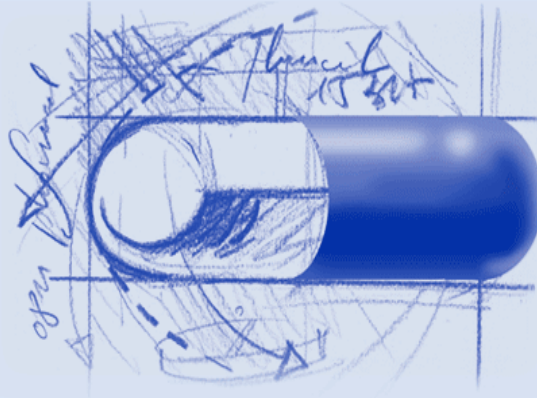


Welcome to PHARMED



ENTER

**POST-GRADUATE PROGRAMME IN PHARMACEUTICAL
MEDICINE & DRUG DEVELOPMENT SCIENCES**



**MODULES 3 & 4
Clinical research, Pharmacokinetics &
Biostatistics**

23-27 January & 13-17 February 2012

PHARMACOKINETICS : BASIC CONCEPTS AND APPLICATIONS

Roger VERBEECK

Pharmacokinetics is the study and characterization of the time course of drug absorption, distribution, metabolism and excretion, and the relationship of these processes to the intensity and time course of therapeutic and toxicologic effects of drugs. The physiologic concepts underlying the fundamental pharmacokinetic processes of absorption, distribution and elimination will be described. The interrelationships among pharmacokinetic parameters and physiologic variables in healthy volunteers and in patients will be demonstrated.

DRUG METABOLISM

Roger VERBEECK

The aim of the lectures is to present different aspects of drug metabolism in humans and animals. The first consists of a short overview of phase I and phase II reactions in the liver and elsewhere in the organism. Attention will also be given to stereoselective metabolism. In a second part, the methodology used in drug metabolism studies will be explained : in vitro methods (microsomes, hepatocytes, liver perfusion), in vivo methods (urinary data, intrinsic clearance). The third part will discuss the different factors influencing drug metabolism, such as species, genetic polymorphism, age (neonate, elderly), gender, interactions (induction, inhibition) and disease states. This seminar will focus on some practical aspects of genetic polymorphism of some drug metabolism enzymes. Molecular basis of the variable enzyme activities and methods to genotype individuals will be discussed (debrisoquine - sparteine polymorphism, mephenytoin and N-acetylation polymorphism).

CLINICAL PHARMACOKINETICS AND LINKAGE BETWEEN PHARMACOKINETIC AND PHARMACODYNAMIC DATA

Christian de MEY

This part of the course is focused on non-mathematical pharmacokinetics, describing the core processes of drug absorption, distribution, metabolism and excretion as a dynamic equilibrium between pharmacokinetic input and output. The main sources of their variability are discussed. Attention is paid to their assessment during drug development and their impact on competitive drug profiling. Examples of 'misleading' and 'confounding' pharmacokinetics are discussed. Finally, the course will consider the linkage between pharmacokinetic and pharmacodynamic data.

BIOEQUIVALENCE TESTING

Roger VERBEECK

Based on the CHMP Note for Guidance on the Investigation of Bioavailability and Bioequivalence, the following aspects of bioequivalence studies for immediate and modified release oral drug products will be discussed: study design, subject selection, food-interaction studies, pharmacokinetic analysis and statistical evaluation of the data, biowaivers based on the Biopharmaceuticals Classification System (BCS).

BIOSTATISTICS

Viviane De MAERTELAER, Christian MELOT

Part I : This part of the course will discuss the fundamental statistical concepts that are essential for professionals in the biomedical sector. Univariate tests of hypotheses, confidence intervals, regression analysis, and some non-parametric tests will be discussed.

Part II : The second part will cover statistical methods required by more elaborate research investigations. Several typical designs of studies will be discussed, including Bayesian and adaptive designs. Techniques for determining the number of subjects required in a clinical trial will be presented.

STUDY DESIGNS

Marie-Paule DERDE

The course defines such basic concepts as : biases, blinding, randomisation, parallel versus cross-ver designs, superiority, equivalence and non-inferiority trials.

THE PROTOCOL

Jean-Pierre TASSIGNON

The protocol is the key reference document of a clinical trial. The homework " Drafting a protocol for a clinical study " will provide a unique opportunity to integrate many aspects of clinical research and provide a competence in reading and understanding protocols.

ETHICAL AND LEGAL ISSUES IN DRUG DEVELOPMENT

André HERCHUELZ, Ingrid KLINGMANN, Anne LENAERS

Performance of clinical studies has important ethical implications. The course will start with the fundamental concepts of bioethics and the basic documents (Nuremberg code, Declaration of Helsinki). In a more practical way, the rules for functioning of ethical review committees will be presented. The European regulations of clinical trials and their implementation at the national level will be discussed. The difference of the ethics committee review system, organization, review timelines and submission process between EU member states will be presented and discussed.

GOOD CLINICAL PRACTICE AND SOPs

Monique PODOOR

The ICH-Good Clinical Practice (ICH4-GCP) guidelines for clinical studies will be reviewed in detail. The consequences of the European Directive on Clinical Trials will be discussed.

VACCINES DEVELOPMENT: FROM PRECLINICAL TO CLINICAL STUDIES

Arnaud MARCHANT

The development of new vaccines represents an important challenge. Vaccines are more difficult to characterize analytically than many pharmaceuticals. In addition, correlates of protection against diseases are not always available, making the prediction of the efficacy of many vaccines difficult. The course will describe the preclinical development of vaccines including the selection of vaccination strategy, antigens, adjuvants and vectors, and the selection of animal models for immunogenicity, protection and toxicology studies. Early phases of clinical development will be explained including immunogenicity and safety studies. The challenge of discovering biomarkers of vaccine efficacy in human subjects will be discussed. Finally, the course will describe how preclinical studies are used during the course of the clinical development of vaccines.

SPECIFIC ISSUES AND STANDPOINTS

Denis LACOMBE

Investigators network, the EORTC

SPECIFICITIES OF THE CLINICAL DEVELOPMENT PLAN OF BIOLOGICS

Isabelle CAMPINE and Marc de LONGUEVILLE

This session will address the following issues :

- The different types of biologics and their potential advantages (humanized monoclonal antibodies...)
- The specific toxicity studies in primates
- The issue of placebo control in a population suffering from a severe disease
- Pharmacokinetic peculiarities and measurement of autoantibodies
- The dose-ranging studies.



Timetable

Monday, January 23rd

- 13.00 – 14.00 *MCQ on preclinical research & development (for participants to seminars 1& 2)*
- 14.00 – 16.00 *Roger Verbeeck*
Pharmacokinetics : basic concepts & applications (I)

Tuesday, January 24th

- 09.00 – 12.00 *Viviane De Maertelaer*
Reminder of basic statistical notions
- 13.00 – 17.30 *Marie-Paule Derde*
Study designs

Wednesday, January 25th

- 09.00 – 12.00 *Viviane De Maertelaer*
Statistical aspects in the planning of clinical trials
- 13.00 – 15.00 *Monique Podoor*
Good clinical practice (ICH-GCP)
- 15.30 – 19.00 *Christian de Mey*
Clinical pharmacokinetics

Thursday, January 26th

- 09.00 – 12.00 *Viviane De Maertelaer*
Common errors in statistics and how to avoid them
- 12.00 – 14.00 PHARMED LUNCH*
- 14.00 – 18.00 *Roger Verbeeck*
Pharmacokinetics : basic concepts & applications (II)
Roger Verbeeck
Introduction of the assignment
“Analysis of pharmacokinetic data”

Friday, January 27th

- 09.00 – 13.00 *Arnaud Marchant*
Vaccines development: from preclinical to clinical studies

**Coffee breaks : 10.30-11.00
15.00-15.30**



Timetable

Monday, February 13rd

- 13.00 – 15.00 **André Herchuelz**
The role of ethics committees
- 15.30 – 17.30 **Isabelle Campine & Marc de Longueville**
Specificities of the clinical development plan of biologics
- 17.30 – 19.00 **Ann Lenaers**
Clinical trials in Europe : the regulatory framework and the role of the national competent authority

Tuesday, February 14th

- 09.00 – 12.00 **Christian Mélot**
Critical reading of a scientific publication on biostatistics
- 13.00 – 15.00 **Roger Verbeeck**
Drug metabolism (I)
- 15.30 – 17.30 **Roger Verbeeck**
Presentation and discussion of the the assignment
“Analysis of pharmacokinetic data”
- 17.30 – 19.00 **Jean-Pierre Tassignon**
The practice of clinical research

Wednesday, February 15th

- 09.00 – 12.00 **Christian Mélot**
Statistical analysis of complicated designs and multivariable analyses
- 13.00 – 18.00 **Jean-Pierre Tassignon**
The study protocol
Introduction of the assignment “Drafting a protocol for a clinical study”

Thursday, February 16th

- 09.00 – 10.00 **Denis Lacombe**
An investigator network, the EORTC
- 10.00 – 12.30 **Roger Verbeeck**
Drug metabolism (II)
- 12.30 – 14.00** **PHARMED LUNCH**
- 14.00 – 17.00 **Roger Verbeeck**
Bioequivalence
- 17.00 – 19.00 **Ingrid Klingmann**
Differences of the ethics committee review process between EU member states

Friday, February 17th

- 09.00 – 10.30 **Christian Mélot**
Bayesian clinical trials
- 11.00 – 12.30 **Viviane de Maertelaer**
Meta-analyses

Coffee breaks : 10.30-11.00 & 15.00-15.30



Isabelle CAMPINE

MD, Director Regulatory Affairs, UCB Pharma, Brussels

Marc de LONGUEVILLE

MD,PhD, FFPM, MBPCM ,Medical Director Inflammation,
UCB Pharma

Viviane De MAERTELAER

Ph.D. in physics, ULB, Professor at the ULB

Christian de MEY

M.D., FFPM, FRCP, Associat. Prof. University of Frankfurt, Clinical pharmacologist ACPS, Mainz-Kastel, Germany

Marie-Paule DERDE

Ph.D. in pharmaceutical Sciences, General Manager, Data Investigation Company Europe (DICE), Brussels

André HERCHUELZ

M.D., Ph.D., Professor of Pharmacology at the ULB, Member of the Belgian Medicines Commission, Chairman of the Ethics Committee of Erasme Hospital

Ingrid KLINGMANN

MD, PhD, FFPM, FBCPM, Managing Director, Pharmaplex bvba, Chairman of EFGCP's Board, Brussels, Belgium.

Denis LACOMBE

M.D., M.Sc., European Organisation for Research and Treatment of Cancer (EORTC), Brussels

Anne LENAERS

Anne Lenaers, Pharmacist, Division Research & Development Federal Agency for Medicines and Health Products, Brussels

Arnaud MARCHANT

M.D., ULB, Senior Research Associate of the FNRS, Institute for Medical Immunology, ULB and Research Center in Vaccinology, Biovallée, Gosselies, Belgium

Christian MELOT

M.D., Ph.D., ULB, M. Sci. Biostatistics, Limburgs Universitair Centrum, Professor of Biostatistics at ULB. Professor, Head of the Emergency Department, Erasme Hospital

Monique PODOOR

M.D., Dip. Pharm. Med., Head of PHARMAKON, Luxembourg, Chairperson of BeAPP

Jean-Pierre TASSIGNON

M.D., ULB, FFPM, Dipl. Pharm. Med., President & CEO,Crossover CRI AG, Past Chairman EFGCP Board,Formerly President PSI Pharma Support International AG (1995-2006)

Roger VERBEECK

Ph.D. in pharmacy, KUL, Professor, School of pharmacy, UCL

LANGUAGE

All courses are taught in English.

REGISTRATION FEE

1000 Euros for each module (including access to the electronic documentation), 250 Euros for one day or 2 halves-days.

Procedure: register by mail by returning a completed registration form.

Payment should be arranged upon receipt of our bill.

LOCATION

ERASME HOTEL

Route de Lennik, 790

1070 ANDERLECHT (Brussels)

Phone : 32-02/523 62 82

E-mail : info@hotelerasme.be

HOW TO GET THE ERASME HOTEL

by car:

Follow the Western Ring Road (RO) and exit at « ULB, ERASME » (between exit 15 and exit 16). At the 2nd roundabout take the exit ULB, ERASME, R.S.C Anderlecht”. The hotel is on your right, 300 m after the underground station Erasme/Erasmus”

By underground:

Take line 5 towards « Erasme/Erasmus » and get off at the terminus. Walk through the exit 2 « Route de Lennik / Lenniksebaan ».(not Hospital Erasme). At the bottom of the stairs exit in the direction of “ Campus, ULB, ERASME”. The hotel is 300 m down the road.

TRANSPORTATION

See our web site (venue): <http://www.ulb.ac.be/medecine/pharmed>

REGISTRATION & INFORMATION

For more information please contact.

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