thymoglobulin (2.5%). This difference was significant (p=0.0875).

Conclusion and relevance In our cohort of patients there was a high prevalence of NI by MDR pathogens, with *K pneumoniae* the most frequent. Ceftazidime was the most commonly used antibiotic as an empirical treatment, and urinary infections the most prevalent within our population. There seems to be a correlation between developing an infection by MDR pathogens and the induction immunosuppressant treatments that included basiliximab, although prospective studies with a larger sample size are needed to confirm these preliminary results.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-040 ADEQUACY OF ANTIBIOTIC PRESCRIPTIONS IN A NURSING HOME

[1]MR Cantudo Cuenca, [1]BM Muñoz Cejudo*, [1]L Dani Ben Abdel-Lah, [1]MA Mora Mora, [2]JE Martínez De La Plata. *[1]Hospital San Agustín Área De Gestión Sanitaria Norte De Jaén, Pharmacy, Linares, Spain; [2]Agencia Pública Empresarial Sanitaria Hospital De Poniente, Pharmacy, El Ejido, Spain*

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Background and importance The pervasive use of antibiotics has been identified as a major public health threat due to the emergence of antibiotic resistant bacteria. Antibiotics are among the most commonly prescribed drugs in nursing homes (NHs) and up to 75% of these are considered inappropriate.

Aim and objectives To characterise antibiotic therapy in NHs and evaluate adequacy.

Material and methods A prospective study was conducted in a NHs (264 residents) over a 3 month period (July–September 2019). All residents with antibiotic prescriptions for suspected infections were included. Data were collected by review of medical and pharmacy records: demographic and clinical characteristics, risk factors for infection, antibiotic prescribed, indication and microbiology data.

Inadequate antibiotic therapy was defined as: (1) conditions without an antibiotic indication; (2) non-adherence to therapeutic guidelines; (3) incorrect dose, route of administration or duration; (4) no microbiology sample collection when needed; and (5) microbiological evidence of infection not covered by the chosen antibiotics, or no antibiotic de-escalation.

Results We included 62 residents, mean age 81.7±10.7 years, 69.4% women, and 6.5% had an antibiotic allergy. Mean Charlson comorbidity index age adjusted was 5.8±1.9. The majority of residents presented risk factors for infection (RFF) (95.2%), mean 3.1±1.4. RFF included functional dependency (6.9% of patients), previous antibiotic therapy (59.7%) and cognitive impairment (53.2%).

The most commonly prescribed antibiotics were amoxicillin/clavulanic (24.2%), quinolones (19.4%), fosfomycin–trometamol (19.4%), cephalosporins (11.2%), fosmomycin calcium (9.7%), cloxacillin (9.7%) and other (6.4%). Mean duration was 5.6±3.5 days. Most treatments were empirical (75.8%), 21% were targeted treatment and 3.2% were prophylactic. Combination therapy was found in only one case; three intravenous route.

The most common infection was urinary tract infection (48.4%), followed by skin and soft tissue infection (22.6%) and lower respiratory tract infection (21%). Sample collection was carried out in 41.9% (76.9% before initiating antibiotic): 65.4% uroculture, 11.5% exudate culture and 23.1% others. Most of the cultures were positive (80.8%; 71.4% were monomicrobial infections). The most prevalent microorganisms isolated were gram negative isolates (85.7%); methicillin resistant *Staphylococcus aureus* was isolated in three cases (14.3%).

Antibiotic therapy was inadequate in 51.6%: (1) 9.3%; (2) 56.3%; (3) 12.5%; (4) 3.2%; and (5) 18.7%.

Conclusion and relevance Broad spectrum antibiotics are often prescribed. There was a high number of inadequate antibiotic prescriptions. Pharmacy teams are well placed to support prudent selection of antibiotic therapy in NHs.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-041 PHARMACIST LED ANTIMICROBIAL STEWARDSHIP PROGRAMME

[1]MR Cantudo Cuenca, [1]L Dani Ben Abdel-Lah, [2]JE Martínez De La Plata, [1]BM Muñoz Cejudo*, [1]M Mora Mora. *[1]Hospital San Agustín Área De Gestión Sanitaria Norte De Jaén, Pharmacy, Linares, Spain; [2]Agencia Pública Empresarial Sanitaria Hospital De Poniente, Pharmacy, Linares, Spain*

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Background and importance Antimicrobial stewardship programmes (ASPs) aim to optimise antimicrobial prescriptions, enhancing clinical outcomes, minimising antimicrobial resistance and improving the quality and safety of patient care. Guidelines recommend a multidisciplinary team but many hospitals do not have infectious disease (ID) physician support.

Aim and objectives To analyse the effectiveness of a pharmacist led ASP in a hospital without an ID physician, with special focus on indicators of the hospital use of antimicrobial agents based on consumption.[1]

Material and methods A pharmacist led ASP was performed in a 200 bed hospital from 1 January to 30 June 2019.

a. The ASP was presented to the hospital physicians through face to face sessions.
b. To improve the prescription of antibiotics, we revised prophylaxis and antibiotic therapy in management protocols and developed a guideline with local antimicrobial recommendations.
c. Clinical sessions were held on different pathologies included in the ASP.
d. Information about antimicrobial consumption rate was provided to physicians.

In addition, the pharmacist performed a daily review of all patients who had a course of antibiotics during their hospital admission, through an electronic prescription programme. Recommendations were made to physicians related to antimicrobial spectrum, dose adjustment, stopping longer courses of antibiotics, interactions, allergies and other.

The consumption of defined daily dose (DDD)/1000 patient days was taken from the first half of 2019 and compared with the same period the previous year.

Results A total of 248 recommendations were recorded. The global consumption of antibiotics was reduced from 931 DDD/1000 patient days in the first half of 2018 to 747.9 DDD/1000 patient days in 2019 (−19.7%). Carbapenem use was reduced by 41.3% DDD (21.3 vs 12.5 DDD/1000 patient

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days). With regard to quinolones, consumption was reduced from 192.7 to 125.5 DDD/1000 patient days (−34.9%). There was a significant decrease in consumption of systemic antifungals of 42.9% (35.9 vs 20.5 DDD/1000 patient days). The ratio (cloxacilin+cefazolin)/anti-MRSA agents increased (1.3 vs 1.8).

Conclusion and relevance A pharmacist led ASP achieved a reduction in consumption of antibiotics, especially carbapenem and quinolones. In the absence of support and oversight from an infectious disease physician, pharmacists could be key in the improvement in the use of antibiotics.

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4CPS-042 PHARMACIST'S MISSION IN INFECTION MANAGEMENT: EVALUATION OF IMPROVEMENT ACTIONS

[1]C Muziotti*, [1]L Dol, [2]MF Texier, [3]S Chadapaud. *[1]Centre Hospitalier D'hyeres, Hospital Pharmacy, Hyeres, France; [2]Centre Hospitalier D'hyeres, Operational Hygiene Team, Hyeres, France; [3]Centre Hospitalier D'hyeres, Infectious Disease Service, Hyeres, France*

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Background and importance Antibiotic (ATB) resistance is a global scourge. The WHO has established an action plan to combat ATB resistance. Pharmacists in our hospital decided to follow this action plan and optimise the use of ATB.

Aim and objectives The purpose of the study was to determine if actions implemented by pharmacists in collaboration with an infectious disease specialist improved the correct use of ATB.

Material and methods All care services in our hospital were involved in this retrospective study. Patients treated with antibiotics were included randomly. Pharmacists and infectious disease specialists checked inpatient records and prescriptions with an assessment form. An average comparison test (n>30; alpha 0.05) comparing each item average before and after implementation of the improvement actions was carried out.

Results A pharmacist was integrated into infectious risk management. A commission of ATB was created. A pharmacist specialised in antibiotics was identified: he analysed ATB consumption and alerted prescribers in the event case discrepancies with the recommendations. Prescription software was set up so that initial treatment duration of ATB was limited to 4 days to promote re-evaluation of ATB. For ATB treatment >7 days, justification was requested. This retrospective study was conducted on 34 inpatient files in 2016 before implementation of the measures and compared with 34 other inpatient files in 2019 after implementation of the improvement actions. The results showed a statistically significant improvement in some criteria: ATB in accordance with recommendations 70% in 2016 and 91% in 2019 (70% vs 91%); ATB re-evaluation 75% versus 82%; and de-escalation 29% versus 69%. There was a reduction in inpatient files for: justification of an ATB treatment (100% vs 91%), clinical course during ATB treatment (100% vs 76%) and interpretation of microbiological examinations (80% vs 70%). In 2019, 82% of ATB therapies with a duration >7 days were justified in the inpatient files.

Conclusion and relevance The actions of pharmacists improved the use of ATB in our hospital. There was a difference between the pre- and post-implementation phases over 3 years. However, during these 3 years, pharmacists made prescribers aware of the correct use of ATB. Pharmacists can improve the use of ATB through education and warning actions for prescribers.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CPS-043 EFFECTIVENESS OF A NEW INTERNAL PROTOCOL FOR DOSAGE OF VANCOMYCIN IN NEONATES

M Ibáñez Carrillo, G Miralles Andreu, S Gutierrez Palomo, AM Sánchez García, AC Murcia López, A Navarro Ruiz*. *Hospital General Universitario De Elche, Servicio De Farmacia, Elche, Spain*

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Background and importance Because of the difficulty in achieving target serum concentrations of vancomycin in neonates after the first dose, the pharmacy and the paediatric services developed a new protocol to establish the initial dosage of vancomycin in neonates. To improve efficacy and/or reduce toxicity, therapeutic drug monitoring (TDM) of vancomycin can be used to adapt doses and personalise treatment.

Aim and objectives To assess the rate of implementation of a hospital internal protocol for vancomycin dosage in neonates and the rate of under- and over-dose after the first control of serum concentrations of vancomycin.

Material and methods A retrospective observational study was carried out including all neonates (n=83) who received vancomycin since approval of the protocol (April 2016) to September 2019. According to the new protocol, the dosage of vancomycin is based on gestational age, postnatal age and weight: in patients <29 weeks, the recommended dose was 10 mg/kg/12 hours for neonates <14 days and 10 mg/kg/8 hours for those >14 days; between 30 and 36 weeks, 10 mg/kg/8 hours for neonates <14 days and 12 mg/kg/8 hours for those >14 days. Vancomycin TDM was done before the third dose. For this study, we wanted a trough concentration of 7.5–15 µg/mL.

Results Eighty-three patients with 87 first determinations of vancomycin were included: 45 males and 35 females with an average weight of 1.32 kg (0.53–4.32). The protocol for the initial dosage of vancomycin was followed in 71 (85.5%) patients. Thirty patients (36.4%) presented trough concentrations <7.5 µg/mL, 6 patients (7.2%) had trough concentrations >15 µg/mL and 51 patients (61.4%) had trough concentrations within the target range (7.5–15 µg/mL).

Conclusion and relevance Most of our patients received the dose of vancomycin following the protocol, achieving target concentrations in 61% of determinations. After implementation of the protocol, a minority of patients (7.2%) showed levels higher than the target therapeutic range.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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