SPSSV.23 software was used for data analysis with centralisation and frequency measurements for descriptive data and the χ^2 test for inference.

Results A total of 192 AT were administrated to a total of 168 patients (52% men), mean age 65 (SD 20) years and 68.5% had a Charlson index ≥ 2 . The three main site of infection were respiratory (53%), urinary (19%) and intra-abdominal (12%). 39.6% of the antibiotic prescriptions were assessed as inappropriate. Inappropriateness was classified and distributed as:

- Unnecessary, no signs of infection: 3.3% of AT prescriptions
- Not active for the expected aetiology: 9.8%
- Appropriate, but wrongly dosed: 4%
- Appropriate, but not recommended according to the CIG: 22.8%.

The indication with the highest degree of inappropriateness was urinary infections, with 19 of 31 AT prescriptions being inappropriate. Inappropriate prescription was not found to be a factor related to an increase in hospital stay (OR 1.39; 95% CI 0.77 to 2.50; $p=0.269$), readmissions (OR 0.751; 95% CI 0.35 to 1.59; $p=0.455$) or mortality (OR 1.40; 95% CI 0.87 to 22.86; $p=0.809$).

Conclusion and relevance In general, CIG were followed because almost two-thirds of AT were appropriate. Furthermore, inappropriate AT prescriptions did not lead to an increase in hospital stays, or readmissions or mortality. The inappropriateness of the AT results may be considered for the development of antibiotic optimisation strategies.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-242 ACUTE RESPIRATORY INFECTIONS: AN ANALYSIS OF HOSPITAL ANTIBIOTHERAPY PRESCRIPTION QUALITY FOR THE PAEDIATRIC POPULATION

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Background and importance In the paediatric population, a potentially high use of antibiotics has been verified. The inappropriate use of these drugs leads to a progressive increase in resistance rates, which is a major public health problem worldwide.

Aim and objectives The objective of the study was to analyse the rationale for antibiotic prescriptions in acute respiratory infections in the paediatric hospital area.

Material and methods A 1 year retrospective observational study was conducted (from November 2016 to October 2017) of episodes of hospital admission for acute respiratory infection in paediatric patients. An expert committee was set up to analyse the rationale for antimicrobial therapy, according to five criteria: indication, choice of drug, dosage, frequency of administration and duration of treatment.

Results 319 children were included in the study, aged (median, range) 2.3 years (1 month–14 years); 178 (55.8%) were male.

72% were diagnosed with acute bronchitis and the rest had community acquired pneumonia. Antibiotics were prescribed in 41% of bronchitis and 92% of pneumonia cases. 408 antibiotic prescriptions were evaluated, the most being broad spectrum antibiotics (27% azithromycin and 26% amoxicillin). 44.3% of patients had a correct antibiotic prescription. Rationality of antibiotic prescription was: 80.6% indication, 81.1% choice of drug, 76.2% dosage, 99.7% frequency of administration and 55.1% duration of treatment. The worst criterion was duration of treatment in patients with community acquired pneumonia, which was incorrect in 62.5% (75.8% for excess of days).

Conclusion and relevance The study data showed a wide margin of improvement in the hospital prescription of antibiotics in paediatric patients. The duration of treatment was the criterion with the least degree of adequacy, being incorrect in almost half of the prescriptions. There is a clear need for urgent action, such as implementing optimisation programmes for the use of antimicrobials in paediatric services, to put a stop to the indiscriminate use of these drugs and improve clinical outcomes of patients with infections, minimise adverse effects associated with the use of antimicrobials as well as microbial resistance, and guarantee the use of cost effective treatments.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-243 HEALTHCARE ASSOCIATED CLOSTRIDIODES DIFFICILE INFECTION IN SURGICAL AND MEDICAL PATIENTS

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Background and importance *Clostridioides difficile* (C difficile) infection (CDI) is one of the most common healthcare associated (HA) infections in contemporary medicine. The risk factors (RFs) for HA CDI in medical and surgical patients are poorly investigated in countries with a limited resource healthcare system.

Aim and objectives To investigate differences in patient characteristics and RFs associated with HA CDI in surgical and medical patients.

Material and methods A prospective cohort study was conducted including adult patients diagnosed with an initial episode of HA CDI from 2011 to 2017 in a 1200 bed teaching hospital. Patients hospitalised for any non-surgical illness, who developed initial HA CDI, were assigned to the medical group, whereas those who developed initial HA CDI after surgical procedures were in the surgical group. Data on the use of proton pump inhibitors (PPIs), chemotherapy and antibiotic usage were gathered by hospital pharmacists.

Results From 553 patients diagnosed with HA CDI, 268 (48.5%) and 285 (51.5%) were surgical and medical patients, respectively. Medical patients were significantly older than surgical patients (68.59 ± 15.46 vs 64.91 ± 14.86 years, $p=0.005$), and were treated significantly more frequently with PPIs (38.9% vs 19%, $p<0.001$), fluoroquinolones (28.6% vs 9.9%,

$p < 0.001$) 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.

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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

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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 $4 \times \text{MIC}$ or above $6 \times \text{MIC}$. 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 m² and for meropenem 89.27 ± 17.43 mL/min/1.73 m². 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 m², and 43% of the patients in whom it was decreased had a GFR < 60 mL/min/1.73 m².

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

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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