

Risk factors and 30-day mortality of septic shock due to complicated urinary tract infection.

A multicenter study

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on behalf of RESCUING study group and Study Sites

Introduction

Complicated urinary tract infections (cUTI) are one of the most frequent infections, and are associated with significant health costs and antimicrobial resistance.

Objective

To analyse risk factors and 30-day mortality of patients with cUTI presenting with severe sepsis or septic shock. We also aimed to evaluate the most frequent microbiology of patients presenting with SS-SS.

Methods

Multicentre, observational study at 20 hospitals in 7 South European countries and Israel. Data was retrospectively collected from patients with cUTI hospitalised between January 2013 and December 2014. Two multivariate regression analysis were performed to seek for:

- **Clinical factors associated with severe sepsis or septic shock (SS-SS) presentation**
- **Risk factors for 30-day mortality in patients presenting with SS-SS.**

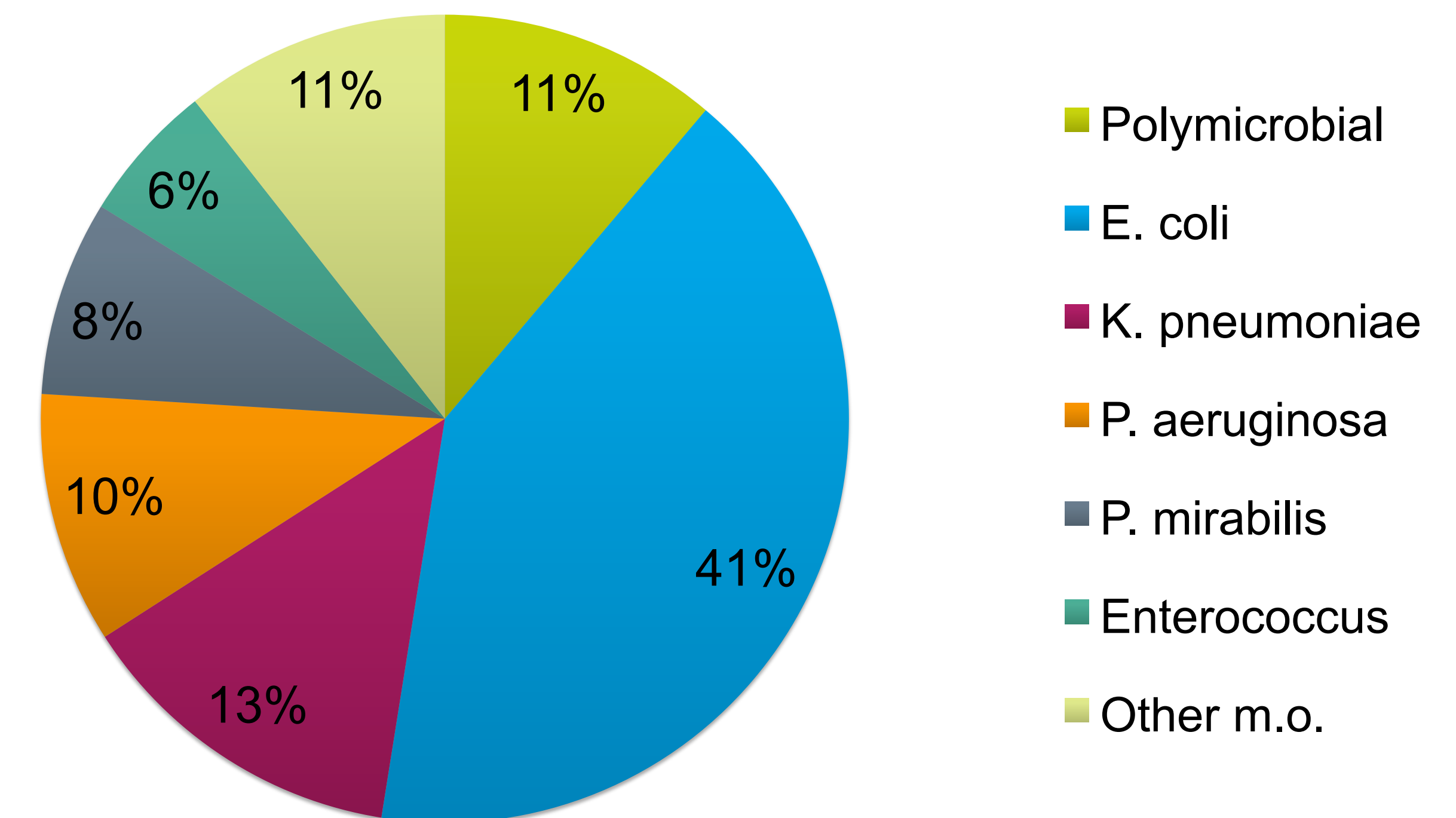
Results

Of 785 patients, 141 (17.9%) had SS-SS, 32.6% being urinary catheter-associated.

Baseline characteristics of patients with and without SS-SS

Characteristics	SS-SS (n= 141)	No SS-SS (n= 643)	P-value
Male gender, n (%)	65 (46.1)	292 (45.4)	0.88
Age, media (SD), years	69.9 (15.4)	65.5 (18.5)	0.01
Diabetes mellitus, n (%)	36 (25.5)	154 (24.1)	0.7
Haematological malignancy, n (%)	6 (4.3)	8 (1.2)	0.01
Solid tumour, n (%)	22 (15.6)	70 (10.9)	0.1
Chronic liver disease, n (%)	12 (8.5)	29 (4.5)	0.05
Immunosuppressive therapy, n (%)	11 (7.8)	63 (9.8)	0.46
Charlson score, media (SD)	3.4 (2.8)	2.3 (2.3)	<0.001
Dependent functional capacity, n (%)	76 (53.9)	286 (44.6)	0.04
Chronic renal impairment, n (%)	53 (37.6)	142 (22.3)	<0.001
Obstructive uropathy, n (%)	32 (22.7)	93 (14.5)	0.01
Healthcare-related acquisition, n (%)	57 (40.4)	285 (44.3)	0.4
Multidrug-resistant GNB, n (%)	33 (23.4)	161 (25)	0.7
30-day mortality, n (%)	37 (26.2)	32 (5)	<0.001

Aetiology of cUTI presenting with SS-SS



Multivariate analysis of risk factors for SS-SS presentation

Risk factors	SS-SS Yes / No	OR	95%CI
Haematological malignancy, %	4.3 / 1.2	3.31	1.08 - 10.15
Charlson score, media	3.41 / 2.35	1.16	1.08 - 1.25
Obstructive uropathy, %	22.7 / 14.5	1.88	1.17 - 3.01
Bacteraemia, %	34 / 16	2.9	1.9 - 4.41

Multivariate analysis of risk factors for 30-day mortality in patients with SS-SS

Risk factors	30-d mortality Yes / No	OR	95%CI
Age, media	76.5 / 67.5	1.04	1.00 – 1.08
Haematological malignancy, %	10.8 / 1.9	13.18	1.58-109.9
Admission for a different reason than UTI, %	59.5 / 22.1	4.32	1.81 – 10.27
Dependent functional capacity, %	83.8 / 43.3	3.9	1.38 – 11.05
Infection source control, % *	5.4 / 10.6	0.92	0.69 - 1.23
Adequate empiric ATB, % *	64.9 / 66.3	0.98	0.79 – 1.21

* Not included in multivariate as they were not significantly associated in univariate

Conclusions

Almost 18% of patients with cUTI presented with SS-SS. Significantly, no particular microbiology, including MDR-GNB, was associated with SS-SS. Mortality of patients with SS-SS was high, more related to the basal condition of patients than to an adequate antibiotic management and source control.

