P3621

Bacteraemia in neutropaenic patients admitted to the intensive care unit with septic shock: aetiology, clinical characteristics, outcome and impact of multidrug resistance on mortality.

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on behalf of ROCAS Study Group - **Argentina**

Background

Episodes of bacteraemia in neutropenic patients (NP) presenting with septic shock have a high mortality rate. Multidrug-resistant gram-negative bacilli (MDR-GNB) may reduce survival.

Methods

Prospective, multicentre study in 10 hospitals in Argentina (Jun 2014 – Dec 2023).

Inclusion criteria: All first episodes of bacteraemia in adult NP with hematologic malignancies (HM) and hematopoietic stem cell transplantation (HSCT) admitted to the intensive care unit (ICU) with septic shock.

Aetiology, clinical characteristics, and outcome were described.

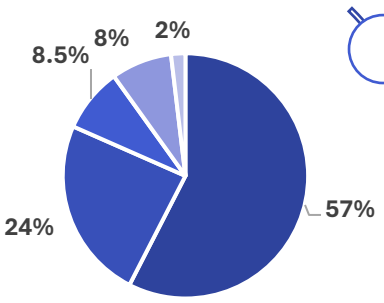
A multivariate logistic regression analysis identified independent risk factors associated with 30-day mortality (RFM).

RESULTS

Baseline Characteristics

212 patients | **65%** ♀ **35%** ♂ | **Median Age:** 58 y (IQR 32-62)

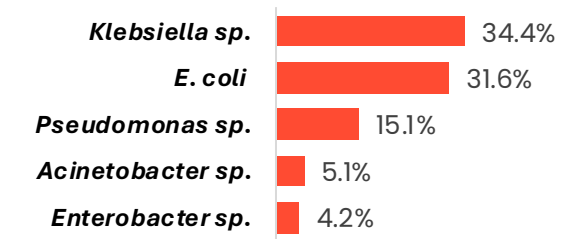
Underlying deseases



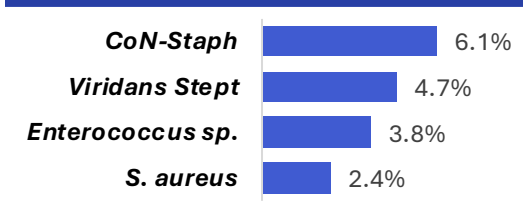
- HSCT 30.7% (58.5% allogeneic)
- Recent chemotherapy 69%
- Corticosteroids use 4.5%
- Antilymphocytic and biological agents 16%
- High-risk NP 96.2%
- Charlson Score 3 (IQR 2-5)

Aetiology

Gram-Negative Bacilli 88.7%

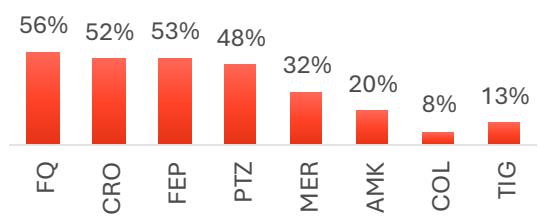


Gram-Positive Cocci 16.9%

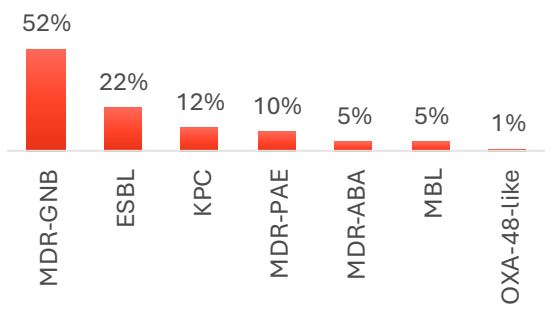


Polimycrobial 13.2%

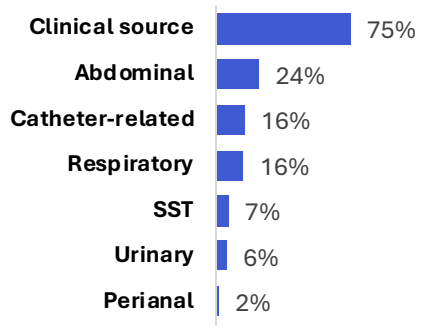
Resistance Profile in GNB



Resistance Mechanisms in GNB



Clinical features and Treatment



Empirical therapy (ET)

Carbapenems	59.4%
Piperacillin-Tazobactam	32.6%
Colistin	32.6%
Amikacin	32.1%
Ceftazidime-avibactam	7.6%
Vancomycin	55.2%
Daptomycin	9.4%
Combined	**58.9%**
Appropriate (AET)	**82.1%**

Severity

APACHE II Score – Mediana (IQR)	19 (15-23)
Score Pitt – Mediana (IQR)	3 (2-4)
Multi-organ failure	75.9%

Target therapy

Meropenem	45.7%
Piperacillin-tazobactam	18.9%
Colistin	27.4%
Amikacin	11.3%
Ceftazidime-avibactam	5.2%
Vancomycin	8.9%
Daptomycin	4.7%
Combined	33.9%

Outcomes and RFM

Risk factors associated with 30-day mortality

Variable	Unadjusted-HR			Adjusted-HR		
	HR	95% CI	p	HR	95% CI	p
Inappropriate ET	3.2	1.4-7.4	0.006	0.6	0.1-4.1	0.59
Delay in AET >24 h	3.4	1.3-8.8	0.01	3.4	0.4-27	0.24
Renal failure	2.6	1.5-4.6	0.001	1.2	0.6-2.5	0.61
Respiratory failure	6.1	3.2-11.1	<0.001	5.2	2.4-11.1	<0.001
Allogeneic HSCT	3.9	1.6-9.2	0.002	2.8	1.1-7.5	0.04
Meropenem – resistant GNB	7.2	3.2-16.2	<0.001	5.1	1.8-14	0.002

Abbreviation: FQ: fluoroquinolones, CRO: ceftriaxone, FEP: cefepime, PTZ: piperacillin-tazobactam, MER: meropenem, AMG: aminoglycosides, COL: colistin, TIG: tigecycline, MDR-GNB: multidrug-resistant gram-negative bacilli, ESBL: extended-spectrum belatacamases, MBL: metallo-betalactamase, MDR-ABA: multidrug-resistant *A. baumannii*

CONCLUSION

MDR-GNB was the leading cause of bacteraemia in NP admitted to the ICU with septic shock. The presence of meropenem-resistant GNB significantly increased the risk of death. These findings highlight the importance of the identification of patients at risk and their appropriate treatment. Moreover, an antimicrobial stewardship program is crucial to reduce antibiotic resistance.

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