GRP-133 PHARMACEUTICAL CARE PROGRAMME IN AN EMERGENCY DEPARTMENT

doi:10.1136/ejhpharm-2013-000276.133

M Alvarez Payero, M Ucha Samartin, A Martín Vila, C Vázquez López, N Martínez López de Castro, G Piñeiro Corrales. *Meixoeiro Hospital (CHUVI), Pharmacy, Vigo, Spain*

Background Over recent decades, the pharmacist's role has evolved with the development of pharmaceutical care, defined as the active participation of the pharmacist in patient care, in collaboration with the doctor and other healthcare professionals in order to improve the patient's quality of life. Based on this, we have established a pharmaceutical care programme in an emergency department (ED).

Purpose

1. To describe more frequent pharmaceutical interventions (PIs) in an ED
2. To analyse the rate of acceptance of the PIs and which were accepted.

Materials and Methods Descriptive-prospective study, for six months, in a University Hospital. All medical prescriptions from the ED were evaluated. If any drug-related problems (DRPs) were detected, the prescriber was notified of a recommendation. The following variables were collected: sex, age, reason for the intervention: DRPs especially adaptation to the pharmaceutical guide used in the hospital (AP), medical service (emergency, medical unit, surgical unit), type of PI, type of DRP, acceptance rate (accepted, not accepted, not assessable). Data were analysed with SPSS vs. 5.

Results The pharmacist reviewed the medical orders of 987 patients. A total of 669 interventions for 320 patients (77 years ±15, 50.3% female) were recorded. The pharmacist carried out an average of 0.7 interventions/patient throughout the study period. PIs/unit: 59% emergency, 28% medical unit, 13% surgical unit. The reasons for interventions were: DRP (60%) or AP (40%) detected. Types of DRP: indication 32.6%, efficacy 26.6% and safety 40.8%. More frequent PIs: AP 40%, posology change 26%, start treatment 13%, change in form of administration 10%, stop treatment 8%. The overall rate of acceptance of the pharmacist's recommendations was 76.8% (8.6% rejected and 14.6% not assessable).Rate of acceptance/unit: emergency 85%, medical unit 75%, surgical unit 76%.

Conclusions The most frequent PIs were adaptation to the pharmaceutical guide and dosage change.

Emergencies physicians accepted more PIs than other doctors or surgeons and medical units rejected more PIs than other units (25%).

Interventions by a clinical pharmacist had a major impact on reducing prescribing errors in the study period, thus improving the quality and safety of care provided.

No conflict of interest.

GRP-134 PHARMACEUTICAL INTERVENTION IN A BRAZILIAN HOSPITAL: ANALYSIS OF INTERVENTIONS FOCUSING ON PATIENT SAFETY

doi:10.1136/ejhpharm-2013-000276.134

C Avelar Ferreira, H Azevedo Guimarães, B Barreto Vianna, M Guatimosim Azevedo, WI Souza, GLN ZAhreddine. *Hospital Galba Velloso, Farmácia, Belo Horizonte, Brazil*

Background Drug interactions (DIs) occur when one drug affects the activity of another drug when both are administered together. This is clinically relevant as it may cause drug-related adverse events, and is generally preventable. [1–3]

Purpose To analyse potential DIs in prescriptions for hospitalised patients. The drugs investigated were lithium, levothyroxine, phenytoin, risperidone, clozapine, olanzapine, quetiapine and ziprasidone.

Materials and Methods A longitudinal and descriptive study of pharmaceutical interventions (PIs) conducted in a Brazilian public hospital specialising in psychiatry with 145 beds, from 5 January to 30 September 2012. The drugs analysed were lithium, levothyroxine, phenytoin, risperidone, clozapine, olanzapine, quetiapine, and ziprasidone. The searches for DIs were done once a week and categorised according to severity (mild/moderate/severe). [4]

Results 134 DIs were analysed in 108 patients. Of the 134 DIs 59.85% were mild; 19.71% moderate and 2.92% severe risk. 1.46% of all prescriptions showed moderate to severe risk and 11.68% showed mild to moderate risk. Of the 134 DIs detected, 59 resulted in a written communication to the physician. The 59 written communications sent to physicians resulted in 25 prescriptions interventions, therefore 34 did not generate a medical intervention. The drugs most frequently involved in an interaction were: lithium (58); olanzapine (44); risperidone (19); levothyroxine (4) and clozapine (7). Of all 25 prescription interventions, 14 removed the potentially risky drug; in 4 the doctor reduced the dose and the other 7 the appearance of adverse reactions was monitored. In all prescriptions with severe and moderate/severe risk the drug with potential risk was replaced and the number of DIs reduced due to pharmaceutical interventions.

Conclusions The study demonstrated the importance of pharmaceutical evaluation of potential DIs in prescriptions and provided information for the prescribing physician to increase patient safety. In addition this study showed that potential DIs generally unnoticed by the prescribing physician were detected by pharmaceutical intervention.

References

1. Oga's, Basile AC, Ch MF. Guide Zanini-Oga interactions. São Paulo: Atheneu; 2002.
2. Rodrigues ML. Prescription medication. In: Cassiani SHB, Ueta, J. patient safety in the use of medication. 1st ed. São Paulo (SP): Mosby; 2004. p. 150.
3. Peral Aguirregoitia J. *et al*, Prospective evaluation of interaciones between drugs en una aplicación informática redeemed by patients. *Farm. Hosp*., Madrid, V. 31, no. 32, pp. 93–100, 2007.
4. David S. Tatro. Drug Interaction Facts, The Authority on Drug Interactions. Pharmaboobooks, 2006.

No conflict of interest.

GRP-135 PHARMACEUTICAL INTERVENTION IN OUTPATIENT SAFETY: PREVENTION OF MEDICATION ERRORS IN AN INTRAVENOUS MIXING UNIT

doi:10.1136/ejhpharm-2013-000276.135

[1]S Martínez, [1]A Izquierdo, [1]M Merchante, [1]L Sánchez-Rubio, [1]A Zorzano, [1]L Carrillo, [2]S Berisa, [1]A Alfaro, [1]MF Hurtado, [1]P Aibar. *[1]Hospital San Pedro, Hospital Pharmacy, Logroño, Spain; [2]Hospital b Complejo Hospitalario de Navarra, Hospital Pharmacy, Pamplona, Spain*

Background The 'Study on patient safety in primary health care' (APEAS), published in 2008 by the Spanish Health Ministry declared that 48% of adverse events (AEs) detected in these patients were due to medicines errors (MEs). The Institute for Safe Medication Practices (ISMP) promotes the development of internal systems to report medicines-related incidents in hospitals in order to achieve effective preventative measures.

Purpose To analyse total errors in an intravenous mixing unit and establish checkpoints to prevent them.

Materials and Methods Prospective observational study (August–December 2011) which included outpatients who might be exposed to an error with intravenous medicines. The variables were: Wrong drug, original prescription service, prescription type (manual or printed), who detected the error and process error (prescription, validation, preparation or administration). Errors were classified according to severity category and error type based on the

taxonomies listed in ISMP Spain. The errors observed and reported by the staff involved with the process were recorded by the pharmacist. The differences between frequencies were checked with the Chi-Square statistical test.

Results The total error frequency (EF) was 1.27%. The drugs most frequently involved were natalizumab (2.43%), infliximab (1.23%) and intravenous immunoglobulin (1.23%). No statistically significant differences between EF of each drug and the mean frequency were detected (P = 0.94, 0.76 and 0.94). The services involved were: Gastrointestinal (2.98%), Neurology (1.57%), Rheumatology (1%), Haematology (0.15%) and Oncology (0.035%). Only in the Haematology and Oncology services were differences from the average found (P = 0.038, p = 0.001). Most failed orders were manual (67%). All incidents occurred in the prescribing process and were detected by the pharmacist during validation. No errors reached the patient (category B). In the classification by error type: 67% were incorrect date (periodicity in the cycle), 22% dosage (50% excess) and 11% in the rate of administration.

Conclusions After reviewing the results we can assume that the main checkpoints where our activities should focus on are the following: incorrect date, dosage and rate of administration.

A possible methodological bias can be considered because the data were collected in the pharmacy unit and all errors were prescription errors – no pharmacy or process errors.

No conflict of interest.

GRP-136 PHARMACEUTICAL INTERVENTIONS AND E-PRESCRIBING TOOLS IN A TERTIARY-CARE INSTITUTION

doi:10.1136/ejhpharm-2013-000276.136

H Mateo Carrasco, M Giménez Ramos, P Nieto Guindo, FD Fernández Ginés, JJ Fernandez Ávila. *Torrecárdenas Hospital, Pharmacy, Almería, Spain*

Background Failure Mode and Effect Analysis (FMEA) is a tool to identify, assess and prevent possible failures that could occur in a process.

Purpose

1. To describe FMEA as a method to identify weaknesses in the process of prescription and transcription of medical orders.
2. To isolate the key steps according to their risk priority number (RPN).
3. To report the steps taken.

Materials and Methods A multidisciplinary study group was assembled. Possible errors in the prescription/transcription workflow were identified and classified according to their RPN score (calculated by multiplying the severity, occurrence, and detection). Strategies for improvement were established.

Results Errors in the prescription were classified as follows: (1) Patient-and-history identification, (2) Clinical and laboratory data checkout, (3) Treatment conciliation, (4) Allergies, (5) Verbal prescription, (6) Handwritten prescription. Errors in transcription: (7) Patient identification (nurse), (8) Internally mailed prescriptions, (9) Paper transcription, (10) Check in pharmacy, (11) Patient identification (pharmacist), (12) Prescription validation, (13) Prescription printing, and (14) Acknowledgement of errors by the pharmacist. Top-ranked item (number), suggested solution, and indicator, respectively were: (5) Verbal prescription (288), storage of verbal prescriptions in pharmacy, % of verbal prescriptions; (9) Failure in paper transcription (288), computerised physician order entry (CPOE), % of electronic prescriptions; (14) Error report to the pharmacist (288), implementation of a two-way communication protocol, number of reports; (8) Paper-based prescriptions sent to pharmacy (243), CPOE, % of electronic prescriptions; (10) Check in pharmacy (216), CPOE, % of electronic prescriptions. The pharmacy, medical director, and Quality Unit were responsible for the changes undertaken in all cases.

Conclusions Verbal prescription, failure in paper transcription, error report and mailed prescriptions to pharmacy were the steps with the highest risk of error. For most cases, CPOE was implemented, whereas the percentage of electronic prescriptions was the key indicator to measure the overall improvement in these processes. In conclusion, further efforts and pharmacy policies should focus on the implementation of CPOE in all inpatient areas, thus preventing failure of prescription/transcription and validation loops.

No conflict of interest.

GRP-137 PHARMACEUTICAL INTERVENTIONS AT BEATRIZ ANGELO HOSPITAL

doi:10.1136/ejhpharm-2013-000276.137

[1]E Marques, [1]M Capoulas, [1]L França, [1]N Pereira, [1]S Castro, [1]P Santos, [1]R Figueiredo, [1]A Neves, [1]C Santos, [2]F Fernandez-Llimós. *[1]Hospital Beatriz Ângelo, Pharmacy, Loures, Portugal; [2]Universidade de Lisboa, Faculdade de Farmácia, Lisboa, Portugal*

Background Beatriz Ângelo Hospital (HBA) is 424-bed district hospital (210-bed Medical Specialties, 90-bed Surgical Specialties, and 22-bed Intensive/Intermediate care unit, among others).

All prescriptions are validated by a pharmacist at the Department of Pharmacy (DP), and it is always possible to access the electronic medical record of each patient to consult clinical data and record any suggestions or interventions. For the purposes of this study, pharmaceutical interventions (PIs) are defined as contact with other healthcare providers in order to prevent any medicines-related problems (MRPs).

Purpose To quantify and characterise PIs at HBA following the identification of any risks of MRPs during prescription validation.

Materials and Methods Prospective data collection from 1 July to 30 September and subsequent entering of the data into a PIs database created by the HBA's DP according to a protocol developed by the DP of Hospital da Luz and Faculdade de Farmácia da Universidade de Lisboa.

Results During the period of analysis, 914 PIs were recorded for a total of 280 patients (an average of 3.3 PIs per patient), with the following distribution: 242 PIs in Intensive Care units, 400 in the Medical Specialties, 214 in the Surgical Specialties and 58 in other units. The most frequent causes of PIs were: unsuitable use of medicine due to the renal function (n = 420 [46.0%]); potential adverse effect/toxicity (n = 139 [15.2%]); and lack of therapeutic efficacy (n = 112 [12.3%]). The most frequent PIs were therapeutic drug monitoring (n = 343 [37.5%]); suggestions regarding parameters found in blood tests (n = 241 [26.4%]); adjustments to dose and frequency of administration (n = 106 [11.6%]); adjustments to route of administration and medicine formulation (n = 07 [11.7%]).

As for the expected effects of PI, the most frequent were: increased effectiveness (n = 548 [60.0%]); reduced drug toxicity (n = 205 [22.4%]); reduced risk associated with route of administration (n = 104 [11.4%]).

Concerning the results of PI, the most frequent were: no clinical improvement/no clinical aggravation (n = 289 [31.6%]); problem prevented (n = 248 [27.1%]); clinical improvement (n = 238 [26.0%]). Of all PIs, 813 (88.9%) were accepted, and 328 (35.9%) of all PIs were recorded in the patient's electronic medical record.

Conclusions The high acceptance of PIs confirms the interdisciplinary cooperation of all the healthcare providers within the institution. The results show that PI is fundamental in promoting the good use of medicines and preventing MRPs. The development of a software application integrated in the electronic medical record will allow us to be more agile in documentation and to quantify the pharmacist's contribution within the clinical team.

No conflict of interest.