satisfied the following criteria: for undocumented infection, discontinuation of probabilistic antibiotic therapy at 72 hours of apyrexia; for documented infection, continuation of documented antibiotic therapy, according to the recommendations of the local antibiotic guidelines.

Results Ninety infectious episodes were studied. The study population comprised 49 men (54%) and 41 women (46%). Average age was 56 years.

Cefepime or piperacillin/tazobactam were systematically introduced as probabilistic therapy. If the infection was undocumented (n=61/90), the duration of probabilistic antibiotic therapy conformed in 41% of cases (n=25/61). For clinical documentation (n=6/90), the conformity rate was 67% (n=4/6). For microbiological documentation (n=23/90), compliance rate was 74% (n=17/23).

Conclusion and relevance For most undocumented infections, probabilistic antibiotic therapy was prescribed for too long. This may be explained by the fragility of haematology patients and the fear of being confronted with recurrence of infection. For documented infections, conformity was very satisfying, as haematologists have extensive knowledge of infectiology. In order to harmonise prescription duration and continue to prevent the emergence of bacterial resistance, a guide for correct use of antibiotics and a second prospective study should be considered.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-051 ANTIBIOTICS IN THE EMERGENCY DEPARTMENT: IS IT POSSIBLE TO IMPROVE PRESCRIPTIONS FOR INFECTIOUS RESPIRATORY DISEASES IN AMBULATORY PATIENTS?

P Ruiz Briones*, R García Sánchez, C Ortega Navarro, MÁ Amor García, F García Moreno, A Melgarejo Ortuño, S García Sánchez, Á Narrillos Moraza, A Herranz Alonso, M Sanjurjo Saez. *Hospital General Universitario Gregorio Marañón, Pharmacy Department, Madrid, Spain*

10.1136/ejhp-pharm-2020-eahpconf.152

Background and importance Due to the rising rate of antibiotic resistance over the past years, healthcare authorities have developed different strategies to solve this problem. In Spain, the Health Care Service of Madrid (SERMAS) published the 'Antibiotics use guide for ambulatory treatment in adults' in 2019, which is used as a reference document for all health professionals, not only for ambulatory but also for hospital assistance.

Aim and objectives The main objective of the project was to evaluate the adequacy of the SERMAS guide for antibiotic prescriptions to ambulatory patients in the emergency department (ED) in one of the largest hospitals in Madrid

Material and methods One hundred patients who went to the ED during a random period in January 2019 were selected. All were diagnosed with a respiratory infection. Only patients who had an antibiotic prescription for the infectious respiratory disease and took the treatment at home were selected.

To evaluate prescription adequacy, the SERMAS guide was used as the reference. The evaluation took place in consecutive steps: (i) indication (necessity for an antibiotic), (ii) election (antibiotic coverage was correct) and (iii) selection (the selected antibiotic was the best option from the available possibilities). Duration and dose adequacy were evaluated.

Results One hundred patients (50 women and 50 men, median age 53 years old) were selected: 53% of patients (53/100) were treated with an antibiotic, and in 73.6% (39/53) the treatment was properly indicated. Antibiotic coverage was adequate in 94.9% (37/39) of cases. In 27.7% (10/37) of patients, the selected antibiotic was the one recommended by the SERMAS guide. Quinolones and high spectrum antibiotics were the more overused groups. In terms of posology, 15.1% (8/53) of patients had a prescription with the proper dose and 7.5% (4/53) received treatment with the proper dose and duration.

Conclusion and relevance The study showed what experts already knew: antibiotic prescriptions in the ED for ambulatory patients are poorly adjusted to the SERMAS guide, mainly due to longer duration and overuse of certain antibiotic groups. Improvement in antibiotic prescriptions should be a main target to reduce increasing antibiotic resistance.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-052 EVALUATION OF PIPERACILLIN/TAZOBACTAM DOSAGE IN SEPTIC PATIENTS ATTENDING THE EMERGENCY DEPARTMENT

¹J Ruiz*, ¹A Juanes Borrego, ¹L López Vinardell, ¹A Plaza Díaz, ¹MA Mangues Bafalluy, ²M Puig Campmany. ¹Hospital Santa Creu I Sant Pau, Pharmacy, Barcelona, Spain; ²Hospital Santa Creu I Sant Pau, Emergency Department, Barcelona, Spain

10.1136/ejhp-pharm-2020-eahpconf.153

Background and importance Although there is consensus for beta-lactam administration for extended infusions in critical care units, the use of this strategy in emergency departments remains unclear.

Aim and objectives To evaluate the probability of achieving an adequate pharmacokinetic/pharmacodynamic ratio for different dosages of piperacillin/tazobactam in septic patients attending an emergency department.

Material and methods A simulation study was carried out based on gram negative bacterial strains causing bacteraemia in septic patients treated in an emergency department (July 2018–December 2019). Two doses were evaluated, 4/0.5 g every 6 hours or 8 hours given as 0.5 hour or 3 hour infusion, in three different renal clearance rates (<30, 70 and 120 mL/min). Pharmacokinetic parameters were obtained from the literature. Minimum inhibitory concentration (MIC) values to piperacillin/tazobactam were obtained from Spanish records (trial database, TEST). Time above MIC was obtained according to the following equation: $fT > MIC = [(t_2 - t_{inf}) - t_1] \times (100/\tau)$, where t_1 was the time at which the free serum concentration reached the MIC, t_2 the post-infusion time at which the free serum concentration equalled the MIC in the elimination phase and τ the dosing interval. A 1000 subject Monte Carlo simulation was performed using Microsoft Excel per dosing and rate of renal function.

Results Sixty patients with gram negative bacteraemia were included. The predominant species were *Escherichia coli* (34, 56.7%), *Klebsiella pneumoniae* (14, 23.3%) and *Pseudomonas aeruginosa* (6, 10%). The probability of target attainment (PTA) $fT > 100\%$ MIC for piperacillin 4 g/8 hour dose was 60.3% and 81.8% for the 0.5 hour and 3 hour infusions for a $ClCr > 120$ mL/min and 75.1% and 94.3% for a $ClCr = 70$ mL/min. For the 4 g/6 hour dose, the PTA $fT > 100\%$ MIC

was >90% for both infusions at 0.5 and 3 hours. For tazobactam, the PTA fT >70% MIC for a ClCr=70 mL/min for the doses 0.5 g/8 hours and 0.5 g/6 hours were 56% and 89%, increasing in the extended infusion of 3 hours (87% and 98%). For a ClCr >120 mL/min, this probability was significantly reduced, being <50% for the dose 0.5 g/8 hours in a 0.5 hour infusion.

Conclusion and relevance The pharmacokinetic/pharmacodynamic objective of fT >100% MIC for piperacillin/tazobactam required a dose of 4/0.5 g/6 hours or extended infusion, especially in patients with high renal clearance and in strains with high levels of expression of beta-lactamases.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-053 ANTIMICROBIAL STEWARDSHIP PROGRAMME IN AN INTENSIVE CARE UNIT

¹E Sánchez Yañez*, ¹M Valera-Rubio, ¹I Moya-Carmona, ¹MR Mora-Santiago, ²C Pérez-López. ¹Hospital Clínico Virgen De La Victoria, Pharmacy Department, Malaga, Spain; ²Hospital Clínico Virgen De La Victoria, Infectious Disease, Malaga, Spain

10.1136/ejhp-pharm-2020-eahpconf.154

Background and importance The antimicrobial stewardship programmes are essential to achieve proper use of antibiotics, especially in units of special complexity, such as the intensive care unit (ICU).

Aim and objectives To show the antibiotic pressure in the ICU and the groups of antibiotics with greatest deviation in their consumption (2017); to describe the activities carried out by the ICU antimicrobial stewardship team (ICU-AST) from 2018 to June 2019; and to show the results obtained in 2018 and in the first and second quarters of 2019.

Material and methods • This was a prospective intervention study from January 2018 (when 2017 ICU antibiotic pressure data were obtained) to June 2019.

• The ICU-AST comprised an intensive care doctor, microbiologist and hospital pharmacist, all with experience in AST.

• The activities and interventions of the ICU-AST were agreed in the commission of infections after analysis of the data obtained. To measure antibiotic pressure, the rate DDD/1000 bed days was used. All antibiotic pressure data were obtained by the hospital pharmacist who analysed consumption in the ICU from electronic prescriptions data.

• All actions carried out by the group were recorded in a database (Excel) where all variables were coded (date, training activity, information feedback and modification in prescriptions).

Results Data were adjusted so that changes in DDD (2019) did not generate interference. Antibiotic pressure in the ICU (2017): 2295.85 DDD/1000 bed days. Groups of antibiotics with greatest deviation: carbapenems 333.03 DDD/1000 bed days and antifungals 210.95 DDD/1000 bed days.

Activities carried out by ICU-AST: in 2018, the interventions (n=943) performed to reduce antibiotic pressure and carbapenem and antifungal consumption were adequacy of prescriptions to the internal guidelines (33.54%), de-escalation of treatments (27.32%), proposition of short course treatments (19.36%), broad spectrum restriction (10.57%) and other (9.21%). Four training sessions on antibiotic prescriptions were conducted (2018) and antibiotic pressure data were shown quarterly (2018–June 2019). All antibiotic treatments

were reviewed 48–72 hours after initial administration by the ICU-AST.

No additional economic resources were needed as the ICU-AST was formed by professionals who already worked in the centre.

The results obtained were

- Antibiotic pressure:
 - 2018: 2078.88 DDD/1000 bed days
 - 1st quarter 2019: 1760.55 DDD/1000 bed days
 - 2nd quarter 2019: 1830.95 DDD/1000 bed days
- Carbapenems:
 - 2018: 329.43 DDD/1000 bed days
 - 1st quarter 2019: 211.34 DDD/1000 bed days
 - 2nd quarter 2019: 232.29 DDD/1000 bed days
- Antifungals:
 - 2018: 132.26 DDD/1000 bed days
 - 1st quarter 2019: 120.22 DDD/1000 bed days
 - 2nd quarter 2019: 108.67 DDD/1000 bed days

Conclusion and relevance In 2017, antibiotic pressure in the ICU was high. Two groups of antibiotics had excessive consumption: carbapenems and antifungals.

The ICU-AST carried out training sessions, feedback of antibiotic pressure data and intervened directly, modifying the antibiotics treatment.

This intervention achieved a decrease in global antibiotic pressure in the ICU. In addition, the ICU-AST achieved a reduction in antibiotic pressure in the groups with greater deviation: carbapenems and antifungals.

A limitation of the study was that mortality was not measured, although no significant change is expected as the mortality commission did not report any significant change during the study period.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-054 A MULTIDISCIPLINARY AND EDUCATIONAL APPROACH TO ANTIMICROBIAL STEWARDSHIP PROGRAMMES IN THE EMERGENCY DEPARTMENT

I Plo Seco, L Moreno Nuñez, S Sanz Márquez, E Zhan Zhou*, J Valverde Canovas, Francisco, E Pérez Fernández, M Pérez Encinas. Hospital Universitario Fundación Alcorcón, Hospital Pharmacy, Alcorcón, Spain

10.1136/ejhp-pharm-2020-eahpconf.155

Background and importance Inappropriate prescription of antimicrobials has been shown to be a cause of microbial resistance. Antibiotics are some of the most prescribed drugs in the emergency department (ED). An educational intervention by a multidisciplinary group could be effective to improve the use of these drugs.

Aim and objectives To describe the current appropriateness of antibiotic prescription in the observation unit of the ED, and the first results of a multidisciplinary antimicrobial stewardship programme (ASP).

Material and methods A pilot interventional study over 1 month was designed. An ASP was organised, comprising an infectious diseases physician, clinical pharmacist and microbiologist. The goal was to attend the ED daily and to assess antimicrobial treatments, interacting directly with physicians and providing oral and written education according to the protocols approved by the centre.