Supplementary Appendix 1

Carbapenem-resistant *Klebsiella pneumoniae* antibiogram

Organism	Percent susceptible [a]					
	Ceftazidime-avibactam	Amikacin	Gentamicin	Colistin	Tigecycine	Meropenem
CR-*K. pneumoniae*	96.0% N=50	66.7% N=33	65.7% N=70	100.0% N=44	64.4% N=45	14.5% N=62

a. Clinical and Laboratory Standards Institute (CLSI) 2019 breakpoints used for all antibiotics except colistin for which the EUCAST breakpoint of 2 mg/mL was applied

CR: carbapenem-resistant

Pseudomonas aeruginosa antibiogram

Organism	Percent susceptible[a]						
	Ceftazidime-avibactam	Ceftolozane-tazobactam	Amikacin	Tobramycin	Ceftazidime	Piperacillin-tazobactam	Meropenem

Pseudomonas aeruginosa	92.6% N=27	85.2% N=27	94.0% N=50	78.0% N=50	52.5% N=40	28.0% N=50	22.5% N=49

a. Clinical and Laboratory Standards Institute (CLSI) 2019 breakpoints used for all antibiotics

Supplementary Appendix 2

Univariate analyses for clinical failure

	Clinical success[a] **N=144**	**Clinical failure[a]** **N=59**	**Odds ratio (95% CI)**	**P value**
Age, years			0.989 (0.972, 1.008)	0.251
Age ≥ 65 years	69 (47.9)	21 (35.6)	0.601 (0.321, 1.122)	0.109
Male gender	80 (55.6)	31 (52.5)	0.886 (0.482, 1.626)	0.695
African American	61 (42.4)	32 (54.2)	1.613 (0.877, 2.967)	0.123
BMI			1.025 (0.994, 1.057)	0.118
Obese (BMI ≥ 30 kg/m^2)	51 (35.4)	26 (44.1)	1.437 (0.775, 2.663)	0.249
Estimated CrCl (mL/min)[a]				
CrCl ≤ 30 mL/min	26 (18.1)	14 (23.7)	1.615 (0.552, 4.729)	0.382
CrCl 31-50 mL/min	24 (16.7)	4 (6.8)	0.500 (0.128, 1.950)	0.318
CrCl 51-90 mL/min	36 (25.0)	14 (23.7)	1.167 (0.406, 3.350)	0.775
CrCl 91 – 130 mL/min	21 (14.6)	7 (11.9)	Reference	---
CrCl > 130 mL/min	20 (13.9)	7 (11.9)	1.050 (0.312, 3.533)	0.937

Hemodialysis	17 (11.8)	13 (22.0)	2.294 (0.749, 7.027)	0.146
CrCl ≤ 30 mL/min or hemodialysis	43 (29.9)	27 (45.8)	1.982 (1.062, 3.700)	0.030
Residence prior to admission				
Community	74 (51.4)	27 (45.8)	Reference	---
SNF/LTAC	47 (32.6)	18 (30.5)	1.050 (0.521, 2.113)	0.892
Transferred from outside hospital	16 (11.1)	12 (20.3)	2.056 (0.862, 4.899)	0.104
Other	7 (4.9)	2 (3.4)	0.783 (0.153, 4.005)	0.769
Comorbid conditions				
Diabetes	60 (41.7)	25 (42.4)	1.029 (0.557, 1.901)	0.926
Heart Failure	25 (17.4)	12 (20.3)	1.215 (0.565, 2.616	0.618
Chronic kidney disease	41 (28.5)	24 (40.7)	1.723 (0.915, 3.244)	0.091

Chronic lung disease Malignancy Liver disease	 15 (10.4) 20 (13.9)	 6 (10.2) 7 (11.9)	 0.974 (0.358, 2.645) 0.835 (0.333, 2.094)	 0.958 0.700
Charlson Comorbidity score			1.051 (0.947, 1.168)	0.349
Charlson Comorbidity score > 4	57 (39.6)	28 (47.5)	1.379 (0.749, 2.538)	0.302
Immunocompromised	13 (9.0)	9 (15.3)	1.814 (0.730, 4507)	0.195
MDRO infection or colonization within 1 year	70 (48.6)	27 (45.8)	0.892 (0.486, 1.638)	0.712
Recent antibiotic exposure (≥ 24 h within 90 days)	108 (75.0)	49 (83.1)	1.633 (0.750, 3.555)	0.213
Recent hospitalization (≥ 48 hours within 90 days)	101 (70.1)	50 (84.7)	2.365 (1.069, 5.234)	0.030
Recent surgery (within 30 days)	28 (19.4)	10 (16.9)	0.845 (0.382, 1.873)	0.679
ICU at index culture	62 (43.1)	40 (67.8)	2.784 (1.471, 5.270)	0.001

SOFA score			1.264 (1.155, 1.385)	< 0.001
Hospital-acquired infection	74 (51.4)	43 (72.9)	2.542 (1.313, 4.921)	0.005
Infection Source				
Primary bacteremia	3 (2.1)	7 (11.9)		
Respiratory	44 (30.6)	32 (54.2)		
Intra-abdominal	33 (22.9)	5 (8.5)		
Skin and soft tissue	13 (9.0)	5 (8.5)		
Osteoarticular	12 (8.3)	2 (3.4)		
Urine	34 (23.6)	6 (10.2)		
Prosthetic device	2 (1.4)	0		
Intravenous catheter	2 (1.4)	2 (3.4)		
Other	1 (0.7)	0		
Primary bacteremia or respiratory tract infection	47 (32.6)	39 (66.1)	4.024 (2.118, 7.646)	< 0.001
Positive blood cultures	13 (9.0)	9 (15.3)	1.814 (0.730, 4.507)	0.195
Secondary bacteremia	10 (6.9)	2 (3.4)	0.470 (0.100, 2.214)	0.515

CRE	83 (57.6)	34 (57.6)	1.000 (0.541, 1.845)	0.999
Pseudomonas spp.	44 (30.6)	19 (32.2)	1.080 (0.563, 2.070)	0.818
Polymicrobial infection	34 (23.6)	14 (23.7)	1.007 (0.494, 2.052)	0.986
Treatment information				
Infectious disease consult	140 (97.2)	59 (100.0)	1.421 (1.299, 1.556)	0.325
Time to infectious diseases consult[b]			1.000 (0.999, 1.001)	0.674
Infectious diseases consult ≤ 48 hours after culture collection[b]	96 (68.6)	40 (67.8)	0.965 (0.503, 1.853)	0.915
Surgical consult	42 (29.2)	16 (27.1)	0.904 (0.459, 1.779)	0.769
Source control pursued	44 (30.6)	10 (16.9)	0.464 (0.215, 0.999)	0.046
Active antibiotic(s) before CZA	38 (26.4)	16 (27.1)	1.038 (0.524, 2.005)	0.915

Time to active antibiotic(s) (hours)			1.000 (0.998, 1.002)	0.682
Active antibiotic therapy ≤ 48 hours after culture collection	71 (49.3)	20 (33.9)	0.527 (0.281, 0.990)	0.045
Time to CZA (h)			1.001 (0.999, 1.002)	0.603
CZA within 48 hour	48 (33.3)	11 (18.6)	0.458 (2.18, 0.962)	0.036
CZA within 72 hours CZA within 96 hours CZA within 120 hours	64 (44.4) 83 (57.6) 100 (69.4)	23 (39.0) 29 (49.2) 36 (61.0)	0.799 (0.431, 1.481) 0.710 (0.387, 1.305) 0.689 (0.366, 1.296)	0.475 0.270 0.246
Combination IV antibiotic therapy with CZA	44 (30.6)	24 (40.7)	1.558 (0.831, 2.923)	0.165
Inhaled antibiotic therapy	10 (6.9)	11 (18.6)	3.071 (1.227, 7.687)	0.013
CZA renal dose adjustment	61 (42.4)	31 (52.5)	1.506 (0.820, 2.769)	0.186

a. All values represent number (%) or median (interquartile range)

b. N = 199

BMI: body mass index; CI: confidence interval; CRE: carbapenem-resistant Enterobacteriaceae; CrCl: creatinine clearance; CZA: ceftazidime-avibactam; ICU: intensive care unit; LTAC: long-term acute care hospital; MDRO: multidrug-resistant organism; SOFA: Sequential Organ Failure Assessment; SNF: skilled nursing facility