

treatment were in accordance with SFAR standards in 35%, 14% and 21% of cases, respectively.

**Conclusion and relevance** This study highlights a problem of compliance with recommendations. This can be partly explained by the unavailability of half of the recommended molecules in the local market, the urgent character of the surgery and the lack of knowledge and training of health staff. The overuse of broad spectrum antibiotics reported in other studies may reveal a fear of SSIs by healthcare providers. These data underline the need for implementing an appropriate antibiotic guide based on local epidemiology and drug availability.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-032

#### ANTIBIOTIC PRESCRIPTION THROUGH MOTIVATED REQUEST: CLINICAL PHARMACY TOOL TO IMPROVE APPROPRIATENESS AND LIMIT RESISTANT BACTERIAL STRAINS. A FOLLOW-UP AFTER A YEAR OF MONITORING IN A LOCAL HOSPITAL

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**Background and importance** In Italy, antimicrobial resistance is among the highest in Europe. The ECDC 2017 surveillance report confirmed a high percentage of critical bacterial isolates with disturbing antimicrobial resistance characteristics, according to the WHO list of dangerous bacteria: *Klebsiella pneumoniae* resistance to carbapenems close to 28%; *Escherichia coli* with combined resistance (third generation cephalosporins, fluoroquinolones and aminoglycosides) close to 20%; and *Acinetobacter* strains resistance to carbapenems of about 70% in Italy. The hospital pharmacy plays a main role in monitoring antibiotic prescriptions in order to limit resistant bacterial strain selection.

**Aim and objectives** To describe the pattern of antimicrobial prescribing with motivated request, comparing 2019 data with that of the previous year, to define the future strategy of the intervention.

**Material and methods** We collected data from antibiotic prescription forms from January to June 2019. We compared data with that of same period in 2018. An Excel database was created. We focused on: length of therapy, type of infection, amount of carbapenems used, resistant bacterial strains and appropriateness of antibiotic choice according to an antibiogram.

**Results** We collected antibiotic prescriptions for 177 (vs 148 in 2018) patients (58% men). Average age was 62 years. Average length of therapy was 8.4 days (previous year 10.5 days). Prevalent types of infection were: 12% (vs 23% in 2018) urinary tract infections (UTI), 26% (vs 22% in 2018) respiratory tract infections; 14% sepsis (same as 2018) and 13% (vs 10% in 2018) surgical site infections. Concerning critical bacterial strains: in 23% (vs 26% in 2018) of UTI, *E. coli* ESBL+ was

isolated and treated with carbapenems; only 2 (vs 5 in 2018) *Klebsiella* carbapenem resistant strains were found; 0 (vs 1 in the previous year) isolation of *Acinetobacter baumannii* multi-drug resistant was found; and 2 *Pseudomonas aeruginosa* carbapenem resistant strains were found, which required treatment with ceftolozane/tazobactam with clinical benefit. Considering all patients, 62% (vs 54% in 2018) of patients were treated with carbapenems. Antibiograms were available for 25% (41/162) of motivated requests, and 25% (10/41) of these were inappropriate because piperacillin/tazobactam or cephalosporins should have been chosen instead of carbapenems.

**Conclusion and relevance** Although a slight reduction in critical bacterial strains was observed compared with the previous year and an improvement in average length of therapy, carbapenems usage increased. This was also due to antibiogram misinterpretation. A future objective has to be improvement in the carbapenem sparing strategy, through clinical pharmacist validation of antibiograms and hospital training meetings.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

1. ECDC—Antimicrobial Resistance Surveillance Report, 2017.

No conflict of interest.

4CPS-033

#### OFF-LABEL USE OF NEBULISED AZTREONAM LYSINE IN PATIENTS WITH CHRONIC GRAM NEGATIVE BACTERIAL LUNG COLONISATION

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**Background and importance** Aztreonam lysine inhalation solution (AZLI) is approved for nebulised treatment (nebT) of pulmonary *Pseudomonas aeruginosa* infections in patients with cystic fibrosis (CF). The clinical benefit of nebulised AZLI in non-CF, such as bronchiectasis (BC) or lung transplant (LT) patients with chronic gram negative infection, has not been clearly established.

**Aim and objectives** To assess the safety and effectiveness of AZLI for nebT in patients with non-CF BC or LT colonised by gram negative chronic bacteria.

**Material and methods** This was an observational retrospective study in patients with non-CF BC or LT affected by chronic gram negative bacterial infection who started AZLI in 2013–2019. Clinical data were collected from the hospital medical records: hospital admissions, infective bacteria, previous nebT, safety and effectiveness date of AZLI. Mean (SD) respiratory function tests (FVC, FEV<sub>1</sub>, FEF<sub>25–75</sub>) were analysed for each patient, along with AZLI treatment.

To evaluate treatment effects (time=0 vs follow-up data), variance analysis (ANOVA) was applied (SPSS).

**Results** The study included 15 patients (aged >18 years) previously treated with alternative nebT. Reasons for stopping previous treatment were: tobramycin/colistin intolerance (n=6, 40%), tobramycin/colistin resistance (n=7, 46.7%) and no clinical improvement (n=2, 13.3%). Patients were classified by diagnosis: BC (n=7; 28.6% men) and LT (n=8; 50.0% men). AZLI was administered in 'on/off' cycles in combination with other nebT or in monotherapy (BC, n=1 (14.3%); LT, n=3

(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 <sub>1</sub> (%)	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?

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**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

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**Background and importance** According to the study by Bury D *et al.*,<sup>1</sup> 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.<sup>2</sup>

**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