EXTENDED INFUSION OF MEROPENEM IN A NEONATE WITH COMPLICATED KLEBSIELLA PNEUMONIAE MENINGITIS

Background
Extended infusion of beta-lactam antibiotics is aimed at achieving microbiological eradication and clinical resolution of complicated bacterial infections. For meropenem, the best predictor of bacterial killing is the time over which free-drug concentration exceeds 4–6×MIC of the microorganism (desirable 40% fT >MIC).

Purpose
To describe the course and monitoring of prolonged treatment with meropenem by extended infusion of 4 hours in a neonate with ventriculitis due to ESBL-producing *Klebsiella pneumoniae*.

Material and methods
We present the case of a 25 weeks’ preterm newborn, who presented with a septicaemic episode with clinical, laboratory and ultrasonographic signs of ventriculitis at 93 days of age, in February 2018. Treatment was started with meropenem 40 mg/kg/8 hour, in an extended infusion of 4 hours. Concentrations of meropenem were determined in plasma and CSF samples before the administration of a dose (Cmin), once steady-state equilibrium was reached. For the quantification of the levels, high-performance liquid chromatography validated techniques were used.

RESULTS
A total of 177 patients were reviewed, with a mean age of 63.4±16.4 and 32.8% were women. Almost half of the patients 48.6% (n=86) had an osteoarticular infection; bacteriemia accounted for 36.2% (n=64). The rest of the infections were related to the central nervous system 3.4% (n=6), endovascular system 3.4% (n=6) and others 8.4% (n=15).

Patients excluded: eight due to neutropenia (n=169), 15 due to thrombocytopenia (n=162) and 14 due to AKI (n=163) prior to vancomycin therapy.

Neutropenia was developed in seven patients (1:24), thrombocytopenia in 12 patients (1:14) and AKI in 26 patients (1:6). The prevalence of nephrotoxicity is described as common (1:100–1:10) in the summary product characteristics (SPC). However, neutropenia and thrombocytopenia are classified as rare undesirable effects (1:10.000–1:1.000).

Conclusion
The prevalence of AE related to vancomycin therapy is higher than reported in SPC. In our study neutropenia was reported in 7:169 patients, thrombocytopenia in 12:162 and AKI in 26:163.

The difference between SPC and our clinical practice is considerable. However, it should be noticed that only patients monitored by PD were reviewed, and therefore the number of patients included is low. It is of high importance to continue reporting any AE related to vancomycin therapy to the appropriate pharmacovigilance institution in order to better understand the toxic profile of the drug.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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4CP5-062 IMPACT OF ANTIMICROBIAL STEWARDSHIP PROGRAMME ON CARBAPENEMS RESISTANCE AND CONSUMPTION IN A TERTIARY HOSPITAL: A BEFORE-AND-AFTER INTERVENTIONAL STUDY

Background
The treatment of infections caused by multiresistant gram-negative late-onset sepsis: a randomized controlled trial. Pediatr Infect Dis J 2017;36.

No conflict of interest.