

Ceftolozane/tazobactam and imipenem/relebactam cross-susceptibility among clinical isolates of *Pseudomonas aeruginosa* from patients with respiratory tract infections in ICU and non-ICU wards – SMART United States 2017-2019

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Supplemental Materials

Supplemental Table S1. Activity of C/T and IMI/REL against pan- β -lactam-nonsusceptible *P. aeruginosa* collected from patients in (a) ICUs and (b) non-ICU wards in 2017-2019

a) ICU

		IMI/REL		Number of isolates
		Susceptible	Nonsusceptible	
C/T	Susceptible	38 (42.2%)	21 (23.3%)	59
	Nonsusceptible	13 (14.4%)	18 (20.0%)	31
Number of isolates		51	39	90

b) Non-ICU

		IMI/REL		Number of isolates
		Susceptible	Nonsusceptible	
C/T	Susceptible	36 (55.4%)	11 (16.9%)	47
	Nonsusceptible	5 (7.7%)	13 (20.0%)	18
Number of isolates		41	24	65

Supplemental Table S2. Activity of C/T and IMI/REL against DTR *P. aeruginosa* collected from patients in (a) ICUs and (b) non-ICU wards in 2017-2019

a) ICU

		IMI/REL		Number of isolates
		Susceptible	Nonsusceptible	
C/T	Susceptible	27 (37.5%)	17 (23.6%)	44
	Nonsusceptible	12 (16.7%)	16 (22.2%)	28
Number of isolates		39	33	72

b) Non-ICU

		IMI/REL		Number of isolates
		Susceptible	Nonsusceptible	
C/T	Susceptible	28 (50.0%)	11 (19.6%)	39
	Nonsusceptible	4 (7.1%)	13 (23.2%)	17
Number of isolates		32	24	56

Table S3. Antimicrobial susceptibility to ceftolozane/tazobactam, imipenem/relebactam, ceftazidime/avibactam, and comparators among all *P. aeruginosa* and isolates with nonsusceptible phenotypes, 2018-2019

Phenotype/ ward type (n)	% Susceptible										
	Ceftolozane/ tazobactam	Imipenem/ relebactam	Ceftazidime/ avibactam	Imipenem	Meropenem	Cefepime	Ceftazidime	Piperacillin/ tazobactam	Aztreonam	Levo- floxacin	Amikacin
All											
ICU (495)	96.0	91.5	93.7	64.4	72.9	78.0	76.6	72.3	68.1	66.7	96.2
Non-ICU (583)	96.7	94.2	96.7	69.0	79.8	83.0	82.9	79.4	72.2	61.9	96.6
Meropenem-NS											
ICU (134)	87.3	68.7	79.9	4.5	0.0	47.0	51.5	38.8	30.6	32.1	89.6
Non-ICU (118)	89.8	72.9	89.0	8.5	0.0	54.2	61.9	46.6	34.8	29.7	90.7
Piperacillin/tazobactam-NS											
ICU (137)	86.9	77.4	78.8	38.7	40.2	26.3	21.9	0.0	8.8	35.8	92.0
Non-ICU (120)	87.5	78.3	86.7	46.7	47.5	35.0	30.0	0.0	17.5	35.8	90.8
Cefepime-NS											
ICU (109)	81.7	73.4	72.5	34.9	34.9	0.0	12.8	7.3	5.5	31.2	87.2
Non-ICU (99)	82.8	77.8	83.8	38.4	45.5	0.0	27.3	21.2	18.2	29.3	84.9
Ceftazidime-NS											
ICU (116)	82.8	79.3	74.1	41.4	44.0	18.1	0.0	7.8	11.2	37.9	88.8
Non-ICU (100)	81.0	86.0	81.0	46.0	55.0	28.0	0.0	16.0	17.0	37.0	89.0
Imipenem-NS											
ICU (176)	91.5	76.1	86.4	0.0	27.3	59.7	61.4	52.3	46.0	41.5	91.5
Non-ICU (181)	92.8	81.8	93.4	0.0	40.3	66.3	70.2	64.6	55.3	44.2	92.3
MDR											
ICU (88)	78.4	67.0	69.3	15.9	15.9	13.6	18.2	8.0	4.5	18.2	83.0
Non-ICU (61)	75.4	68.9	75.4	18.0	23.0	13.1	18.0	11.5	4.9	14.8	80.3
Pan- β -lactam-NS											
ICU (54)	74.1	59.3	59.3	0.0	0.0	0.0	0.0	0.0	0.0	18.5	85.2
Non-ICU (32)	68.8	65.6	68.8	0.0	0.0	0.0	0.0	0.0	0.0	9.4	81.3

Phenotype/ ward type (n)	% Susceptible										
	Ceftolozane/ tazobactam	Imipenem/ relebactam	Ceftazidime/ avibactam	Imipenem	Meropenem	Cefepime	Ceftazidime	Piperacillin/ tazobactam	Aztreonam	Levo- floxacin	Amikacin
DTR											
ICU (43)	67.4	55.8	51.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.4
Non-ICU (28)	64.3	60.7	67.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	78.6
C/T-NS											
ICU (20)	0.0	60.0	35.0	25.0	15.0	0.0	0.0	10.0	5.0	10.0	55.0
Non-ICU (19)	0.0	68.4	42.1	31.6	36.8	10.5	0.0	21.1	10.5	5.3	68.4
IMI/REL-NS											
ICU (42)	81.0	0.0	66.7	0.0	0.0	31.0	42.9	26.2	19.1	16.7	78.6
Non-ICU (34)	82.4	0.0	79.4	2.9	5.9	35.3	58.8	23.5	20.6	11.8	79.4
Ceftazidime/avibactam-R											
ICU (31)	58.1	54.8	0.0	22.6	12.9	3.2	3.2	6.5	3.2	12.9	80.7
Non-ICU (19)	42.1	63.2	0.0	36.8	31.6	15.8	0.0	15.8	5.3	15.8	79.0

NS, nonsusceptible (intermediate or resistant MICs); MDR, multidrug-resistant; DTR, difficult-to-treat resistance; R, resistant.