(37.5%)). Bacteria causing chronic infection was *P aeruginosa* in BC (n=7;100%), and in LT, *P aeruginosa* (n=6; 75%) and *Proteus mirabilis* (n=2; 25%).

AZLI treatment duration was 20.6±14.2 months (BC) and 10.1±9.7 months (LT). Respiratory function tests during AZLI (mean values of the population) are shown in table 1.

Abstract 4CPS-033 Table 1

	Diagnosis	FVC (%)	FEV_1 (%)	FEF25–75 (%)
Baseline	BC	56.5±13.6	49.2±8.8	25.3±9.3
	LT	48.1±13.6	41.0±17.0	25.0±13.4
Mean follow-up	BC	58.0±10.1	47.1±4.0	21.4±7.3
	LT	48.6±14.5	45.2±13.9	33.5±12.7

Comparing BC with LT, a statistically significant improvement was observed in FVC (p=0.011) and FEF25–75 (p=0.005) but this was not clinically relevant. BC annual emergency admissions were 0.07 before and 0.42 during AZLI; annual rates of hospital admissions were 0.44 and 0.55, respectively. Remission data (negative results in sputum burdens) were: BC (n=2, 28.6%) and LT (n=1, 12.5%). The most commonly reported treatment emergent adverse effects (AE) were dyspnoea, bronchospasm and arthralgias in BC (n=3; 42,9%). There were no AE in LT and no deaths in either group.

Conclusion and relevance The results suggest that off-label use of AZLI in complicated chronic infected patients could control gram negative infection and neutralise sputum burdens in some cases, while maintaining lung function and decreasing accelerated clinical deterioration.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-034 IS IT POSSIBLE TO RATIONALISE ANTIBIOTIC USE AMONG HOSPITALISED PATIENTS BY CLINICAL PHARMACIST ACTIVITY?

[1]Z Haleder*, [1]H Takács, [2]G Soós. [1]*Semmelweis University, University Pharmacy Department of Pharmacy Administration, Budapest, Hungary*; [2]*Semmelweis University, Department of Dermatology-Venereology and Dermatooncology, Budapest, Hungary*

10.1136/ejhpharm-2020-eahpconf.135

Background and importance Many hospitalised patients require antibiotic therapy as a result of either community acquired or nosocomial infections. The consequences of inappropriate antibiotic use carries the risk of undesirable side effects and facilitates the selection of resistant bacteria. Therefore, it is important to prioritise targeted therapy and to encourage switch therapy.

Aim and objectives We performed a pilot study with the aim of monitoring the nature of antibiotic prescribing on a ward with a gastroenterology and endocrinology profile in the First Department of Internal Medicine, Semmelweis University. In addition, we wanted to prove that the help of a clinical pharmacist in a systematic review of therapies is an important part of patient centred care.

Material and methods Our prospective study took place in two 3 month period in 2018–2019, based on patient medical records. The medications of 50–50 randomised patients, of all patients receiving antibiotic therapy were analysed.

In the first phase of the study, the use of antibiotics was analysed without counselling of a pharmacist. In the second phase, all observations regarding therapy were reported to the responsible physician. We compared the periods based on specific indicators, such as therapy choice (empirical or aimed), duration of antibiotic therapy and costs.

Results Empirical therapy was the dominant therapy in both phases (71% vs 74%). The most frequently prescribed antibiotics were ceftriaxone, piperacillin/tazobactam, metronidazole and clarithromycin. Duration of intravenous treatment was reduced by 11% in the second phase, while oral therapy showed a small increase as a result of the promotion of switch therapy. There was also a decrease in the total number of treatment days, and consequently antibiotic treatment costs were reduced by 12%. In the second phase, we had suggestions for 38% of patients regarding modification of therapy. This represented 24 interventions of which 19 were fully or partially accepted. The rejections were explained by special instructions from the infectologist.

Conclusion and relevance As a result of monitoring, the appropriateness of antibiotic use increased. This study also confirms that the presence and counselling of a ward pharmacist could be helpful regarding the rationalisation of drug therapy.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-035 CLINICAL PHARMACOKINETICS OF VANCOMYCIN IN NEUTROPENIC PATIENTS

[1]M Hijazi Vega*, [1]F Fernández-Fraga, [2]I Gumiel-Baena, [1]ME Martínez-Núñez, [1]T Molina-García. [1]*Hospital Universitario De Getafe Madrid, Pharmacy, Getafe, Spain*; [2]*Hospital Universitario Puerta De Hierro Madrid, Pharmacy, Majadahonda, Spain*

10.1136/ejhpharm-2020-eahpconf.136

Background and importance According to the study by Bury D *et al*,[1] vancomycin dosage should be 25% higher than standard dosages in neutropenic patients due to increased clearance of vancomycin in this population. Renal hyperfiltration is considered a possible mechanism.

Aim and objectives We aimed to determine the prevalence of subtherapeutic drug exposure in neutropenic patients under therapeutic drug monitoring (TDM) and the subsequent TDM dosage adjustments.

Material and methods This was a retrospective and descriptive study from 2010 to 2019. Patients with haematological disease with neutropenia and receiving vancomycin TDM by pharmacists were included. Demographic variables, Cockcroft–Gault creatinine clearance (CrCl), initial dosage, dose adjustments and the first two trough levels were collected. Renal impairment was defined as CrCl <60 mL/min. Dosages of 15–20 mg/kg/dose and trough levels between 10 and 20 µg/mL were considered optimal for intermittent infusion schedules, according to international guidelines.[2]

Results Forty-one patients were included (58.5% men). Median age was 62.9 years (IQR 19.4–48) and 80% of patients had CrCl ≥60 mL/min. We found that 65.9% of patients did not achieve therapeutic levels in the first determination; most (77.8%) received a subtherapeutic initial dose. Also, 22.2% achieved a subtherapeutic level despite being treated with a

correct initial vancomycin dose, requiring ≥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 ≥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

[1]L Jimenez*, [2]E Lobo-Leon, [3]C Puivecino-Moreno, [3]R Gazquez-Perez, [3]A Varas-Perez. *[1]Hospital San Juan Grande, Pharmacy Hospital, Jerez De La Frontera Cadiz, Spain; [2]Hospital San Juan Grande, Pharmacy Hospital, Cadiz, Spain; [3]Hospital Sas Jerez, Pharmacy Hospital, Cadiz, Spain*

10.1136/ejhpharm-2020-eahpconf.137

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.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

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

[1]A Khangtragool*, [2]K Sunkonkit, [3]A Lucksiri, [2]S Seetaboot. *[1]Division of Pharmacy, Faculty of Medicine-Chiang Mai University, Chiang Mai, Thailand; [2]Division of Pulmonary and Critical Care, Department of Paediatrics-Faculty of Medicine-Chiang Mai University, Chiang Mai, Thailand; [3]Department of Pharmaceutical Care, Faculty of Pharmacy-Chiang Mai University, Chiang Mai, Thailand*

10.1136/ejhpharm-2020-eahpconf.138

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 paediatrics 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).