary routes; individual variability of the pharmacological response (age, gender, ethnicity, conditions and pathologies of patients).

Pharmacodynamics: the different types of receptors: membrane and intracellular receptors; characteristics of the drug-receptor interaction; agonists and antagonists; dose-response relationship; therapeutic index, therapeutic window.

Adverse drug reactions: hypersensitivity, idiosyncrasy, allergy. Iatrogenic diseases.

Drug interactions: synergy, additivity, antagonism, indifference

The autonomic nervous system and the main pharmacological intervention sites: adrenergic and cholinergic transmission

Radiopharmacology: chemical structure, radionuclides used for diagnostic or therapeutic applications, kinetics of biodistribution, mechanism of action (trapping, binding), clearance.

Prerequisites

Biomedical Sciences

Teaching form

Lectures, exercises

Textbook and teaching resource

Cella, Di Giulio, Gorio, Scaglione, Farmacologia generale e speciale per le lauree sanitarie triennali, ED Piccin

Slide presented during the course

Semester

Second semester

Assessment method

Written and oral exam.

The written test will consist of a single task for the Pharmacology and Anesthesiology modules. 33 multiple choice questions (5 answers each, only one is correct) will be administered, divided proportionally to the credits: 22 on topics related to Pharmacology and 11 of Anesthesiology. For some quizzes, a brief analysis will be required (like open question).

The oral test will focus on main issues presented and discussed with students during the course

For the evaluation of the written and oral test, the following criteria will be taken into account:

- correct answers

- answer relevance and completeness to the questions

Office hours

By appointment required by mail