contribute to the optimization of pharmacotherapy and to prioritising safety in an Intensive Care Unit (ICU).
Purpose To identify and quantify medicines errors observed and interventions made in the ICU in question, drawing a profile of the main actions of the pharmacist in critical care specialising in women's health.
Materials and Methods The study was conducted in a Brazilian ICU of a university hospital specialising in women's health, from February to May 2012. Interventions were performed after analysis of patient prescriptions (18 years old or over, hospitalised for more than 24 hours in the ICU) and discussions of clinical cases during multidisciplinary meetings. Interventions were classed on whether or not they were accepted by the medical staff. Drug-related errors observed were classed as preventable or not and ranked by an adaptation of the classification of the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP).
Results The study involved 82 patients, and 386 prescriptions were evaluated. The mean age was 41.1 ± 19.0 years old and the average hospital stay was 4.7 ± 3.3 days. We identified 45 medicines errors (mean 0.6 ± 3.5/patient), 86.7% of these were preventable and 13.3% were not. The most common error types were: unsafe medicine due to drug interaction (26.7%), higher dose than recommended (15.6%) and unsafe medicine during lactation (13.3%). Fifty-one interventions were made (mean 0.6 ± 4.2/patient), and 84.3% of these were accepted; 3.9% partially accepted; and 11.8% were not accepted. The most common interventions were to recommend an alternative dose (25.5%), identify drug interactions (23.5%), and risk during lactation (11.8%).
Conclusions Partial results obtained show the necessity for clinical pharmacy services in the ICU as an important contribution to reducing risks from drug treatment.

No conflict of interest.

CPC-109 PHARMACY INTRAVENOUS IRON PROTOCOL IN A CENTRAL HOSPITAL

doi:10.1136/ejhpharm-2013-000276.566

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Background Iron deficiency anaemia (IDA) is a common condition. The pharmacy intravenous iron protocol (100 mg/5 ml iron sucrose vials) includes assessment of patient analytical data, dose calculation, schedule and information about iron administration intended to prevent adverse reactions.
Purpose To assess the use of intravenous iron in hospitalised patients being treated by the pharmacy protocol.
Materials and Methods An eight-month retrospective, observational study (January to August 2012). Hospitalized patients treated with pharmacist-managed intravenous iron were selected. Demography, main diagnosis, comorbidities, basic data, dosage suggestions and haemoglobin and haematocrit values were collected from electronic clinical files and pharmacotherapeutic profiles.
Results A total of 35 patients (19 male) were included. Mean age was 75.9 years (range 43–94).

9 (25.7%) patients were admitted for surgery and 26 (74.3%) for a variety of medical conditions.

20 patients (57.1%) were treated without complete investigation of the anaemia.

The most frequent intravenous iron dosage was 200 mg 3x week.

27 (77.1%) patients had increased haemoglobin and haematocrit values after an average of 10.3 days (range 3–20) of intravenous iron replacement treatment. The mean increase in haemoglobin concentration was 2.5 g/dl (range 0.2–6.6). Only 9 patients (25.7%) achieved the haemoglobin target during admission. The majority of patients were discharge before achieving the target haemoglobin. No adverse reactions were reported to the pharmacist.
Conclusions As stated in the literature, a large proportion of patients in our study were not confirmed to be iron deficient. Pharmacist should advise physicians about the importance of a complete IDA study before starting this therapy. The information about iron administration and a test dose in the pharmacy protocol seem to be useful in preventing adverse reactions.

No conflict of interest.

CPC-110 PHARMACY INVOLVEMENT IN THE MANAGEMENT OF ACADEMIC CLINICAL TRIALS

doi:10.1136/ejhpharm-2013-000276.567

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Background The sponsor is the person or entity that initiates a clinical trial, manages it and provides funding. We define two types of promoters, commercial sponsors and academic sponsors (mainly hospitals). In order to minimise the cost of academic studies without limiting the quality, some work done by the hospital is not included, for example pharmaceutical management by pharmacies.
Purpose To measure the size of pharmacy involvement in the management of clinical studies and academic costs not taken into account.
Materials and Methods We accounted for all pharmaceutical work done for academic studies (dispensing, preparation, reception of goods or materials, destruction of goods or materials, monitoring, labelling, ordering, randomization) managed by our pharmacy during the year 2011. We estimated the average time for each of these duties and the resulting financial cost (national grid, LEEM).
Results 35 institutional studies were in progress during this period and represented approximately 20% of all studies managed by our service: 8 studies were promoted by Montpellier hospitals, 7 by associations and 20 by other hospitals. We noted 501 prescriptions dispensed, 180 assignments to treatment or randomization, 52 preparations, 138 receptions, 13 destruction, 55 orders, 416 labels prepared and 52 monitoring visits. All this took 736.5 hours (or 210 half days) and additional costs estimated at 45,752 euros. Only 8,865 euros were allocated to the pharmacy (19% of the costs).
Conclusions Academic research is essential and necessary for the improvement of scientific knowledge. However, in most cases, no expenditure is planned for the pharmacy unit. Currently, these activities are made within the hospital pharmacist's "free time". A national reflection is currently under way to establish a grid indicating how much academic studies should pay for the recruitment of dedicated medical staff. This study demonstrates that academic research requires a considerable time from the pharmacies, to justify the allocation of human resources in order to support good management.

No conflict of interest.

CPC-111 PHARMACISTS' OPTIMIZATION OF THE MEDICATION PROCESS DURING ADMISSION TO HOSPITAL: A MULTICENTRE, RANDOMIZED, CONTROLLED TRIAL

doi:10.1136/ejhpharm-2013-000276.568

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Background During hospital admission, nearly 10% of all patients experience adverse events (AEs) and almost 1/3 of AEs are

drug related (ADEs). The effect of clinical pharmacy on ADEs and drug costs has not been substantiated in randomised controlled trials.

Purpose To study the clinical effect of pharmaceutical optimisation of the medication process at admission to hospital.

Materials and Methods Medical patients admitted to three Danish acute wards aged ≥18 years and taking ≥4 types of medicine per day were eligible for inclusion. The patients were randomised to either intervention or control group. A retrospective control group was also formed.

The intervention was comprised of: medicines history, medicines review, medicines reconciliation and entry of proposed prescriptions in the electronic medication system.

Primary endpoint was the proportion of patients with adverse drug events (ADEs), identified by screening the charts for 25 defined triggers from the Danish version of 'Global Trigger Tool'. ADEs were then validated and evaluated for severity scores by two independent panels of clinicians blinded for the intervention.

Secondary end points were length of hospital stay (LOS), in-hospital drug costs, readmissions and death within one year of discharge.

Results From March 2010 to July 2011 a total of 1775 patients were screened for inclusion. 573 patients were included, 74 were excluded due to discharge within 24 hours, leaving 499 patients in the study. Preliminary studies clearly showed that the intervention group had fewer ADEs and triggers, shorter LOS and lower in-hospital drug costs than the control groups, although no significant differences were recorded.

Conclusions Although the findings did not reach statistical significance, the clinical pharmacist's intervention tended to have a positive impact on the medication process in terms of higher patient safety and lower health care costs.

No conflict of interest.

CPC-112 PREDICTORS OF POTENTIALLY INAPPROPRIATE PRESCRIBING IN ELDERLY FALLERS

doi:10.1136/ejhpharm-2013-000276.569

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Background A study to explore the rate of potentially inappropriate prescribing (PIP) in elderly fallers, and the impact of pharmacist-led medicines reviews was undertaken. Data relating to possible predictors of PIP, identified in the literature, were also collected.

Purpose To investigate the following factors as predictors of PIP in elderly fallers:

- Demographic data
- Drugs classes
- Polypharmacy

Materials and Methods The following data were collected as part of a larger study:

- Demographic data: age, gender and days since admission at time of fall
- Number of regular medicines
- Name and class of PIMs identified

Results

- Sixty patients were included in this study, 34 (56.7%) of whom were male.
- The median age was 79 years (range: 29). Patients were taking a median of 9 regular drugs (range: 17). Twenty-one (35%) patients were prescribed ≥1 PIM at the time of their fall.
- Gender was not a predictor of PIP, with 13 male and 8 female patients prescribed ≥1 PIM ($P = 0.548$).
- Excessive polypharmacy (≥10 medications) was identified as a positive predictor of PIP. Participants prescribed ≥1 PIM were taking a mean of 10.86 regular medicines; those not prescribed ≥1 PIM were taking a mean of 7.67 regular medicines ($p < 0.001$).
- A drug from each class in section H of the STOPP criteria was identified at least once. Benzodiazepines were the most frequently prescribed PIM drug class, accounting for 59% of PIMs overall. Six patients in the baseline group and 7 in the intervention study were prescribed a benzodiazepine. The most commonly prescribed PIM was temazepam.

Conclusions Polypharmacy is a predictor of PIP. Patients prescribed ≥1 PIM were taking on average 3 more regular medicines than those who were not prescribed ≥1 PIM ($p < 0.001$). Gender was not a predictor of PIP.

No conflict of interest.

CPC-113 PREOPERATIVE ORAL IRON PRESCRIPTION IN THE PREVENTION OF POSTOPERATIVE ACUTE ANAEMIA IN ORTHOPAEDIC SURGERY

doi:10.1136/ejhpharm-2013-000276.570

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Background A previous study on postoperative acute anaemia in orthopaedic surgery was conducted in 2011 (S1), showing that anaemia is recurrent and not always treated. We have recommended prescribing oral iron in the month preceding surgery. A pre-dispensed oral iron prescription has been set up for use during preoperative anaesthesia consultations. We decided to evaluate the impact of this recommendation by a second study in 2012 (S2).

Purpose To assess the impact of preoperative oral iron prescription on the prevalence and treatment of postoperative acute anaemia in orthopaedic surgery.

Materials and Methods Both studies included patients who underwent total hip or knee arthroplasty (THA/TKA). S1 was conducted retrospectively on all patients operated on in 2011. S2 was conducted prospectively on patients who had been prescribed preoperative iron in September/October 2012. We collected data about operations, iron prescriptions, haemoglobin levels, transfusions and lengths of stay.

Results Operations: 327 (S1): 205THA/122TKA vs. 30 (S2): 13THA/17TKA. Postoperative iron prescription: 69% of patients (S1): oral iron 32%, intravenous iron 20%, both oral and intravenous iron 17% vs. 43% of patients (S2): oral iron 23%, intravenous iron 13%, both oral and intravenous iron 7%. Haemoglobin levels: between preoperative and immediate postoperative periods, mean decrease was from 12.9 ± 0.2 g/dl to 11.1 ± 0.1 g/dl (S1) vs. 13.3 ± 0.2 g/dl to 11.7 ± 0.2 g/dl (S2), between preoperative period and hospital discharge, mean loss was 2.2 ± 0.2 g/dl (S1) vs. 1.9 ± 0.17 g/dl (S2) ($p < 10–3$). Transfusions: 29% of patients (S1) vs. 20% (S2) ($p < 10–3$). Length of stay: mean was 10.6 ± 0.8 days (S1) vs. 8.3 ± 0.3 days (S2) ($p < 0.005$).

Conclusions The prospective study showed that oral iron preventive treatment significantly decreases haemoglobin level fall, transfusion rate and length of stay. Therefore it is necessary to sensitise prescribers concerning preventive iron coverage. A further study is needed to evaluate the impact of a longer iron preventive treatment on a larger number of patients.

No conflict of interest.