



Pharmacokinetics 2010

September 27-29, 2010
Kasteel Oud-Poelgeest, Oegstgeest

COURSE DESCRIPTION

Pharmacokinetic research is fundamentally important for the development, registration and application of new drugs. This post-doctoral course discusses the most important novel approaches in human-drug relations:

- **Absorption**, in relation to drug delivery pathways and forms;
- **Distribution**, a.o. lipid binding, blood-brain barrier and placenta passage;
- **Excretion**, through urine, bile, saliva and breast milk;
- **Biotransformation**, i.e. the various Cytochrome P450 enzymes and the origin of genetically induced polymorphisms, conversion speed, induction, inhibition, saturation and interactions.

Following a general introduction, these processes will be discussed according to pharmacokinetic parameter clearance, partition volume, and half-life. With a problem-orientated approach, the focus will be on the interpretation of pharmacokinetic data, both in healthy volunteers, as well as in patients (i.e. suffering from kidney insufficiency and liver illness). Additionally, the role of pharmacokinetic studies in drug registration will be addressed. The course will be concluded with a discussion on the relations between pharmacokinetics and pharmacodynamics. This course will be provided in the form of lectures, alternated with practical examples and cases studies, with ample possibility for discussion.

TARGET AUDIENCE

This post-doctoral course is especially tailored for the needs of researchers from the pharmaceutical industry, who often encounter pharmacokinetic data and its interpretation for registration purposes, but is also highly recommended to anyone who on a regular basis is involved with the evaluation of the functionality and the fortunes of drugs.

LECTURERS

Prof.dr. M. Danhof

Professor Meindert Danhof's research interest is in the development of new theoretical concepts in pharmacokinetic-pharmacodynamic (PK-PD) modeling. In recent years important contributions in his research have been on the incorporation of i) receptor theory and ii) dynamical systems analysis. This has resulted in a new class of 'mechanism-based' PKPD models with considerably improved properties for extrapolation and prediction. His most recent research focuses on the development of novel concepts of "disease system analysis". Meindert Danhof has an active interest in the dissemination of PKPD modeling concepts through the organization of international conferences, workshops and courses. As such, he is the Founder and Chairman of the series of international conferences "Measurement and Kinetics of *In Vivo* Drug Effects" in Noordwijkerhout, the Netherlands in 1990, 1994, 1998, 2002, 2006 and 2010.

Dr. A.G. de Boer

Dr. Bert de Boer worked from 1979 to 1984 in the Department of Pharmaceutical Technology on rate-controlled polymeric and osmotic drug delivery systems. In 1984, he started his present research in the Division of Pharmacology. In 1999, he took over the responsibility for the Blood-Brain Barrier Research Group following the appointment of Prof. Breimer as Rector Magnificus of Leiden University. His research focuses on the functionality of the blood-brain barrier (BBB) under disease conditions and on drug transport and targeting to the brain. Recently a novel drug targeting technology including a human applicable ligand was

discovered that can be applied to target large molecules like enzymes, genes and RNAi to the brain and to treat diseases with inflammatory events like multiple sclerosis, stroke, Parkinson, Alzheimer, epilepsy, tumours. He is chairman of the Scientific Advisory Board of to-BBB, member of the Scientific Advisory Board of the Centre for Human Drug Research and he is one of the two coordinators of the Dutch Network on Advanced Drug Delivery/Drug Targeting.

Dr. A. Jonker-Hoogerkamp

Dr. Ineke Jonker completed her PhD in 1992 at the Division of Pharmacology of the LACDR, with Prof.dr. D.D. Breimer as promoter and Prof.dr. M. Danhof as co-promoter. From 1992 onwards, she worked at the department of Regulatory Affairs by N.V. Organon. In 2001, she started as senior consultant and business unit manager, with Regulatory Assist, a business unit from Univald Compliance & Validation. Dr. Jonker has ample experience with the pre-clinical, clinical, and chem/bio-technologic pharmaceutical aspects of drug-registration worldwide. She provides drug registration services for all phases of drug development, from elementary research, through development, and production, both for market approval and post-approval aspects

Dr. O. Della Pasqua

Dr. Oscar Della Pasqua is Director Clinical Pharmacology and Discovery Medicine at GlaxoSmithKline in the UK and Associate Professor at the Division of Pharmacology at the LACDR. In addition to his extensive experience in early and late clinical development in industry, he leads a research group focused on longitudinal markers of disease and clinical trial design. This includes the extrapolation of PKPD

relations from health to disease states and characterisation of placebo response in clinical trials. Important elements of this research are i) the pathological process itself, ii) the response to treatment compliance, and iii) feedback control mechanisms (homeostasis) activated by pharmacological activity. These PKPD models enable prediction of response to treatment for time- and rate-dependent processes. In addition, Dr. Della Pasqua is a member of the Executive Board of the TEDDY Network of Excellence for paediatric drug development and therapeutics.

Dr. E.C.M. de Lange

Dr. Elizabeth CM de Lange (PhD) is head of the Target Site Equilibration Group within the Division of Pharmacology. Her ultimate aim is to aid in the prediction of the dose-response relationship of CNS drugs in the clinical setting, on the basis of preclinical data (translational research). Her current research program involves the identification and characterization of key factors in the dose-response relationship of CNS drugs: the pharmacokinetics of the drug in plasma; the kinetics of passive and active drug transport across the BBB; the kinetics of drug distribution into different compartments in the CNS, the kinetics of drug equilibration to the target site and the ability of the drug to interact with the target to activate signal transduction pathways that lead to the effect. Also changes in BBB functionality that may occur in CNS disorders, such as Parkinson's disease and Epilepsy, are included. Elizabeth de Lange has been the chair of the 1st (1998), 2nd (2000) and 5th (2007) International Symposium on Microdialysis in Drug Research and Development. She is the current Past-Chair of the Microdialysis Focus group of the American Association of Pharmaceutical Scientists.

COURSE PROGRAM - PHARMACOKINETICS 2010

Monday, September 27th: "Pharmacokinetic Models en Parameters"

08.30 - 09.00	<i>Registration</i>
09.00 - 10.00	General Introduction Prof.dr. M. Danhof
10.00 - 10.30	<i>Coffee</i>
10.30 - 12.30	Pharmacokinetics after intra-vascular administration Dr. E.C.M. de Lange
12.30 - 14.00	<i>Lunch</i>
14.00 - 15.00	Pharmacokinetics after extra-vascular administration Dr. A.G. de Boer
15.00 - 17.30	Assignments Dr. E.C.M. de Lange and Dr. A.G. de Boer
18.00 - 19.30	<i>Dinner</i>
19.30 - 21.30	Case Study: Pharmacokinetics and Drug Registration Dr. A. Jonker-Hoogerkamp and Dr. O.E. Della Pasqua

Tuesday, September 28th: "Pharmacokinetic Processes"

09.00 - 09.30	Summary day 1 Dr. O.E. Della Pasqua
09.30 - 10.30	Pharmacokinetics after continuous infusion and repeated administration Dr. O.E. Della Pasqua
10.30 - 11.00	<i>Coffee</i>

11.00 - 12.30	Membrane transport and absorption Dr. A.G. de Boer
12.30 - 13.30	<i>Lunch</i>
13.30 - 14.30	Drug distribution Dr. A.G. de Boer
14.30 - 15.30	Drug Excretion Dr. A.G. de Boer
15.30 - 16.00	<i>Tea</i>
16.00 - 17.30	Biotransformation Dr. O.E. Della Pasqua
18.00 - 19.00	<i>Dinner</i>
19.30 - 21.30	Case Study: Population Pharmacokinetics and Clinical Drug Development Dr. O.E. Della Pasqua en Dr. A. Jonker-Hoogerkamp

Wednesday, September 29th: "Integration"

09.00 - 09.30	Summary day 2 Dr. E.C.M. de Lange
09.30 - 10.45	Integration of pharmacokinetic processes and parameters Dr. E.C.M. de Lange
10.45 - 11.15	<i>Coffee</i>
11.15 - 12.30	Relation between Pharmacokinetics and Pharmacodynamics Dr. E.C.M. de Lange
12.30 - 13.00	Concluding remarks and final discussion Dr. E.C.M. de Lange
13.00	<i>Lunch and farewell</i>

Course Venue:

Kasteel Oud Poelgeest
Poelgeesterweg 1, 2341 NM, Oegstgeest
Tel: 071 – 517 4224 / Fax: 071 - 515 6478

Course Fee:

€1150,- including course materials, consumptions during the breaks, 3x lunch, 2x diner, excluding hotel accommodation.

Hotel Accomodation:

€190,- for two nights (including breakfasts).

PhD-students:

A maximum of 5 PhD-students can register for a reduced fee. A support letter of the supervisor has to be included upon registration.

Registration and payment:

There is a maximum of 30 participants, so please send in your registration as soon as possible. Upon receipt of the registration form, we will send a confirmation letter with the invoice attached. Payment has to be fulfilled before the start of the course.

Cancellations:

Cancellations made before August 1st, 2010, are free of cost.
After August 1st, 2010, the following payments are required:
- Between August 1st, and September 1st, 2010: 50 % of the course fee.
- After September 1st, 2010: 100 % of the course fee.
Swapping registered participants is possible until the start of the course.

REGISTRATION PHARMACOKINETICS – September 2010

First Name: Last Name:
 Organization:
 Address:
 Zip Code: City:
 Invoice Address: VAT number:
 Telephone: Fax:
 E-mail:
 Lodgings [] No lodgings [] Arrival date: Departure date:

Please send to: LACDR Office, P.O. Box 9502, 2300 RA Leiden, The Netherlands
 Tel 071-527 4341; Fax 071-527 4277
 Email: e.devries@lacdr.leidenuniv.nl