4CPS-175 EVOLUTION OF ANTIMICROBIAL CONSUMPTION IN A TRAUMA INTENSIVE CARE UNIT USING DEFINED DAILY DOSES PER 100 OCCUPIED BED DAYS

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Background and importance Microbial resistance to antimicrobial treatment constitutes a public health problem, principally in the hospital environment.

Aim and objectives To evaluate the evolution of antimicrobial consumption in a trauma intensive care unit (ICUt) using defined daily doses per 100 occupied bed days (DDD/100 OBD).

Material and methods A retrospective study was conducted at a third level hospital including all patients admitted to the ICUt from January 2016 to December 2018. We collected biodemographic and clinical data of patients, and annual DDD/100 OBD and DDD/100 OBD for each antimicrobial drug. We used DDD established by the WHO's International Working Group for Drug Statistics Methodology of Norway.

Results A total of 1206 patients (68.0% men) were included with a median age of 54±19 years. The main diagnosis was trauma (74.3%). Biodemographic and clinical data were similar for the 3 years.

In 2016, DDD/100 OBD were 131.12: DDD/100 OBD for penicillins were 60.00 (amoxicillin/clavulanate 33.90, piperacillin/tazobactam 12.39), cephalosporins 13.95, fluoroquinolones 3.70, carbapenems 1532 (meropenem 14.34), aminoglycosides 3.15, daptomycin 3.36, linezolid 2.38, glycopeptides 4.11 and antifungals 7.34 (fluconazole 6,48).

In 2017, DDD/100 OBD were 137.62: DDD/100 OBD for penicillins were 54.77 (amoxicillin/clavulanate 35.03, piperacillin/tazobactam 8.37), cephalosporins 16.14, fluoroquinolones 9.42, carbapenems 16.00 (meropenem 15.36), aminoglycosides 2.86, daptomycin 4.68, linezolid 3.27, glycopeptides 3.05 and antifungals 3.69 (fluconazole 2.76).

In 2018, DDD/100 OBD were 133.09: DDD/100 OBD for penicillins were 60.42 (amoxicillin/clavulanate 39.81, piperacillin/tazobactam 6.76), cephalosporins 14.37, fluoroquinolones 7.07, carbapenems 15.03 (meropenem 13.08), aminoglycosides 5.69, daptomycin 2.35, linezolid 3.32, glycopeptides 3.85 and antifungals 3.74 (fluconazole 3.35).

From 2016 to 2018, the results showed:

- Important reduction in DDD/100 OBD for piperacillin/tazobactam (−45.46%) but an increase in DDD/100 OBD for amoxicillin/clavulanate (+17.42%).
- Stable use of cephalosporins, with a minimum consumption of ceftolozane/tazobactam (<1.5%).
- Stable consumption of carbapenems, with meropenem being the most prescribed (>87%) and reduction in the use of imipenem/cilastatin (−32.51%).
- Reduction in prescription of antifungals (−49.02%), with fluconazole the most used (>74%).

Conclusion and relevance Reduction of piperacillin/tazobactam use with an increase in amoxicillin/clavulanate prescriptions showed a decrease in extended spectrum penicillin consumption and could demonstrate the appropriateness of empirical therapy. Low ceftolozane/tazobactam prescriptions demonstrated controlled prescription of restricted use cephalosporins. Minimum imipenem/cilastatin use could be in relation to its neurotoxic effects. The results indicate an adequate use of antifungals.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-176 ELECTROLYTE DISTURBANCES IN PREMATURE INFANTS WITH INTRAUTERINE GROWTH RESTRICTION RECEIVING PARENTERAL NUTRITION

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Background and importance Intrauterine growth restriction (IUGR) in neonates can promote the occurrence of electrolyte disturbances. Therefore, some authors propose a modification of parenteral nutrition (PN) in these patients which allows for correcting electrolyte disturbances.

Aim and objectives To evaluate the association between IUGR and the occurrence of calcium and phosphate disturbances in a cohort of premature infants receiving PN.

Material and methods An observational retrospective study was conducted at a third level children's hospital between January and December 2016. Neonates with a gestational age (GA) <33 weeks and birth weight (BW) <1500 g on PN in the neonatal intensive care unit were included. Biodemographic data (sex, GA and BW), daily PN composition and plasma levels of phosphate and ionised calcium levels during administration of PN were collected from the electronic health record Centricity Critical Care.

We analysed ionised calcium levels because it does not depend on albumin levels. The infants were divided into two groups: IUGR and non-IUGR. Hypophosphataemia was defined as plasma phosphate levels <1.1 mmol/L and hypercalcaemia as plasma calcium ion levels >1.3 mmol/L. Associations between calcium and phosphate, and IUGR were analysed by logistic regression using SPSS V.15.0 (SPSS Inc, Chicago, Illinois, USA) software package.

Results In the IUGR group (n=52, 33 female), GA was 29.39 ±2.82 weeks and BW was 1047.13±297.41 g. PN composition: 93.20±16.31 mL/kg/day; 59.00±8.61 kcal/kg/day; amino acids 2.96±0.44 g/kg/day; calcium 1.45±0.28 mEq/kg/day; and phosphorus 0.68±0.13 mmol/kg/day. Plasma levels of phosphate were 1.36±0.34 mmol/L and plasma levels of calcium ion were 1.20±0.30 mmol/L; hypophosphataemia 85.48%; hypercalcaemia 34.62%.

In the non-IUGR group (n=62, 32 female), GA was 27.77 ±2.10 weeks and BW was 1087.42±260.13 g. PN composition: 94.78±18.94 mL/kg/day; 58.56±7.89 kcal/kg/day; amino acids 2.91±0.34 g/kg/day; calcium 1.47±0.19 mEq/kg/day; and phosphorus 0.66±0.14 mmol/kg/day. Plasma levels of phosphate were 1.64±0.34 mmol/L and plasma levels of calcium ion were 1.21±0.25 mmol/L; hypophosphataemia 78.85%; hypercalcaemia 19.35%.

There was no statistically significant difference between the groups with respect to age, GA, BW, PN composition or phosphate and calcium plasma levels. Logistical regression showed a statistically significant relationship between IUGR and

hypercalcaemia events (p=0.047). Only weight was associated with hypophosphataemia events (p=0.019).

Conclusion and relevance We found that the IUGR group presented more hypercalcaemia events compared with the non-IUGR group. These results suggest that modification of electrolyte content of the PN in the IUGR group may be a strategy to avoid calcium disturbances.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-177 COMPARATIVE STUDY OF PATIENT PROFILES AND INITIAL ANTIRETROVIRAL TREATMENT IN 2014 VERSUS 2018

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Background and importance Antiretroviral therapy (ART) has evolved over the years, leading to a change in initial therapy strategies.

Aim and objectives To describe and compare the profile of patients who started ART in 2014 and 2018. To assess chosen treatment schemes and cost per patient.

Material and methods A retrospective, observational, descriptive study was conducted in HIV patients who started ART in 2014 and in 2018 in a second level hospital. Data collected from the electronic medical history and prescription programme were demographic data, transmission route, viral load (VL) and CD4 lymphocytes at the beginning and after 4 weeks of treatment, chosen ART and treatment cost/patient/year.

Results Combination ART therapy chosen in 2014: two nucleoside reverse transcriptase inhibitors (NRTIs) (87% tenofovir–disoproxil/emtricitabine (TDF/FTC) and 13% abacavir/lamivudine (ABC/3TC)), a non-nucleoside reverse transcriptase inhibitor (NNRTI) (13.3% efavirenz and 20% rilpivirine) or a protease inhibitor (PI) (46.7% darunavir–ritonavir (DRV/r)) or an integrase inhibitor (INSTI) (20% raltegravir).

Abstract 4CPS-177 Table 1

	2014	2018
Patients (n)	15	15 (dropout at week 2: 1 patient)
Men (%)	93	73
Age (years)	44.9 (28–68)	41.5 (14–72)
Transmission route (%)		
Heterosexual	46	33
Homosexual	27	47
Parenteral	27	20
Time from diagnosis to the beginning of ART (days)	1025 (12–4116)	93 (6–489)
Week 0		
VL (copies/mL)	410535 (3200–2530000)	252510 (1410–2340000)
CD4 (U/mm³)	247.8 (4–701)	452 (52–1165)
Week 4		
VL (copies/mL)	1992 (0–12500)	1318 (0–13800)
Undetectable VL patients	1	5
CD4 (U/mm³)	302 (74–713)	553 (197–1455)

Combination ART therapy chosen in 2018: two NRTIs (26.7% TDF/FTC and 53.3% ABC/3TC, 20% tenofovir–alafenamide (TAF)/FTC)) and a PI (20% DRV–cobicistat) or an INSTI (60% dolutegravir, 20% elvitegravir–cobicistat (ELV/c)). One patient initiated TAF/FTC+DRV+ELV/c due to a restrictive resistance profile. The cost of ART per patient/year was 8632€ in 2014 and 7405€ in 2018.

Conclusion and relevance The demographic profile of patients changed little over the study period. Sexual transmission continued to be the main route of infection despite official prevention strategies. The new recommendations for early initiation of ART in all HIV patients leads to better results than deferred treatment (higher values of CD4 at baseline and at 4 weeks, and more patients with indetectable VL). Our study reflected a decrease in the use of TDF/FTC as starting ART and TAF/FTC was introduced, a fact attributable to its better bone and renal safety profile. In turn, the use of INSTI associated with initial ART has increased due to its power and good tolerance. The cost/patient decreased slightly despite commercialisation of generics due to the appearance of INSTI and TAF.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-178 TRANSCRIPTION OF SUPPORTIVE MEDICATION FOR INPATIENT CHEMOTHERAPY BY DESIGNATED ONCOLOGY WARD PHARMACISTS

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Background and importance Following several incidents where patients' supportive treatments were omitted, a safety measure in the verification process for inpatient chemotherapy (IPChx) treatment was implemented. Oncology ward pharmacists (OWPs) must ensure supportive medications are transcribed from ARIA (chemotherapy prescribing software) to JAC (inpatient prescribing software) before chemotherapy is released to the ward. Current practice is for clinicians to complete the transcribing, and delays in prescribing these may delay chemotherapy administration. This can impact on the pharmacy service, hospital workflow, and patient care and satisfaction.

Aim and objectives To evaluate whether the transcribing pharmacist role reduces IPChx delivery time and occurrence of transcribing errors.

Material and methods Stage 1 (control): the clinician led process of transcribing was mapped and the time taken for each stage recorded by OWPs for 4 weeks (February–March 2019) using a piloted data collection form. Stage 2 (active period): OWPs carried out the transcription. Transcription and delivery to patient times were again recorded using the same data collection form (June–July 2019). Stages 1 and 2 mean delivery to patient and transcribing process times were compared using a Student's t test and Welch t test, respectively. Transcribing error rates for each stage were compared using a χ^2 test.

Results The mean IPChx delivery time during the active period was 50.2 hours (range 24.7 to 75.7), a decrease of 23.7 hours (95% CI −15.4 to 62.8) compared with the control period (p=0.228). There was a notable decrease in