

Methods PI of the first semester of 2017 aimed at drug dosing recommendations for renal impairment or renal function recovery, were selected from the PI database. The information collected included drug identification and dosing recommendation made (dose reduction/increase/drug suspension). Age, weight, height and creatinine were added and GFR was calculated using the above two equations. Finally, we analysed the impact of the result on the dosing suggestion made, according to the GFR cut-off value for each drug-dosing recommendation.

Results A total of 149 interventions were included, covering 115 patients with a median age of 85 years. The recommendations for dosing alteration or drug suspension focused mainly on antibiotics (Meropenem, Piperacillin/tazobactam, Co-amoxiclav), anticoagulants (Enoxaparin, Rivaroxaban, Dabigatran) and NSAIDs. The mean difference in estimated GFR between the two formulae was 8 ml/min. However, larger differences appear to be associated with older age and body-weight limits. There were 36 (24%) cases of discrepancy between the recommendations to be made depending on the formula used.

Conclusions The choice of the GFR estimation formula may have a significant impact on the recommendations of dose adjustments, namely in the elderly and in extremes of body-weight. Because each formula has its limitations, it is crucial to interpret the result as a range of probability rather than an absolute value, and consider the complete patient context in the decision.

REFERENCES AND/OR ACKNOWLEDGEMENTS

None.

NP-006

EARLY DETECTION OF RETINOPATHY IN PREMATURE INFANTS USING MIXTURE OF EYE DROPS WITH 2.5% PHENYLEPHRINE HYDROCHLORIDE AND 0.5% TROPICAMIDE

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Background Retinopathy of prematurity (ROP) is an eye disease that can happen in premature babies. It causes abnormal blood vessels to grow in the retina and can lead to blindness. Birthweight and gestational age are the most important risk factors in the development of severe ROP. Phenylephrine and tropicamide are most commonly used as mydriatic agents for eye examination.

Purpose Using a combination of 2.5% phenylephrine hydrochloride and 0.5% tropicamide drops, in the Neonatal Intensive Care Unit (NICU), help us to discover abnormality in retinal vascularisation in the initial phase of retinopathy. This helps in effective medical treatment and healthy visual function.

Material and methods One-thousand, five-hundred and forty premature infants with a gestational age between 26 and 32 weeks and/or birthweight between 680 g and 2100 g were examined by binocular indirect ophthalmoscopy between 2 to 4 weeks after birth, and followed up until retinal vascularisation was complete. Pupillary dilatation was done with a mixture of 2.5% phenylephrine hydrochloride and 0.5% tropicamide and instilled twice at intervals 1 hour before

examination. The eye drops were prepared in our clinical pharmacy. In order to identify the stage of premature retinopathy, and eye examination was repeated every 7 to 10 days. Depending on the results, the term of the next examination was determined every 7 to 14 days. Once the regression was achieved in two consecutive examinations, the monitoring was done once a month.

Results In this study, a total of 1540 premature infants were screened from 10 May 2017 to 16 May 2018. Maximal pupil dilatation was achieved with a mixture of 2.5% phenylephrine hydrochloride and 0.5% tropicamide. All examined infants had some type of ROP. Some children had spontaneous regression. Four infants had ROP that had to be treated with anti-VGF therapy within 24 to 72 hours.

Conclusion The early detection of ROP in premature and very-low-birthweight infants is crucial. Screening programmes for ROP should be implemented in every NICU and should be carried out by an experienced ophthalmologist and offered to all premature infants with birthweight of ≤ 2100 g or gestational age of ≤ 32 weeks to ensure early detection and timely treatment of threshold ROP to prevent its blinding sequelae.

REFERENCES AND/OR ACKNOWLEDGEMENTS

None.

NP-007

MEDICATION ANALYSIS FOR HOSPITAL PATIENTS WITH RENAL INSUFFICIENCY: FROM DEVELOPMENT PHASE TO STANDARD PRACTICE

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Background A previous research project¹ had confirmed that patients with renal impairment and poly-medication had a greater risk of suffering from medication-related problems.

Purpose Our objective was to develop a practicable method of monitoring medication which could be permanently integrated into the everyday routines of a team of pharmacists working at a general hospital without the facilities of a university medical centre.

Materials and methods Glomerular filtration rates (GFRs) were recorded on a daily basis by staff at the clinic's laboratory. This list enabled us to monitor the medication of 425 inpatients with GFR < 40 ml/min between March and June 2017 with regards to: (A) kidney-relevant adaptation to renal insufficiency medication (e.g. wrong dosage, contraindications); and (B) significant drug interaction (ABDAMED categories) considered 'substitution necessary', and passed on the results to the doctors. The implementation of such recommendations by the physicians was checked by referring to the electronic patient record and registered in ADKA-DokuPIK.

Results In about one-third of the cases (154 patients, about six per day) the medication to be administered was changed directly or after joint consultation between the medical and pharmaceutical staff. More than half of the recommendations were immediately applied, and in roughly one-quarter of the remaining cases a decision deferred, pending further risk-benefit assessment. Therapeutic intervention (type A or B) was required for approximately 51% of the inpatients with GFRs of 10–30 ml/min, but, in contrast, only recommended for approximately 17% of inpatients with GFRs of 30–40 ml/min.

Furthermore, a drug list was designed to facilitate routine work (with a link to www.dosing.de), as well as an information leaflet listing those drugs used in our hospital that either required dose adjustment or should not be used in cases of renal impairment.

Conclusion An increase in patient safety by means of intervention was achieved in 114 of the 154 cases, limiting patient assessment to GFRs of 10–30 ml/min (in accordance with KDIGO classification 4). This would correspond to a work-efficient intervention rate of 51% (about seven medication errors per day). After successfully presenting our results to the board of management and at the chief physicians' conference meeting, the decision was taken to continue to provide this everyday form of clinical service despite our limited human resources situation.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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NP-008

STABILITY OF CEFTOLOZANE/AZOBACTAM IN SOLUTION AS INFUSION FOR PROLONGED OR CONTINUOUS APPLICATION

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Background Ceftolozane is a novel cephalosporin and commercially available in combination with the beta-lactamase inhibitor tazobactam under the brand name Zerbaxa. Cephalosporins exhibits, like all betalactams, a time-dependent antibacterial action. The concentration of the antibiotic at the site of infection should exceed the MIC of the underlying pathogen for at least 60%–70% of the dosing interval. According to the German prescribing information, Zerbaxa is administered as a short infusion in sodium chloride 0.9% or glucose 5%. However, clinical studies suggest that prolonged or continuous infusion of beta-lactam antibiotics can improve therapy success, especially in intensive care patients.

Purpose At present, there is insufficient data on the stability of ceftolozan/tazobactam in infusion solution for continuous infusion. German product information provides data on the stability under conditions of cooling (2°C–8°C) and light protection. Therefore, a stability test was carried out for 24 hours under real-world conditions.

Material and methods Solutions of ceftolozan/tazobactam (20/10 mg/L and 10/5 mg/L) in sodium chloride 0.9% and glucose 5%, respectively, were stored at room temperature for 24 hours without protection from light. Concentrations of ceftolozan/tazobactam were analysed at the start of the experiment and 1, 4, 8 and 24 hours thereafter using high-performance liquid chromatography with UV detection. In addition, at each analysis time point the solutions were visually examined and the pH values were determined.

Results Ceftolozan/tazobactam concentrations were stable for at least 24 hours (>98.5% of baseline) at both concentrations regardless of the used carrier solution. Visual appearance and pH values remained unchanged.

Conclusion Zerbaxa is stable in sodium chloride 0.9% and glucose 5% at room temperature for at least 24 hours and is therefore suitable for prolonged or continuous infusion.

REFERENCES AND/OR ACKNOWLEDGEMENTS

None.

NP-009

PATIENTS' PERSONAL TREATMENT MANAGEMENT IN A UNIVERSITY HOSPITAL

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Background Patient's personal treatment (PPT) management in a hospital is a problem potentially responsible for incidents such as medical duplications that can lead to serious consequences (especially with oral anticoagulants), treatment omissions and dosages. The management of PTT is not subject to legal/national regulation in Belgium or institutional regulation in our hospital.

Purpose The primary objective was to establish an inventory of management practices of PTT in our hospital by conducting interviews with inpatients and nurses. The secondary objective was to propose an institutional regulation for the control and administration of PTT.

Material and methods The state of play was realised in 22 care units from 5 October to 4 November 2016. PTT management was evaluated by a pharmacist with a survey (patient/responsible nurse) based on a review of the literature.

Results Into the targeted care units, 47% (195/410) hospitalised patients were included. Of 410 patients hospitalised into the targeted care units, 195 patients were included. Sixty five per cent (102/195) had the usual treatment and brought their own drugs into hospital. Among the 289 drugs brought by patients, 71% of drugs (206) were registered in the hospital's drug formulary and were administered.

Conclusion PPT management in a hospital is problematic in terms of safety and quality, and concerns an important part of patients' treatment, as confirmed by this study. Communicating the results to the different stakeholders is a first step in this process of continuous improvement of quality. An institutional regulation standardising and securing PTT management practices must be drafted, taking into account reality in the field. Other proposals are under study: verification of compliance by nurses, identification of PTT, information to the patient to prevent the use of PPT in parallel with treatment administered by nursing staff, and sensitisation of patients and visitors to these practices.

REFERENCES AND/OR ACKNOWLEDGEMENTS

None.

NP-010

WHAT IS THE EFFECT OF INTERPROFESSIONAL STUDENT PLACEMENTS IN PRIMARY CARE? A RETROSPECTIVE PRE-POST STUDY

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Background The Centre for Interprofessional Workplace Learning (TVEPS) offers an interprofessional learning experience in primary care for health students in their final years of study.