

Individual questions were further analysed to ascertain if there were particular drugs causing difficulty. Analysis showed that a question on potassium chloride yielded low pre-assessment scores of 21% and 39% respectively for MMUH Doctors and Nurses and 45% and 20% for Peamount. Although both disciplines improved, this demonstrated a need for further training with this drug.

Conclusions The e-learning programme showed a significant increase in user knowledge, in both hospitals, for all disciplines. These results are very encouraging given the differences between the institutions, grades of staff and experience. The results do not stem from a 'specific teacher effect' and therefore are reproducible in multiple sites.

No conflict of interest.

GRP-015 AN OVERVIEW OF HOSPITAL PHARMACEUTICAL EXPENDITURE IN GREECE OVER THE LAST TWO YEARS

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Background Under the burden of the economic crisis in Greece, a series of cost containment measures for hospitals' operating costs have been implemented, with the emphasis put on limiting the money spent on medicines purchasing.

Purpose To review the extent to which the target of reducing hospital pharmaceutical expenses has been achieved along with reporting the changes, as far as the 'in hospital' use of generic medicine is concerned.

Materials and Methods Financial data from 136 Greek public hospitals, as officially reported in ESY.net database, were collected and compared for the years of interest. The financial data were selected with respect to the cost of purchasing medicines and non-pharmaceutical material, while other operational costs were omitted.

Results The cost of purchasing medicines constantly accounts for a high percentage of a hospital's budget for supplies (51%, 53% and 56% for 2010, 2011 and 2012 respectively). An overall decrease in pharmaceutical expenditures was achieved (23% reduction in 2011, along with a further reduction of 17% in 2012). Although rates of introducing generic drugs differ among different hospitals, an increase in use of generics was observed (26% in 2011 and 30% in 2012). Psychiatric hospitals seem to have better scores compared to paediatric and oncology departments.

Conclusions The 'in hospital' use of generic drugs score is significantly higher compared to that of the Greek market in general (18%) and has therefore contributed to the hospitals' attempt to reduce the amount of money spent on medicine supplies. The lower rates of generics' use observed in paediatric hospitals are consistent with the lower possibility for substitution in these cases. Last but not least, when selecting and implementing drug cost management strategies, it is essential that pharmacists remain mindful of patient safety and quality of patient care.

No conflict of interest.

GRP-016 ANALYSIS AND CONSUMPTION OF INNOVATIVE ANTIDIABETIC DRUGS IN PIEDMONT PATIENTS

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Background The increase in deaths due to diabetes records a trend in growth and the OSMED National Report of 2011 highlights a prescription shift towards the high-cost innovative drugs for the

treatment of type II diabetes mellitus (DMII). This is subject to intensive monitoring by the health ministry.

In the management of diabetic patients, the guidelines suggest an early intensive therapeutic intervention and the pursuit of a personal glycaemic target for avoiding hypoglycaemic episodes, which are possibly responsible for the increased risk of developing cardiovascular episodes.

Purpose To analyse the population, consumption and type of innovative diabetic drugs used in the Piedmont region; this is to put a value on the type of treatment used for DMII, because the advantages of innovative therapy must be valued too.

Materials and Methods In the first step the incidence of DMII in Piedmont was valued by analysing data from the regional diabetic database during the period 2007–2012. Dipeptidyl peptidase 4 inhibitors (sitagliptin and vildagliptin alone or in association with metformin and saxagliptin), thiazolidinediones (pioglitazone alone or in association with metformin), glucagon-like peptide 1 (exenatide, liraglutide), insulin glargine and detemir were considered innovative drugs. Consumption and type of drugs were analysed in terms of the defined daily dose/1000 inhabitants/day (DDD) over a six-month period in 2012 using regional databases of prescriptions which enabled us to access population data. 2012 data were compared with 2011.

Results The first striking finding is the increase in the incidence of DMII, 1.70% in five years, which corresponds to 80,327 patients. Focusing on the population treated with innovative drugs revealed that 21% (61,679/294,590) of diabetic patients are 65 years old and far more males than females are affected (respectively 53.87% vs. 46.13%). The drug most used is insulin glargine with 43.84% of total consumption, another 25.08% use DPP4 inhibitors alone or in association, 20.05% use pioglitazone alone or in association, 9.02% use glucagon-like peptide 1 and 2.01% use insulin detemir. The comparison with the same period of 2011 highlights the increased consumption of innovative drugs in Piedmont, 23% (8.97 DDD in 2012 vs. 6.91 DDD in 2011) while Italian data record an increase of 5% (15.69 DDD vs. 14.87 in 2011).

Conclusions Increased consumption of these drugs suggests that medical prescriptions could maybe move on innovative therapeutic molecules. It is important that clinicians discuss and compare the data analysis shown above with medical management guidelines, with the aim of estimating the genuine advantages of innovative drugs in terms of compliance, reduction in adverse reactions and increased quality of life.

No conflict of interest.

GRP-017 ANALYSIS AND PREVENTION OF MUSCULOSKELETAL DISORDERS IN A HOSPITAL STERILISATION UNIT

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Background Musculoskeletal disorders (MSDs) are problems caused by the poor ergonomic design of work stations. The daily work of sterilisation, especially carrying heavy loads, carries a risk of developing MSDs.

Our sterilisation unit, certified ISO 9001, tries to improve the working environment including the ergonomics of work stations.

Purpose To establish an inventory of fixtures and to suggest preventive measures in order to limit the appearance of those disorders.

Materials and Methods The whole of the sterilisation unit workforce was interviewed about any pain, physical effort and non-ergonomic situations that they routinely face during their daily work.

Results The main pain reported by the staff was lumbar pain (70%).

Several factors explain that result:

- Repeatedly carrying heavy weights (>7 Kg), especially when loading the Instrument Washer-Disinfector trolleys and sterilisers.
- Making little use of helping fork-lift trucks (60% of the staff use them <2 hrs/day).
- Not asking colleagues for help when carrying heavy weights.
- 80% of people work in front of a computer screen for 1/3 or ½ the day without adopting an ergonomic position.
- Highly repetitive actions during packaging.

Preventive measures:

- Staff training on ergonomics suited to any post.
- Organization of packaging posts and data capture according to the “comfort zone” concept.
- Reduction of distances to be covered when carrying or moving heavy weights.

Conclusions This study demonstrates that MSDs often appeared in sterilisation. The implementation of suitable preventive measures – according to posts – should increase efficiency and reduce the physical demands made on members of staff.

No conflict of interest.

GRP-018 ANALYSIS OF ANTINEOPLASTIC MEDICATION ERRORS IN A 500-BED TEACHING HOSPITAL

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Background Medication errors with antineoplastic drugs may be catastrophic due to the drugs' high toxicity and narrow therapeutic index.

Purpose To assess antineoplastic medication errors in terms of frequency, type of error and severity for patients.

Materials and Methods A 1-year prospective study was conducted (2011) in order to identify the medication errors that occurred during cancer chemotherapy for patients in a 500-bed teaching hospital. Wards included both day care and inpatient units. All prescriptions and production forms were verified by pharmacists. The different types of error were defined in a data collection form. For each medication error intercepted, the potential severity was evaluated according to the Ruiz-Jarabo 2000 version2 classification system.

Results During the study period, the pharmacy unit prepared 17241 distinct anticancer drugs. In total, 136 medications errors were detected throughout the medicines use process. Prescriptions errors represented 82% of errors, followed by pharmaceutical validation (7%) transcription (7%), preparation (2%) and administration errors (2%).

The most common causal drug was carboplatin, which was involved in 25 cases, despite corresponding to only 2.8% of anti-cancer drugs prescribed at our institution. Overall, in 66 cases erroneous doses of the medicine were recorded (48.5%), 24 errors were linked to the choice of antineoplastic regimen (17.6%) while in 12 cases, erroneous duration of treatment was prescribed (8.8%).

Of the 136 medication errors, 124 were intercepted prior to administration while 12 reached the patients (9%). Overall 66% of non-intercepted medication errors had no impact on the patient and only 3 cases required enhanced monitoring.

Conclusions In our study pharmaceutical validation mainly allowed us to identify prescription errors (82%), almost all errors

were intercepted prior to administration to the patient. Wrong dose represented the most common type of error. Few pharmaceutical errors (transcription, validation, preparation) were detected.

No conflict of interest.

GRP-019 ANALYSIS OF ANTIRETROVIRAL TREATMENT ADHERENCE IN OUTPATIENTS OVER A TWO-YEAR PERIOD OF STUDY

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Background The efficacy and safety of anti-retroviral treatment is affected by many factors and compliance is key in therapy success. A lack of adherence may lead to therapeutic failure and higher rates of drug resistance.

Purpose To describe collected data about outpatient antiretroviral treatment adherence and analyse characteristics and factors associated with the non-adherent population.

Materials and Methods A retrospective observational study was conducted over 27 months on all outpatients on antiretroviral therapy who attended our hospital for human immunodeficiency virus (HIV) monitoring between June 2010 and September 2012. Each patient's adherence was checked and recorded every 6 months. This was measured as '(Total no. of units dispensed/Total no. of units needed) × 100'. Those patient with adherence >95% were considered as 'adherent' and those with <95% as 'non-adherent'. All results were recorded in a database. For the 'non-adherent' population the following features were reviewed: Sex, age, drug use, presence of Hepatitis B (HBV) or Hepatitis C (HCV) and total number of tablets/day, including drugs for other diseases besides HIV.

Results During the period of study, 1841 adherence cheques were made on a total of 630 patients (2.9 tests/patient). 24.6% of the HIV patients in treatment were non-adherent in at least one cheque. Their average age was 45.5 ± 8.6 years, 74% men, mean treatment duration of 8 ± 4.4 years, and a median consumption per day of 4 doses (range 1 to 16). 35.5% of these patients took drugs, 7.1% were co-infected with HBV and 45.2% were co-infected with HCV (5.2% was co-infected with both viruses). The Chi-square test showed a significant relationship ($p < 0.05$) between substance abuse, HCV infection and male gender in non-adherent patients.

Conclusions The study revealed a large percentage of non-adherent patients who compromised the effectiveness of their anti-retroviral treatment. The intervention of hospital pharmacists, checking on compliance and following up with patients, could play an important role in reducing this negative factor, especially in those with HCV and/or substance abuse.

No conflict of interest.

GRP-020 ANALYSIS OF ITALIAN HOSPITAL PHARMACIST ACTIVITIES TO PREVENT LASA DRUG ERRORS IN TREATMENT: FIRST RESULTS

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Background Errors caused by the use of Look-Alike/Sound-Alike (LASA) drugs occur with high frequency in hospital departments. In August 2010 the Italian Ministry of Health passed a Recommendation to help health operators to reduce LASA errors, through