Course Specifications
Valid as from the academic year 2018-2019

General Pharmacology (G000734)

Course
Specifications

Lecturers in academic year 2018-2019
Croubels, Siska
DI02
lecturer-in-charge
Devreese, Mathias
DI02
co-lecturer

Course offerings and teaching methods in academic year 2018-2019
A (semester 1)
Dutch
seminar: coached exercises
lecture
10.0 h
25.0 h

Offered in the following programmes in 2018-2019
crds
offering
Bachelor of Science in Veterinary Medicine
3
A

Teaching languages
Dutch

Keywords
Drug disposition, pharmacokinetics, pharmacodynamics

Position of the course
The student is informed about the general basic principles of pharmacokinetics and mode of action, pharmacodynamics, of veterinary drugs. More particularly the main targets of veterinary medicines in the patient are overviewed. Also aspects such as drug-drug interactions are discussed.

Contents
Basic principles of veterinary pharmacology. Important aspects such as pharmaceutical formulation and impact on the pharmacokinetics (drug concentration-time curve), different routes of drug administration, and pharmacokinetic ADME processes i.e. absorption, distribution, elimination (metabolism and excretion) and bioavailability are discussed. The pharmacodynamics of drugs treat general mechanisms of drug action, dose-response curve, receptor theory, molecular targets, agonism / antagonism of drugs and PK-PD modelling.

Initial competences
Sufficient knowledge about physiology, biochemistry and organic chemistry are required.

Final competences
1. To provide the student knowledge and understanding of the basic pharmacology with emphasis on general pharmaceutics, pharmacokinetics and pharmacodynamics of veterinary drugs.
2. To interpret drug concentration-time curves after single and multiple dosing for parenteral and oral drug administration (linear and non-linear pharmacokinetics).
3. To use non-compartmental modeling and pharmacokinetic models: linear kinetics, one- and two-compartmental models.
4. To calculate the posology of drugs and the main pharmacokinetic parameters such as absorption and elimination half-life, volume of distribution, clearance, bioavailability, ...
5. To calculate the posology of a drug using its pharmacokinetic properties.
6. To interpret scientific leaflets of veterinary drugs, i.e. the pharmacokinetic and pharmacodynamic properties, and posology.
7. To gain insight in the similarities and differences of pharmacokinetic processes between men and animals, and between several animal species (multidisciplinarity),

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as well as in the use of laboratory animals as preclinical animal model for drug research in humans.

The economical context related to the pharmacological treatment of patients with respect to generic drugs (multiperspectivism).

Conditions for credit contract
Access to this course unit via a credit contract is determined after successful competences assessment.

Conditions for exam contract
Access to this course unit via an exam contract is unrestricted.

Teaching methods
Lecture, seminar: coached exercises

Extra information on the teaching methods
Twice a week a lecture of about 1.25 hour is given. Therefore a syllabus of about 160 pages is used. Hereby the active participation of the student will be also be required. For each drug mainly basic, practical and essential information will be discussed. Practical seminars (guided exercises) are given. The student is encouraged to solve the PK/PD problems individually or in a team with other students. Each student constructs the drug concentration-time curves, and calculates the PK parameters using a calculator. The tutors and assistants are continuously available for questions/problems raised during the practical seminars, and each student is individually motivated/contacted to solve the problems and to construct the PK profiles. Afterwards, the solution is stepwise elaborated by the tutors.

Learning materials and price
A syllabus of approximately 200 pages is available, +/- 15 Euro. Books on general pharmacology (Dutch and English) are available for the students in the department of pharmacology.

References
Book possible to use and to consult: Algemene Farmacologie by J.M. van Ree and D. D. Breimer, second edition.

Course content-related study coaching
No specific study coaching is foreseen. Personal contact and discussion with the tutor is always possible, also during the exercises.

Evaluation methods
day-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period
Written examination

Examination methods in case of periodic evaluation during the second examination period
Written examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation
not applicable

Extra information on the examination methods
Written examination with open questions (incl. PK problems) and multiple choice questions.

Calculation of the examination mark
Score obtained during the exam.

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