(K): 82.69% and 93.03% met the recommended requirements respectively (3–5 mEq/kg/day and 2–5 (mEq/kg/day); phosphate (P): 23% within the recommended limits (1.45–2.25 (mM/g/day), 64.47% above; and calcium (Ca): 80.44% within the recommended range (3–4 mEq/kg/day). Recommended volume (140 ml/kg/day): 7.96% on range, 92.04% below. kcal/kg: in 95.5% of patients increased compared to that recommended on the first day (60 kcal/kg/day); and 90% of patients were below the recommended level in the third week (120 kcal/kg/day).

RNAT under 1 month: 24 patients and 248 NPs. aa: 43.54% met the requirements (2.3–3), exceeding 43.14%. HC and lipids: 100% within the limits (16–18 and 3–4 respectively). Na: 71.79% within the recommended range (2–3); K: 66.49% within the recommended range (1.5–3); 33.5% above; P: 39.5% met the recommendations (1–1.5), 24.5% below, 36% above; and Ca: 75.40% on range (2–3). Volume ml/kg: 90.38% lower than recommended (140 ml/kg/day). Energy requirements: 83.33% of patients lower than recommended (110 kcal/kg).

Conclusion We consider an acceptable degree of adequacy to the published recommendations regarding macronutrient inputs and caloric distribution. The energy and water contributions below the mean could be justified by the administration of concomitant enteral nutrition. The contribution of micronutrients is more variable because of the individual situation of each patient.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-190 RITUXIMAB USE IN CHILDREN, A SINGLE HOSPITAL EXPERIENCE

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Background Rituximab is a monoclonal antibody directed against the CD20 antigen, expressed on the surface of B-lymphocytes, promoting the lyses of the cells. It is labelled for adult different indications, non-Hodgkin's lymphoma, chronic lymphocytic leukaemia (CLL), rheumatoid arthritis and granulomatosis with polyangiitis and microscopic polyangiitis. Nowadays it is commonly used as an off-label treatment for many other diseases, including some paediatric disorders.

Purpose To describe the patterns of rituximab use in a paediatric teaching hospital.

Material and methods We conducted a retrospective observational study involving all patients treated in a paediatric hospital with rituximab from January 2001 to June 2018.

Clinical data were collected from electronic patients' medical records, including: patient age, prescribing services and indication.

Results The study comprised 145 patients (39% males) with a median age of 15.4 years. The principal indications according to the prescribing services were:

- Forty–seven patients of the nephrology unit: resistant or refractory nephrotic syndrome (34) and transplants–rejects (13).
- Forty patients of the oncology unit: non–Hodgkin lymphoma (23), syndrome opsoclonus–myoclonus in neuroblastoma (14) and others (three).
- Twenty–five patients of the haematology unit: disease: haemolytic anaemia (11), leukaemia (four), haemophagocytic syndrome (four), thrombocytopenic purpura (two) and others (four).
- Thirteen patients of the rheumatologic diseases unit: juvenile idiopathic arthritis (four), systemic lupus erythematosus (four), vasculitis (two) and others (three).
- Twelve patients of the neurology unit: autoimmune encephalitis (nine), post–Herpes Simplex encephalitis (two) and others (one).
- Seven patients of the infectious unit: Epstein–Barr virus infection (seven).
- One dermatologic disease: Steven–Johnson disease (one).
- No unexpected side effects were observed outside those reported in the summary characteristics of the product.

Conclusion In paediatrics, rituximab treatment is prescribed for off-label indications. Our study shows that rituximab is used in a wide variability of disorders, where the renal disease, specifically the nephrotic syndrome, is the most common indication as a second-line treatment.

Although the utilisation of rituximab increases every year and some uses are well described, further studies for some indications are necessary to establish a correct safety and efficacy profile in children.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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No conflict of interest.

4CPS-191 EFFECTIVENESS AND SAFETY OF RADIUM-223 CHLORIDE IN BONE-METASTATIC CASTRATION-RESISTANT PROSTATE CANCER

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Background Radium-223 (^{223}Ra) chloride has been shown to improve overall survival (OS) and progression-free survival (PFS) in patients with castration-resistant prostate cancer (CRPC) and bone metastases.

Purpose To evaluate the effectiveness and safety of ^{223}Ra in real-life clinical practice in patients with CRPC and bone metastases.

Material and methods Retrospective observational multicentre study evaluating all males with CRCP treated with ^{223}Ra from July 2015 until September 2018. Demographical, diagnostic, therapeutic and clinical variables were collected. The response was assessed through the PFS and OS. To assess safety, all treatment-related adverse events were recorded.

Results Sixty-three patients with metastatic CRPC were treated with ^{223}Ra at three different hospitals. Mean age 71.9 years (SD=10.3), 64% of patients ECOG 0–1% and 36% ECOG 2–3. Six per cent of patients received ^{223}Ra as first treatment, 48% as second line and 25% as the third

one: the remaining 21% ^{223}Ra was used in the fourth line or higher. Thirty-seven patients completed six treatment cycles and 26 stopped treatment before completing six cycles because of side effects or worsening performance status: ^{223}Ra mean dose was 4.6 MBq (SD=0.7). Fifteen per cent of patients had more than a 40% reduction in PSA levels at the end of treatment. According to Kaplan–Meier estimation, median OS and PFS were 10.0 (95% CI: 8.1 to 11.9) and 5.0 (95% CI: 4.1 to 5.9) months, respectively. Six- and 12 month OS rates were 76% and 39%, respectively. Patients receiving all six cycles experienced the major benefit from the therapy. In addition, nine patients were given ^{223}Ra at least 1 month prior to death. Forty-nine per cent of patients suffered haematological adverse effects such as thrombocytopaenia and neutropaenia, three patients grade 3 or 4 toxic effects and 24% of patients showed gastrointestinal side effects such as diarrhoea, nausea and vomiting in grade 1–2. Fourteen patients reported a worsening of their bone pain.

Conclusion PFS and OS observed in this study are lower than those reported in the clinical trial. This could be explained by a worse performance status and that approximately half of the patients had been heavily pre-treated, ^{223}Ra receiving as a third line or higher. ^{223}Ra was well tolerated, the adverse effects being clinically manageable.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-192 IDENTIFYING MEDICATION HISTORY ERRORS AT HOSPITAL ADMISSION USING THE LUND INTEGRATED MEDICINES MANAGEMENT MODEL

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Background An accurate medication history list is an integral part of patient assessment at hospital admission.

Purpose The objective of the study was to describe the frequency, type and predictors of unintentional medication errors and to evaluate the quality of the clinical pharmacy services, focusing on the acceptance of the recommendations made by the clinical pharmacist.

Material and methods A descriptive study was conducted at two internal medicine wards at a teaching hospital using Lund Integrated Medicines Management (LIMM)-based medication reconciliation. The study pharmacist conducted medication interviews for patients shortly after hospital admission to obtain the most accurate pre-admission medication history list. This list was compared with the medication list in the patient's medical chart. Intended addition, withdrawal of a drug, or changes to the dose/dosage form in the patient's medical list was considered as medication discrepancies. However, medication discrepancies were considered as medication errors based on no identified clinical reason.

Results A total of 114 patients were included in this study. Over two-thirds of the study patients (73.6%) experienced 215 medication errors identified by a clinical pharmacist conducting medication reconciliation. Most errors were omission (87.9%). Cardiovascular agents followed by NSAID were commonly in error (53%) and (10.2%) respectively. In a logistic regression model, age (OR, 1.055: 95% CI: 1.010 to 1.102), female gender (OR, 3.468: 95% CI: 1.232 to 9.761) and number of medications at admission (OR, 0.810: 95% CI: 0.681 to 0.963) were predictors for medication history errors at admission.

Conclusion Medication errors at the time of hospital admission are common and undetected. A structured approach such as LIMM-based medication reconciliation at the hospital is needed to detect these errors.

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Conflict of interest Corporate-sponsored research or other substantive relationships:

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4CPS-193 A THEORETICALLY BASED CROSS-SECTIONAL SURVEY ON THE BEHAVIOURS AND EXPERIENCES OF CLINICAL PHARMACISTS CARING FOR CHRONIC KIDNEY DISEASE PATIENTS

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Background Chronic kidney disease (CKD) is a comorbid condition with high economic burden. Patients need multiple medications and pharmacists provide care that improves outcomes. A systematic review published in 2012[1] and an update in 2018[2] reported that pharmacists are often poorly integrated within the multidisciplinary CKD team with little description of the practice of pharmacists.

Purpose To describe behaviours and experiences of clinical pharmacists providing care to patients with CKD.

Material and methods This was a cross-sectional online survey using questionnaire items relating to influences on behaviours grounded in the Theoretical Domains Framework (TDF). The questionnaire was reviewed for face/content validity and the subjected to think aloud testing then piloting. Items included; demographics, clinical practice and prescribing practice. The Bristol Online Survey Tool was used with a link emailed to members of a national renal pharmacy group (n=147). The study was approved by a university ethics committee.

Results Responses were received from 36 persons, female (n=25), qualified as pharmacist for >10 years (n=19) and registered active NMPs (n=24). Services provided to inpatients and outpatients are described in the table 1.