hospitalised non-ICU patients who received at least one antimicrobial suitable for CI. Amoxicillin, aztreonam, benzylpenicillin, ceftazidime, flucloxacillin, meropenem, piperacillin/tazobactam, temocillin and vancomycin were included as antimicrobials. Catheter type, number of lumens, administration mode, loading and maintenance dose, and pump settings were assessed by comparing the electronic prescription and patient file with the observations. Drug incompatibilities (DI) were analysed using the compatibility information provided in Trissel's two clinical pharmaceuticals database and categorised as compatible, incompatible, uncertain or none. DI were defined as incompatibility or uncertainty about the compatibility between at least two simultaneously Y site administered drugs.

Results 107 observations in 86 patients were performed and 113 antimicrobial prescriptions were analysed. Peripheral lines were most commonly used (53%), followed by central venous catheters (35%) and peripherally inserted central catheters (10%). Single, double, triple and quadruple lumen catheters accounted for 56%, 23%, 17% and 4%, respectively. CI therapy was prescribed, according to hospital guidelines, in 96% of patients, 93% of whom received a loading dose. In 96% of cases a correct maintenance dose was administered. Only 63% of the infusion bags/syringes were labelled appropriately. In 7% of the observations, the pump settings did not match the prescribed dose, causing both over and under dosing in three patients (defined as >105% and <95% of the prescribed daily dose, respectively). We observed DI in 28% (30/107) of cases, mostly with single lumen catheters (63%), and in haematological patients (37%). Moreover, change from CI to intermittent infusion was the only solution to overcome DI in 73% of these cases.

Conclusion and relevance We found that administration issues were common in CI of antimicrobials. In response, we started educational sessions, the hospital policy was slightly adapted, including allowing intermittent infusion in the case of DI, and we created a prescribing alert for the assistance of a clinical pharmacist for DI review.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-238 EVALUATION OF EFFECTIVENESS OF COMPOUNDED ORAL VANCOMYCIN CAPSULES FOR TREATMENT OF CLOSTRIDIUM DIFFICILE INFECTION

¹Á Narrillos Moraza*, ¹MS Pernía López, ²M Olmedo Samperio, ¹E Chamorro De Vega, ¹C Rodríguez Gonzalez, ¹J Vicente Valor, ¹B Somoza Fernández, ¹P Ruiz Briones, ¹A Herranz Alonso, ¹M Sanjurjo Saez. ¹Hospital General Universitario Gregorio Marañón, Hospital Pharmacy, Madrid, Spain; ²Hospital General Universitario Gregorio Marañón, Microbiology, Madrid, Spain

10.1136/ejhp-2021-eahpconf.70

Background and importance Oral vancomycin (125 mg four times daily) is the standard treatment for mild/moderate *Clostridium difficile* infection (CDI). As there are no marketed vancomycin capsules in our country, vancomycin 500 mg vials have been taken orally for this purpose. But high price, difficult acquisition and complicated dilution and administration, especially among elderly patients, were associated with poor adherence to treatment and a higher risk of recurrence.

Aim and objectives To study the clinical effectiveness of oral vancomycin in patients with CDI and to compare the utilisation of two different pharmaceutical forms: vials and capsules.

Material and methods A retrospective, observational, cohort study was conducted. Vancomycin 125 mg capsules were first compounded and dispensed by us in January 2018. Electronic health records of outpatients with an episode of CDI and receiving vancomycin vials (January 2017 to December 2017) or capsules (January 2018 to December 2018) were reviewed. Variables analysed were: demographics (sex, age), CDI episode (new episode, first recurrence, second or subsequent recurrence), vancomycin pharmaceutical form, treatment adequacy (dosing and duration, as recommended from clinical guidelines), recurrence rate (presence of symptoms within 60 days of treatment), treatment adverse effects and hypervirulent PCR-ribotype 027 strain cases (epidemiological and clinical interest).

Results 99 patients were included, 35 receiving vancomycin vials and 64 receiving compounded vancomycin capsules. Demographic characteristics were similar between groups (median age was 60 years; 59.6% women).

Vials cohort: 22 diagnoses of a new episode (62.8%), 11 first recurrences (31.4%) and 2 second or more recurrences (5.8%). Capsules cohort: 48 diagnoses of a new episode (55%), 13 first recurrences (20.3%) and 3 second or more recurrences (4.7%). Recurrence occurred within 60 days in 13 (37%) of the patients from the vial cohort and in 20 (31%) patients from the capsules cohort ($p=0.52$). Inappropriate oral vancomycin dosing decreased from 28.6% (vials) to 6.3% (capsules) ($p=0.002$). No vancomycin adverse effects were reported. PCR-ribotype 027 was found in 9 patients (9.1%).

Conclusion and relevance Oral vancomycin is safe regardless of the pharmaceutical form. Prescription adequacy improved with capsules. Further studies need to be done to confirm if dispensing capsules containing an appropriate drug dose relates to less recurrence rate, and better adherence and outpatient satisfaction.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-239 THERAPEUTIC DRUG MONITORING OF GENTAMICIN IN NEONATES

MP Ortega-García*, M Zaragoza-González, P Pérez-Villalón, I Gil-Gómez, A Moya-Gil Ana, E Gómez-Bayona, R Laguía-Sánchez, P Blasco-Segura. Consorcio Hospital General Universitario De Valencia, Service of Pharmacy, Valencia, Spain

10.1136/ejhp-2021-eahpconf.71

Background and importance Peak (maximum plasma concentration)/MIC >8–15 is a pharmacokinetic (PK)/pharmacodynamic (PD) parameter that best correlates with the effectiveness of aminoglycosides. A peak between 8 and 15 mg/L is necessary to achieve this. In neonates, doses of 3–5 mg/kg/day for the first week and 7.5 mg/kg/day from the second to the fourth week of life are recommended.

Aim and objectives To evaluate the degree of adequacy of the initial dose with current recommendations and whether therapeutic drug monitoring (TDM) allows optimisation of treatment.

Material and methods A retrospective study was conducted from 1 January 2016 to 29 February 2020, in a general

university hospital. Patients 0–35 days old treated with gentamicin and with plasma concentrations (Cp) were reviewed. The descriptive analysis was performed with the SPSSV.24 programme.

Results 47 patients with a median age of 3 days (0–33) were studied, 33 male. 26 (55.3%) were <1 week old. 34 (72.3%) were admitted for neonatal sepsis and 7 (14.9%) for urinary infection. Gentamicin was used in combination with ampicillin in 45 cases (95.7%) and empirically in 34 (72.3%). The initially prescribed dose was 4 mg/kg/day in 36 (77%) and 5 mg/kg/day in 8 (17%), with no differences in weeks of life. Cp were extracted with a median of 2 days (1–4) after the start, the median peak was 7.5 mg/L (3.5–21.6) and 29 (62%) had a peak <8 mg/L. The trough was <0.2 mg/L in 26 patients and of those that were quantified, the median was 0.4 mg/L (0.2–1.3), and was higher than 1 mg/L in only one case. It was recommended to increase the dose in 26 (55.3%) and reduce it in 4 (8.5%) patients, with 90% acceptance. A second Cp determination was requested in 16 (34%) cases with a median peak of 9 mg/L (6–12) and trough levels always <0.5 mg/L. It was recommended to increase the dose in 5 cases with an acceptance of 94%.

Conclusion and relevance The dose prescribed was lower than recommended in neonates >1 week old. Cp allowed detection and correction of deviations from the recommended peak or trough levels in 64% of cases, mainly due to low peak levels, with high acceptance of TDM. Plasma determination and TDM of gentamicin continues to be an essential tool to achieve the recommended PK/PD profile.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-240 THERAPEUTIC MONITORING OF VANCOMYCIN IN A COHORT OF PAEDIATRIC PATIENTS

M Alonso Moreno*, B Fernandez Rubio, B Guisado Gil, E Alfaro Lara. *Hospital Universitario Virgen Del Rocío, Farmacia, Sevilla, Spain*

10.1136/ehjpharm-2021-eahpconf.72

Background and importance The practice of routine monitoring and adjusting serum vancomycin drug concentrations is relevant to lessen the potential for nephrotoxicity and ototoxicity and to achieve therapeutic concentrations. However, therapeutic monitoring in paediatric patients is not widely known. **Aim and objectives** To describe the clinical and pharmacokinetic parameters in a cohort of paediatric patients treated with vancomycin and to analyse the achievement of the pharmacokinetic objectives after monitoring of vancomycin serum concentrations (SC) and dosage adjustment performed by the hospital pharmacy department.

Material and methods A retrospective study of paediatric patients treated with intravenous vancomycin from 2019 to 2020 was conducted. Variables collected were: sex, age, weight, diagnosis, bacterial isolation, infusion type, initial dosage and dose after two adjustments. Pharmacokinetic parameters were: volume of distribution (Vd), total clearance (Cl), elimination half-life ($t_{1/2}$) and 24 hour area under the curve (AUC). Data were expressed as median (range) values.

The goals for vancomycin SC were 15–20 mg/dL trough levels (for intermittent infusion) or 20–25 mg/dL steady state concentrations (for continuous infusion)

Results 32 patients were studied, 62% males, with a median age of 51 months (2 months–16 years) and median weight of 16.5 (5–53) kg. Diagnoses were: catheter related bloodstream infection (n=7), surgical infection (n=7), meningitis (n=3), pneumonia (n=3), osteomyelitis (n=2) and other (n=10). Microorganisms were isolated in 66% of patients: *Staphylococcus epidermidis* (n=12), *Streptococcus* spp (n=3), *Enterococcus* spp (n=2), *Staphylococcus aureus* (n=1) and other (n=3). 78% of patients were treated initially with intermittent infusion and 22% with continuous infusion. After monitoring, 38% changed from intermittent to continuous infusion.

Median initial dose was 51 (34–80) mg/kg/day, and median doses after the first and second adjustments were 65.5 (40–95) and 68.6 (47–87) mg/kg/day, respectively. Median Vd, Cl, $t_{1/2}$ and AUC were 0.82 (0.77–0.91) L/kg, 0.15 (0.06–0.85) L/hour/kg, 3.46 (0.63–15.10) hours and 408 (57.57–958.90) mg×hour/L. 9% of patients did not require dosage adjustment. In the remainder (91%): 45% obtained optimal SC after the first monitoring, 28% after the second monitoring, 20% after subsequent monitoring and 7% discontinued due to another isolation.

Conclusion and relevance Vancomycin was used as target therapy in most cases. The wide use of vancomycin continuous infusion as well as the high doses given were remarkable. Most patients needed dosage adjustments to achieve therapeutic SC and it was possible after the first two pharmacokinetic adjustments.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-241 IMPACT OF ANTIBIOTIC PRESCRIBING IN AN EMERGENCY DEPARTMENT ON HOSPITAL STAYS, READMISSION AND MORTALITY

¹G Gonzalez Morcillo*, ¹B Calderón Hernanz, ²MD Calderón Torres, ²ML Martín Fajardo, ¹AC Mandilego García, ¹L Pérez De Amezaga Tomás, ¹MM Parera Pascual, ¹M Vilanova Boltó. ¹Son Llatzer Hospital, Pharmacy Department, Palma De Mallorca, Spain; ²Son Llatzer Hospital, Emergency Department, Palma De Mallorca, Spain

10.1136/ehjpharm-2021-eahpconf.73

Background and importance Antibiotics are widely prescribed in the emergency department (ED). Around 30–60% of antibiotic prescriptions in the ED are inappropriate; this fact is associated with an increase in length of hospital stay and is a public health problem. In this context, the ED becomes a key point for antibiotic optimisation.

Aim and objectives The objectives of the study were to determine the frequency and type of inappropriate prescriptions of antibiotic therapy (AT) in the ED and to assess the impact in terms of increase in hospital stay, readmissions and 30 day mortality after the event.

Material and methods This was a descriptive, observational, retrospective, multidisciplinary study authorised by the hospital research commission. A cross sectional serial point prevalence study of all antibiotic prescriptions for patients under observation in the ED between January and March 2020 was conducted. The appropriateness of the prescription was evaluated by specialists from emergency medicine and clinical pharmacists, according to the centre's infection guidelines (CIG). Demographic variables, comorbidity and site of infection were checked with the electronic medical record (HPHCIS V.3.8).