UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Pharmacology

2627-3-H4102D129-H4102D12901

Aims

1. To know the most used onco-hematological drugs
2. To understand the principles underlying onco-hematologic therapy
3. To identify and correctly solve the complex problems related to the use of onco-hematological drugs in clinical practice

Furthermore, the course contributes to the following objectives:

1. Knowledge and understanding:
   Knowledge of the key elements of pharmacology, with attention to sex/gender and population differences.
2. Applied knowledge and understanding:
   Ability to apply acquired knowledge.
3. Independent judgment:
   Demonstrate a critical approach, constructive skepticism, and a creative, research-oriented attitude. Build awareness of the importance and limitations of scientific thinking based on information obtained from various resources.
4. Learning skills:
   Collect, organize, and critically interpret new scientific knowledge and health/biomedical information from various resources and databases.

Contents

1. Classification of the most commonly used hematologic drugs: antianemic drugs and hematopoietic growth factors, anticoagulants and antiplatelet agents, antihemorrhagic drugs, lipid-lowering drugs.

2. Description of the main classes of antineoplastic drugs: cytotoxic drugs, monoclonal antibodies, CAR-T cells; drugs that act on trophic factor receptors, drugs that act on signaling pathways, and notes on epigenetic drugs that affect DNA methylation (and acetylation).

3. ADME and mechanisms of action

4. Cellular, biochemical, and molecular bases of the action of onco-hematologic drugs and their interactions within the human body

5. Therapeutic uses

6. Advantages and disadvantages of their therapeutic use

Detailed program

- Antiplatelet drugs
- Anticoaugulants
- Introduction to cancer chemotherapy
- Oncolytic viruses
- Therapeutic antibodies
- Treatment of breast cancer
- Treatment of colon cancer
- Treatment of lung cancer
- Treatment of prostate cancer
- Liquid biopsy
- Oncohematological drugs
- CAR-T therapies
- Innovations in the Treatment of Childhood Cancer

Prerequisites

Basic Pharmacology course

Teaching form

Lectures will be in attendance: 10 lessons of 2 hours. Lessons will be delivered in English in the form of lectures, exercises and discussions of simple clinical cases on pharmacological topics.

Textbook and teaching resource

Brunton, Hilal-Dandan, Knollmann. Goodman and Gilman: The parmacological basis of therapeutics. McGraw-Hill, 13th ed

Katzung and Trevor. Basic and clinical pharmacology. McGraw-Hill, 13th ed

Semester

III year, second term

Assessment method

The final evaluation will take place in presence and will consist of an oral exam on the topics discussed in the course

Office hours

On appointment to be requested by email

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY