

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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10.1136/ejhp-pharm-2020-eahpconf.276

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 (ICU) 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 ICU 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 15.32 (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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10.1136/ejhp-pharm-2020-eahpconf.277

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