(2) Is treatment modification or close monitoring necessary? (3) Is it reasonable to prohibit the use of any supplement?

Purpose To explore and study those determinants that need to be taken into account when managing drug/supplement interactions.

Materials and Methods Taking the results of our previous study as a basis we have systematically evaluated the literature and the available authentic databases.

Results There are significant differences between the databases we have looked at, as to which interactions are present in the system, and how broad a spectrum of active ingredients is included when a known case of interaction occurs.

We identified the following factors, which have to be taken into account when evaluating a potential interaction:

- type of underlying evidence (in vitro studies, case reports, clinical trials, etc.)
- which form of a given interacting substance has been reported on (species, plant-part, type of extract, etc.) and whether this component is present in the product
- mechanism and dose dependence of the interaction
- which patient groups are more likely to develop symptoms due to the interaction

We evaluated 155 components found in supplementary products by the listed criteria, then assessed the relevance and classification of interactions.

Conclusions Special software, that contains all the recommended criteria we have set up, could become an effective tool for preventive screening of interactions on hospital admission.

Reference

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No conflict of interest.

GRP-046 CORONARY PATIENTS: WHICH THERAPEUTIC APPROACH ON DISCHARGE FROM HOSPITAL?

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G Foucras, L Denis, B Sallerin, E Divol. *CHU TOULOUSE – Rangueil, Pharmacy, Toulouse, France*

Background Coronary artery disease is one of the main causes of death in industrialised countries. The recommended treatment is 'BASI' (B for beta-blockers, A for antiplatelet agent, S for statin and I for ACE inhibitors or sartans) together with appropriate treatment of major cardiovascular risk factors (CVRFs).

Purpose To study compliance with the standard care of coronary patients, choosing to focus on hospital discharge in the context of improving professional practise.

Materials and Methods This study was conducted in two cardiology units, over 2 years. It focused on all inpatients with a positive coronary angiography. An evaluation of professional practise was conducted in 2010. Improvement actions were then taken: the results were presented to cardiologists and a booklet was written summarising good professional practise recommendations. In 2012, practise was re-evaluated through a second study. We collected and analysed information on treatment after hospitalisation, CVRFs and information in the discharge letter.

Results The study included 179 patients in 2010 and 111 in 2012.

Concerning drug treatment, the recommended 'BASI' treatment was prescribed in 72% of cases in 2010 versus 70% in 2012. For non-compliant treatments (i.e. other than BASI), 17% were justified in the discharge letter (BASI not indicated or contraindicated), against 16% previously.

Concerning the management of CVRF, lipid analysis was performed for 94% of patients in both groups, and recorded in the discharge letter in 82% (2010) versus 77% (2012). 30% of patients with diabetes and/or obesity consulted a dietician or diabetologist in 2010 versus 44% in 2012. Last, 68% of smokers received a nicotine substitute in 2010 and 35% in 2012.

Conclusions Our work shows that the recommendations are generally well respected. This may explain why, despite successive changes of junior doctors, practise has changed little during this study. However, further action will be required concerning management of CVRFs, which is still less satisfactory.

No conflict of interest.

GRP-047 CREx AND ORIONÆ ANALYSIS IN AN HOSPITAL PHARMACY: A SIX-MONTH REVIEW

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C Pichard, F Roussel, I Debrix, F Baud-Camus. *HOPITAL TENON (AP-HP), Pharmacie, Paris, France*

Background Prevention of medication errors has led to improved safety of the drug use system. Experience feedback committees (Comités de Retour d'Expérience, CREx), in particular, can help health professionals to improve the quality and safety of drugs management.

Purpose To set up a CREx in our pharmacy, in order to record, analyse and correct precursor events.

Materials and Methods Medication errors are collected on a report form. Once a month, these errors are reported to CREx and the staff select the event that will be discussed in the next CREx meeting. The ORION method, based on experience acquired in aeronautics, was selected to analyse how the CREx should operate. The systemic analysis is divided into 5 steps, performed by a pilot trained in the method and presented during CREx. The five steps are: collect the data, rebuild a chronology of facts, identify any gaps, contributing and influential factors, propose corrective measures and write the analysis report.

Results From April to September 2012, 61 dysfunctions were reported. 19 were actual and 42 were potential errors. Among these errors, 47.5% related to prescription, 21% to dispensing, 21% to inventory management, 7% to administration, 1.7% to validation and 1.7% to preparation. Five of these errors were analysed in CREx (ORION method). Ten corrective measures were proposed, 6 of which were actually implemented. We noted an increase in the number of dysfunctions reported, from 4 dysfunctions reported in April to 22 in September.

Conclusions CREx is well established in our pharmacy, taking place once a month, with representatives of all pharmacy staff. After six months, CREx has enabled 6 corrective measures to be implemented (creation or modification of procedures, modification of medicines management, etc.). It has also enabled pharmacy staff to understand the importance of reporting and analysing medication errors.

CREx is thus an approach to sustain in order to improve the safety of the drugs use system.

No conflict of interest.

GRP-048 CYTOTOXIC DRUGS WITH THE POTENTIAL TO PROLONG THE QT INTERVAL

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[1]M Morgado, [2]L Lemos, [2]R Oliveira, [1]S Morgado. *[1]Hospital Centre of Cova da Beira, Pharmaceutical Services, Covilhã, Portugal; [2]University of Beira Interior, Health Sciences Faculty, Covilhã, Portugal*

Background Regulation No. 173/CD/8.1.7. from the Portuguese Authority of Medicines and Health Products (INFARMED), issued on 2 August 2012 and titled 'Ondansetron – dose constraint for

injectable drugs', recommends that 'care must be taken when administering this antiemetic associated with other drugs that prolong the QT interval, namely several cytotoxic agents'. To effectively implement this recommendation, it was thought advisable to point out, in the computerised hospital drug database, all cytotoxic drugs that prolong the QT interval.

Purpose To review all cytotoxic drugs available in the Portuguese pharmaceutical market to identify those with the potential to prolong the QT interval, in order to allow hospital pharmacists to quickly and efficiently implement the above-mentioned recommendation.

Materials and Methods Literature review based upon all summaries of product characteristics (SPCs) of cytotoxic drugs available in Portugal and 48 literature sources from PubMed, found by intersecting the terms 'cytotoxic-induced prolongation of the QT interval', 'antineoplastic-induced prolongation of the QT interval' and 'drug-induced prolongation of the QT interval' and using the time limit interval from January/2003 to September/2012.

Results A total of 58 cytotoxic agents currently available in Portugal were investigated. Agents with the potential to prolong the QT interval are: arsenic trioxide, capecitabine, dasatinib, doxorubicin, epirubicin, eribulin, gefitinib, lapatinib, nilotinib, sorafenib, sunitinib and vandetanib. Substantial evidence supports the conclusion that arsenic trioxide and vandetanib have a risk of torsades de pointes (TdP) when used as directed in SPC. Regarding eribulin, lapatinib, nilotinib and sunitinib, there is insufficient evidence that they may cause TdP when used as directed in the SPC. Note that the hormone antagonists bicalutamide and tamoxifen also have the potential to prolong the QT interval.

Conclusions The database produced is a valuable tool to Portuguese hospital pharmacists who dispense cytotoxic drugs, contributing to the implementation of one of the recommendations of the above-mentioned regulation.

No conflict of interest.

GRP-049 DESIGN AND DEVELOPMENT OF A PRESCRIPTION MODULE OF ENTERAL DIETS FOR A NEONATAL UNIT

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JJ Martínez Garde, LR López Giménez, M Valero Domínguez, C Abraira Meriel, A Gómez Esteban, MA Martín Vega, MD Rivas Santayana. *Hospital Universitario Marqués de Valdecilla, Pharmacy, Santander, Spain*

Background A safety problem occurred in requesting enteral diets (EDs) in the neonatal unit. So we decided to develop a special prescription module for requesting EDs.

Purpose To describe the design and development of a prescription and request module for EDs in a neonatal unit.

Materials and Methods The first step was to assemble all the EDs, such as milks, supplements or fortifiers and described the composition of these products, indicating total kilocalories, macronutrients (grammes of protein, lipids and carbohydrates), micronutrients (mg and mEq of Na, K, Cl, Ca and Mg, mg and mMol of P, mg of elemental iron, IU of vitamin D3) and osmolarity (mOsm/L).

Many of these data weren't in the product's package leaflet, so it was necessary to contact the manufacturer to request this information.

We decided to include the name of the diet, frequency, administration route and type and unit of administration in the ED prescription module.

Results The neonatal computer physician order entry (CPOE) now has another option, the ED module. The prescriptions also include the weight of the patient. When the physicians select ED, they can view the qualitative and quantitative composition of the formula. The prescription module calculates macronutrients provided for that prescription (g/kg/day), micronutrients (mg/kg/day, mEq/kg/day or mMol/kg/day), total kilocalories (kcal/kg/day) and osmolarity (mOsm/L).

The prescribed diet is checked against nutritional requirements obtained from the European Society of Paediatric Gastroenterology and Nutrition guidelines.

Finally, the software can generate the request for the diets without the necessity of handwritten requests.

Conclusions ED can cause medication errors, such as transcription problems, excessive or miscalculated macro and micronutrients or errors in route of administration. These errors may have clinical impact on children and can be more serious in preterm infants. The ED prescription module is an excellent tool to prevent errors and facilitate the nutritional calculations.

No conflict of interest.

GRP-050 DETECTION AND ANALYSIS OF ADVERSE DRUG REACTIONS IN CANCER PATIENTS IN A TERTIARY HOSPITAL

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[1]M Ferrit, [1]M Cañadas, [1]N Martinez, [1]A Madrid, [1]E Puerta, [1]MS Caparros, [1]I Vallejo, [2]P Aznarte, [2]M Salazar, [2]MA Calleja. *[1]University Hospital Virgen de las Nieves, Pharmacy, Granada, Spain; [2]University Hospital Virgen de las Nieves Virgen de las Nieves, Pharmacy, Granada, Spain*

Background Adverse drug reactions (ADRs) are especially important with antineoplastic drugs because of their implications on patients' health and quality of life.

Purpose To study the epidemiology, clinical features, diagnosis and pharmacology of ADRs detected in hospitalised patients treated with antineoplastic drugs.

Materials and Methods Analytical observational study (2011). We included all patients receiving cancer treatment. Study variables were: sociodemographic characteristics (age, sex), clinical (diagnostic, stage) and ADRs. The analysis was epidemiological: ADRs conducted (cumulative incidence, CI), clinical: (physiological system affected, type, duration, production mechanism, frequency, severity), pharmacological: (drug, administration, cycle) and diagnostic: (causality, chronological sequence).

Results 125 patients (mean age 51 years), 68% male, 32% female, 90% comorbidities. The most common diagnoses were lymphoma (28%), specifically non-Hodgkin's Lymphoma (11%), acute lymphoblastic leukaemia (9%), acute myeloid leukaemia (6%) mainly in advanced stages (68%). We detected a total of 170 ADRs with antineoplastic agents (28% CI). Physiological systems primarily affected were: blood (89%), digestive system (23%). The most common ADR was cytopenia (49%) specifically febrile neutropenia (37%). The duration was <7 days (75%) and >7 days (25%). ADRs were mostly produced in a dose-dependent way (85%), were very common (94%) and according to severity were: lethal (2%), severe (5%), moderate (73%), mild (19%). The drugs involved were: cytarabine, methotrexate, idarubicin, carmustine, cisplatin by intravenous administration (97%) and during first treatment cycles: cycle 1 (53%), cycle 2 (23%). 92% of the ADRs are tested and produced after drug administration (99%). In 60% and 19% of cases the measure was the continuation and discontinuation of antineoplastic therapy, respectively. In cases of re-exposure, the emergence of drug ADRs was positive in 45% of patients and in the disappearance of ADRs discontinuation was positive in 92%.

Conclusions The incidence of ADRs was high, the majority of ADRs were well known, moderate and positive outcome according to the measurements. It would be better to understand the ADRs as it can help develop other strategies to reduce their impact on the safety of cancer treatments in the first cycles.

No conflict of interest.