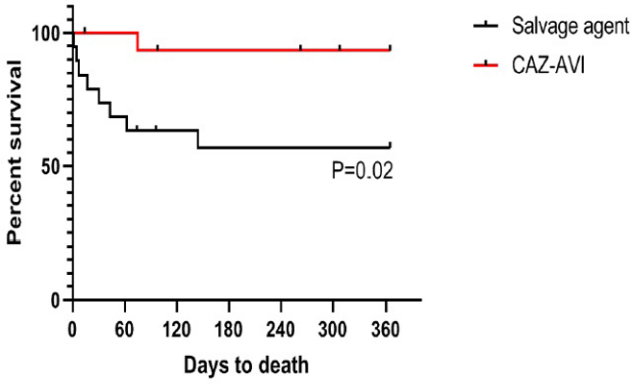

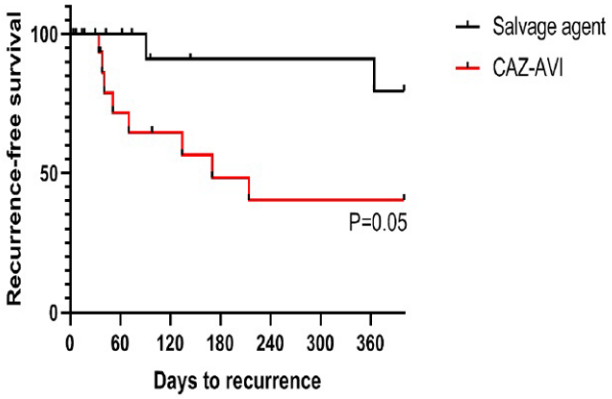

Disclosures. **All authors:** No reported disclosures.

2668. B Lactam and Other Antibiotic Allergies in Patients Undergoing Solid-Organ and Hematopoietic Cell Transplantation

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Background: Patients with reported β-lactam antibiotic allergies (BLA) are more likely to receive broad-spectrum antibiotics and experience adverse outcomes. There are limited data on the burden of β-lactam and other antibiotic allergies among solid-organ transplant (SOT) and hematopoietic cell transplant (HCT) recipients.

Methods: We reviewed records of first-time adult SOT or allogeneic HCT recipients from January 1, 2013 to December 31, 2017 to characterize allergy labels at the time of transplant. Days of hospitalization and inpatient antibiotic use for pre-specified antimicrobials were collected for the first 100 days post-transplant, and incidence rate ratios (IRR) comparing BLA to non-BLA group were calculated using negative binomial models adjusted for transplant type, age, and diagnosis of cystic fibrosis as appropriate. If the adjusted estimates were significantly different for SOT and HCT recipients, separate models were presented.

Results: Among 2153 SOT (65%) and HCT (35%) recipients, 634 (29%) reported any antibiotic allergy and 347 (16%) reported BLAs (Figure 1). Of 634 patients with allergy labels, the most common were penicillins (40%), sulfa (29%), and cephalosporins (17%); 31% reported allergies to ≥2 classes of antibiotics. The most commonly reported reaction to β-lactams was rash (42%), followed by unknown (18%) and hives (17%). In a multivariable model (Table 1), patients with reported BLAs had significantly higher use of vancomycin (IRR 1.35 [95% CI 1.13, 1.60], $P < 0.001$) and significantly lower use of ampicillin-sulbactam (IRR 0.13 [0.05, 0.39], $P < 0.001$) and piperacillin–tazobactam (IRR 0.39 [0.25, 0.62], $P < 0.001$) compared with those without BLAs. For some antibiotics, the effect of BLA varied by SOT/HCT (Table 2). No significant differences in *Clostridioides difficile* infection or inpatient days were noted.

Conclusion: Transplant recipients have a high burden of reported antibiotic allergies, in particular BLAs. A BLA label was significantly associated with altered antibiotic prescribing in the early post-transplant period. Pre-transplant allergy evaluation may be helpful in directing antibiotic use following transplant as part of a comprehensive antibiotic stewardship program.

Figure 1. Prevalence of Electronic Medical Record (EMR)-documented beta lactam allergy (BLA) labels at the time of transplant. Red-shaded portions show the number of patients with BLA labels; percentages of patients with BLA labels in each group are shown atop the bars. Prevalence of BLA varied significantly by transplant type ($p<0.001$).

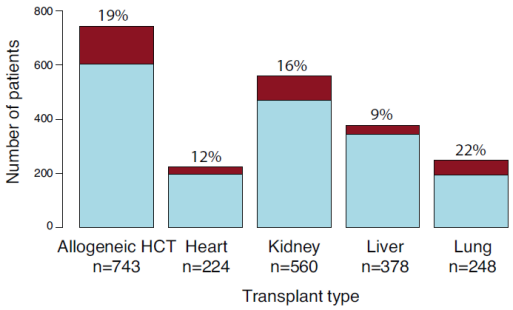

Table 1. Univariable and multivariable models evaluating post-transplant antibiotic use

	BLA: Mean Days of Therapy /1000 inpatient days (range)	Non-BLA: Mean Days of Therapy/ 1000 inpatient days (range)	IRR[a] (95% CI)	p-value	Adjusted IRR[b] (95% CI)	p-value
Ampicillin-sulbactam/Amoxicillin-clavulanate	1.1 (0 – 318.2)	9.3 (0 – 1000)	0.12 (0.04, 0.34)	<0.001	0.13 (0.05, 0.39)	<0.001
Ceftriaxone	33.6 (0 – 916.7)	38.7 (0 – 1000)	0.88 (0.61, 1.29)	0.50	0.83 (0.58, 1.23)	0.36
Vancomycin	162.4 (0 – 1000)	107.5 (0 – 1000)	1.44 (1.20, 1.74)	<0.001	1.35 (1.13, 1.60)	<0.001
Carbapenems	73.7 (0 – 1000)	42.5 (0 – 1000)	1.61 (1.48, 1.74)	<0.001	1.31 (0.90, 1.97)	0.17
Piperacillin-tazobactam	15.5 (0 – 761.9)	30.1 (0 – 1000)	0.53 (0.35, 0.83)	0.007	0.39 (0.25, 0.62)	<0.001
Cefepime	60.0 (0 – 1000)	46.4 (0 – 1000)	1.15 (1.04, 1.25)	0.004	1.25 (0.88, 1.83)	0.22

[a]IRR, Incidence rate ratio comparing BLA to non-BLA group
[b]Adjusted for age, transplant type, and pre-transplant diagnosis of cystic fibrosis

Table 2. Univariable and multivariable SOT/HCT-specific models evaluating selected post-transplant antibiotic use if the effect of reported BLA varied significantly by transplant type.

	BLA Mean DOT/1000 inpatient days (range)	Non-BLA: Mean Days of Therapy/ 1000 inpatient days (range)	IRR[a] (95% CI)	p-value	Adjusted IRR[b] (95% CI)	p-value
SOT recipients[c]						
Fluoroquinolones	100.7 (0 – 928.6)	43.2 (0 – 1000)	2.16 (1.55, 3.09)	<0.001	2.18 (1.56, 3.09)	<0.001
Ceftazidime	2.9 (0 – 291.1)	9.8 (0 – 1000)	0.48 (0.31, 0.69)	<0.001	0.18 (0.03, 1.04)	0.06
Clindamycin	5.5 (0 – 257.1)	0.4 (0 – 307.7)	15.19 (4.96, 53.33)	<0.001	19.31 (5.46, 84.89)	<0.001
HCT recipients[d]						
Aztreonam	27.7 (0 – 500)	3.1 (0 – 352.9)	8.24 (2.76, 31.55)	<0.001	9.71 (3.32, 35.01)	<0.001
Ceftazidime	109.1 (0 – 937.5)	137.3 (0 – 1000)	0.78 (0.54, 1.16)	0.22	0.78 (0.54, 1.16)	0.22
Clindamycin	2.7 (0 – 200)	2.3 (0 – 428.6)	1.07 (0.17, 12.2)	0.95	1.02 (0.96, 1.10)	1.0

[a]IRR, incidence rate ratio comparing BLA to non-BLA group
[b]Adjusted for age in HCT models and adjusted for age, transplant type, and pre-transplant diagnosis of cystic fibrosis in SOT models
[c]There was insufficient aztreonam use in SOT recipients to analyze this as an outcome
[d]Fluoroquinolones are given as routine neutropenic prophylaxis in HCT recipients at our center and not typically given therapeutically, so use was only collected in SOT recipients

Disclosures. **All authors:** No reported disclosures.