General and risk management, patient safety

GRP-001 1ST ESNEE EXCIPIENT MONOGRAPH: INFORMATION NEEDED TO FORMULATE, PREPARE AND PRESCRIBE MEDICINES FOR NEONATES CONTAINING PROPYLENE GLYCOL AS AN EXCIPIENT

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Background Neonates are particularly vulnerable to the adverse effects of medicines and excipients because their organs are immature. ESNEE (European Study of Neonatal Exposure to Excipients) is a European research consortium created in 2011 after the PRIOMED-CHILD call for proposals.
Purpose The aim of ESNEE workpackage 2 was to conduct a literature review of excipients used in medicines for neonates and to establish a monograph of information for each excipient.
Materials and Methods A systematic review of the literature was conducted with 6 key databases (i.e. Medline, Web of Science, Pascal, International Pharmaceutical Abstracts, Biosis previews, Embase). Hits were selected for their relevance according to criteria set by toxicology experts. Summaries of relevant papers were prepared with underlying critical information in a table. A face to face meeting was organised with experts to validate the data. Experts from European Medicines Agency Paediatric Committee (EMA PDCO) were involved.
Results The search strategy identified around 1500 papers of which 87 were relevant to our purpose. Among those papers, 17, 20, and 15 corresponded to non-clinical, case report, and epidemiological data respectively. The remaining 35 reported miscellaneous data observed in adults. The monograph includes some general information (chemical structure, pharmaceutical use), the list of all (propylene glycol) PG-containing medicines used in Europe for neonates collected by ESNEE workpackage 1 during a point prevalence study, the kinetic characteristics of PG, the first signs of toxicity (biological perturbation, clinical signs, etc.), the organ to target for monitoring and follow up for short or long term effects, some estimations of Acceptable Daily Intake (ADI), and Permitted Daily Exposure (PDE) and finally some recommendations to manage PG toxicity.
Conclusions This is the first monograph on PG that includes the most available and relevant information validated by a panel of European experts. This documented, accurate and practical information should help the pharmaceutical industry and hospital pharmacists when formulating/preparing medicines and neonatologists when prescribing such PG-containing medicines. It also provides a clear image of which information is lacking and warrants further experimental investigation.

No conflict of interest.

GRP-002 A CASE REPORT: MANAGEMENT OF PAIN AFTER SUBCUTANEOUS INJECTION OF TREPROSTINIL

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Background Treprostinil is a prostacyclin analogue indicated for the treatment of Pulmonary Arterial Hypertension (PAH) for patients with functional NYHA class III. The administration is a continuous subcutaneous infusion. It is recommended that the treatment is initiated incrementally to reach a target dose, in intensive care. Injection site pain and local reactions (respectively 85% and 83% of patients) cause treatment cessation in 8% of cases [1].
Purpose To describe the role of multidisciplinary care in the management of pain due to treprostinil treatment.
Materials and Methods A descriptive study of a patient with pain due to subcutaneous injection of treprostinil. We collected information from the clinical and pharmacotherapeutic histories. A systematic literature search was performed about practical considerations for subcutaneous treprostinil in PAH. At Grenoble Hospital, the pain of treprostinil is managed by patient education [2] conducted by pharmacists, doctors and nurses belonging to different units.
Results Treprostinil treatment was initiated on 19 May 2011, on a 43 year-old patient with idiopathic pre-capillary NYHA III PAH (bosentan and tadalafil not effective; right-heart catheterization 80/30/50 mmHg PAP). The 6-minute-walk test was 544 metres. The initial dose is 1 ng/kg/min for a target dose of 40 ng/kg/min. The initial tolerance was good (Visual Analogue scale (VAS): 3; controlled by paracetamol). Doses were increased with an increment of 1 ng/kg/day. On May 30, 2011, with 10 ng/kg/min dose, the pain was intense (VAS: 8) despite analgesic treatment (paracetamol + tramadol), application of hot/cold packs and diclofenac gel. Mathier's work suggested changing the injection site (abdomen) and limiting the rotation. On July 08, 2011, the pain was controlled (VAS: 2) decreasing 4 days after changing the injection site [1]. The dose was 38 ng/kg/min, the NYHA stage was going down to II, while echocardiography showed persistent right dysfunction. By September 13 the desired dose had been reached (40 ng/kg/min), the pain had disappeared (VAS: 0), the patient was not taking analgesics and the injection site was being changed every 3 weeks. The effectiveness of the treprostinil treatment was demonstrable clinically and echographically.
Conclusions Intense pain due to treprostinil may require discontinuation of effective treatment. This case shows that multidisciplinary care with the use of simple measures allows this common side effect to be managed and cessation of treatment prevented.
References

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GRP-003 A MEDICINES RECONCILIATION PROCESS IN FRAIL ELDERLY PEOPLE

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Background Medicines reconciliation may be effective in reducing clinically important medicines errors among high-risk patients such as elderly polymedicated people.
Purpose To standardise a home medicines reconciliation process in frail elderly people admitted to hospital.
Materials and Methods In this two-month pilot study in a 280-bed hospital, a reconciliation process was designed by a multidisciplinary team. Geriatricians obtained medical information to verify home medicines by interviewing patients with the help of nurses and also from other medical reports. Pharmacists were

informed of these patients by the electronic records thus made by geriatricians. Pharmacists checked their medical records with the currently prescribed medicines and identified all discrepancies revealed in reconciliation, and if appropriate, notified attending physicians.

Results A total of 45 patients were included in the study with a median age of 87.8 (SD 4.6) years and a median of 8 (SD 3) current home medicines. The pharmacist was consulted in 86.7% of patients. Pharmacists reviewed all these patients and discrepancies were detected in 41% patients: a) prescription of a drug not included in the hospital formulary (23.1% of patients). The substitution of these drugs proposed by pharmacists was accepted by physicians in 44.4% patients. b) Other kinds of discrepancies were detected in 5 patients (12.8%). The degree of acceptance of these pharmaceutical interventions was positive in just one patient. The rest was either negative or not assessed by physicians. 100% of discharged patients included in their medical report a list of active drugs and also, specific recommendations were made about interrupting former medicines.

Conclusions Medicines reconciliation developed by a multidisciplinary team has been found to be useful in detecting and reducing discrepancies with home medicines when frail elderly patients are admitted to hospital. It will be interesting to implement the same process, involving a pharmacist, when patients are discharged.

No conflict of interest.

GRP-004 A NEW STRATEGY FOR MONITORING AND IDENTIFICATION OF ADVERSE DRUG REACTIONS IN ONCOLOGY PATIENTS

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Background Drug safety is an important issue in clinical practise because Adverse Drug Reactions (ADRs) are frequent and potentially life-threatening complications in patients undergoing cancer treatment.

Purpose This study had two main purposes: firstly, to monitor the safety of oncology patients in chemotherapy treatments and to identify and describe the toxicity of drugs; secondly, to compare the incidence and frequency of ADRs in approved experimental chemotherapy protocols compared to the ADRs in common clinical practise.

Materials and Methods From September to December 2012, all prescriptions reducing the normal dosage by at least 25% were examined to evaluate whether or not the reduction or withdrawal were related to ADRs. During these analyses pharmacists supported oncologists in completing ADR spontaneous report forms.

Results To date, eighty-two patients with dose reductions have been screened in the database. Seventeen patients (20.7%) experienced an ADR and the reports were recorded in the Italian Pharmacovigilance Database. Of the 17 patients, 12 were female and the median age was 62 years. All the observed ADRs are known and described in the summary of product characteristics. The drugs mainly responsible for the reactions were 5-fluorouracil, platinum-based agents, bevacizumab and cetuximab. Eight ADRs were graded as serious and required hospitalisation. Reducing the dose or withdrawing the drug after the onset of reactions led to a complete recovery in the majority of the patients. In 1 patient the ADRs caused treatment failure.

Conclusions Our exploratory survey demonstrates a clear and consistent underreporting in this patient setting. Management and understanding of ADRs in the course of drug treatment in cancer patients is important for improving the response to, and tolerability of, the treatment. Collaboration between different professionals is needed to improve the clinical efficacy and safety of care for patients.

No conflict of interest.

GRP-005 A NOVEL MODELLING APPROACH ADAPTING FUZZY REGRESSION FOR CAPTURING VAGUE DEFINITION OF ADMISSION OF A PATIENT

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Background Unplanned admission of a patient which is a vague or fuzzy event has important financial implications for efficient use of hospital resources. Patients at high risk of admission are of major concern due to heavy use of hospital resources. Traditional approaches are not capable of accounting for the complex uncertainty and vague nature of hospital admissions. Methods adapting fuzzy regression methods could be an alternative method for decision-making experts to predict patient admission.

Purpose To deal with uncertainty in health system variables, identify the relationship between risk of admission and risk factors associated with the admission of a patient, and capture a vague definition of admission of a patient.

Materials and Methods A modelling approach adapting a fuzzy regression method was designed and developed using UK Hospital Episode Statistics (HES) data to capture the vague definition of admission of a patient. This model deals with uncertainty in health system variables which act as input variables in the model. The data collected is fuzzified, upper and lower bounds of the fuzzy membership function are evaluated using a JAVA programme that uses fuzzy regression methods.

Results

1. The fuzzy membership function was evaluated for about 10,000 patient records.
2. 404 inpatient variables were scanned using HES data sets.
3. Significant risk factors were admission source, admission method, reference conditions, age, length of stay, disease diagnosis.
4. The uncertain relationship between predictors and outcome associated with it is shown with the help of upper and lower bound regression equations.

Conclusions The fuzzy regression model was found to be capable of quantifying and estimating the unknown relationships between input predictors and predicted outcomes. The findings suggest that the fuzzy regression approach provides a good way of dealing with uncertainty in health system variables and vagueness in the admission of a patient.

No conflict of interest.

GRP-006 A POLICY REVIEW OF THE APPLICATION OF THE INTEGRATED MEDICINES MANAGEMENT SERVICE MODEL IN NORTHERN IRELAND

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Background Since 2002, the Integrated Medicines Management Service (IMM) has strategically re-engineered clinical pharmacy services in the five acute Health and Social Care Trusts (HSCTs) in Northern Ireland. The Department of Health, Social Services and Public Safety (DHSSPS) supported the initial development of the IMM informed by evidence which demonstrated improvements in