UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Pharmacology

2122-2-I0302D034-I0302D039M

Aims

The course aims at providing students with the basic principles of general pharmacology and the mechanism of action of some of the major drugs.

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. Mechanism of action of the main classes of drugs.

Detailed program

Pharmacology

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.

Main pharmacological classes:

- overview of cardiovascular pharmacology (antihypertensive);
- anti-inflammatories and painkillers;
- antibiotics;
- drugs that act on bone tissue (bisphosphonates);
- antiseptics and disinfectants.

Prerequisites

Knowledge of the introductory courses indicated in the regulation of the degree course.

Teaching form

Lectures, exercises in Italian language.

Textbook and teaching resource

Suggested text book: Cella, Di Giulio, Gorio, Scaglione, Farmacologia generale e speciale per le lauree sanitarie triennali, Ed. Piccin;

The teachers will provide educational material.

Semester

II year, II semester.

Assessment method

- 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 multiple choice questions, a brief analysis could be required (like open question).

The oral test will focus on in-depth study of the written test.

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

- correct answers;
- answer relevance
- completeness to the questions.

Office hours

By appointment