



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Pharmacology

2627-4-H4102D024-H4102D081M

Aims

This course will provide basic knowledge about the effects of different drugs on heart and circulation and will explain the mechanisms of action of the main classes of cardiovascular drugs. The course will allow students understand how to tailor drug prescription according to patient disease and characteristics. After completion of this course, the students will learn basic knowledge about the treatment of major cardiovascular and respiratory conditions (hypertension, ischemic heart disease, heart failure, asthma etc).

In details, 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

Main classes of cardiovascular and respiratory drugs with their mechanisms of action, drug interactions and precautions

Detailed program

- General overview of pharmacologic therapy for cardiovascular diseases
- Anti-ischemic and antianginal therapies
- Anti-hypertensive therapies (Beta-blocking agents, Calcium channel blockers, Inhibitors of Renin-Angiotensin-Aldosterone System, Diuretics)
- Antithrombotic agents (acute and chronic anticoagulation, fibrinolytics) - brief overview, as already discussed in the Onco-Hematological diseases
- Antiplatelet agents - brief overview, as already discussed in the Onco-Hematological diseases
- Lipid-modifying therapies (statins, fibrates, ezetimibe) - brief overview, as already discussed in the Onco-Hematological diseases
- Anti-arrhythmic drugs
- Treatment of acute and chronic heart failure
 - Natural products in cardiovascular medicine
- Contributory risk and management of comorbidities in chronic heart failure
- Non-cardiac drugs affecting the heart
- Treatment of asthma and chronic obstructive pulmonary disease

Prerequisites

Fundamental knowledge on cell biology and general pharmacology

Teaching form

10 frontal lessons

Textbook and teaching resource

- Kaski JC, Kjeldsen KP. The ESC Handbook on Cardiovascular Pharmacotherapy (2 edn). Oxford University Press 2019
- Brunton L, Hilal-Dandan R, Knollmann BC. Goodman and Gilman's the Pharmacological Basis of Therapeutics (13th Edition) McGraw Hill 2018

Goodman and Gilman's The pharmacological basis of therapeutics, 13th ed. (2018) McGraw-Hill Education.

Semester

- First semester

Assessment method

As for the vertical track (multiple choice exam and oral examination)

Office hours

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Sustainable Development Goals
