(CI) have a fundamental task of achieving adequate use of these drugs. It is important to establish a suitable circuit for the control of their prescriptions. Knowing how this circuit operates is essential to establish if it is necessary to make any modifications.

Aim and objectives To analyse the operation of the prescription/revision circuit for new antibiotics included in the pharmacotherapeutic guide, and to show the adequacy of the prescriptions of antibiotics recently included in the hospital's pharmacotherapeutic guide.

Material and methods Inclusion criteria: prescriptions (January 2018 to September 2019) of ceftaroline, dalbavancin, ceftolozano/tazobactam, ceftazidime/avibactam, tedizolid and isavuconazole. Exclusion criteria: prescriptions in the intensive care unit (which has a different prescription circuit).

The CI and AST decided the indications for the new antibiotics and their prescription circuit. A non-restrictive attitude was decided. Prescription of these antibiotics could be carried out by any specialist, with or without prior advice from the AST. Prescriptions made without AST supervision were reviewed by the AST in 24–48 hours.

The information for review was obtained from medical and electronic prescription records.

Results A total of 28 prescriptions were reviewed: 39.3% (n=11) ceftazidime/avibactam, 28.6% (n=8) dalbavancin, 14.3% (n=4) ceftaroline, 7.2% (n=2) ceftolozano/tazobactam, 7.2% (n=2) isavuconazole and 3.4% (n=1) tedizolid. A total of 50% (n=14) of prescriptions were made by the AST and 50% (n=14) were performed by doctors who did not belong to the AST, of which 36% (n=5) had prior consultation with the AST and 64% (n=9) did not consult the AST.

Of the prescriptions that did not receive prior advice from the AST, 55.55% (n=5) were reviewed by the AST. All of the prescriptions (100%, n=14) made by the AST or under their supervision were within the indications established by the CI.

Five of 28 prescriptions were not adequate (2 isavuconazol, 2 ceftaroline, 1 tedizolid). These were prescriptions made without the advice or revision of the AST. Three of the incorrect prescriptions were in August 2018 and one in August 2019.

Conclusion and relevance In general, our circuit worked correctly. Some of the prescriptions out of indication were during the holiday period and not all AST members were working. Therefore, this team should operate at full capacity all year round. The adequacy of antibiotics is greater when there is AST prescription or intervention.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-047 ASSESSING THE IMPACT OF ANTIMICROBIAL STEWARDSHIP PROGRAMMES IN HOSPITALS: THE ROLE OF PHARMACISTS

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Background and importance Antimicrobial resistance is a growing public health problem because it has been associated with increasing treatment failure, hospital stay, mortality and healthcare costs. An antimicrobial stewardship programme is a multidisciplinary team working together against inappropriate antimicrobial prescriptions. Its aim is to improve clinical outcomes and slow down the emergence of antimicrobial resistance. Pharmacists are an integral part of the stewardship team and have an important role.

Aim and objectives This study aimed to assess the role of pharmacists within the antimicrobial stewardship programme in a 200 bed hospital. Secondary objectives were to analyse pharmaceutical interventions, quantify their acceptance, the recommendations made and the antimicrobial drugs involved.

Material and methods We conducted a prospective observational study in a 200 bed hospital over a period of 25 months (September 2017–September2019).

Inclusion criteria: patients with active antimicrobial prescriptions during admission with an antimicrobial stewardship programme recommendation. Exclusion criteria: antimicrobial stewardship programme recommendation made without active pharmacist participation. Recommendations were classified as no indication of antimicrobial treatment, inadequate antimicrobial drug selection, drug dosage, route of administration and duration of treatment.

Recommendations made were prospectively registered and at 72 hours intervention acceptance was assessed based on modifications to the medical prescription. Collected data were age, gender, antimicrobial treatment, type of recommendation and acceptance.

Results A total of 580 recommendations were carried out in 474 patients. The average age of the patients was 69 years (54% men). Intervention acceptance was 93% (539 recommendations were accepted). Recommendations according classifications were: 190 (33%) inadequate antimicrobial drug selection, 131 (23%) inadequate route of administration, 129 (23%) inadequate duration of treatment, 85 (15%) inadequate drug dosage and 45 (8%) no indication for antimicrobial treatment.

Conclusion and relevance Pharmacist recommendations were about drug selection, route of administration, drug dosage, duration of treatment and absence of indication of treatment, with a high degree of acceptance. Hence pharmacists can play an important role in antimicrobial stewardship programmes. It seems reasonable to claim that antimicrobial stewardship programme recommendations may enhance the degree of acceptance when decisions are made from a multidisciplinary team.

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No conflict of interest.

4CPS-048 BETA-LACTAM ANTIBIOTICS IN CRITICAL ILL PATIENTS: ARE WE DOSING OUR PATIENTS CORRECTLY?

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Background and importance Exposure to beta-lactam antibiotics due to their hydrophilic properties is widely known to be influenced by the typical pharmacokinetic alterations in critical

patients, such as increased volume of distribution and increased clearance. For instance, subtherapeutic plasma concentrations are a concern.

Aim and objectives The objective of this work was to determine if the current dosage of meropenem and piperacillin strategies in clinical practice are enough to achieve pharmacokinetic/pharmacodynamic targets (minimum 100% fT once above MIC, optimal 4–6 times above MIC).

Material and methods A prospective study was conducted from February to June 2019 of serum levels of meropenem and piperacillin in an intensive care unit in the south of Spain. In all patients, the initial dose was chosen by the prescribing intensivist (extended infusions, high doses and adjustments for renal impairment were also included). A predose sample (100% fT >MIC) of the target antibiotics within the first 48 hours was included. As the majority of treatments were empirical, the CMI target was defined by EUCAST PK/PD break points (MIC >16 µg/mL for suspected *Pseudomonas aeruginosa* in the case of piperacillin and >2 µg/mL in the case of meropenem)

Results Twenty-eight patients were included. Median age was 64 years (IQR 48–78 years), median APACHE II score was 15 (IQR 14–24) and 18/28 patients were men. Of the 28 patients treated, 10 did not reach 100% fT >MIC, mostly in the piperacillin group (6/9) and 4/9 in the meropenem group; 100% fT> 4–6×MIC was not achieved in 8/9 patients in the piperacillin group and in 12/19 in the meropenem group.

Conclusion and relevance Over 5 months, thanks to the active surveillance of patients who were candidates for beta-lactam therapeutic drug monitoring and the request for determination of plasma levels by the hospital pharmacist, more than 30% of meropenem and piperacillin prescriptions were found to be subtherapeutic and 70% were optimisable.

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No conflict of interest.

4CPS-049 UNDERDOSING WITH HIGH DOSE PIPERACILLIN/TAZOBACTAM ADMINISTERED VIA CONTINUOUS INFUSION IN OUTPATIENT PARENTERAL ANTIMICROBIAL THERAPY: A STABILITY OR VISCOSITY PROBLEM?

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Background and importance Continuous infusion of high dose piperacillin/tazobactam (16/2 g in 264 mL NaCl 0.9%) has been included in the UZ Leuven outpatient parenteral antimicrobial therapy (OPAT) protocol. Elastomeric pumps (Infusor LV10, Baxter) were selected as the drug delivery device, as the patient's mobility and comfort are maintained. Unfortunately, incomplete infusions after 24 hours were observed, related to a reduced flow rate. A mean daily residual volume of 50 mL, corresponding to a dose of 3/0.38 g piperacillin/tazobactam, was detected, resulting in substantial underdosing with the risk of treatment failure.

Aim and objectives To analyse two hypotheses: a reduced flow rate could be the result of particulate formation of piperacillin dimers due to the absence of stabilising excipients (hypothesis 1) or a result of high viscosity (hypothesis 2).

Material and methods Hypothesis 1: particulate formation was detected by comparing the flow rate of tazocillin (with stabilising excipients) versus generic piperacillin/tazobactam (without this excipients), by measuring light absorbance (600 nm) by spectrophotometry and by measuring total piperacillin content at different concentrations after storage for 24 hours at 33°C.

Hypothesis 2: the effect of concentration on the density and viscosity at 33°C was measured. Additionally, the relation between viscosity and flow rate was evaluated.

Results Hypothesis 1: no difference was observed in the flow rate between Tazocillin and generic piperacillin/tazobactam. No difference was observed in absorbance between Tazocillin and generic piperacillin/tazobactam, and no difference was observed in absorbance between piperacillin/tazobactam and a blank. Generic piperacillin/tazobactam seemed to be stable for 24 hours at 33°C.

Hypothesis 2: a linear relationship was observed between concentration and viscosity. An inverted linear relationship was observed between viscosity and flow rate of piperacillin/tazobactam solutions.

Conclusion and relevance The in vitro experiments suggest that the reduced flow rate is a result of high viscosity, related to the concentration of piperacillin/tazobactam. As it is impossible to lower the concentration, the final volume of the solution should be adjusted. Before being used in clinical practice for OPAT, this mode of administration will first be validated in five patients during hospitalisation. In general, healthcare teams need to be aware of factors which may lead to longer flow durations with these infusion devices.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-050 CONFORMITY OF ANTIBIOTIC THERAPY DURATION IN PATIENTS WITH FEBRILE NEUTROPENIA, HOSPITALISED IN THE HAEMATOLOGY DEPARTMENT OF A UNIVERSITY HOSPITAL

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Background and importance The emergence of bacterial resistance and the proper use of antibiotics are major public health issues.

In 2011, the European Conference on Infections in Leukaemia (ECIL) published recommendations for the management of febrile neutropenia. In this context, a university hospital wanted to evaluate follow-up of these recommendations.

Aim and objectives To evaluate conformity for duration of antibiotic therapy in patients with febrile neutropenia, hospitalised in the haematology department.

Material and methods The study was monocentric, retrospective, observational and conducted over a 6 month period in the haematology department. Data collection was carried out via a collection form. Two algorithms, created with the ECIL guidelines, were used to evaluate febrile neutropenia episodes. Duration of the prescription was considered to conform if it