



Meropenem in the Right Dose: A Safe Step in the Care of Hospitalized Elderly

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INTRODUCTION: High morbidity and mortality rates from bacterial infections are a significant problem today. Therapeutic drug monitoring (TDM) aims to optimize both the dosage and duration of medication usage, prioritizing the minimization of adverse effects and therapeutic failures. In this context, the objective of this study was to perform TDM of meropenem in hospitalized elderly patients and evaluate the achievement of some therapeutic targets. . **METHODS:** The study was carried out at the University Hospital of Santa Maria. Steady-state blood samples were collected from patients using meropenem at two distinct times: peak and trough. Plasma levels were quantified using high-performance liquid chromatography coupled to a photodiode array detector. Clinical and demographic data were collected from medical records. The study was approved by the Ethics Committee of UFSM (CAAE:83200618.7.0000.5346). **RESULTS:** Twenty-one patients median age 70 (60 – 92) years were evaluated, 66.6% of whom were men. Most common comorbidities presented were diabetes mellitus type II (n=10) and cardiovascular diseases (n=14). The main pathogens associated with the infections were: *Escherichia coli* (n=4), *Pseudomonas aeruginosa* (n=3) and *Klebsiella pneumoniae* ssp. (n=3). The mean dose of meropenem was 1375 ± 483.3 mg, administered every 8 hours. Median days of treatment was 10 (4 – 38). The peak and trough plasma concentrations were 34.53 ± 25.31 µg/mL and 8.55 ± 9.06 µg/mL, respectively. The literature provides data that meropenem trough plasma concentrations above 44.45 µg/mL are related to nephrotoxicity and neurotoxicity above 62.5 µg/mL. None of the analyzed trough samples were above the toxic range, and none of the elderly presented any sign of toxicity during meropenem therapy. **CONCLUSION:** The routine TDM of meropenem may be useful for dose adjustment and maintaining adequate therapeutic concentrations, and it may also serve as a basis for corroborating the implementation of new protocols in the hospital routine.

Keywords: Therapeutic Drug Monitoring. Antibiotics. Elderly patients

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