

Bacteremia in Patients with Autologous and Allogeneic Hematopoietic Stem Cell Transplantation:

Clinical Features, Resistance Patterns, and Risk Factors for Mortality

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Disclosures

- Dr. Fabián Herrera:
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Background

- Clinical and microbiologic characteristic of bacteremia in patients with hematopoietic stem cell transplantation (HSCT) may differ according to the type of transplant.
- Our purpose was to describe and compare the clinical features of bacteremia episodes in patients with HSCT, as well as resistance patterns of gram-negative bacteremia (GNB) between autologous and allogeneic HSCT and identify risk factors for 30-day mortality.

Methods

- Prospective, observational, and multicenter study carried out in 12 centers of Argentina from May 2014 to July 2021.
- The first episodes of bacteremia during hospitalization in adult patients with HSCT were included.
- Clinical features, microbiological characteristics, resistance profile in GNB and outcome were compared between autologous or allogeneic HSCT.
- To identify risk factors for 30-day mortality we performed a logistic regression model for multivariate analysis.

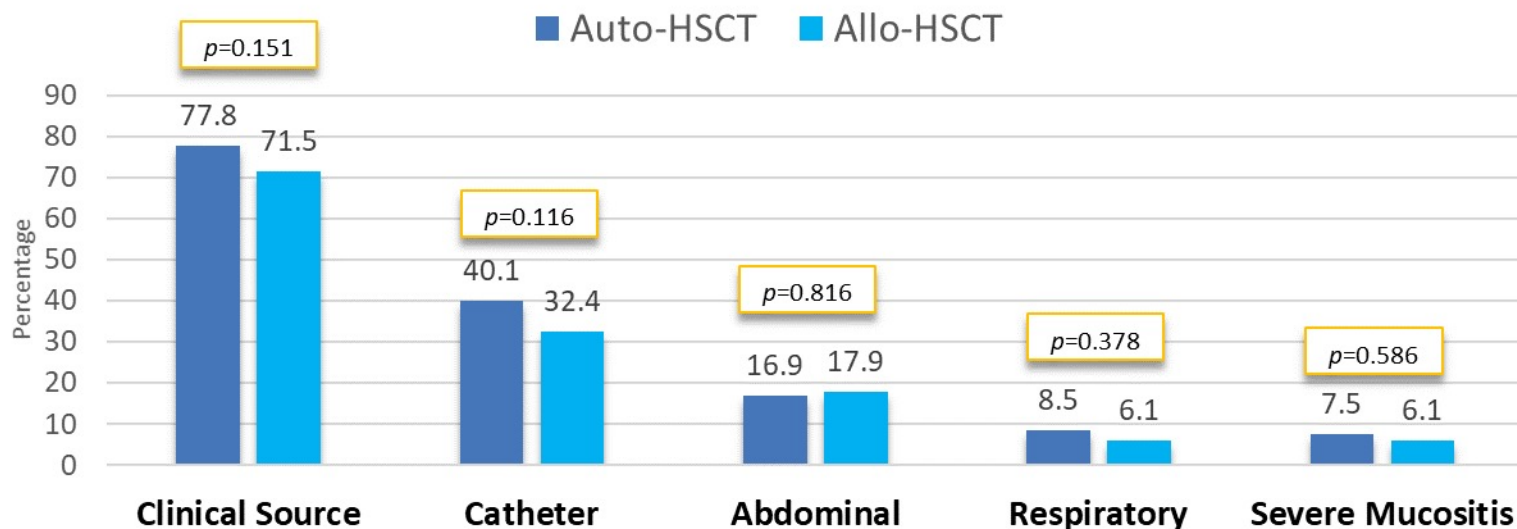
Results: Baseline Characteristics

■ **391 episodes were included: Auto 212 vs. Allo 179**

	Auto-HSCT	Allo-HSCT	<i>p</i>
Age - Median (IQR)	52 (47-63)	41 (31-51)	<0.0001
Charlson Score – Median (IQR)	2 (2-2)	2 (2-2)	0.94
Underlying disease – n (%)			
Acute Leukemia	0	117 (65.4)	<0.0001
Lymphoma	111 (52.3)	24 (13.4)	<0.0001
Multiple Myeloma	98 (46.2)	2 (1.1)	<0.0001
Myelodysplastic syndromes	1 (0.5)	29 (16.2)	<0.0001
Neutropenia - n (%)	182 (85.5)	128 (71.5)	<0.0001
Duration (days) – Median (IQR)	11 (9-14)	18 (12-27)	<0.0001
Status of disease – n (%)			
Complete remission	129 (60.8)	108 (60.3)	0.917
Partial remission	47 (22.2)	13 (7.3)	<0.0001
Relapse	28 (13.2)	38 (21.2)	0.035
Refractory	8 (3.4)	20 (11.2)	0.005

Results: Clinical Features

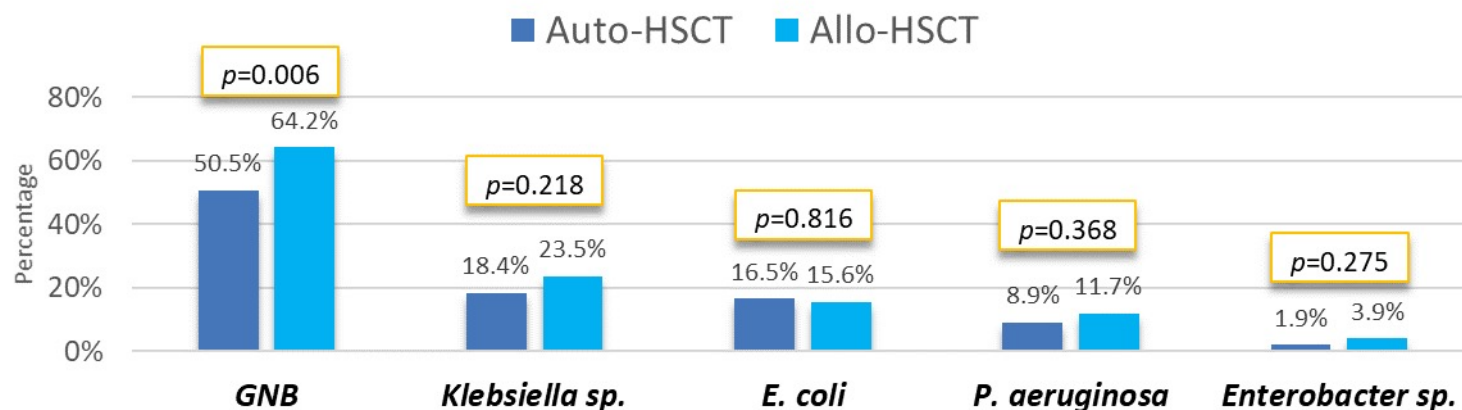
Clinical Source



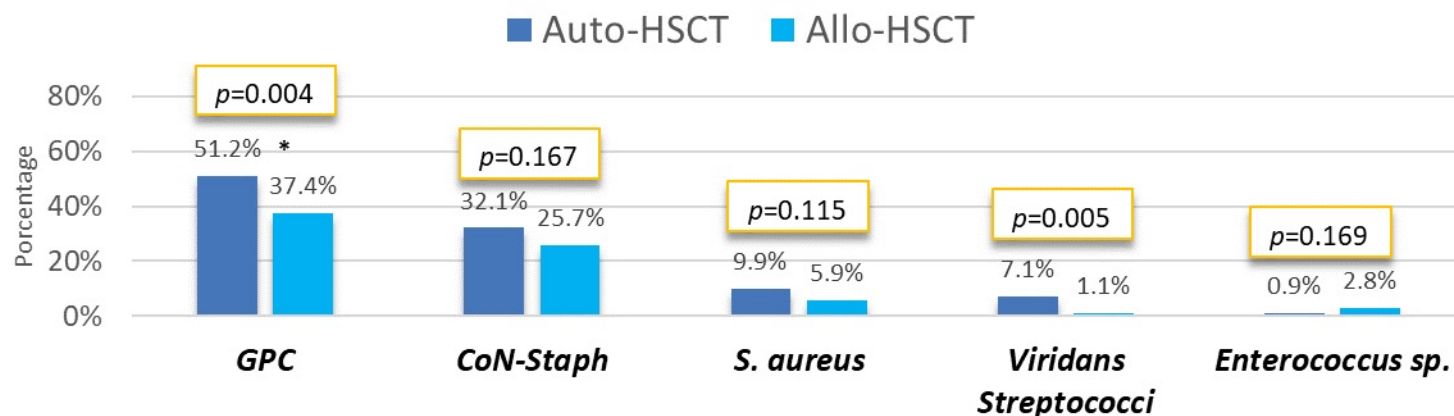
Severity of presentation	Auto-HSCT	Allo-HSCT	<i>p</i>
ICU admission – n (%)	33 (15.6)	41 (22.9)	0.065
Shock – n (%)	30 (14.1)	39 (21.7)	0.048
Pitt Score – Median (IQR)	0 (0-2)	0 (0-2)	0.508
APACHE II Score – Median (IQR)	13 (10-17)	14 (10-16)	0.446

Results: Microbiological Isolates

Gram-Negative Bacilli



Gram-Positive Cocci



* Polymicrobial: Auto-HSCT 5.6% vs. Allo-HSCT 7.2%, p= 0.52

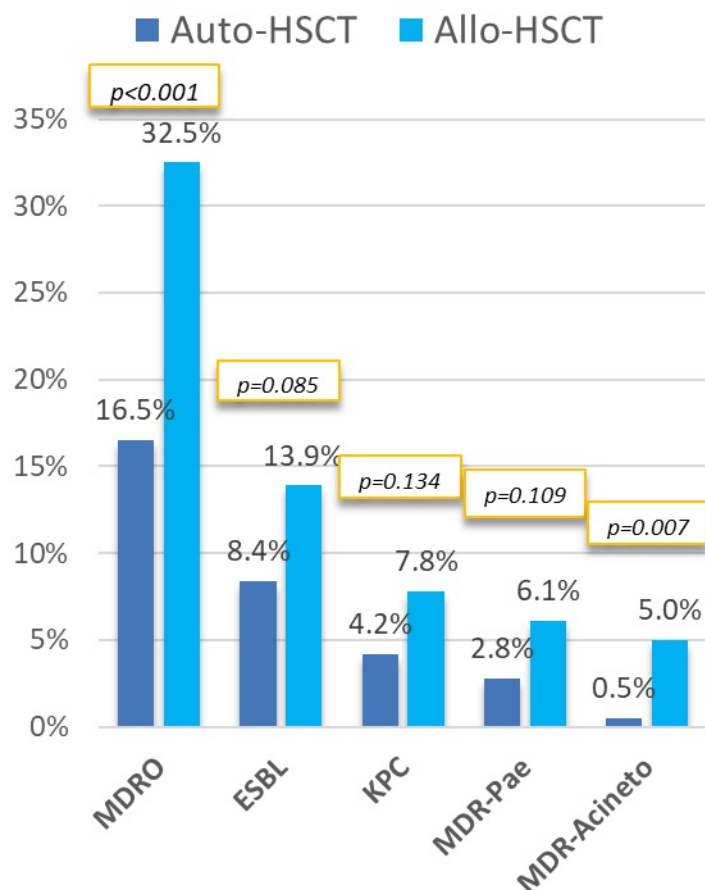
Results: Resistance Profile in GNB

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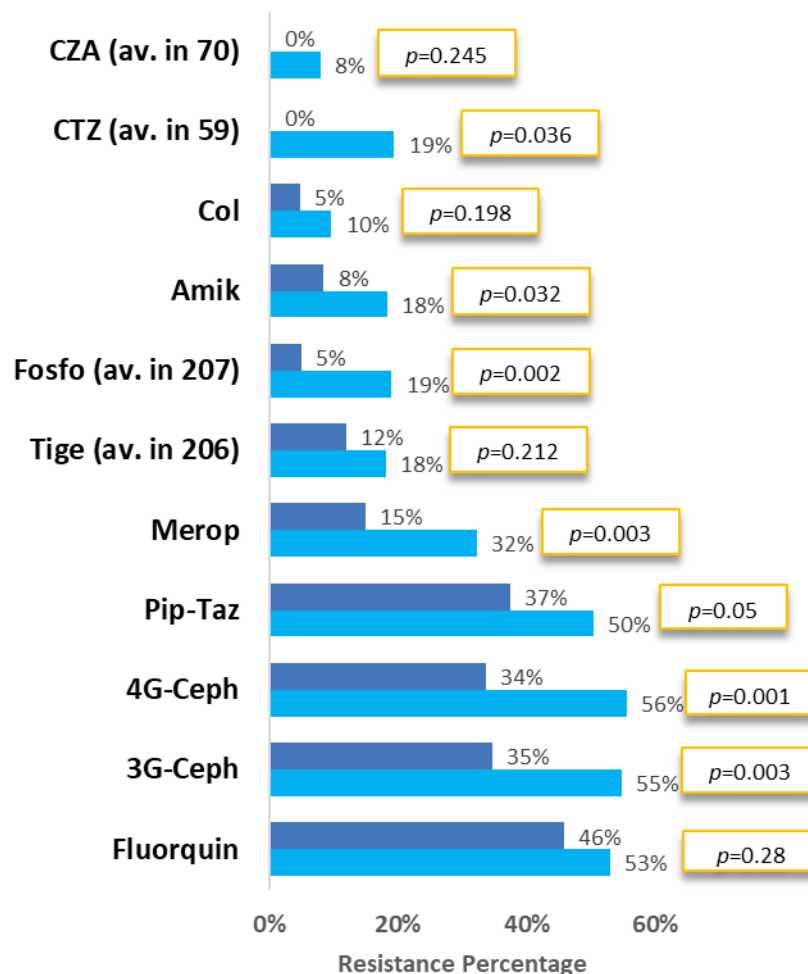
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Main Resistance Mechanisms / Phenotypes



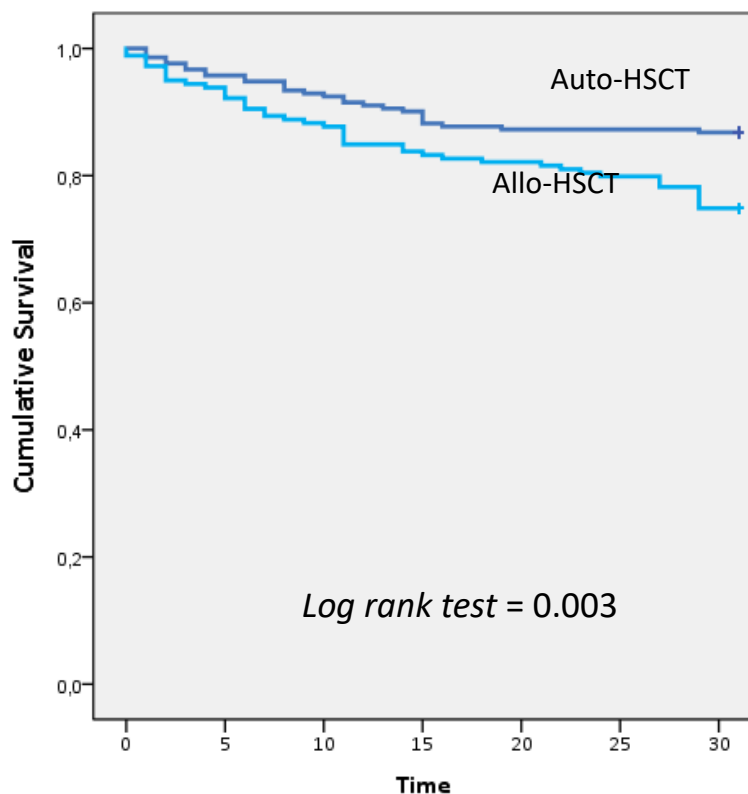
Resistance Profile



Results: 30-day Mortality

■ **Auto-HSCT 13.2% vs. Allo-HSCT 25.1%**

Survival



Risk factors for Mortality

	MV analysis OR (95%CI)	<i>p</i>
Relapse underlying disease	5 (1.4-18)	0.01
Carbapenem resistant GNB	3.4 (1-11)	0.04
Shock	13.6 (1.7-108)	0.001

Conclusion

- Allogeneic-HSCT patients had GNB bacteremia more frequently than autologous-HSCT with higher resistance patterns.
- They also had higher severity and mortality.
- Our results stress the importance of infection control measures and antibiotic stewardship to reduce resistance and mortality in this population.

Thanks!

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