

Corporate Scholarship Presentations

CS3.2 Paediatric Services

13:15 Room 228

Provision of Pharmacokinetic Services for Paediatric Patients

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Objectives and Purpose of the Overseas Corporate Scholarship Programme

The three-month Overseas Corporate Scholarship Programme at the University of Illinois in Chicago (UIC) Medical Centre aims to develop and enhance the clinical skills of pharmacists, help them gain first-hand experience of the innovative pharmacy practice in the USA and learn to assess clinical protocols from experts in the field.

Key Training Activities

The Overseas Corporate Scholarship Programme was hosted by UIC Clinical Pharmacy specialists from the Neonatal Intensive Care Unit, Paediatrics Intensive Care Unit, Ambulatory Care Centre and General Paediatrics from February to April 2012. Clinical services training included patient assessment and monitoring, patient interviews on medication history, patient education, pharmacokinetic dosing, parenteral nutrition consultations, clinical protocol development and drug information research.

Outcome and Experience Sharing

Children with pharmacokinetic characteristics different from adults is one of the principles learnt from the training. The absorption, distribution, metabolism and elimination of drugs in children change with different stages of development. Therefore, therapeutic drug monitoring (TDM) is especially important to optimise the efficacy of drug therapy while minimises toxicity in this population. Some examples of drugs that we currently perform TDM include aminoglycosides, vancomycin and anti-epileptics etc.

At Pamela Youde Nethersole Eastern Hospital, pharmacists conduct clinical screening on patient medication profile, drug information and patient education. In addition, pharmacists are also involved in monitoring of drug levels, calculation of appropriate dosages and recommendation for treatment regimens. Monitoring protocols jointly developed by paediatricians and pharmacists are now in place to streamline the interpretation of gentamicin, amikacin and vancomycin levels. The importance of monitoring vancomycin in paediatric patients is exemplified by the risk of under-dosing, emergence of vancomycin-resistant bacteria and optimisation of the time-dependent killing properties of the drug as the rate of clearance is widely variable. In view of the global threat of antibiotic resistance, measures adopted by paediatricians and pharmacists at our hospital include raising the target drug level of vancomycin and customising dosing such as continuous infusion to achieve the desirable therapeutic drug levels. The safety of using higher vancomycin troughs was assessed and the preliminary results did not show any increase of renal toxicity.

The provision of pharmacokinetic services for paediatric patients greatly enhances drug efficacy, saves cost while minimises toxicity. Pharmacists have a unique role in applying their knowledge of pharmacokinetic to individualise pharmacotherapy for paediatric patients.