p<0.001) and chemotherapy (12.6% vs 1.9%, p<0.001). Admission to the intensive care unit (ICU) was significantly more frequent in surgical patients (35.4% vs 10.9%, p<0.001) as well as use of second and third generation cephalosporins (30.0% vs 17.6%, p=0.001; 64.6% vs 53.1%, p=0.007, respectively).

Conclusion and relevance Age ≥65 years, use of PPIs, chemotherapy and fluoroquinolones were positively associated with the medical group and were significant predictors of CDI, whereas admission to the ICU and the use of second and third generation cephalosporins were positively associated with being in the surgical group and were significant predictors of CDI. We conclude that medical patients were more endangered with HA CDI than surgical patients.

REFERENCES AND/OR ACKNOWLEDGEMENTS
1. Perić A, Dragojević- Simić V, Milenković B, et al. Antibiotic consumption and healthcare-associated infections in a tertiary hospital in Belgrade, Serbia from 2011 to 2016. *J Infect Dev Ctries* 2018;**12**:855–863.
2. Šuljagić V, Miljković I, Starčević S, et al. Risk factors for Clostridioides difficile infection in surgical patients hospitalised in a tertiary hospital in Belgrade, Serbia: case-control study. *Antimicrob Resist Infect Control* 2017;**6**:31.

Conflict of interest No conflict of interest

| 4CPS-244 | THERAPEUTIC DRUG MONITORING GUIDED PHARMACY INTERVENTIONS TO OPTIMISE THE DOSAGE OF BETA-LACTAMS ADMINISTERED IN CONTINUOUS INFUSION IN NON-CRITICALLY ILL PATIENTS |

[1]AM Aragones Eroles, [1]P Taberner Bonastre*, [1]JA Schoenenberger Arnaiz, [2]A Bellés Bellés, [1]SM Cano Marrón, [1]A Morales Portillo, [3]A Jover Saenz. [1]*Hospital Universitario Arnau De Vilanova, Hospital Pharmacy, Lleida, Spain*; [2]*Hospital Universitario Arnau De Vilanova, Microbiology, Lleida, Spain*; [3]*Hospital Universitario Arnau De Vilanova, Proa Equip, Lleida, Spain*

Background and importance Increasing bacterial resistance to antibiotics requires new treatment strategies.

Aim and objectives To assess the number and type of pharmacy interventions in therapeutic drug monitoring (TDM) guided piperacillin or meropenem treatments. Treatments were administered by continuous perfusion (CI) in non-critically ill patients.

Material and methods We conducted a prospective study (October 2019-February 2020) to measure plasma concentrations (PC) of piperacillin or meropenem administered by CI. The physician prescribed the antibiotic as a continuous infusion and requested monitoring of drug therapy. The pharmacist established the time to determine PC and interpreted the analytical result, modifying the treatment if necessary. TDM sought to achieve free drug PC with 100% fT, four times the minimum inhibitory concentration (MIC) of the microorganism. If there were no isolates, the MIC of the most resistant microorganism was considered. We used high performance liquid chromatography to determine the PC.

Samples to be analysed were obtained once steady state was reached. The MIC of the microorganisms was determined by microdilution in broth or by E-test. The glomerular filtration rate (GFR) of patients was calculated using CKD-EPI. The pharmacist directly modified the regimen for piperacillin and meropenem PC below 4×MIC or above 6×MIC. Microsoft Excel was used for the statistics calculation.

Results 37 patients treated with piperacillin (62.2% men; aged 67.3 ± 15.4 years) and 11 treated with meropenem (45.5% men; aged 73.8 ± 24.8 years) were included. For 28/37 (75.7%) patients treated with piperacillin and 8/11 (72.7%) treated with meropenem, symptoms related to chronic pulmonary disease were present. We analysed a total of 48 PC for piperacillin and 15 for meropenem. Mean GFR of those treated with piperacillin was 77.46 ± 29 mL/min/1.73 m^2 and for meropenem 89.27 ± 17.43 mL/min/1.73 m^2. Pharmacists intervened in 14/37 (37.8%) patients treated with piperacillin, 9/14 (64.3%) to increase the dosage. For meropenem, the pharmaceutical interventions were 4/11 (36.4%), two to reduce the dose. In 90% of the patients in whom the dosage was increased had a GFR >60 mL/min/1.73 m^2, and 43% of the patients in whom it was decreased had a GFR <60 mL/min/1.73 m^2.

Conclusion and relevance TDM of beta-lactams shows whether the concentration reached is adequate for the causative microorganism and the patient's condition. Pharmaceutical interventions optimised the dosage in cases where standard regimens were not appropriate.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

| 4CPS-245 | DURATION OF ANTIBIOTIC TREATMENT IN PATIENTS DISCHARGED FROM A SHORT STAY HOSPITALISATION UNIT |

[1]C Pinto-Nieto*, [2]P Conde Baena, [3]J Canto Mangana, [4]A Martos Rosa, [5]B Casado Robles, [6]MA Garre Gonzalvez, [7]G Alvarez Corral, [3]M Herrera Exposito, [3]JE Martinez De La Plata, [3]MA Castro Vida. [1]*Har Guadix, Pharmacy Department, Guadix-Granada, Spain*; [2]*Hospital De Guadix, Internal Medicine, Guadix-Granada, Spain*; [3]*Hospital De Poniente, Pharmacy Department, El Ejido-Almería, Spain*; [4]*Hospital De Poniente, Hospital Pharmacy, El Ejido-Almería, Spain*; [5]*Har Guadix, Communitary Medicine, Guadix-Granada, Spain*; [6]*Hospital De Guadix, Communitary Medicine, Guadix-Granada, Spain*; [7]*Hospital De Guadix, Biotechnology, Guadix-Granada, Spain*

Background and importance Shortening the duration of antibiotic treatment is one of the cornerstones to reduce antibiotic pressure and, therefore, the appearance of antimicrobial resistance

Aim and objectives To describe the duration of antibiotic treatment in patients discharged from a short stay hospitalisation unit and to analyse the duration of antibiotic treatment with regards to the current evidence based recommendations.

Material and methods A descriptive, retrospective, cross sectional study was carried out in a short stay hospitalisation unit in January 2020. Patients ≥14 years old with an antibiotic prescription at discharge were included. Data collected were: age, gender, average number of admission days, antibiotic prescribed and antibiotic clinical indication. Data were collected from patients' electronic health records. Pubmed database review was performed regarding the current evidence based recommendations for optimising the duration of antibiotic treatment.

Results 98 patients were admitted in January 2020; 63 patients met the study inclusion criteria and 40 were men. Average age was 74 years (18–92) and average number of admission days was 3.4 (1–11). 11 (17.5%) patients visited the emergency department or general practice the following

month due to an infectious process and 7 of these patients were readmitted. 36 (57%) patients had taken antibiotics within 3 months before the study.

The most common illnesses were community acquired pneumonia (CAP) 16 (25.4%), acute bronchitis (AB) 15 (23.8%), COPD exacerbation 13 (20.6%) and influenza 7 (11.1%). The most common antimicrobials prescribed were: cephalosporins 24 (26.7%), co-amoxiclav 20 (22.2%) and quinolones 17 (18.9%).

Patients with AB were not analysed because there is no optimal duration of antibiotic treatment recommended in the current scientific evidence. The remainder of the patients were analysed (48): 35 were given antibiotics for more days than the recommended evidence (15 CAP, 12 COPD exacerbation, 4 influenza, 4 other infections); 9 patients were given antibiotics as per the recommended duration (3 acute pyelonephritis, 3 influenza, 1 CAP, 1 hospital acquired pneumonia, 1 complicated cystitis); and 4 were given antibiotics for a shorter duration than recommended (1 complicated cystitis, 1 COPD exacerbation, 1 pharyngotonsillitis, 1 acute gastroenteritis).

Conclusion and relevance Nearly 75% of patients had a longer antibiotic course than the recommended evidence. This should be a priority for intervention. It is important to create antibiotic awareness, where 'shorter is better' is a 'prescriber mantra' as far as the rational use of antibiotics is concerned.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-246 | CORONAVIRUS FIRST WAVE EFFECT ON ANTIBIOTIC CONSUMPTION AND ANTIMICROBIAL RESISTANCE

[1]P Tejedor Prado*, [1]A Lázaro Cebas, [2]B Sánchez Artola, [3]E Palencia Herrejon, [4]E Aznar Cano, [4]S Salso Ortiz, [1]A Such Díaz, [1]S Esteban Casado, [1]E Izquierdo García, [1]EA Álvaro Alonso, [1]I Escobar Rodríguez. [1]Hospital Universitario Infanta Leonor, Pharmacy, Madrid, Spain; [2]Hospital Universitario Infanta Leonor, Internal Medicine, Madrid, Spain; [3]Hospital Universitario Infanta Leonor, Intensive Care Medicine, Madrid, Spain; [4]Hospital Universitario Infanta Leonor, Microbiology, Madrid, Spain

Background and importance In the absence of evidence about the incidence of bacterial co-infection, antibiotic treatment was widely prescribed to prevent this potential complication. Increasing antibiotic consumption could have exerted an ecological pressure on microorganisms with potential clinical implications that need to be examined.

Aim and objectives The aim of this study was to analyse antibiotic consumption and antimicrobial resistant microorganism isolates during the peak incidence of the COVID-19 first wave at our hospital.

Material and methods An observational, descriptive, cross sectional study was carried out. Antibiotic consumption data for March and April 2020 and 2019 were analysed. Defined daily dose (DDD) per 100 bed days was used as the consumption indicator and changes were expressed in absolute and percentage terms. Isolates of Enterobacteriaceae (*Escherichia coli* and *Klebsiella pneumoniae*) were examined for March and April 2020 and compared with the average over 2019. Extended spectrum beta-lactamase (ESBL) producing Enterobacteriaceae were expressed in relative terms over their total isolates.

Results For the period under study, antibiotic consumption increased from 79.94 to 141.10 DDD/100 bed days in 2020, which was an increase of 77%. Macrolides and cephalosporins were among the groups of antibiotics with the highest consumption, representing 37% (52.79 DDD/100 bed days) and 32% (45.41 DDD/100 bed days) of total consumption, respectively, and almost 70% jointly. Additionally, ceftriaxone and azithromycin showed an increase in DDD/100 bed days of $4.5\times$ (8.91 vs 39.97) and $27.4\times$ (1.89 vs 51.90) with respect to the same period in 2019.

The share of ESBL producing *Escherichia coli* was 12% (13/111 isolates) and 23% (20/87 isolates) in March and April 2020 compared with an average of 11% (273/2494 isolates) in 2019. ESBL producing *Klebsiella pneumoniae* was 23% (8/35 isolates) and 57% (25/44 isolates) in March and April 2020 versus 24% (153/642 isolates) on average in 2019.

Conclusion and relevance During the study period, antibiotic consumption increased markedly. The increasing use of third generation cephalosporins, which have no effect on ESBL producing Enterobacteriaceae, may have contributed to the observed changes in the bacterial ecology in our hospital. As the incidence of bacterial co-infection on admission was reported to be lower than 5% and the increase in antibiotic consumption translated into selection of antibiotic resistant bacteria, it is important to properly assess antibiotic treatment for each particular case in future outbreaks of SARS-CoV-2 infections.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-247 | VARIATIONS IN CONSUMPTION OF ANTIMICROBIALS IN INTERNAL MEDICINE WARDS OF HOSPITALS

[1]K Perdikouri, [2]F Marini*, [2]D Gennimata. [1]Spiliopoulio Hospital, Pharmacy, Athens, Greece; [2]'Korgialenio-Benakio' Red Cross General Hospital, Pharmacy, Athens, Greece

Background and importance Although there is a direct relationship between rates of antibiotic use and emergence of antimicrobial resistance in the community and in hospital, measurement of antimicrobial consumption, without further analysis of any variations observed, is inadequate to support decision making.

Aim and objectives The aim of the study was twofold: presenting variations in antimicrobial consumption in internal medicine wards and investigating potential variables in the choice of regimen.

Material and methods Anonymous data on administration of parenteral antibiotics, during 2019, in two internal medicine wards of a general hospital and one semi-autonomous (independent) internal medicine clinic, located in the same healthcare region, were collected and compared. Antibiotic consumption was recorded as daily defined doses per 100 bed days (DDDs/100 bed days). All antibacterial antibiotics were included in the analyses. Furthermore, each substance's contribution, as a percentage of the annual configuration of the total index, was calculated. Average length of stay (LOS) and regimen indications were also registered.

Results In 2019, total antibiotic consumption in the general hospital internal medicine clinics ranged from 176.53 to 184.03 DDDs/100 bed days, exhibiting a 4.5-fold difference compared with the independent clinic. Administration of 33