Clinical Pharmacy Service in QEH NICU and SCBU

CHEUNG Y(1), CHU MW(1), LAM MW(1), NG TM(1), HO YL(1), FUNG HC(1), LEUNG WYS(1), LAW KM(1), LAW CW(2), LEE WH(2), KWAN KF(2), SIU KL(2), LEUNG SF(2), MAN KL(2), LIONG MT(2), NG W(2), NG YH(2)

(1) Pharmacy Department, Queen Elizabeth Hospital (2) Department of Paediatrics, Queen Elizabeth Hospital

Keywords:
Clinical pharmacy service
Paediatric
NICU
SCBU

Introduction
Neonates in neonatal intensive care unit (NICU) are recognized to experience higher rates of medication errors and potential adverse drug effect rates. Clinical pharmacists' participation at ward level was recognized to optimize the quality use of medication and improve patient safety in pediatric units. In QEH, clinical paediatric pharmacy service was implemented in NICU and SCBU starting from February 2012 with the support from medical and nursing staff of the Department of Paediatrics.

Objectives
1. To review the deliverables of clinical pharmacy service 2. To analyze the rate, type, causes and severity of DRPs.

Methodology
In QEH, the service is provided to NICU and SCBU by a pharmacist from Monday to Friday in the morning session. The scopes of service are: 1. Participate in NICU/SCBU senior ward-round daily; 2. Review medication orders including medication administration records(MAR), prescriptions of IV infusion drugs, TPN, infusion fluid, and vaccines; 3. Identify drug-related problems(DRP) and make recommendations accordingly. A feedback mechanism of DRPs to doctors and nurses on a monthly basis has been in-place; 4. Handle drug information enquiries; 5. Formulate or review drug dosage and administration guidelines; 6. Deliver lectures twice-a-year to nursing staff; The recent one-year data, from October 2013 to September 2014, was generated and reviewed. The types of DRPs and the causes of DRPs are categorized using PCNE (Pharmaceutical Care Network Europe)
Severity of DRPs was rated independently by three pharmacists using the scale published in the international journal.

**Result**

From October 2013 to September 2014, clinical pharmacists attended the daily senior ward-round from Monday to Friday and have handled 198 drug-related enquiries. A total of 320 recommendations regarding DRPs were offered for NICU/SCBU cases. Top three drug classes involved in DRPs were 1) antimicrobials (37.14%), 2) parenteral nutrition (23.71%) and 3) vaccines (12.86%). Top three types of problems identified using PCNE were 1) P1.2 - effect of drug treatment not optimal (50.94%), 2) P2.1 - adverse drug event (28.75%) and 3) P1.4 - untreated indication (13.44%). For severity rating, 32.5% was rated minor, 65% was rated significant and 2.5% was rated serious. In addition, a guideline on IV infusion medications was reviewed. Two lectures were also delivered to nurses. The active participation of paediatric clinical pharmacists in patient care as part of the multi-disciplinary team at ward level can help optimize drug therapy, enhance medication safety, facilitate drug prescribing and drug administration process, and also enhance communication among health care providers.