



Antimicrobial Susceptibility and Carbapenemases in *Pseudomonas Aeruginosa* Isolated From Children with Cystic Fibrosis

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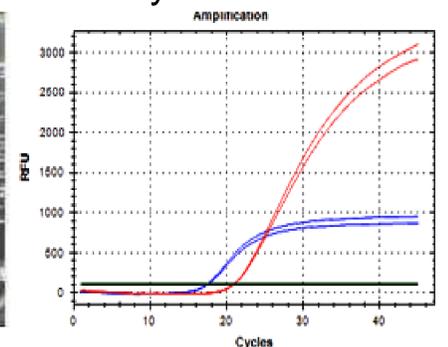
INTRODUCTION & AIM

P. aeruginosa is an opportunistic pathogen that is a major cause of morbidity and mortality in patients with cystic fibrosis and immunocompromised individuals. The eradication of *P. aeruginosa* is becoming increasingly difficult due to its ability to resist antibiotics.

The aim of this study was to study the susceptibility to antimicrobial drugs and the presence of carbapenemases in *P. aeruginosa* isolates from patients with cystic fibrosis.

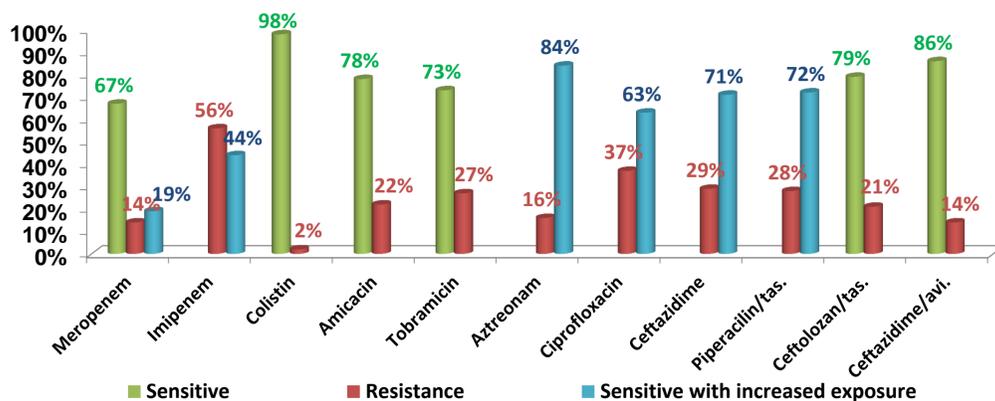
METHODS

Antibiotic susceptibility was determined by the broth microdilution method, whereas carbapenemases were determined by real-time PCR.

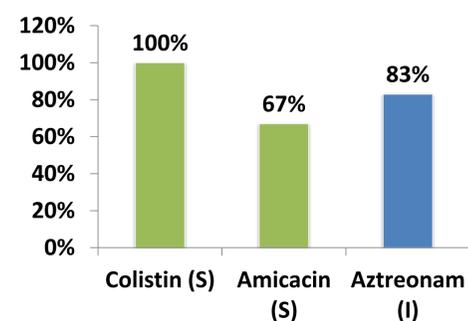
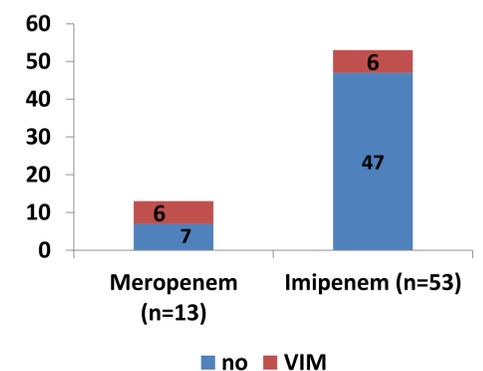


RESULTS & DISCUSSION

A total of 95 *P. aeruginosa* strains isolated in 2022-2023 were studied. Resistance to meropenem and imipenem was 14% and 56%, respectively. Sensitivity with increased exposure was 19% and 44%, respectively. Between 22% and 27% of isolates were resistant to aminoglycosides. A total of 21% and 14% were resistant to ceftolozane/tazobactam and ceftazidime/avibactam, respectively. Resistance to aztreonam, ciprofloxacin, ceftazidime and piperacillin/tazobactam was 16%, 37%, 29% and 28%, respectively. It is worth noting that we identified 2% of strains resistant to colistin.



When performing PCR for strains resistant to meropenem and/or imipenem, it was determined that six isolates had VIM carbapenemase (NDM, IMP carbapenemases were not detected).



All VIM+ isolates retained susceptibility to colistin, four isolates were also susceptible to amikacin and five isolates showed susceptibility with increased exposure to aztreonam.

CONCLUSION

The resistance of *P. aeruginosa* to antibiotics of different classes ranged from 2 to 56%. Only six isolates were found to have metallo- β -lactamase VIM. Resistance to meropenem was demonstrated by 13 isolates and to imipenem by 52 isolates. Resistance to carbapenems in *P. aeruginosa* isolated from cystic fibrosis patients is probably associated with other properties of the bacterium.