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), cefalosporins 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), cefalosporins 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), cefalosporins 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 cefalosporins, with a minimum consumption of cefotolozane/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 cefotolozane/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.