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CLINICAL AND ECONOMIC IMPACT OF CEFIDEROCOL MONITORING THROUGH A NATIONAL REGISTRY: A PRE-POST REAL-WORLD EVALUATION SUPPORTING ANTIMICROBIAL STEWARDSHIP

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BACKGROUND AND IMPORTANCE

Antimicrobial resistance (AMR) is a major global threat to patient safety and healthcare sustainability. The spread of multidrug-resistant Gram-negative bacteria has limited treatment options and increased costs. Cefiderocol, a siderophore cephalosporin with a unique iron-transport mechanism, is among the few "reserve" antibiotics for infections caused by carbapenem-resistant organisms. Real-world data on its utilisation, appropriateness and economic impact under registry-based monitoring remain scarce. Evaluating these aspects is essential to determine whether registries enhance antimicrobial stewardship and support sustainable access to high-cost, last-resort antibiotics.

AIM AND OBJECTIVES

To evaluate clinical outcomes, prescriptive appropriateness and economic impact of cefiderocol before and after implementation of a national monitoring registry designed to optimise antimicrobial use in hospital settings.

MATERIALS AND METHODS

- Retrospective observational study of adult inpatients treated with cefiderocol before (Mar 2022–Feb 2023; n=19) and after (Mar 2023–Feb 2024; n=16) registry implementation.
- Data collected included infection type, ward distribution, renal dose adjustments, treatment duration, outcomes (discharge/death), vials used and drug expenditure.
- Economic analysis was conducted from a healthcare system perspective, considering direct drug acquisition and reimbursement costs.

RESULTS

Thirty-five patients were analysed: nineteen pre-registry and sixteen post-registry.

Patient population and outcomes

- Pre-registry mortality: 21.1% (4/19)
- Post-registry mortality: 43.8% (7/16)

Treatment patterns

- No patient exceeded 21 days of therapy.
- Median treatment duration decreased.
- Renal function–based dose adjustments increased.

Economic impact

- Vials used decreased from 1,403 to 752 (-46%).
- Total drug expenditure fell from approximately €2.8 million to €1.5 million.
- Post-registry phase enabled full reimbursement through an innovative medicines fund.

CONCLUSION AND RELEVANCE

- Registry-based monitoring improved prescribing governance and supported cost containment without restricting access.
- Controlled eligibility and treatment duration promoted appropriate antibiotic use.
- The 2025 regulatory expansion confirms registry-based stewardship as a sustainable model for reserve antibiotics.
- Hospital pharmacists play a central role in ensuring appropriateness, outcomes and sustainability.