Clinical Characteristics and Outcomes of Raoultella Bacteremia: A Retrospective Analysis of 32 Cases

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Aim and Methods

- **Aim**: To clarify the clinical characteristics and outcomes of bacteremia caused by *Raoultella* species, which are emerging but understudied pathogens.

- **Methods:** We conducted a single-center retrospective study (May 2015–May 2025) of all *Raoultella* bacteremia cases, collecting data on demographics, clinical features, susceptibility, and outcomes.

Highlights of Results

- 32 cases identified: *R. planticola* 26 (81.3%), *R. ornithinolytica* 5 (15.6%), mixed 1 (3.1%)
- Median age 77 years; 62.5% male; community-acquired 84.4%, healthcare-associated 15.6%
- Active malignancy 28.1%, immunosuppressive therapy 6.3%
- Main infection sources: biliary tract 59.4%, urinary tract 21.9%, GI tract 9.4%
- All isolates resistant to ampicillin; one AmpC producer (cefazolin-resistant). Others susceptible to major agents, except fluoroquinolone and TMP-SMX resistance in two isolates each.
- In-hospital mortality: 6.3% (2 cases)

Discussion

- **Infection background:** Reported mainly in elderly or immunocompromised patients with malignancy or biliary/urinary disease, often hospital-acquired [1-3].
  ➡ In our study, patients were similarly aged, biliary source 59%, notable proportion with malignancy, but mostly community-acquired.

- **Antimicrobial susceptibility:** Previous studies showed intrinsic ampicillin resistance and overall susceptibility to major agents, with occasional AmpC/ESBL producers and partial resistance to fluoroquinolones or TMP-SMX [1–3].
  ➡ Our findings were consistent, showing comparable susceptibility patterns.

- **Clinical outcomes:** Earlier series reported high mortality (20–45%), especially with malignancy, biliary disease, or immunosuppression [2,3].
  ➡ Our mortality was low (6.3%), possibly reflecting differences in patient background and setting.

- **In summary**, this study provides updated evidence that patient characteristics in recent *Raoultella* bacteremia cases may differ from earlier reports, with correspondingly distinct clinical outcomes.

References: [1] Mettler et al., Front Cell Infect Microbiol, 2024 [2] Alicja Sękowska, Folia Microbiologica, 2017 [3] Chun S. et al., Infection, 2014

Table 1. Clinical characteristics of patients with Raoultella bacteremia (n=32)	
Characteristics	**n (%)**
Species distribution	
R. planticola	26 (81.3)
R. ornithinolytica	5 (15.6)
Mixed infection	1 (3.1)
Median age (IQR)	77 (68–84)
Male sex	20 (62.5)
Acquisition	
Community-acquired	27 (84.4)
Healthcare-associated	5 (15.6)
Indwelling devices	6 (18.8)
Active malignancy	9 (28.1)
Immunosuppressive therapy	2 (6.3)
Source of bacteremia	
Biliary tract	19 (59.4)
Urinary tract	7 (21.9)
Gastrointestinal tract	3 (9.4)
Trauma	1 (3.1)
Unknown	2 (6.3)

Table 2. Antimicrobial susceptibility and outcomes of Raoultella bacteremia (n=32)	
Variable	**n (%) or findings**
Antimicrobial resistance	
Ampicillin	32 (100%) resistant
Ampicillin-sulbactam	0 resistant
Piperacillin-tazobactam	0 resistant
Cefazolin	1 (3.1%) resistant (AmpC producer)
Ceftriaxone	0 resistant
Cefepime	0 resistant
Cefmetazole	0 resistant
Aztreonam	0 resistant
Imipenem	0 resistant
Meropenem	0 resistant
Amikacin	0 resistant
Ciprofloxacin	2 (6.3%) resistant
Levofloxacin	2 (6.3%) resistant
Trimethoprim–sulfamethoxazole	2 (6.3%) resistant
Outcomes	
In-hospital mortality	2 (6.3%)
Median hospital stay	12 (9-18) days