with anti-TNFα are worth their higher costs. The most favourable incremental cost-effectiveness ratio was for etanercept compared to methotrexate.

Conclusions The cost-effectiveness of an intervention depends on the maximum the decision makers are willing to pay for an extra unit of health effect. It should be considered that treatments with anti-TNFα, in a societal perspective, decrease the use of health resources and increase productivity.

No conflict of interest.

CPC-106 PHARMACOKINETIC DRUG-DRUG INTERACTIONS DUE TO TREATMENT WITH AMIODARONE – A PRACTICAL APPROACH

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Background The drug amiodarone has a complex pharmacokinetic profile and can be a challenge to use due to the high potential for drug-drug interactions.

Purpose To identify and submit proposals for handling drug-drug interactions for patients treated with amiodarone. In addition we would like to highlight the fact that drug interactions can occur even if amiodarone is administered as only a single IV dose, and the effect on further treatment. The purpose was also to prepare proposals for management and follow ups of interactions in the clinic.

Materials and Methods Before the ward round the pharmacist carried out medicines reviews for the 25 patients who were included. They were all treated with amiodarone at admission or during hospitalisation. Input was given on the clinically significant interactions identified. For patients treated with warfarin in addition to IV amiodarone the INR values were observed through the entire hospital stay for any signs of a drug-drug interaction.

Results The pharmacist had 54 inputs referring to interactions with amiodarone, of which 41 were taken into account. The inputs led to dose reductions, changes of drugs and monitoring of blood values. Case reports showed that interactions do occur after IV amiodarone treatment and these lead to uncertain and variable drug efficacy over time.

Conclusions Based on results from the study and a literature search, general advice for handling interactions due to amiodarone and further treatment were prepared. The recommendations were endorsed by the consultant Cardiologist.

Abstract CPC-106 Table 1

Advice for avoiding Drug-Related Problems DRPs due to treatment with amiodarone
Warfarin Reduce/give half-dose warfarin at start-up. Monitor the INR values (1)
Digitoxin Give half dose digitoxin/digoxin and monitor digitoxin/digoxin determined by procedure (2)
Simvastatin No doses above 20 mg or switch to another statin. (3)
Atorvastatin Note the dose! No clear recommendations, but maximum 40 mg
Metoprolol Bradycardia? The dose may be adjusted (4)
General advice
When admitted from other hospitals
Note in the drug curve if recently treated with amiodarone!
Discharge summaries
Explain why the GP should follow up the blood values; INR, digitoxin/digoxin and possibly CK.

1. Edvin SB *et al*, An evaluation of early pharmacodynamic response after simultaneous initiation of warfarin and amiodarone.
2. Laer S *et al*, Digitoxin intoxication during concomitant use of amiodarone.
3. Marot A *et al*, Concomitant use of simvastatin and amiodarone resulting in severe rhabdomyolysis: a case report and literature review
4. Fukumoto *et al*, Effect of amiodarone on the serum concentration/dose ratio of metoprolol in patients with cardiac arrhythmias

No conflict of interest.

CPC-107 PHARMACOTHERAPY FOLLOW-UP IN CHRONIC HEPATITIS C PATIENTS TREATED WITH BOCEPREVIR OR TELAPREVIR

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Background The approval for the clinical use of direct-acting antivirals in 2011 (boceprevir [BOC] and telaprevir [TLV], viral NS3 protease inhibitors) has increased recovery rates by up to 70%. However follow-up of these patients is necessary due to adverse effects (AEs) and the high cost of the treatment.

Purpose To follow up the pharmacotherapy in chronic hepatitis C virus genotype-1.

(VHC-1) patients treated with triple therapy (TT): BOC or TLV, ribavirin and peg-interferon.

To evaluate the efficacy of the treatment and describe the pharmacological handling of severe AEs.

Materials and Methods Prospective study (from 01/01 to 30/9/2012) was carried out in the Pharmacy Department. VHC-1 patients who started TT were included. All of them had at least one viral load (VL) determination (BOC at week 8 and TLV at week 4).

A hospital pharmacist interviewed the patient at the first day treatment and provided oral and written information about how to take the drugs and their potential AEs.

Later, we analysed the compliance of the treatment to the guidelines of Spanish Agency for Drugs. Patient data (age, sex, basal LV at week 4 and week 8, previous treatment response, fibrosis and haemoglobin levels) were collected from electronic clinical histories and outpatient software.

Results 35 patients were included (22 TLV and 13 BOC), 28 had initial VL > 800000 IU/mL. 34 patients had fibrosis grade ≥3.13 patients were treatment-naive, 22 had been treated previously (9 non-responders, 8 relapsers, 5 partial responders). 2 BOC patients obtained fast viral response vs. 4 TLV patients, and 7 BOC patients had undetectable VL at the week 8 cheque-up vs. 16 TLV patients at week 4 cheque-up.

5 patients (4 with BOC) discontinued treatment, one due to severe toxicity and 4 due to lack of efficacy. TT was effective and adhered to the guidelines in 84% patients.

The most frequent AEs were asthenia, anaemia and dermatological reactions (mainly with TLV). 9 patients presented grade 3 anaemia and were treated with erythropoiesis-stimulating agents (EEAs) (31% BOC vs. 23% TLV).

Conclusions The safety profiles of BOC and TLV found in our study were similar to those published in clinical trials. Despite not being a comparative study, we observed that more people in the TLV group reached undetectable VL after 4 or 8 weeks (91% TLV vs. 69% BOC). Patients treated with BOC had earlier suspended the TT because of lower effectiveness and higher occurrence of grade 3 anaemia that required EAAs.

No conflict of interest.

CPC-108 PHARMACY INTERVENTIONS UNDERTAKEN IN AN INTENSIVE CARE UNIT SPECIALISING IN WOMEN'S HEALTH

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Background Pharmaceutical interventions can prevent drug-related problems and possible prescription errors. They thus

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

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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

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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

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