4CPS-342 TRANSIENT VALPROIC ACID TOXICITY: HYPERAMMONAEMIA IN A PAEDIATRIC PATIENT

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Background and importance Hyperammonaemia is known as a metabolic disturbance due to deficiency of some enzymes of the 'urea cycle', a biochemical process where nitrogenous products are purified from the organism and whose accumulation leads to neurological disorders, vomiting, seizures, coma and death.
Aim and objectives To evaluate the evolution and response after administration of corrective treatment in a 5-month-old paediatric patient diagnosed with epilepsy who developed hyperammonaemia secondary to high doses of valproic acid (VA).
Material and methods To reverse hyperammonaemia, the patient's status epilepticus, the frequency of seizures, ammonium levels (µg/dL) and VA (µg/mL) were monitored.
Results Because of persistence of seizures, intravenous VA treatment was started, initially at a bolus dose of 400 mg and subsequent infusion of 20 mg/kg (rate 1 mg/kg/hour). The rate of infusion should increase 10 hours after the start of treatment at 1.5 mg/kg/hour, controlling the crisis and performing sequential therapy with oral VA at 40 mg/kg/8 hours. Later, cloning and disconnection episodes were again evident, forcing monitoring of VA levels and assessment of the general state. Hyperammonaemia was diagnosed, with levels of 140 µg/dL of blood ammonia (reference range 29–70 µg/dL), There was clinical and therapeutic agreement with VA levels of 113 µg/mL (range 50–100 µg/mL).

The paediatric critical care unit consulted the pharmacy unit to advise on detoxification treatment, suggesting arginine (0.15–0.4 g/kg/day), carnitine (20 mg/kg/day) and N-carbamyl glutamate (100 mg/kg/day), reserving phenylbutyrate as a corrective treatment. Toxic and analyte levels progressively improved (103 µg/dL of ammonia and 47.3 µg/mL of VA), allowing the use of phenylbutyrate to be postponed. After an approximate 20% reduction in ammonia (86.3 µg/dL), treatment was interrupted, except for carnitine and levetiracetam. Finally, stabilisation of the epileptic seizures was achieved, maintaining normal ammonia levels, and he was discharged from hospital with outpatient treatment based on oxcarbazepine and levetiracetam.
Conclusion and relevance Medication overdose to reverse a particular situation can trigger unexpected toxic conditions, which could cause organic or metabolic alterations. An adequate pharmacotherapeutic follow-up could avoid risk situations, especially in the paediatric population.

REFERENCES AND/OR ACKNOWLEDGEMENTS

1. Special thanks to the paediatric and emergency units.

Conflict of interest No conflict of interest

4CPS-343 PREGABALIN AND GABAPENTIN DRUG UTILISATION REVIEW

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Background and importance The Health Service Executive Medicines Management Programme has highlighted the need for vigilance when prescribing and dispensing pregabalin or gabapentin as both drugs have a risk of addiction and a potential for misuse/abuse. A recent systematic review found that reports of pregabalin and gabapentin abuse are increasingly being documented worldwide.[1]
Aim and objectives To examine the pharmacy supply of pregabalin/gabapentin over the past 4 years to determine if usage has increased; and to assess if pregabalin/gabapentin is being initiated for patients inhouse, what doses are being used and if prescribed for epilepsy.
Material and methods Reports on pregabalin/gabapentin use in the previous 4 years were generated from the pharmacy information system. A 1 day hospital-wide review of pregabalin/gabapentin prescribing was conducted in August 2018. A data collection form was designed to collect information on the number of patients prescribed pregabalin or gabapentin, the dose prescribed, if treatment was started prior to hospital admission and if the patient had a history of epilepsy. Clinical pharmacists completed the data collection by examining the drug chart and the medical notes.
Results

- Hospital usage of pregabalin and gabapentin increased by 7% and 16%, respectively, from 2015 to 2018.
- 588 inpatient drug charts were included.
- 53 patients were prescribed pregabalin, 1 of whom had a history of epilepsy. 83% of pregabalin prescriptions were initiated before hospital admission.
- 45 patients were prescribed gabapentin. Five patients had a history of epilepsy. 47% of gabapentin prescriptions were initiated before hospital admission.

Conclusion and relevance Hospital prescribing of pregabalin and gabapentin has increased since 2015. The high rate of gabapentin initiation reflects the hospital postoperative pain guidelines. In contrast, most patients were commenced on pregabalin prior to hospital admission. The results suggest that pregabalin and gabapentin are rarely prescribed for epilepsy. These results were disseminated to the Drug and Therapeutics Committee. Interventions for appropriate use will be explored. This review will provide baseline data for which future reviews can be compared against.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-344 PRESCRIPTION AUDITING OF THE 3 MONTHLY FORMULATION OF PALIPERIDONE PALMITATE IN ADULT PATIENTS WITH SCHIZOPHRENIA

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Background and importance The 3 monthly formulation of paliperidone palmitate (3MPP) was introduced to the Italian market in 2017 for the treatment of schizophrenia in adult patients.

3MPP is a useful treatment option for patients who are adequately treated with the 1 monthly formulation of paliperidone palmitate (PP) but who may benefit from longer dosing intervals.
Aim and objectives To assess the appropriateness of 3MPP prescriptions and the effectiveness of treatment in our centre.
Material and methods This was an observational retrospective study of patients with a 3MPP prescription between January 2018 and July 2020. The variables used to evaluate appropriateness were the number of switches from PP to 3MPP, dosage and administration time. Effectiveness was evaluated by recording treatment interruptions, dose variations and switch back to PP. Data were extracted from an administrative database and collected in Excel.
Results 38 patients were included, 23 men (60.5%), with a mean age of 50±14 years. The dosages of 3MPP were: 175 mg in 5 patients (13.2%), 263 mg in 6 (15.8%), 350 mg in 18 (47.4%) and 525 mg in 9 (23.7%). In 30 patients (78.9%), the 3MPP prescription was appropriate. The number of switches was 35/38 (92.1%): 3 patients received a first prescription of 3MPP without a previous prescription of antipsychotic depot drugs from our centre. An appropriate dosage was selected in 33/35 patients (94.3%): 1 patient switched from PP 100 mg to 3MPP 263 mg and another from PP 150 mg to 3MPP 263 mg. An appropriate administration time was selected in 35/38 patients (92.1%): 1 patient took the drug every 4 months and two patients received only one administration of 3MPP. In total, six patients interrupted treatment (3 in 2019; 3 in 2020). Dose variation of 3MPP during treatment occurred in 2 patients: 1 switched from 3MPP 350 mg to 525 mg and the other from 3MPP 263 mg to 350 mg. Two patients returned to treatment with PP.
Conclusion and relevance Most of the 3MPP prescriptions were appropriate. This treatment has been shown to be effective in this setting where clinical diagnosis and therapeutic choice are not simple and medication adherence is a clinical challenge. The intervention of the pharmacist by auditing prescriptions is important to further increase appropriate treatments in these patients.

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4CPS-345 MANAGEMENT OF BRONCHIOLITIS IN HOSPITALISED CHILDREN

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Background and importance Bronchiolitis is a common cause of hospitalisation in infants. Clinical guideline recommendations are based on supportive treatment. Pharmacological treatment is reserved for severe cases
Aim and objectives To analyse the prescription of recommended drugs used for the treatment of bronchiolitis in bronchiolitis patients under the care of the paediatric service (PS).
Material and methods A retrospective observational study was conducted in a regional hospital. We selected drugs recommended by paediatrics guidelines. Bronchiolitis inpatients with any of these drugs prescribed by the PS during January 2020 were included. Data collected were: demographics, length of admission, respiratory syncytial virus (RSV) test results, bronchiolitis treatment, oxygen therapy, oxygen saturation, respiratory rate, wheezing, accessory muscles use and antibiotic therapy. Bronchiolitis treatment was classified according to its therapeutic activity: bronchodilators: epinephrine, salbutamol, and ipratropium; glucocorticoids: methylprednisolone and prednisolone; and hypertonic serum (SH). Patients were classified according to the Wood–Downes severity scale (WDS) and the prescribed treatment. The data were collected from the electronic prescription programme and digital medical records.
Results 48 patients were included, 25 (52%) females, mean age 3 months (0.77–11). Average stay was 4 days (1–7). 34 (70%) patients were positive for RSV and 2 (5%) were also positive for influenza A virus. Patients classified according to the WDS scale and mean number of drugs during admission were: patients with a mild condition 8 (16%), 2.25 drugs; patients with a moderate condition 23 (47%), 2.08 drugs; and patients with a severe condition 17 (35%), 2.64 drugs. Drugs during admission for all patients included: 3 (6%) patients were treated with palivizumab previously, 2 in the previous season and 1 in the current season; 6 (12%) were treated with antibiotic therapy alone or in combination (6 (100%) clavulanic amoxicillin, 3 (50%) ampicillin, 1 (2%) cloxacillin and 1 (2%) cefotaxime); 46 (95%) patients were treated with SH; 35 (73%) with adrenaline; 18 (37%) with salbutamol; and 14 (29%) with corticosteroid therapy. 35 (73%) inpatients received oxygen therapy during admission and the mean PO_2 on admission for these patients was 94%. Mean PO_2 at admission for patients who did not receive oxygen therapy was 96%.
Conclusion and relevance There were no differences between patient severity and number of prescribed drugs. The study highlighted the prescriptions of salbutamol and adrenaline despite the limited evidence of use in bronchiolitis. In our study, oxygen therapy was applied when oxygen saturations were above recommendations. The treatment used in bronchiolitis should be reviewed, promoting a rational use of the drug and therapies based on evidence, avoiding over medication.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-346 EVALUATION OF THE IMPLEMENTATION OF 'INHALER INTERVIEWS' DURING MEDICATION RECONCILIATION IN THE PNEUMOLOGY SERVICE

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Background and importance At the request of the pneumology specialists, we managed to set up medication reconciliation in the service. Taking advantage of this new activity, we proposed to evaluate patients' ability to use their inhalers.
Aim and objectives The objectives were to promote the correct use of inhalation devices and to ensure proper patient management.