Background and importance The introduction of the unit dose (DU) as a drug dispensing system produces a multiplicity of advantages, ranging from prescribing to administering therapies.

Aim and objectives The purpose of this study was to evaluate, through the computerised prescription, the prescriptive appropriateness of antibiotic therapy and the economic impact of a targeted therapy after an antibiogram compared with empirical therapy.

Material and methods The analysis was carried out by extrapolating, from the prescription software and administration in use, the antibiotic prescriptions subjected to a single request motivated (SRM) from 1 January 2019 to 31 December 2019. With the Modulab software, a clinical information management system, prescriptions with antibiograms were verified and divided into appropriate and inappropriate. Prescriptions initiated as empirical therapies were defined as appropriate if the results of the antibiogram confirmed the therapy already started or if the prescriptions changed following the antibiogram. Therapies were considered inappropriate if the antibiogram results were different from the antibiotics used as empirical therapy (resistant/intermediate) or were not tested.

Prescriptions were grouped for empirically prescribed antibiotics and for sensitive antibiotics (as a result of the antibiogram), considering a median duration of therapy. The maximum daily dosage from the technical data sheet was considered for the calculation of the cost of the therapy. Only inappropriate prescriptions were considered in the pharmacoeconomic evaluation.

Results During the study period, total prescriptions of antibiotics with SRM were 2067 of which 1322 (64%) had no antibiogram and 745 (36%) had an antibiogram. The latter were divided into appropriate (63%) and inappropriate (37%). The pharmacoeconomic analysis showed a cost of non-appropriate therapy of 53 950€, with a possible saving of around 49 274€ if the same had been transferred to the sensitive antibiotic resulting from the antibiogram.

Conclusion and relevance We hope, in the future, to directly consult the antibiogram from the computerised prescription to highlight extemporaneously the limitations of long term empirical therapies both for prescriptive appropriateness and for cost savings.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

5PSQ-141 ANALYSIS OF CEFTAROLINE ASSOCIATED NEUTROPENIA

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Background and importance Ceftaroline is a new fifth generation cephalosporin indicated for the treatment of severe pneumonia and skin and soft tissue infection, which is particularly effective against methicillin resistant *Staphylococcus aureus* (MRSA) and penicillin resistant strains of *Streptococcus pneumoniae*. Some studies have found an association between prolonged use of ceftaroline and a higher incidence of neutropenia.

Aim and objectives To study the incidence and causality of the onset of neutropenia associated with the use of ceftaroline in routine clinical practice.

Material and methods A retrospective observational study was conducted in a tertiary hospital between April 2017 and July 2020. Electronic records were used. Inclusion criteria were: adult patients treated with ceftaroline for >7 days. Exclusion criteria were: oncohaematological patients or those with a neutrophil count <1500 cells/mm³ at the beginning of treatment. Demographic variables recorded were: age, gender, Charlson comorbidity index (CCI), length of treatment, admission to the intensive care unit, diagnosis, concomitant antibiotic therapy, bacteria isolated, nadir neutrophil count during treatment, use of granulocyte colony stimulating factor (G-CSF) and clinical evolution. Causality was analysed with the Naranjo adverse drug reaction probability scale.

Results Between April 2017 and July 2020, 41 patients received ceftaroline (69±11 years, 78% men, CCI=6±2). Median length of treatment was 9 days (IQR 8–12.5). 78% of patients were admitted to the intensive care unit and 76% of cases had a diagnosis of pneumonia. Ceftaroline was used as firstline therapy in 54% of patients, frequently associated with levofloxacin (50%). MRSA was isolated from blood cultures in 20% of cases. During ceftaroline treatment, 15% of patients had a nadir count of <1500 neutrophils/mm³ in a median of 6 days (IQR 4–7). 7% of patients had severe neutropenia (<500 cells/mm³). Only one of the neutropenic patients received a dose of G-CSF. In all cases, neutropenia was considered to be ‘possibly’ associated with ceftaroline. None of the patients discontinued their treatment due to neutropenia.

Conclusion and relevance In patients treated with ceftaroline, neutropenia was an adverse effect that must be considered. More studies are needed to confirm this causality.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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5PSQ-142 SAFETY OF AZOLE ANTIFUNGALS IN TRANSPLANTED PATIENTS RECEIVING TACROLIMUS

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Background and importance Potential interaction between tacrolimus and azole antifungals is often detected in transplanted patients with fungal colonisation or infection.

Aim and objectives To compare the influence of voriconazole and isavuconazole on maintenance of plasma levels of tacrolimus and to analyse their safety.

Material and methods A retrospective observational study was conducted according to cluster classification in all patients immunosuppressed with tacrolimus and receiving concomitant treatment with voriconazole or isavuconazole over a 2 year period in a class 5 hospital. The variables collected included age, plasma levels of tacrolimus for 10 days after the start of the combination, and toxicity associated with azole throughout treatment with it. The standard deviation of tacrolimus levels was calculated to determine which of the antifungals had

generated more oscillation in plasma levels. For qualitative variables, absolute and relative frequencies were obtained, and for quantitative variables, the median (IQR) were used. For hypothesis contrast, Fisher's exact test or the Mann-Whitney U test was performed according to the type of variable.

Results 45 patients were included, 23 received voriconazole and 22 isavuconazole. Median age was 62 years (56–67) for those receiving voriconazole versus 63 years (54–68) for those receiving isavuconazole ($p=0.91$). 34.8% ($n=8$) of patients treated with voriconazole achieved concentrations of tacrolimus >20 ng/mL (toxic concentration) within 10 days from the start of the combination compared with 14.3% ($n=3$) of patients treated with isavuconazole ($p=0.1685$). The median standard deviation of plasma concentrations was 3.76 ng/mL (2.89–4.5) with voriconazole versus 3.17 ng/mL (1.4–5) with isavuconazole ($p=0.272$). The proportion of patients who temporarily discontinued tacrolimus treatment due to high level concentrations and associated toxicity was 18.2% ($n=4$) with isavuconazole versus 34.8% ($n=8$) with voriconazole ($p=0.318$).

Regarding tolerance to treatment, 28.57% of patients treated with isavuconazole had side effects associated with azole, compared with 82.6% of those treated with voriconazole ($p<0.005$). Treatment had to be suspended due to these side effects in 47.82% ($n=11$) of patients treated with voriconazole and in no patient treated with isavuconazole ($p<0.005$).

Conclusion and relevance Treatment with isavuconazole resulted in fewer tacrolimus poisonings, although the difference was not statistically significant. In addition, treatment with isavuconazole was found to be safer, had fewer side effects and did not require antifungal discontinuation.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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5PSQ-143 DRUG RESISTANT TUBERCULOSIS IN A HIGH COMPLEXITY SPECIALISED UNIT: EPIDEMIOLOGY, TREATMENT AND MAIN ADVERSE REACTIONS

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Background and importance Inadequate therapeutic regimens and lack of adherence due to adverse effects of antituberculosis drugs have made resistance to these drugs a major public health problem. A better understanding of these issues may lead to better outcomes.

Aim and objectives To describe the population with drug resistant tuberculosis, the most used treatments, their adverse drug reactions (ADR) and their efficacy.

Material and methods A descriptive, observational, retrospective study was carried out. All patients cared for in our hospital that finished their treatments for drug resistant *Mycobacterium tuberculosis* between 2015 and 2019 were included.

Results 13 patients were analysed (62% men, mean age 43 (SD 14.8) years). Patients came from the following places: 46% Eastern Europe, 38% Latin America, 8% Western Europe and 8% Asia. Nine patients were diagnosed with multidrug resistant tuberculosis, 2 with polyresistant tuberculosis and 2 with extensive drug resistant tuberculosis. The therapies

included 6–9 different antituberculosis drugs. The most commonly used were linezolid and moxifloxacin (13/13), followed by amikacin and clofazimine (12/13). Other prescribed drugs were cycloserine (10/13), prothionamide (10/13), pyrazinamide (5/13), ethambutol (5/13), isoniazid (3/13), bedaquiline (2/13), meropenem/clavulanate (2/13), streptomycin (1/13), rifampicin (1/13) and rifabutin (1/13).

All patients had some ADR. The most frequent ADR were neurological (10), gastrointestinal (9), ototoxicity (5) and hepatitis (4). Cycloserine caused ADR (psychological, dizziness) in 70% of patients; amikacin (ototoxicity), ethambutol (cutaneous, neurological) and pyrazinamide (hyperuricaemia, arthralgia) in 40%; clofazimine (cutaneous, gastrointestinal), linezolid (neurological, aplasia) and prothionamide (gastrointestinal, hormonal) in 30%; moxifloxacin (fasciitis, nausea) in 8%. All patients reached seroconversion after 1.9 (SD 0.77) months from the beginning of treatment.

Conclusion and relevance Most of the patients diagnosed with drug resistant tuberculosis came from Eastern Europe and Latin America. Moxifloxacin and linezolid were the most used drugs. Cycloserine was the most toxic treatment. Despite the high frequency of ADR reported, all treatments were effective.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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5PSQ-144 PHARMACOTHERAPY OPTIMISATION IN PATIENTS OVER 50 YEARS OF AGE WITH HIV INFECTION: FIRST STEPS

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Background and importance HIV infection causes premature aging. As a result, there is an increase in comorbidities and therapeutic burden in these patients earlier than in the rest of the population.

Aim and objectives To evaluate the prevalence of pluripathology, polypharmacy and pharmacotherapeutic complexity in HIV patients aged over 50 years and to determine the need for optimisation of non-antiretroviral therapy.

Material and methods A cross sectional observational study was conducted (November 2019 – September 2020) in HIV patients aged over 50 years. Electronic prescription programme and clinical history were used to collect the following data: sex, age, comorbidities, antiretroviral therapy (ART) and concomitant medication. Pluripathology was defined as three or more comorbidities, and polypharmacy as six or more prescribed drugs. Pharmacotherapy complexity was determined by calculating: anticholinergic burden and the drugs involved, using the anticholinergic burden calculator programme; and relevant interactions between non-ART/ART medication (potential interaction/not coadminister), using the University of Liverpool and Lexicomp databases. Pharmaceutical interventions (PI) were performed based on criteria for optimisation of non-antiretroviral therapy from a guide for pharmacological deprescription in HIV patients, published by the Spanish AIDS Study Group (GESIDA).