Real World Experience with Cefiderocol for Multi-Drug Resistant Gram-Negative Bacterial Infection in a Tertiary Hospital

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Background

- Rising rates of antibiotic resistance is an ongoing concern in healthcare
- Many multi-drug resistant organisms, including carbapenem-resistant *Enterobacteriaceae* (CRE) and *Pseudomonas aeruginosa* with difficult-to-treat resistance (DTR) present a challenge in treating common infections
- Cefiderocol is a novel siderophore cephalosporin that potentially can be used to tackle these infections
- However, real-world data regarding the clinical use and outcomes of cefiderocol is limited

Methods and Objectives

- Single-center, retrospective cohort study of all patients age ≥ 18 years who received at least one dose of Cefiderocol between July 2020 and March 2022
- 22 unique patient encounters were reviewed
- Demographic characteristics were obtained
- Primary outcome: clinical failure defined as 30-day mortality following cefiderocol administration
- Secondary outcomes:
  - Development of resistance to cefiderocol
  - Clearance of bacteremia
  - Adverse drug reactions
  - Hospital length of stay

Results

Table 1: Patient and clinical characteristics

Age, y (Mean)	52.7
Gender (Male)	18/22 (81.8%)
Location before admission	
Home	7/22 (31.8%)
Outside Hospital	3/22 (13.6%)
Long term Care Facility	12/22 (54.5%)
Location of Infection	
Cardiac Device	9/22 (40.9%)
Respiratory	10/22 (45.5%)
Others (Musculoskeletal, Gastrointestinal)	3/22 (13.6%)
Gram negative bacteremia	8/22 (36.3%)
Pathogen	
Pseudomonas spp.	15/22 (68.2%)
DTR-*P. aeruginosa*	15/15 (100%)
Klebsiella spp.	6/22 (27.3)
CRE	6/6 (100%)
Others	9/22 (40.9%)
ID Consult	20/22 (90.9%)

Table 2: Outcomes

Parameters	N=22
Primary Outcome: Clinical failure: 30 day mortality	5/22 (22.7%)
Secondary outcome	
Development of resistance	1/22 (4.5%)
Hospital length of stay (median)	24 days (3-152)
Clearance of GNR bacteremia	7/8 (87.5%)
Side effects Diarrhea	2/22 (9%)

Discussion

- Cefiderocol is listed as an alternative agent in the treatment of CRE and DTR-*P. aeruginosa*
- Based on this cohort, its use seems promising in the context of limited treatment options
- Cefiderocol should still be used judiciously given evidence of resistance developing on treatment

Conclusion

Cefiderocol can be used in a variety of multidrug resistant infections, including bacteremia.

References

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