UCL Faculté de médecine

MD

FARM2144	Pharmacologie générale

[30h+15h exercises] 3.5 credits

This course is taught in the 1st semester

Teacher(s):　　　　　　　Josiane Burton, Emmanuel Hermans, Roger-K. Verbeeck
Language:　　　　　　　　　french
Level:　　　　　　　　　　　2nd cycle course

Aims

The objective of this course is to teach the students the basic principles of the pharmacodynamic and pharmacokinetic characteristics underlying the rational use of therapeutic agents. At the end of the course, the students should have a good understanding of the fundamental aspects of the therapeutic use of drug substances as well as the qualitative/quantitative aspects of the use of agonists and antagonists as therapeutic agents.

Main themes

In the first part of the course (pharmacodynamics) the qualitative and quantitative effects of agonists and antogonists on different types of receptors are explained as well as the interpretation of dose-effect curves, Pharmacodynamic parameters (ED50, pA2, pD2, #) and notions such as therapeutic index will be explained as well as their importance in pharmacotherapy. The implications of preganancy and lactation on the rational use of drugs will be also be briefly discussed.
The pharmacokinetic part of the course describes the 3 fundamental processes determining the pharmacokinetic behavior of a drug, i.e. absorption, distribution and elimination. In addition, the calculation and interpretation of pharmacokinetic parameters such as clearance, distribution volume, half-life and others is presented.

Content and teaching methods

The total number of lecture hours of the theoretical part of the course is 30 and is equally divided between pharmacodynamics and pharmacokinetics. In addition, practical laboratory sessions are organized (15 hours in total) during which the students will use an isolated organ model (the ileum of guinea pigs) to establish dose-effect curves for agonists (acetylcholine, histamine) and to illustrate the effects of antagonists (anti-histamine H1). The experimental results are used to calculate pharmacodynamic parameters such as pA2. A series of pharmacokinetic problems (based on plasma concentration-time data) have to be solved by the students to show them the calculation of the main pharmacokinetic parameters.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisite courses: general chemistry, physiology/anatomy, biochemistry,
mathematics.
Student evaluation: written exam on the theoretical part of the course, laboratory
reports for the practical sessions plus written exam on the
theory behind the practical laboratory sessions.
Course support: written lecture notes, model answers to a number of
pharmacokinetic problems, powerpoint slides and
transparencies used to give the course are available to the
students.

Other credits in programs

FARM21	Première année du grade de pharmacien	(3.5 credits)	Mandatory