P0507 - Predictors of *Pseudomonas aeruginosa* in the elderly with community-onset bloodstream infections.

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Objectives

The objective of this study was to determine the factors predicting the presence of *Pseudomonas aeruginosa* in elderly patients with community-onset bloodstream infections (Co-BSI)

Methods

Analysis of a series of consecutive episodes of Co-BSI diagnosed at a tertiary hospital in patients 65 years of age or older prospectively collected from 2005 to 2011.

Co-BSI was defined as community-acquired (CA-BSI) or health-care associated BSI (HCA-BSI). HCA-BSI was defined as a positive blood culture obtained from a patient during the first two days of hospital admission, who meets at least one of the following criteria: (1) residence in a nursing home or long-term care facility, (2) a recent (< 30 days) history of haemodialysis or any kind of intravenous treatment, or (3) ≥2-day-long admission in an acute care hospital in the previous 30 days. CA-BSI was defined as a positive blood culture obtained ≤2 days from admission without meeting any of the above criteria.

Predictors of *P. aeruginosa* were determined by a stepwise forward logistic regression on the variables significant at a p≤ 0.05 in the univariate analysis.

Results

During the study period 2605 episodes of Co-BSI were identified, of which 1788 (68.6%) were due to Gram-negative bacilli, and 139 (5.3%) to *Pseudomonas aeruginosa*. The mean (SD) age of the study population was 78.1 (7.7) years and 52.9% of them were men. Health care-associated BSI added up to 35.7% of the cases. Almost all (92.8%) patients had some sort of comorbidity. The most frequent infection sites were urinary tract (35.2%), unknown focus (14.9%) and biliary tract (13.6%). Inappropriate empirical antibiotic treatment was twice as frequent in cases caused by *P. aeruginosa* (44/139, 31.7%) than in the rest of the episodes (360/2466, 14.6%, p<0.001). Thirty-day mortality was significantly higher in cases due to *P. aeruginosa* (17.3% vs 11.1%, p=0.027), although after adjusting for potential confounders *P. aeruginosa* was not an independent predictor of mortality. **Table 1** resumes the results of the univariate and multivariate analyses of predictors of *P. aeruginosa*.

Conclusions

In the elderly the most important risk factors for *P. aeruginosa* Co-BSI are related to recent use of antibiotics, immunosupression due to organ transplantation, haematological malignancy and corticoesteroid treatment, and factors related to exposure to the acute health care setting. Taking into account these factors may be useful to identify the patients in whom antipseudomonal therapy should be considered.

Table 1

Variables introduced in the multivariate analysis are marked in color.

	P. aeruginosa (N=139) n (%)	Other isolates (N= 2466) n (%)	Univariate analysis p	Univariate analysis OR (95% CI)	Multivariate analysis OR (95% CI)
Age					
65-74 years	69 (49.6)	852 (34.5)	Ref	Ref	Ref
75-84 years	60 (43.2)	1049 (42.5)	0.057	0.71 (0.49-1.01)	-
85+ years	10 (7.2)	565 (22.9)	<0.001	0.22 (0.11-0.43)	-
Male gender	97 (69.8)	1281 (51.9)	<0.001	2.14 (1.47-3.10)	1.98 (1.34-2.93)
Ultimately or rapidly fatal underlying disease (McCabe)	83 (59.7)	1531 (37.9)	<0.001	2.43 (1.71-3.44)	1.51 (1.01-2.27)
Previous hospital admisión	57 (41.0)	439 (17.8)	<0.001	3.21 (2.25-4.57)	1.78 (1.16-2.74)
Healthcare associated BSI	108 (77.7)	821 (33.3)	<0.001	6.98 (4.64-10.50)	
Comorbidity	136 (97.8)	2282 (92.5)	0.018	3.65 (1.15-11.63)	-
Diabetes Mellitus	40 (28.8)	632 (25.8)	0.441	1.16 (0.80-1.69)	
Alcohol abuse	1 (0.7)	34 (1.4)	1.000	0.52 (0.92-1.03)	
Liver cirrhosis	3 (2.2)	175 (7.1)	0.025	0.29 (0.09-0.92)	-
Chronic lung disease	19 (13.7)	290 (11.8)	0.498	1.19 (0.72-1.96)	
Heart disease	19 (13.7)	506 (20.5)	0.050	0.61 (0.37-1.01)	
Chronic renal insufficiency	27 (19.4)	279 (11.3)	0.004	1.89 (1.22-2.93)	-
Hemodyalisis	24 (17.3)	133 (5.4)	<0.001	3.66 (2.28-5.88)	4.53 (2.72-7.57)
Uropathology	3 (2.2)	148 (6.0)	0.059	0.35 (0.11-1.10)	-
Neurologic impairment	7 (5.0)	286 (11.6)	0.017	0.40 (0.19-0.87)	-
HIV infection	3 (2.2)	30 (1.2)	0.257	1.79 (0.54-5.94)	
Hematological malignancy	40 (28.8)	224 (9.1)	<0.001	4.04 (2.73-5.99)	1.97 (1.13-3.42)
Hematopoietic stem-cell transplantation	2 (1.4)	7 (0.3)	0.024	5.13 (1.06-24.92)	-
Solid organ cancer	35 (25.2)	490 (19.9)	0.129	1.36 (0.91-2.02)	
Solid organ transplantation	10 (7.2)	52 (2.1)	<0.001	3.60 (1.79-7.24)	2.87 (1.26-6.54)
Neutropenia	26 (18.7)	86 (3.5)	<0.001	6.37 (3.95-10.27)	3.68 (2.00-6.79)
Clinical findings on the day of bacteremia					
Absence of fever	8 (5.8)	159 (6.4)	0.746	0.89 (0.43-1.84)	
Shock	20 (14.4)	310 (12.6)	0.531	1.17 (0.72-1.91)	
Acute renal failure	6 (4.3)	86 (3.5)	0.633	0.25 (0.54-2.91)	
Extrinsic risk factors					
Corticoid treatment	35 (25.2)	218 (8.8)	<0.001	3.47 (2.31-5.22)	1.73 (1.05-2.88)
Previous antibiotic therapy (last month)	50 (36.0)	393 (15.9)	<0.001	2.97 (2.06-4.26)	1.92 (1.23-3.00)
Beta-lactams	37 (26.6)	273 (11.1)	<0.001	2.91 (1.96-4.33)	-
Quinolones	21 (15.1)	138 (5.6)	<0.001	3.00 (1.83-4.93)	-
Glycopeptides	9 (6.5)	23 (0.9)	<0.001	7.35 (3.34-16.21)	-
Aminoglycosides	9 (6.5)	16 (0.6)	<0.001	10.6 (4.6-24.45)	
Previous surgery (last month)	8 (5.8)	80 (3.2)	0.139	1.82 (0.86-3.85)	
Indwelling urinary catheter	14 (10.1)	242 (9.8)	0.921	1.03 (0.58-1.82)	
Endovascular catheterization	42 (30.2)	295 (12.0)	<0.001	3.19 (2.18-4.67)	-
Infection site					
Urinary tract	30 (21.6)	887 (36.0)	Ref	Ref	Ref
Respiratory	23 (16.5)	237 (9.6)	<0.001	2.87 (1.64-5.03)	-
Abdominal	5 (3.6)	123 (5.0)	0.709	1.20 (0.46-3.16)	-
Biliary tract	11 (7.9)	344 (13.9)	0.876	0.95 (0.47-1.91)	-
Unknown	25 (18.0)	364 (14.8)	0.011	2.03 (1.18-3.50)	-
Catheter	27 (19.4)	149 (6.0)	<0.001	5.36 (3.01-9.27)	-
Others	18 (12.9)	362 (14.7)	0.206	1.47 (0.81-2.67)	-

References

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