



Clinicalquest

Best Practices in Therapeutic Drug Monitoring Level One

July 8 - 10, 2010, Amman, Jordan

Therapeutic drug monitoring (TDM) is a relatively new clinical discipline that combines the determination of drug levels with the application of pharmacokinetic principles and pharmacodynamics to optimize dosage regimens in a patient. Therefore, therapeutic drug monitoring services has been deemed to have much greater role than merely therapeutic drug measuring. To date, in many countries worldwide it has been applied mainly to drugs with narrow therapeutic ranges (such as aminoglycosides, vancomycin, digoxin, and theophylline) that may induce severe toxicity. Moreover, motivating developments in TDM of extensively metabolized drugs (such as immunosuppressant, cytotoxic drugs and psychotropic drugs) are still arising to aid doctors' decisions in dosage adjustment in such therapeutic areas where high intra / interindividual variability in dosage requirement is anticipated with respect to genetic and ethnic factors.

Several pharmaco-economic studies have documented the positive impact of TDM and clinical pharmacokinetic services on patient's outcome, reflected by reduction in toxicity, a decrease in the length of hospital stay and more important there was a trend toward lowering mortality.

To start and maintain a modern TDM service in developing countries we do require substantial efforts to implement, a multidisciplinary team, and education effort to change behaviors and convince clinicians to change practice. However, this type of service has not been well-established in Jordan.



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The aims of our series of workshops are to:

1. To highlight the significance of TDM to patient care
2. To describe the process of organization of a TDM service
3. To review basic clinical pharmacokinetic concepts and hypothesis
4. To apply population pharmacokinetic data of most important drugs to real patient cases.
5. To bring attention to more advanced topics in dose adjustment such as serum level analysis and Bayesian curve fitting
6. To provide training in clinical interpretation of serum drug levels and thus consult form writing to be submitted to various levels of decision-makers in health-care institutions.

The target audiences are:

- Pharmacists, doctors and chemists working in hospitals
- Pharmacists, doctors and chemists working in clinical laboratory (private sector)
- Pharmacists, doctors and chemists working in pharmacovigilance center
- Pharmacists, doctors and chemists working in poison and drug information centers
- Pharmacists, doctors and chemists interested in TDM for academic and research purposes



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Course Agenda

Day 1(July 8, 2010)

Morning

9:00-9:15 Introduction and course outline **Dr Sireen Shilbayeh**

9:15-10:15 Theoretical concepts of TDM:

Definition
Objectives

10:15-11:15 Drug Therapy Monitoring related to Pharmaceutical Care **Dr Sireen Shilbayeh**

11:15-11:45 Coffee Break

11:45-1:30 Clinical Pharmacokinetics **Dr Sireen Shilbayeh**
Clinical indications for measurement of drug concentrations
Characteristics of TDM Drugs
Frequency of monitoring drug levels
Sampling for TDM
Interpretation of Serum Drug Concentrations
Individual Patient Differences
Appropriate Uses of TDM
Clinical Effectiveness

1:30-2:30 Lunch

Afternoon

2:30-3:00 Significance of TDM **Dr Sireen Shilbayeh**

Medical Benefits
Economic benefits
Change in Professional care
Cost-benefit of TDM



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Course Agenda

Day 2(July 9, 2010)

Morning

- 9:00-9:30 Steps for organizing of TDM service **Dr Sireen Shilbayeh**
- 9:30-11:30 Managing TDM **Dr Sireen Shilbayeh**
Setup
Personnel and Training
Quality Control
Computerized TDM
- 11:30-12:00 Coffee Break
- 12:00-1:00 Principles of applied pharmacokinetics **Dr Sireen Shilbayeh**
- 1:00-2:00 Lunch

Afternoon

- 2:00-3:00 Pharmacokinetic (PK) modeling **Dr Sireen Shilbayeh**
Analyzing your patient population **Dr Sireen Shilbayeh**
Bayesian principles in pharmacokinetics **Dr Sireen Shilbayeh**
- 3:00-3:30 Coffee Break
- 3:30-4:15 Population PK **Dr Lara Tutunji**
- 4:15-4:45 Strategies for increasing physician awareness of TDM **Dr Gada Khayatt**



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Day 3 (July 10, 2010)

Morning

- 10:00-10:30 The selection of most appropriate creatinine clearance equation
Dr Sireen Shilbayeh
- 10:30-11:30 TDM of vancomycin **Dr Sireen Shilbayeh**
- 11:30-12:00 Coffee Break
- 12:00-1:00 Introduction to a TDM software **Dr Sireen Shilbayeh**
- 1:00-2:00 Lunch

Afternoon **Dr Sireen Shilbayeh/ Pharmacist Hosam Al-Deen Abu-Awwad**

- 3:00-4:00 Working on simple patient cases at the computer
Vancomycin case studies

(Administration of a questionnaire to the participants and round table discussion)