

4CPS-044 THE ROUTINE USE OF ANTIBIOTICS AFTER INSERTION OF A CARDIAC IMPLANTABLE ELECTRONIC DEVICE (CIED): EVIDENCE AND CURRENT PRACTICE

S Omran*, O Mukhtar, S Mousa. *King Salman Armed Forces Hospital-Nwafah, Adult Intensive Care Unit, Tabuk, Saudi Arabia*

10.1136/ejhpharm-2020-eahpconf.145

Background and importance Cardiac implantable electronic devices (CIED) are used for patients with heart block and severe dysrhythmia to improve patient quality of life and survival. However, the implanted devices have been associated with an increased rate of infections and subsequently cause significant morbidity and mortality. Recent guidelines recommend the use of intravenous cefazolin as standard preoperative antibiotic prophylaxis. However, there is no consensus about postoperative antibiotic prescribing to treat infection. The routine practice in our clinical setting is to prescribe antibiotics pre and post insertion according to physician experience and preference. Hypothetically, if such practice continues, it may lead to an increased risk of antibiotic resistance, suboptimal clinical outcomes and higher healthcare costs.

Aim and objectives To investigate the rate of postoperative infection associated with CIED insertion, to find an association between prescribing antibiotics post insertion and postoperative infections and to develop recommendations that may help to optimise antimicrobial prescribing and minimise the consequences of infection and subsequently improve the practice.

Material and methods In this retrospective observational study, patient records (aged ≥ 18 years old) with complete heart block who were admitted for permanent pacemaker (PPM) insertion were reviewed during the period January 2012 to December 2017. Patient demographic, comorbidities and microbiological reports through screening of blood culture within 90 days of post pacemaker insertion were collected. To find an association between antibiotic post insertion and postoperative infections, the χ^2 or Fisher's exact test was applied. A p value ≤ 0.05 was considered statistically significant.

Results Of 130 implanted device cases, 95 were reported as pacemaker (PPM) insertion cases during the study period; 67 (70%) PPM cases were given post insertion antibiotics. No postoperative case of pocket infection or infective endocarditis was reported. Of 5 bacteraemia infections, only 1 case (3%) was reported among the group who was not given antibiotics post insertion ($p=0.63$).

Conclusion and relevance Antibiotic administration post pacemaker insertion has no added value in terms of infection prevention, and no evidence to support the use of antibiotics post pacemaker insertion. Therefore, this practice is not justified.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-045 COST EFFECTIVENESS ANALYSIS OF MEROPENEM DOSE OPTIMISATION IN CRITICAL PATIENTS

Al Idoate*, A Aldaz, I Aquerreta, A Ortega. *Clinica Universidad De Navarra, Pharmacy, Pamplona, Spain*

10.1136/ejhpharm-2020-eahpconf.146

Background and importance Meropenem dose adjustment following pharmacokinetic/pharmacodynamic monitoring (TDM) in critical patients (CP) presents a clinical benefit. An economic analysis of this activity could facilitate its use in clinical practice.

Aim and objectives To conduct a cost effectiveness analysis of meropenem TDM in CP versus standard dose (SD) according to the package insert recommendations.

Material and methods We conducted a naturalistic, retrospective, observational cohort study of CP receiving meropenem between May 2011 and December 2017 in a university hospital. Two cohorts were analysed: patients with meropenem TDM (cohort A) and patients with SD meropenem (cohort B).

The main effectiveness variable was the percentage of patients with a reduction of at least 80% in the procalcitonin value at the end of meropenem treatment compared with the maximum value during meropenem treatment.

Costs included in the analysis were: meropenem, material for drug preparation, TDM, time for preparation, administration and infusion surveillance, meropenem adverse drug reactions (ADR), critical care hospitalisation days and re-entries.

Propensity score (PS) matching was applied for patient selection. The χ^2 was used to compare effectiveness and bootstrap to calculate the difference in costs between cohorts. A cost effectiveness analysis with deterministic and probabilistic sensitivity analyses was performed.

Results A total of 154 patients were included (77 per cohort) after PS matching. Meropenem dose was changed in 51 (66.2%) patients with TDM, in most (90.2%) because they were overdosed. In cohort A, 71.4% of patients had reduced procalcitonin by at least 80% compared with 53.2% in cohort B (difference 18.2% (95% CI 3.1; 33.2; $p=0.020$)). No significant differences were found in ADR between the two cohorts. An average decrease in cost per patient of -1454€ (95% CI $-4627; 1720\text{€}$) with TDM was observed, with lower cost per patient for meropenem -62€ (95% CI $-116; -4$), disposable material -12€ (95% CI $-29; 4$) and nursing time -38€ (95% CI $-71; -4$) in cohort A, that offset the TDM cost (47€). Mean hospitalisation cost in patients with TDM was 8912€ versus 10 325€ in cohort B. There was a 75% probability that TDM was more effective and cheaper (dominant) than SD according to the sensitivity analysis.

Conclusion and relevance Meropenem dose adjustment following pharmacokinetic/pharmacodynamic criteria was more effective, with similar safety and lower costs, than dosing according to the package insert recommendations.

REFERENCES AND/OR ACKNOWLEDGEMENTS

1. Schuetz P, et al. Procalcitonin-guided antibiotic stewardship. *Clin Chem Lab Med* 2019.

No conflict of interest.

4CPS-046 MONITORING THE PRESCRIPTION OF NEW ANTIBIOTICS: THE WORK OF THE ANTIMICROBIAL STEWARDSHIP TEAM IN A THIRD LEVEL HOSPITAL

E Sánchez-Yáñez, M Gómez Delgado, JL Ortiz Latorre*, MR Mora-Santiago, I Moya-Carmona. *Hospital Universitario Virgen De La Victoria, Servicio De Farmacia, Málaga, Spain*

10.1136/ejhpharm-2020-eahpconf.147

Background and importance The prescriptions of new antibiotics should be done with caution as improper use can lead to the emergence of new antimicrobial resistance. The antimicrobial stewardship team (AST) and the commission of infections

(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 isavuconazole, 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

¹M Jaime Gaya, ²R Pérez Senoff, ³MS Sanz Parras, ⁴JM Saurina Gomila, ³A Rey Ferrin, ⁵Á García Álvarez, ¹J Martínez Sotelo, ¹PJ Siquier Homar, ¹F Fernandez Cortes, ⁵A Vanrell Ballester, ¹M Pinteño Blanco*. ¹Hospital Comarcal D'inca, Clinical Pharmacy, Inca, Spain; ²Hospital Comarcal D'inca, Intensive Care, Inca, Spain; ³Hospital Comarcal D'inca, Infectious Disease, Inca, Spain; ⁴Hospital Comarcal D'inca, Clinical Microbiology, Inca, Spain; ⁵Primary Care, Clinical Pharmacy, Inca, Spain

10.1136/ejhpharm-2020-eahpconf.148

Background and importance Antimicrobial resistance is a growing public health problem because it has been associated with

increasing treatment failure, hospital stay, mortality and health-care costs. An antimicrobial stewardship programme is a multi-disciplinary 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–September 2019).

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.

REFERENCES AND/OR ACKNOWLEDGEMENTS

- <https://www.eahp.eu/practice-and-policy/antimicrobial-resistance>
- Int J Clin Pharm* 2018;**40**:948–952. doi: 10.1007/s11096-018-0675-z.

No conflict of interest.

4CPS-048

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

M Núñez-Núñez, R Morón-Romero, R Álvarez-Sánchez, J García Villanova, N Chueca, S Portillo-Haro*, E Yuste-Ossorio, J Cabeza-Barrera. *Farmacia Hospital San Cecilio, Pharmacy, Granada, Spain*

10.1136/ejhpharm-2020-eahpconf.149

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