ECVPT Pharmacokinetics Workshop: Basic concepts for future professionals (foundation module/refresher course)

Course Information

Key Areas

- Pharmacokinetics and physiological understanding of PK parameters

- Clinical pharmacology

- Introduction to computational approaches for evaluation of PK parameters

About this course

The present course is organized for professionals involved in pharmacokinetic studies, clinical research or regulatory affairs but without specific skill in data analysis and interpretation. This course is also a valuable refresher course for professionals actively working in PK.

The aim of this course is:

1. To show non-kineticists that pharmacokinetics (PK) can be a useful tool to document drug efficacy and safety and more generally to understand the role of PK on drug discovery, drug development, drug submission and clinical pharmacology.

2. To understand the meaning and utility of the main PK parameters (plasma clearance, volumes of distribution, plasma terminal half-life and bioavailability).

3. Brief training session on how to use a PK software program (Phoenix WinNonlin).

The 3.5 day course will comprise a series of lectures and practical exercises, which delegates will solve utilizing to Microsoft Excel and the computer software Phoenix WinNonlin (version 8.4). Prior to the Workshop (a few weeks in advance), you will be provided with educational licences to download onto your personal PC, which you will bring to the Workshop (NB: not MAC compatible). All test exercises have been carefully designed to allow attendees to proceed in a step-by-step progressive manner. Tutor support will be available and correction of the exercise will be provided.

To achieve its objectives, the course is deliberately presented without (advanced) mathematical consideration but attendees are assumed to know what a logarithm and an exponential are and to have a basic knowledge of statistics.

We recommend this course for residents of the European College of Veterinary Pharmacology and Toxicology and also residents of other colleges where PK is an important part of the exam curriculum (for example anaesthesia). This course provides a brief introduction to the Phoenix WinNonlin interface (but not to population PK).

Course programme below

Dates
From Tuesday 25th (afternoon) to Friday 28th March 2025

DAY 1 Tuesday, 25th March 2025 Room G60

Time		Durat.	Activity	Activity description	Academic staff
13:00	13:30	00:30	Introduction	Meet and Greet - Overview of the course	
13:30	14:30	01:00	Lecture 1	**Rationale for the effective use of pharmacokinetics and pharmacodynamics in drug development**	VARIOUS LECTURERS (PLT)
14:30	15:00	00:30	Lecture 2	**What needs to be validated for an analytical technique**; Statistical methods to test Linearity, accuracy, precision, agreement… of an analytical technique	VARIOUS LECTURERS (LP)
15:00	15:30	00:30		Afternoon break, coffee	
15:30	17:30	02:00	*Exercise 1 (start)*	**Building and validation of a calibration curve with Phoenix/WinNonlin**; Notion of residuals, weighting factors as proposed by Phoenix/WNL but also 1/X and 1/X^2 using a user vector, back calculations, including with an equation having a quadratic components etc.	VARIOUS TUTORS (LP)
17:30	18:30	01:00		End of the day. Pizza in the refectory	
18:30	19:30	01:00	*Exercise 1 (continuation)*	**Building and validation of a calibration curve with Phoenix/WinNonlin**;	VARIOUS TUTORS LP (G60 after 18h30)

DAY 2 Wednesday, 26th March 2025, Conference Rooms 1+2

Time			Activity	Activity description	Academic staff
08:30	09:00	00:30	Lecture 3	**Body clearance: underlying concepts**	VARIOUS LECTURERS (PLT)
09:00	10:00	01:00	Lecture 3	**Body clearance: an overview**	VARIOUS LECTURERS (PLT)
10:00	10:30	00:30		Morning break, coffee	
10:30	11:30	01:00	Lecture 4	**The half-life: an overview**	VARIOUS LECTURERS (LP)
11:30	12:30	01:00	Lecture 5	**Volume of distribution: an overview**	VARIOUS LECTURERS (PLT)
12:30	14:00	01:30		Lunch	
14:00	15:30	01:30	*Exercise 2 (start)*	**Phoenix WinNonlin: one compartment model**, IV dosing and oral dosing	VARIOUS TUTORS
15:30	16:00	00:30		Afternoon break, coffee	
16:00	18:00	02:00	*Exercise 2 (continuation)*	**Phoenix WinNonlin: one compartment model**, IV dosing and oral dosing	VARIOUS TUTORS
Evening				Dinner at the Tandori Raj, Brookmans park	

DAY 3 Thursday, 27th March 2025, Conference Rooms 1+2

Time			Activity	Activity description	Academic staff
09:00	10:00	01:00	Lecture 6	**Bioavailability (rate and extent):** protocols (plasma, urine, metabolites), estimation, interpretation	VARIOUS LECTURERS (LP)
10:00	10:30	00:30		Morning break, coffee	
10:30	11:30	01:00	Lecture 7	**Non compartmental analysis**	VARIOUS LECTURERS (ABM)
11:30	13:00	01:30	*Exercise 3 (start)*	**A test exercise to illustrate NCA with physiological interpretation**	VARIOUS TUTORS
13:00	14:30	01:30		Lunch	
14:30	16:00	01:30	*Exercise 3 (continuation)*	**A test exercise to illustrate NCA with physiological interpretation (continued)**	VARIOUS TUTORS
Evening				Free evening, a chance to visit London by Night	

DAY 4 Friday, 28th March 2025, Conference Rooms 1+2

Time			Activity	Activity description	Academic staff
08:30	09:30	01:00	Lecture 8	**Plasma protein binding: an overview**	VARIOUS LECTURERS (PLT)
09:30	10:00	00:30	*Exercise 4 (start)*	**Estimation of Bmax, Kd** and NS using linear and Non Linear regression: **application to clinical situations**	VARIOUS TUTORS
10:00	10:30	00:30		Morning break, coffee	
10:30	12:00	01:30	*Exercise 4 (continuation)*	**Estimation of Bmax, Kd** and NS using linear and Non Linear regression: **application to clinical situations**	VARIOUS TUTORS
12:00	12:30	00:30	Feedback	**End of the workshop / debriefing / evaluations**	LP PLT
12:30	13:00	00:30		Farewell	LP PLT