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Optimizing the Pharmaceutical Care of Paediatric Oncology and Haematology Inpatients through Paediatric Clinical Pharmacy Service

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Introduction

Contributions of Clinical Pharmacists in improving the quality of care in paediatric patients through identification of drug-related problems (DRPs) and optimization of drug therapy have been demonstrated in overseas studies. Since the introduction of Clinical Pharmacy services in paediatric haematology and oncology ward of Queen Mary Hospital (QMH), there are no relevant local studies evaluating the nature of DRPs and impact of Clinical Pharmacist's interventions in this paediatric population involving the use of many high-alert medications.

Objectives

This project aimed to evaluate the nature of DRPs identified in the setting of paediatric haematology and oncology ward and the clinical impact of Clinical Pharmacists' interventions.

Methodology

Drug-related problems identified by Clinical Pharmacists in paediatric haematology and oncology ward of QMH during August 2015 to March 2017 were analyzed. Drug-related problems were captured using the Pharmaceutical Care Network Europe (PCNE) DRP registration form V6.2. The medications involved, causes of DRPs, interventions made and outcomes of the interventions were recorded on the PCNE DRP registration form. The primary endpoints were the number of DRPs identified and the acceptance rate of Clinical Pharmacists' interventions. Secondary endpoints were the nature of DRPs and the significance of DRPs. The level of significance of DRPs was retrospectively evaluated by two independent assessors (a Consultant in Department of Paediatrics and Adolescent Medicine, QMH, and a Lecturer from Department of Pharmacy and Pharmacology, the University of Hong Kong) according to Hatoum scale, with rankings ranging between 1 (adverse significance) and 6 (extremely significant).

Result

There were 363 DRPs (3.6 DRPs per 100 bed-day occupancy) identified by Clinical Pharmacists during the study period. Acceptance rate of Clinical Pharmacists' interventions by physician was 96.4%. The three most common causes of DRPs were 'dose too low' (14.3%), 'deterioration/ improvement of disease' (12.1%), and 'dose too high' (10.2%). Antibiotics (25.1%) and chemotherapy (11.0%) were the most common types of medications involved. For the level of significance of DRPs, the mean score (\pm SD) of significance rated by the Paediatric Consultant and University Lecturer were 3.97 (\pm 0.46) and 3.70 (\pm 0.58) respectively. Clinical Pharmacists had significant contributions in identifying and resolving drug-related problems in paediatric haematology and oncology patients. This demonstrated that Paediatric Clinical Pharmacy service can optimize the quality of pharmaceutical care and enhance medication safety in this group of patients involving the use of many high-alert medications.