

*Pseudomonas aeruginosa* Infections Treated with Cefiderocol:  
Associations of Site of Infection and Time to First Dose with Outcomes in  
PROVE (Retrospective Cefiderocol Chart Review) Study

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OBJECTIVES

The main objectives of the PROVE study are to describe the clinical and microbiological characteristics of infections treated with cefiderocol, patient characteristics, treatment patterns, and patient outcomes, including safety, in real-world settings.

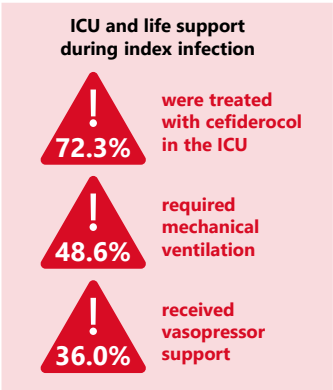
METHODS

- PROVE is an ongoing, international, retrospective medical chart review study of first-time cefiderocol use in patients with Gram-negative bacterial infections.
- Eligibility criteria include having a documented Gram-negative bacterial infections that prompted the use of cefiderocol for at least 72 hours, availability of data regarding cefiderocol dosing, description of the Gram-negative bacterial infections for which cefiderocol was prescribed, and discharge data after hospitalization.
- Clinical cure was defined as resolution or improvement in infection signs and symptoms, without evidence of later relapse.

RESULTS

Demographics

- 253 patients treated with cefiderocol had *Pseudomonas aeruginosa* infections.
- Median age was 57 years.
- 69.6% of patients were male.
- Comorbidities: diabetes (34.0%), chronic pulmonary disease (20.2%).
- 30.8% of infections were polymicrobial; Enterobacterales and *Stenotrophomonas maltophilia* were most frequent.
- Median duration of cefiderocol treatment was 12 days (Q1–Q3: 8–16).



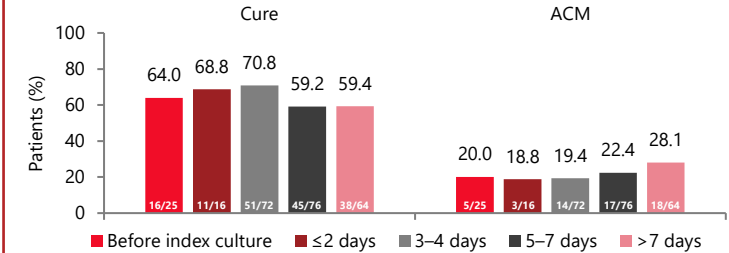
Distribution of infection sites

Infection site		
	Without BSI	With BSI
Bloodstream only	6%	
Respiratory	57%	9%
Skin and skin structure	9%	2%
Urinary	4%	2%
Bone and joint	1%	-
Intra-abdominal	5%	1%
Other sites	2%	2%

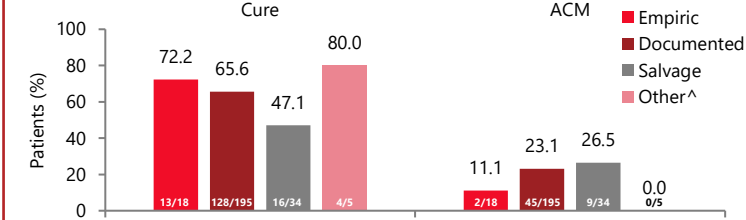
BSI, bloodstream infection.

Outcomes of patients with *Pseudomonas aeruginosa* infections treated by cefiderocol (N=253)

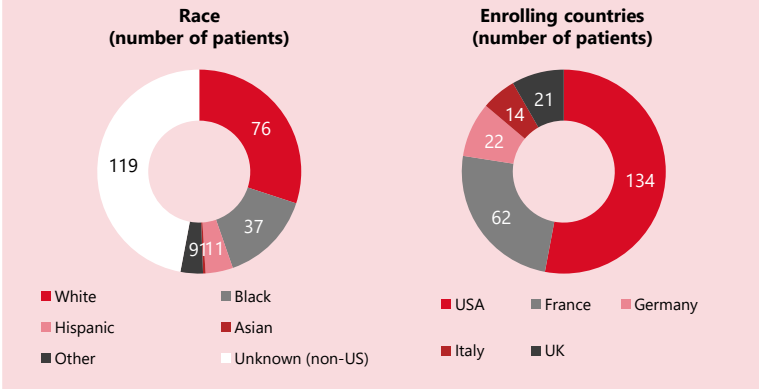
Clinical cure and Day 30 all-cause mortality (ACM) by timing of cefiderocol treatment



Clinical cure and Day 30 ACM by type of cefiderocol treatment\*



\*Reason unclear for one patient, patient died by Day 30; ^documented substitution, or escalation to optimize regimen.



Outcomes by infection site and pathogen

Characteristic	Clinical cure n/N (%)	Day 30 ACM n/N (%)
Overall	161/253 (63.6)	57/253 (22.5)
Primary index infection site(s) <sup>1</sup>		
BSI only	11/16 (68.8)	3/16 (18.8)
Respiratory	91/144 (63.2)	35/144 (24.3)
Respiratory + BSI <sup>2</sup>	15/22 (68.2)	6/22 (27.3)
Skin and skin structure	13/23 (56.5)	4/23 (17.4)
Skin and skin structure + BSI <sup>2</sup>	2/5 (40.0)	2/5 (40.0)
Urinary	9/10 (90.0)	0/10 (0.0)
Urinary + BSI <sup>2</sup>	4/5 (80.0)	0/5 (0)
Bone/joint	2/4 (50.0)	0/4 (0)
Intra-abdominal	8/12 (66.7)	3/12 (25.0)
Intra-abdominal + BSI <sup>2</sup>	2/2 (100)	0/2 (0)
Other sites <sup>3</sup>	3/6 (50.0)	1/6 (16.7)
Other sites + BSI <sup>2</sup>	1/4 (25.0)	3/4 (75.0)
Type of infection		
Monomicrobial ( <i>P. aeruginosa</i> only)	115/175 (65.7)	42/175 (24.0)
Polymicrobial	46/78 (59.0)	15/78 (19.2)
Enterobacterales	25/39 (64.1)	6/39 (15.4)
<i>Stenotrophomonas maltophilia</i>	13/21 (61.9)	1/21 (4.8)
<i>Acinetobacter baumannii</i>	6/16 (37.5)	6/16 (37.5)
Any other Gram-negative pathogens	4/10 (40.0)	3/10 (30.0)
Carbapenem Resistance		
Yes	131/205 (63.9)	46/205 (22.4)
No	12/22 (54.5)	6/22 (27.3)
Not tested or undetermined	18/26 (69.2)	5/26 (19.2)

[1] Index infection: first culture taken containing *P. aeruginosa* from the primary site of infection. [2] Same *P. aeruginosa* pathogen at both sites. [3] Other infection or culture sites: abscess of prelaryngeal cartilage, organ preservation liquid, pleural fluid, pharynx, rectal culture, and ventricular assist device, aortic stent graft, and combinations of two or more sites.

CONCLUSIONS

Clinical cure rate was highest among patients with urinary tract infections, followed by patients with BSI and respiratory tract infection.

Patients with Enterobacterales or *S. maltophilia* co-infections had higher clinical cure and lower ACM than patients with other Gram-negative pathogens.

Patients who were treated with cefiderocol as salvage therapy had lower clinical cure than patients who received cefiderocol empirically or for a documented infection.