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

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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.

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

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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).