and 35 different antibiotics, respectively, was recorded in the general hospital clinics versus 25 in the independent clinic. Ampicillin/sulbactam, meropenem and piperacillin/tazobactam (with minor differences observed) were more often used in the general hospital, while meropenem, piperacillin/tazobactam and clindamycin were used most in the independent one. Despite the differences, the relative contribution of different antibiotics to total consumption was comparable for piperacillin/tazobactam, meropenem and ceftriaxone in all cases. Variables in the choice of regimen were mainly patient age, LOS and antibiogram. Average LOS was 10 days versus 25 days between hospitals. More than 90% of admissions in the general hospital (vs 5%) were emergency admissions.

Conclusion and relevance Only small differences in antimicrobial regimens were observed within each hospital, whereas between hospitals they varied significantly. Variables related to the general hospital environment, such as the increased probability of multiresistant pathogens (suggesting concomitant administration of two or more antibiotics) and the intensive care profile may adequately explain the observed variations. Such variables should always be considered in antibiotic stewardship programmes and/or other initiatives.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

4CPS-248 APPROPRIATENESS OF THE *CLOSTRIDIUM DIFFICILE* INFECTION PRESCRIPTION PRIOR TO THE IMPLEMENTATION OF A PROTOCOL FOR ITS MANAGEMENT

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Background and importance *Clostridium difficile* disease (CDD) is the main cause of nosocomial diarrhoea.

Aim and objectives To evaluate the adequacy of treatment of CDD prior to implementation of the checklist for the diagnosis and treatment of CDD.

Material and methods This was a retrospective observational study of CDD cases in a tertiary hospital during 2019. The adequacy of treatment of positive cases was evaluated according to the checklist, considering variables for vulnerability (cancer patients, neutropenic, transplant recipients, inflammatory bowel disease or prolonged antibiotic treatment), severity (according to leucocytosis, renal function or presence of hypotension, shock or ileus), risk of recurrence (age, CDD the previous year, positive toxin or persistence of diarrhoea on the fifth day) and their treatment.

Results There were 126 cases of CDD in 100 patients, with a median age of 76 years (1–96) and 59% were women. The adequacy of the protocol was checked in 103 cases and the rest were incomplete:

- First non–severe episode/non–vulnerable patient (protocol: metronidazole → vancomycin): one case was not appropriate because it was treated with fidaxomycin before vancomycin.
- First non–severe episode/vulnerable patient (protocol: vancomycin → fidaxomycin): five cases were not adequate because they were not treated with vancomycin initially.
- First severe episode/non–vulnerable patient (protocol: vancomycin → fidaxomycin): seven cases were not appropriate because they were not treated with vancomycin initially.
- First severe episode/vulnerable patient (protocol: vancomycin → fidaxomycin → vancomycin+bezlotoxumab): one was not adequate because they were not treated with vancomycin initially.
- Fulminant (protocol: vancomycin+metronidazole IV): two cases were not appropriate as they were not initially treated with vancomycin+metronidazole IV.
- First episode and mild recurrence (protocol: vancomycin): six cases were not adequate. All should have been treated initially with vancomycin.
- First severe episode or recurrence (protocol: vancomycin or fidaxomycin±bezlotoxumab, depending on previous treatment): in four cases the treatment received was not appropriate because vancomycin is not indicated without continuing a downward pattern.

The treatment received was not appropriate in 26 (25.2%) cases.

Conclusion and relevance The percentage of patients whose treatment did not follow the protocol was considerable (26.5%). An increase in protocol deviations was observed in more complex treatments as the severity and/or vulnerability of the patient increased. Although oral metronidazole should be reserved only for the first mild episode in non-vulnerable patients, overuse was observed in all cases.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-249 SECOND GENERATION β-LACTAM/β-LACTAMASE INHIBITOR COMBINATIONS: CEFTAZIDIME–AVIBACTAM AND CEFTOLOZANE–TAZOBACTAM EXPERIENCE OF USE

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Background and importance Ceftazidime–avibactam and ceftolozane–tazobactam are two second generation cephalosporin/β-lactamase inhibitor combinations. The antimicrobial spectrum of activity includes multidrug resistant gram negative bacteria, including *Pseudomonas aeruginosa*. Ceftazidime–avibactam is also active against carbapenem resistant Enterobacteriaceae that produce *Klebsiella pneumoniae* carbapenemases. Both drugs are approved for treatment of complicated intra-abdominal infections (cIAIs), complicated urinary tract infections (cUTIs), community acquired pneumonia (CAP) and ventilator associated bacterial pneumonia (VABP).

Abstract 4CPS-249 Table 1

	Ceftazidime–avibactam	Ceftolozane–tazobactam
Patients (n)	24	16
Demographic variables		
Age (median (IQR)) (years)	68.5 (63.5–75)	67 (57.5–73.7)
Sex (men) (%)	58.3	56.2
Type of infection (%)		
cUTIs	12.5	0
cIAIs	41.7	31.25
CAP and VABP	20.8	37.5
Bacteraemia	12.5	25
Other	12.5	6.25
Microorganisms isolated (%)	100	93.75
P aeruginosa multiresistant	20.8	68.7
K pneumoniae	70.8	0
E coli BLEE	4.2	12.5
Other	4.2	12.5
Duration of treatment (median (IQR)) (days)	11.5 (6.5–16.5)	12.5 (8–17.75)

Aim and objectives To evaluate the use of ceftazidime–avibactam and ceftolozane–tazobactam in a Spanish general hospital (400 beds).

Material and methods A prospective descriptive study was carried out from October 2016 to September 2020 including all patients treated with ceftazidime–avibactam and ceftolozane–tazobactam at the hospital. Variables collected were demographic (age/sex) and clinical (type of infection, microorganism isolated, duration of treatment, dose administered, prescriber clinical service and antibiotic tested in the antibiogram).

Results 40 patients were included and the results are shown in table 1.

The most common dosage of ceftazidime–avibactam was 2 g every 8 hours. The prescribing clinical services were 33.3% general surgery (GS), 20.8% intensive care unit (ICU), 12.5% haematology, 8.3% oncology and 25.1% other. For ceftolozane–tazobactam, the most common dosage was 1 g every 8 hours, and the prescribing clinical services were 68.75% ICU, 12.5% internal medicine, 12.5% haematology and 6.25% GS.

Both antibiotics were susceptible in 75% of patients. Clinical and microbiological resolution of the infection was 75% for ceftazidime–avibactam and 70% for ceftolozane–tazobactam. 17.5% of patients died during hospitalisation because of their clinical situation.

Conclusion and relevance

- Both patient populations were demographically similar but the use of ceftazidime–avibactam was more frequent.
- cIAIs and pneumonias were the most common infections treated. Mostly, ceftazidime–avibactam was used for carbapenemase producing K pneumoniae and ceftolozane–tazobactam for P aeruginosa multiresistant.
- ICU and general surgery were the most experienced clinical services.
- Both antibiotics were tested in the antibiogram in most cases.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-250 EVALUATION OF PRESCRIPTION ADEQUACY TO THE ANTIBIOTHERAPY PROTOCOL IN INTRA-ABDOMINAL INFECTION IN A REGIONAL HOSPITAL

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Background and importance The global increase in antimicrobial resistance makes it necessary to establish local protocols for the empirical treatment of the different syndromes in hospitals to preserve and optimise the use of antibiotics as much as possible.

Aim and objectives To assess the adequacy of the prescription and the degree of compliance with the 'protocol of antibiotherapy in intra-abdominal infection (PIAI)' in a regional hospital.

Material and methods This was a retrospective observational study including patients with abdominal infection treated with antibiotics from May to December 2019. Patients with antibiotic prophylaxis were excluded. In February 2019, the PIAI was approved. The variables included were: age, sex, type of infectious syndrome, prescribed antibiotic, type of therapy (empirical/targeted), need for adjustment to renal function and samples collected for microbiological cultures (MC). Three criteria were established for non-compliance with the protocol: indication, dose and duration. We also recorded: patients with unsuitable prescriptions, reason for non-compliance and pharmaceutical interventions. When the protocol was breached, the pharmacist notified the doctor through an electronic prescription alert system.

Results 65 patients were included (50.8% men) with a median age of 59 years (range 19–95). 38.46% had acute cholecystitis, 16.92% acute diverticulitis, 12.31% acute appendicitis, 4.62% secondary peritonitis, 4.62% surgical wound infection, 3.08% intra-abdominal abscess, 3.08% perianal abscess, 3.08% acute cholangitis, 1.54% acute pancreatitis and 12% other infections.

82 antibiotics were prescribed (amoxicillin/clavulanic 40.2%, piperacillin/tazobactam 26.8%, imipenem/cylastine 9.8%, ertapenem 7.3%, ciprofloxacin+metronidazole 7.3%, and other antibiotics 8.6%). One patient required adjustment to renal function. The average duration of treatment was 7.82 days (SD 4.87). 87.7% of patients received empirical treatment and samples were collected for MC in 17 patients.

The degree of adequacy was 76.3%. 21 cases of inadequacy were identified (long duration=9, incorrect selection=8, incorrect dose=1). 21 pharmaceutical recommendations were recorded. The predominant infectious syndromes in protocol breaches were: 41.2% acute cholecystitis and 29.4% acute diverticulitis. Distribution of unsuitable antibiotics was: piperacillin/tazobactam 41.2%; amoxicillin/clavulanic 23.5%; ciprofloxacin +metronidazole 17.6%; imipenem/cylastine 11.8%; and ertapenem 5.9%.

Conclusion and relevance The adequacy of the prescription to protocol was good. Excessive duration and selection of antibiotics were the main causes of inadequacy. Pharmaceutical validation is essential to promote optimisation and rational use of antibiotics in hospitals. Subsequent and periodic studies are needed to monitor adequacy time.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest