

Table SI. Antimicrobial susceptibility in the six most common isolates from patients with acute pyelonephritis.

Antimicrobial agent	<i>Escherichia coli</i>	<i>Klebsiella</i>	<i>Enterococcus</i>	<i>Proteus</i>	<i>Enterobacter</i>	<i>Pseudomonas</i>
Amikacin (%)	98.6	100	-	75	83.3	60
Ampicillin (%)	29.1	0	68.8	25	0	-
Ampicillin/sulbactam (%)	36.6	78.9	-	75	33.3	-
Cefepime (%)	72.8	87	-	62.5	83.3	60
Ceftazidime (%)	73	87	-	62.5	66.7	60
Ciprofloxacin (%)	70.7	87	46.7	37.5	83.3	60
Piperacillin/tazobactam (%)	96.0	95.7	-	100	83.3	50
Meropenem (%)	96.3		-	100	100	50
Vancomycin (%)			100			

ESBL, extended-spectrum β -lactamase.

Table SII. Univariate analysis for risk factors associated with the presence of ESBL-producing bacteria as a cause of acute pyelonephritis.

Variable	U-ESBL			UB-ESBL		
	Positive (n=144)	Negative (n=367)	OR (95% CI)	Positive (n=163)	Negative (n=378)	OR (95% CI)
Age >65 years, no. (%)	87 (60)	177 (48)	1.638 (1.107-2.424) ^a	100 (61)	185 (49)	1.656 (1.139-2.408) ^b
Sex, male, no. (%)	20 (18)	17 (5)	3.321 (1.685-6.543) ^b	25 (15)	18 (5)	3.623 (1.917-6.850) ^c
Residence, rural area, no. (%)	26 (4)	36 (10)	2.026 (1.173-3.499) ^a	30 (18)	41 (11)	1.854 (1.111-3.093) ^a
Residence, nursing home, no. (%)	23 (16)	19 (5)	3.482 (1.832-6.615) ^c	30 (18)	19 (5)	4.262 (2.320-7.829) ^c
Urolithiasis, no. (%)	4 (3)	7 (2)	0.681 (0.196-2.361)	4 (2)	7 (2)	1.333 (0.385-4.619)
Foley catheter, no. (%)	9 (6)	3 (1)	8.089 (2.158-30.325) ^b	12 (7)	4 (1)	7.430 (2.359-23.403) ^c
Neurogenic bladder, no. (%)	4 (3)	12 (3)	1.183 (0.375-3.730)	6 (4)	11 (3)	1.275 (0.463-3.508)
CHF, no. (%)	5 (3)	11 (3)	0.859 (0.293-2.517)	8 (5)	13 (3)	1.449 (0.589-3.566)
CVA, no. (%)	22 (15)	21 (6)	2.971 (1.578-5.593) ^b	26 (16)	22 (6)	3.071 (1.684-5.601) ^c
Dementia, no. (%)	25 (17)	20 (5)	3.645 (1.953-6.801) ^c	28 (17)	22 (6)	3.356 (1.856-6.070) ^c
COPD, no. (%)	2 (1)	3 (1)	1.709 (0.283-10.335)	3 (2)	4 (1)	1.753 (0.388-7.923)
Rheumatic disease, no. (%)	1 (1)	17 (5)	0.114 (0.019-1.092)	4 (2)	17 (5)	0.534 (0.177-1.613)
Diabetes, no. (%)	49 (34)	104 (28)	1.304 (0.863-1.971)	56 (34)	109 (29)	1.292 (0.872-1.912)
Malignancy, no. (%)	9 (6)	18 (5)	1.293 (0.567-2.948)	10 (6)	19 (5)	1.235 (0.561-2.718)
Liver disease, no. (%)	3 (2)	15 (4)	0.499 (0.142-1.751)	3 (2)	16 (4)	0.424 (0.122-1.476)
Previous antibiotics exposure, no. (%)	13 (9)	17 (5)	2.045 (0.966-4.323)	19 (12)	18 (5)	2.639 (1.346-5.173) ^b

^aP<0.05, ^bP<0.01 and ^cP<0.001. ESBL, extended-spectrum β -lactamase; APN, acute pyelonephritis; CHF, congestive heart failure; CVA, cerebrovascular accident; COPD, chronic obstructive pulmonary disorder; U, urine; UB, either urine or blood; OR, odds ratio; CI, confidence interval.

Table SIII. Treatments and outcomes in acute pyelonephritis patients according to the presence of ESBL-producing bacteria in the urine.

Variable	U-ESBL			
	Positive (n=144)	Negative (n=367)	OR (95% CI)	P-value
Hospital stay (days), mean (SD)	14.17 (9.789)	7.87 (3.481)		0.001
ICU stay (days), mean (SD)	0.76 (2.275)	0.29 (0.974)		0.016
Septic shock, no. (%)	11 (7.6)	20 (5.4)	1.435 (0.669-3.076)	0.352
CRRT, no. (%)	4 (2.8)	1 (0.3)	1.688 (1.138-2.504)	0.009
Days of antibiotic therapy, mean (SD)	14.94 (9.223)	14.43 (5.191)		0.490
Days of IV antibiotic use, mean (SD)	13.26 (7.982)	7.09 (2.613)		0.001
Recurrence, no. (%)	2 (1.4)	2 (0.5)	1.246 (0.800-1.941)	0.331
Mortality, no. (%)	3 (2)	1 (0.3)	1.603 (1.031-2.493)	0.037

ESBL, extended spectrum β -lactamase; ICU, intensive care unit; no, number; CRRT, continuous renal replacement therapy; IV, intravenous; U, urine; OR, odds ratio; CI, confidence interval.

Table SIV. Multivariable analysis for prognostic factors associated with clinical failure in patients with acute pyelonephritis.

Variable	Unweighted		Weighted	
	HR (95% CI)	P-value	HR (95% CI)	P-value
Urine ESBL	2.710 (0.8514-8.625)	0.915	2.689 (0.8297-8.712)	0.0992
Age, >65 years	1.132 (0.3184-4.022)	0.8484	1.281 (0.2534-6.472)	0.7648
Sex, male	1.836 (0.4695-7.180)	0.3825	1.390 (0.3714-5.201)	0.6249
Cardiac disease ^a	1.402 (0.1731-11.353)	0.7516	2.017 (0.2650-15.356)	0.4981
Cerebral disease ^b	1.671 (0.4280-6.526)	0.4599	1.946 (0.4780-7.921)	0.3527
Septic shock	3.735 (0.9890-14.107)	0.0519	4.134 (1.0921-15.649)	0.0367

^aPatients with cardiac disease included those diagnosed with congestive heart failure or ischemic heart disease. ^bCerebral disease patients included cases of dementia, cerebrovascular accident or hemiplegia due to brain damage. ESBL, extended-spectrum β -lactamase; HR, hazard ratio; CI, confidence interval.