that the ethanol will affect the patient and, thus, deserves attention.

Special caution should be taken with those patients at higher risk (alcoholism, liver disease, epilepsy). Special care should also focus on others drugs the patient may take that might interact with ethanol.

Patients should be advised not to drive or use machines soon after the chemotherapy treatment has been given and to inform the staff of any ethanol-related effect.

When assessing new formulations, pharmacists should also consider the ethanol content apart from the convenience of dilution.

Abstract GRP-059 Table 1

Drug	Patients	Dose (mg)[1]	Administrations[2]	g Ethanol/dose
Gemcitabine	69	1553.8	6.4	15.34(6.91–22.71)
Paclitaxel	63	149.78	6.02	9.86(4.74–28.83)
TOTAL	132			

[1] Medium dose.
[2] Number of administrations/patient.
10 g of ethanol = 1 glass of wine or beer.

No conflict of interest.

GRP-060 EVALUATION OF A PHARMACEUTICAL CARE PROGRAM TO PATIENTS WITH IMPAIRED RENAL FUNCTION

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Background According to EPIRCE study results (Epidemiology of Chronic Kidney Disease in Spain), approximately 11% of the adult Spanish population suffers from some degree of Cronic Kidney Disease (CKD).

Purpose Evaluate a Pharmaceutical Care Program to hospitalised patients with impaired renal function and determine the degree of acceptance.

Materials and Methods Prospective intervention study of 9 months (January–September 2012) at a regional 110 beds hospital. Patients with creatinine clearance (CRCL) < 50 ml/min/1.73 m^2 and a prescribed medication where is needed a CKD adjustment were selected. CRCL was estimated using the Cockroft-Gault equation (60 kg for women and 70 kg for males).

The patients identification was performed using the electronic prescription programme (eOsabide) and the laboratory INFOMEGA application. The data collected in the study were: age, sex, serum creatinine, pharmacotherapy and clinical service profile. The crossing data has been made in Access 2003.

The dose adjustment report's was made in writing in the patient's medical record (Osabide global). At 24–48 hours, the acceptance was evaluated.

Results A total of 618 hospitalised patients were included in the study (16 had a CRCL < 10 ml/min, 342 a CRCL between 10 and 30 ml/min and 309 a CRCL between 30 and 50 ml/min).

899 (14%) of 6.248 prescriptions were considered non-adjusted and were informed (27 were advices and 113 not evaluated because patient's discharge).

Fifty one per cent of the interventions were accepted.

Antibiotics were 26% of the interventions, anticoagulants in 39%, benzodiazepines in 18%, antiemetics in 6% and digitalis in 5%.

Conclusions Pharmaceutical care plays an important role in the drug treatment of patients in renal failure.

The implementation of the project has been well received among clinicians.

No conflict of interest.

GRP-061 EVALUATION OF DOSE RECOVERY FROM TABLET MANIPULATION FOR ENTERAL TUBE ADMINISTRATION

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Background Liquid formulations of medicines are required for administration through enteral feeding tubes (EFTs). Due to the limited availability of liquid medicines, crushing or dispersing tablets is frequently undertaken by nurses, carers and patients using a variety of different methods. The most accurate method of tablet manipulation has not been determined.

Purpose To determine the best method of tablet manipulation through comparison of dose recovery.

Materials and Methods Naproxen was selected as the model drug as no liquid formulations are available. The tablet was prepared using one of 6 methods identified from a previous survey: Dispersion in a syringe, dispersion in a medicine pot, crushed and dispersed using a crushing syringe, crushed and dispersed using a crushing device, crushed and dispersed in a pestle and mortar or crushed using two spoons. The resulting dispersion was flushed via an 8Fr polyurethane EFT (Corpak) into a receiving flask; repeated 6 times for each method. Dose recovery was determined using HPLC. Excel and statistical software was used for data analysis.

Results Tablet dispersion in the barrel of a syringe produced the highest dose recovery. All other methods delivered a dose outside the BP acceptable range of 95–105%. Full results in table 1.

Conclusions Dispersal in the barrel of a syringe did not significantly affect dose recovery. This study demonstrates that methods currently in use may deliver an insufficient dose; further research is required using different medicines and the effect of dispersion particle size on tube blockage.

Abstract GRP-061 Table 1

Method	% dose recovered	SEM	p
Control	100%	0.9	
Dispersal in syringe	98.0%	0.5	0.1493 NS
Crushing syringe	94.5%	1.2	0.0178
Dispersal in medicine pot	90.5%	3.4	0.0982 NS
Pestle and mortar	90.1%	1.5	0.0037
Crushing device	90.1%	2.7	0.0433
Crushing between 2 spoons	88.8%	1.1	0.0003

No conflict of interest.

GRP-062 EVALUATION OF GENTAMICIN THERAPY FOR ELDERLY HOSPITALISED PATIENTS

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Background New guidelines for the use of aminoglycosides were published by French National Health Authority in March 2011 [1]. They recommended 3–5 mg/kg/d for 48–72 h. Before, aminoglycosides doses were reduced in line with the creatinine clearance, which is frequently reduced in elderly patients.

Purpose To determine whether aminoglycoside treatment conformed to the guidelines. If not, the risks are a reduction in antibiotic effectiveness and the development of bacterial resistance among a vulnerable population.

Materials and Methods Elderly patients hospitalised in an acute geriatric unit or in a follow-up and rehabilitative care ward were included in a retrospective study with 2 inclusion periods: 3 months

before and 3 months after the guidelines were issued. Student's t test was used to compare the mean dose and average duration of gentamicin with the guidelines and compare gentamicin treatment before and after the guidelines.

Results 88 patients were included in the study period. Both groups (before/after) were similar in terms of age, weight and creatinine clearance (Cockroft and Gault formula). The main aminoglycoside used was gentamicin (97.7%) (mostly with ceftriaxone). Before the recommendations, the mean gentamicin dose was 2.0 ± 0.7 mg and mean gentamicin duration was 2.4 ± 0.6 days. After the recommendations, the mean dose was 2.2 ± 0.9 mg and mean gentamicin duration was 2.4 ± 1.1 days. After the recommendations: 78% of gentamicin prescriptions were consistent with the recommended duration; 30% of prescriptions followed the recommended dose; the average dose of gentamicin differed significantly from the recommended dose ($p < 0.001$); 24% of gentamicin treatments were consistent with recommendations. Average dose and duration of gentamicin did not significantly differ before and after the publication of the recommendation ($p > 0.05$).

Conclusions Only 24% of geriatric patients have consistent gentamicin treatment. Guidelines did not change doctor's habits about gentamicin. We should now implement a new strategy for informing the medical staff, communication inside the institution and question their knowledge and make representations about kidney damage due to gentamicin. Clinical pharmacy should also be developed in order to help to improve the use of medicines.

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No conflict of interest.

GRP-063 EVALUATION OF INTRAVENOUS IMMUNOGLOBULIN (IVIG) PRESCRIPTIONS IN AN ITALIAN PAEDIATRIC HOSPITAL: AN OVERVIEW OF OFF-LABEL USES

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Background Our paediatric hospital 'G. Salesi' officially follows regional guidelines on the proper use of IVIG. Guidelines aim to improve the management of drug requests during times of shortage and to ensure IVIG supplies for critical situations.

Purpose To evaluate the suitability of IVIG prescriptions for children, to identify 'off-label' uses, to cheque the amounts of drug used.

Materials and Methods Retrospective analysis of prescriptions delivered to the hospital pharmacy from July 2011 to June 2012. IVIG requests were paper forms with 7 licenced directions according to regional guidelines: primary immune-deficiency disorder (PID), myeloma/chronic lymphocytic leukaemia (CLL), idiopathic thrombocytopenic purpura (ITP), Kawasaki disease (KD), Guillain–Barré syndrome (GBS), bone marrow allograft (BMAG) and severe bacterial infectious disease (BID).

Results We examined 154 drug requests for 67 patients admitted to one or more of the following wards: Onco-haematology, Paediatrics, Infectious Diseases Unit, Neonatology, Intensive Care Unit, Paediatric Neuropsychiatry. One patient was also affected by cystic fibrosis (CF).

Onco-haematology was the most demanding ward with 98 prescriptions, 46 patients and 58% (2430 g/4160 g) of dispensed IVIG. The CF patient with ITP received 580 g with 14 prescriptions over 6 months.

Most of the requests had licenced indications (131) classified as follows: BID (68), ITP (26), PID (23), KD (11), GBS (1) and BMAG (1).

Eighteen patients had 23 off-label requests. The main unlicensed uses were thrombocytopenia (6), hypogammaglobulinaemia in acute lymphoblastic leukaemia (5), autoimmune haemolytic anaemia (3), neonatal hyperbilirubinaemia (2) and Rh iso-immunisation (1). Seventeen off-label prescriptions didn't have written clinical certification to support the request. However the request form declared the physician's responsibility and the absolute necessity of IVIG treatment.

Conclusions Despite regional guidelines, off-label use of IVIG is constant in our hospital. Hospital pharmacists should work more closely with clinicians to identify off-label prescriptions without evidence/directions because this drug can be life-saving and it is necessary to keep it available for critical situations.

No conflict of interest.

GRP-064 EVALUATION OF MEDICAL ACCEPTANCE OF PHARMACEUTICAL INTERVENTIONS IN LAVERAN MILITARY HOSPITAL

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Background Laveran Military Hospital (Marseille, France) contains 18 clinical units (300-bed capacity). Every day, pharmacists analyse computerised prescriptions and formulate pharmaceutical interventions (PIs) defined by the French Society of Clinical Pharmacy as "a change in drug treatment initiated by the pharmacist".

Purpose To determine the most common medicines errors and to evaluate the clinical impact of pharmaceutical validation.

Materials and Methods A prospective study included all patients hospitalised in four medical units (internal medicine, pneumology-oncology, tropical and infectious diseases and orthopaedic surgery) from 14 May to 31 August 2012. Doctors were either notified of PIs by phone and/or by clinical staff interventions and/or by electronic notification (by Pharma software). Medical acceptance was defined as changing the prescription. Drug switches or drug discontinuations in case of unavailability in the hospital pharmacy were not included so as not to overestimate the acceptance rate.

Results In 16 weeks, pharmacists analysed 3334 prescriptions, which led to 247 PIs The main problems were overdose (34.4%), inappropriate administration (19.4%), non-conformity or contra-indication (11.7%). The solutions most often suggested by pharmacists were dose adjustment (36.4%), optimization of administration (28.4%) and drug discontinuation (21.6%). The drugs most frequently involved were: antithrombotics (12.1%), antibacterials for systemic use (7.7%) and analgesics (6.1%). During the study period, 58.7% of PIs were accepted by the prescribers. This result depended on the different means of interventions: 81.3% and 72.2% of staff interventions or phone calls were accepted respectively, versus 48.7% for electronic notification. The acceptance rates were comparable to the studies reported in the literature [1].

Conclusions This study shows the superiority of oral notification and encourages a pharmaceutical presence in care units. Later, it would be interesting to identify the causes of non-acceptance, in particular for electronic notification.

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No conflict of interest.