correct initial vancomycin dose, requiring $\geq 25\%$ increase in the total vancomycin dose.

Regarding TDM dosage adjustments, 63.4% of patients required an increase in the total daily dose (77% needed a shorter dosing interval while 23% needed higher doses with the same dosing interval).

Conclusion and relevance More than a half of the patients had subtherapeutic vancomycin levels. Initial underdosage was the main cause of subtherapeutic levels. Nevertheless, 22.2% required $\geq 25\%$ increase in dose to achieve target drug concentrations despite an initial therapeutic regimen, according to previous evidence. Shortening the dosing interval was the main TDM dosage adjustment, probably due to increased vancomycin clearance in this population.

REFERENCES AND/OR ACKNOWLEDGEMENTS

1. Bury D, *et al.* The effect of neutropenia on the clinical pharmacokinetics of vancomycin in adults. *Eur J Clin Pharmacol* 2019;**75**:921–928.
2. Rybak M, Lomaestro B, Rotschafer JC, *et al.* Therapeutic monitoring of vancomycin in adult patients: a consensus review of the American Society of Health-System Pharmacists, the Infectious Diseases Society of America, and the Society of Infectious Diseases Pharmacists. *Am J Health Syst Pharm* 2009;**66**:82–98.

No conflict of interest.

4CPS-036 PHARMACEUTICAL INTERVENTIONS IN A SMALL HOSPITAL

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Background and importance One of the functions of a pharmacist is to validate the prescribed treatment by the doctor, taking into account efficacy, safety, adequacy and cost.

Aim and objectives To analyse pharmaceutical interventions (PI) in prescribed treatment in a 115 bed hospital, and to quantify the degree of acceptance.

Material and methods This descriptive study included patients with an antibiotic prescription whose PI were analysed over a period of 11 months (2018 and 2019). The collected data were: demographic data, antibiotic treatment and indication, duration of treatment, comorbidities and abnormal analytical values (glomerular filtrate, potassium level, C reactive protein), type of PI and acceptance rate of PI. PI were classified as: actions on efficacy, actions on safety, actions on adequacy and actions on cost. The acceptance rate of the PI was detected based on modifications to the medical prescription according to the recommendations. The pharmaceutical recommendations were made through daily assessments of the patient's history or talking by phone with the physician.

Results A total of 438 patients were studied and a PI was made in 1 of 3 patients (163 PI). The interventions were made in antibiotic and non-antibiotic prescriptions. Actions on efficacy: antimicrobial change after antibiogram (11%), antimicrobial inadequate posology (3%) and adding an antibiotic to get a broad antibacterial spectrum (3%). Actions on safety: dose adjustment due to renal failure (15%), dose adjustment due to adverse reaction (0.6%), suspending the drug due to an adverse reaction, contraindication or interaction (4%), suspending the antibiotic due to inadequate duration (20%), inadequate posology (2.4%), therapeutic duplicity (4%), actions on potassium as monitoring levels, increase or decrease in

potassium dose (2.4%) and other (antithrombotic prophylaxis and monitoring nephrotoxicity by aminoglycosides (1.8%)). Actions on adequacy and cost: change to oral administration (24%).

A total of 58% (94/163) of PI were accepted. Most PI not accepted (40/69) were recommendations about change to oral administration or suspending the antibiotic. The reasons for non-acceptance were clinical deterioration or the patient was discharged.

Conclusion and relevance More than half of the pharmaceutical interventions resulted in a change in the medical prescription according to the recommendation. Pharmaceutical validation ensures safety in the hospitalisation process and represents an improvement in quality of care.

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4CPS-037 CLINICAL OUTCOME IN PAEDIATRIC INTENSIVE CARE UNIT PATIENTS TREATED WITH VANCOMYCIN

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Background and importance Vancomycin, a glycopeptide antibiotic, is used for the treatment of serious infections by gram positive microorganisms, especially methicillin resistant *Staphylococcus aureus* (MRSA). However, the attributable mortality of paediatric patients treated with vancomycin in paediatric intensive care units (PICU) has been limited.

Aim and objectives Our study aimed to determine the factors influencing mortality of paediatric patients treated with vancomycin in the PICU.

Material and methods A retrospective study was conducted in paediatric patients admitted to the PICU who received vancomycin from April 2018 to April 2019. We investigated variables such as age, sex, underlying disease, diagnosis, length of stay in the PICU, paediatric index of mortality 2 score, mechanical ventilator use, renal replacement therapy, laboratory data, dose, level of vancomycin and mortality rate.

Results A total of 160 paediatric patients were enrolled (median age 12 months (range 2–180), 69.4% male). The percentage of patients reaching therapeutics trough levels of vancomycin (10–20 mg/L) was 32.5% (n=52). Septic shock was the most common diagnosis (49.3%) and mortality rate was 39.4%. Our study found that children who had vancomycin levels outside the therapeutic range, and used mechanical ventilation and renal replacement therapy were associated with a higher mortality rate (OR 3.14, 95% CI 1.34–7.35, p=0.008; OR 6.1, 95% CI 1.6–22.7, p=0.007; and OR 10.4, 95% CI 2.6–41.4, p=0.001, respectively).

Conclusion and relevance Improper therapeutic vancomycin levels, mechanical ventilator use and renal replacement therapy are factors associated with mortality in the PICU.

REFERENCES AND/OR ACKNOWLEDGEMENTS

1. Miloslavsky M, Galler MF, Moawad I, *et al.* The impact of pediatric-specific vancomycin dosing guidelines: a quality improvement initiative. *Pediatrics* 2017;**139**(6).