

- Final concentration of the KCl infusion ≤ 4 g/L.
- Mention of the final volume of the KCl infusion.

Results One-hundred and four patients were included.

- 30.7% (95% CI: $\pm 8.9\%$) of the prescriptions were relevant in term of indication.
- 38.4% (95% CI: $\pm 9.35\%$) of the prescriptions used the correct specific units.
- In 99.1% (95% CI: $\pm 1.82\%$) of cases the correct slow infusion rate was prescribed.
- In 15.3% (95% CI: $\pm 6.9\%$) of cases a ready-to-use solution was prescribed.
- Mention of the nature of the dilution solution to be used was found in 84.6% (95% CI: $\pm 6.9\%$) of cases.
- Final concentration of the KCl infusion was ≤ 4 g/L in 73% (95% CI: $\pm 8.5\%$) of cases.
- Mention of the final volume of the KCl infusion was detailed in 82.6% (95% CI: $\pm 7.29\%$) of cases.

Conclusion Indications to use injectable KCl were not strictly applied, which may be explained by prescribing habits and the desire to quickly normalise hypokalaemia.

A very low utilisation of ready-to-use products which is probably due to insufficient information to prescribers concerning the available ready-to-use products.

Most prescriptions were not using the recommended units, and lack of knowledge of the prescriber of the need to prescribe in g or mmol may be the cause of this.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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5PSQ-021 PHARMACOGENETIC TESTING FOR PERSONALISATION OF STATIN THERAPY

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Background The solute carrier organic anion transporter family member 1B1 (*SLCO1B1*) protein facilitates the hepatic uptake of simvastatin. The *SLCO1B1* c.521T>C genetic polymorphism (rs4149056) decreases the function of *SLCO1B1* and is a strong predictor of simvastatin-induced myopathy. *SLCO1B1* genotyping and pharmacist interpretation of the results are a step forward in personalising statin therapy. Hospital pharmacists have an innovative role in the clinical implementation of *SLCO1B1* pharmacogenetic testing for statin therapy in the interests of patient safety.

Purpose To identify the presence of the *SLCO1B1* c.521T>C genetic polymorphism in a cohort of cardiac patients on simvastatin to correlate genotype results with myopathy risk.

Material and methods Patients (n=110) on simvastatin were recruited by convenience sampling from the cardiac catheterisation laboratory of an acute general hospital. An EDTA-blood sample was collected from each patient after informed written consent. Genomic DNA was extracted and real-time polymerase chain reaction genotyping to identify the

SLCO1B1 c.521T>C (rs4149056) single nucleotide polymorphism was performed using the Sacace biotechnology kits and Rotor-Gene 6000/Q for fluorescence detection. The patient cohort was classified into three genotypes: TT (homozygous wild-type – normal *SLCO1B1* function); TC (heterozygous – intermediate *SLCO1B1* function); and CC (homozygous variant – low *SLCO1B1* function). The 2014 Clinical Pharmacogenetics Implementation Consortium (CPIC) guideline, which suggests prescribing a lower simvastatin dose (20 mg/day) or consideration of rosuvastatin instead of simvastatin in patients genotyped as TC or CC, was used for genotype-based therapy recommendations.

Results The 110 patients (all caucasian, 90 males, mean age 65+1.02 years) were genotyped as TT (78.2%, n=86), TC (20.0%, n=22) and CC (1.8%, n=2). Fifteen patients genotyped as TC or CC were on a higher simvastatin dose (40 mg/day) than suggested by the CPIC guideline for *SLCO1B1* and simvastatin-induced myopathy.

Conclusion Patients genotyped as TC have mild risk of myopathy and patients genotyped as CC have a higher risk of myopathy compared to patients genotyped as TT or TC. Pharmacists should recommend *SLCO1B1* genotyping in patients on statin therapy, interpret test results and suggest therapy recommendations according to genotype to improve patient safety with respect to myopathy.

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No conflict of interest.

5PSQ-022 AN EVALUATION OF THE PHARMACIST INTERVENTION IN INTRAVENOUS MIXTURES' STABILITY

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Background The knowledge concerning intravenous mixtures' stability is important because their effectiveness and safety depends on it.

Purpose To evaluate a check of the replacement of the infusion bag in time, concerning dopamine and nitroglycerin to ensure their effectiveness and safety in different hospitalisation units.

Material and methods An observational prospective study was carried out during 3 months. Dopamine and nitroglycerin intravenous mixtures' prescriptions were selected from a pharmacy electronic prescription program. From the pharmacy department an information sheet was sent to the hospitalisation units, where patients were treated with any of the mixtures, with the following information: patient identification, intravenous mixture prescribed and the text: 'The stability of the mixture is 24 hour. Change the dilution every day at the same time.'

The variables studied were the infusion rate (<21 mL/h, >21 mL/h and =21 mL/h) and the time when the mixture was replaced. The information sources used were electronic medical files, nurse interviews and direct observation of the mixture.

Results Sixty prescriptions were studied: 48 mixtures were prescribed with an infusion rate of <21 mL/h, nine mixtures

with 21 mL/h and three mixtures with >21 mL/h. Thirty of the 60 mixtures (50%) were changed every 24 hours, the rest were changed when the perfusion finished according to the infusion rate without considering the mixtures' stability. Of the mixtures which were changed correctly: 70% were prescribed with an infusion rate of <21 mL/h; 20% with 21 mL/h; and 10% with >21 mL/h. On the other hand, the mixtures changed after the recommended time were prescribed with an infusion rate: 90% with <21 mL/h and 10% with 21 mL/h.

Conclusion The mixtures prescribed with an infusion rate of <21 mL/h led to a miscalculation of the time when the mixtures had to be changed correctly. Every mixture was changed at the right time when written and oral recommendations were given to the nursery. Therefore, it is necessary to give active and passive information about mixtures' stability to ensure their effectiveness and safety.

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5PSQ-023 ADEQUATE DIGOXIN DOSAGE IN PATIENTS WITH DIGITALIS TOXICITY

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Background Digoxin is a high-alert medication because of its narrow therapeutic range and high drug-to-drug interactions. Fifty per cent of cases of digoxin toxicity can be prevented by improving treatment with digoxin.

Purpose Checking whether the dosage of digoxin in intoxicated patients accords with clinical guidelines' recommendations.

Material and methods Retrospective study of patients discharged between 2015–2017, presented as a primary or secondary diagnosis of digitalis toxicity. Variables: date of birth, sex, weight, size, diagnosis for treatment with digoxin – atrial fibrillation (AF) or heart failure (HF) – daily dose of digoxin, serum creatinine, digoxinemia and Potasemia (K +). It was estimated whether the dosage of digoxin was correct based on anthropometric data and doses of daily digoxin using PKS. For those inadequately dosed patients, daily doses of adequate digoxin were calculated. The glomerular filtration rate (GFR) was calculated by MDR/CKD-EPI.

Results Sixty-four patients (47 females), median age: 83.7 years (55–102), median weight: 69.2 kg (45.5–105 kg) with 52% below 70 kg were considered in the dosage recommendations. The mean value of GFR 50, 65 mL/min (SD=19.9) (77%<60 ml/min): 67% [k+]≤4.5 meq/dl. Diagnosis for treatment: HF in 34 patients and AF in 30 patients. The average dose of digoxin prior to admission was 0.163 mg/day (SD=0.06). The average digoxinaemia at income was two, 94 ng/mL (SD=1.36). The serum digoxin concentrations justified intoxication in most patients. Only two patients presented with serum digoxin concentrations below 1 ng/ml: 81% greater than 2 ng/ml. No significant differences were found between doses, concentrations or level/dose index of digoxin of patients diagnosed with HF and AF. A significant relationship (p<0,003) was found

between dose or level/dose index and patient's GFR. Doses estimated to obtain concentrations within therapeutic range were 0, 110 mg/dia (considering age, sex, weight and GFR), that is, 32.4% less than the pre-admission dose. Nine patients met the STOPP criterion of inappropriate prescription for administering doses of digoxin >0.125 mg/day to patients older than 65 years with GFR <50 mL/min.

Conclusion Clinical guidelines recommend evaluating renal function (K +) and serum digoxin concentration, considering the appropriate range for HF (0.6–0.8 ng/dl) and AF (0.8–1.0 ng/dl). Control of potassium levels would be insufficient, and doses administered higher than those necessary for the recommended therapeutic range. Monitoring of serum digoxin concentrations could reduce digitalis toxicity.

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5PSQ-024 MEDICATION ERRORS – A CAUSE FOR MAJOR CARDIOVASCULAR EVENTS IN AN EMERGENCY DEPARTMENT

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Background Cardiovascular diseases (CVD) represent the main cause of mortality worldwide. The drugs recommended for CVD are the most prescribed drugs and, as a consequence, the risk of medication errors is increased. Nowadays, medication errors are the most common type of medical errors.

Purpose The objective of this study was to assess the major cardiovascular events due to medication errors in an emergency department (ED).

Material and methods A retrospective observational study was conducted in 416 patients with major cardiovascular problems (acute coronary syndrome – SCA, ischaemic/haemorrhagic stroke, hypertensive crisis) in an ED from 1 July 2017 to 31 August 2017.

Results A total of 9086 patients were admitted to the ED during July to August 2017. Of these, 416 patients (4.57%) presented with major cardiovascular events, 220 females (52.9%) and 196 males (47.1%). The mean age of the analysed patients was 67.68±14.2 years. The most common cardiovascular events were strokes (50%), hypertensive crisis (34.4%) and acute coronary syndrome (14.7%). In 99 out of 416 patients (23.8%), medication errors were identified. The main medication errors were lack of anti-platelet/anticoagulant therapy (43.43%), non-adherence to treatment (16.16%), inadequate anti-hypertensive therapy (7.07%) and inappropriate treatment (e.g. association between two calcium channel blockers) (1.01%).

Conclusion Medication errors are one of the major causes of major cardiovascular events. Many of the medication errors leading to a visit to the ED could be prevented. It is necessary to develop prevention strategies. Clinical pharmacologists/pharmacists can play an important role in this strategy.