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Abstract (oral session)

The presence of the *fyuA* and P fimbria genes are related with mortality in *Escherichia coli* bloodstream infections

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Objectives: There are limited data about the impact of virulence factors (VF) on outcome of blood stream infections (BSI) caused by *E. coli*. Our aim was to study the characteristics of *E. coli* causing BSI and factors associated with mortality. **Methods:** Single-hospital prospective observational study of adult patients with *E. coli* BSI. Demographic data, comorbidities, clinical onset, source and origin of infection, and outcome were collected. VF genes (*papC*, *papGI*, *papGII*, *papGIII*, *fimH*, *sfaD/E*, *afaB/C*, *iha*, *cnf1*, *cdtB*, *sat*, *hlyA*, *iucD*, *iroN*, *iutA*, *ireA*, *fyuA*; *kpsMT II*, *traT*, *cvaC*, *ompT*, *ibeA*, *maIX*, *svg* and *usp*) and antibiotic resistance betalactamase genes (TEM and CTX-M) were studied in all isolates by PCR amplification. Phylogenetic groups were identified by multiplex PCR. We evaluated by logistic regression the impact of VF on the outcome of BSI. **Results:** 120 consecutive *E. coli* BSI episodes were included (May 2010-May 2011). Total 30-day mortality was 27.7% (33 patients). BSI and death were considered: Related in 7 patients (21.1%), not related in 21 (63.6%), and possibly/probably related in 5 (15.2%). Main characteristics according to outcome are shown in the table. Multivariate analysis for mortality showed that active chemotherapy (OR 17.87, 95%IC 3.35-95.45), McCabe-Jackson Index (OR for rapidly-fatal category 120.15, 95%IC 4.19-3446.23), Pitt index (OR 1.78, 95%IC 1.25-2.56) and presence of *fyuA* gene (OR 8.05, 95%IC 1.37-47.12) predicted death while the presence of P fimbriae genes had a protective role (OR 0.094, 95%IC 0.018-0.494). No other independent factors were found to be related. **Conclusion:** This study provides new evidence in the interaction of bacterial VF, *fyuA* and P fimbria genes, and host determinants in the mortality of *E. coli* BSI.

	Survivors n=87	Non-survivors n=33	p value
Sex, male	38 (43.7)	22 (66.6)	0.025
Age, mean (range)	71.78 (20-98)	68.03 (33-96)	-
Charlson Index, mean (range)	2.62 (0-9)	4.06 (1-9)	0.001
Diabetes mellitus	16 (18.4)	8 (24.2)	-
Cancer	30 (34.5)	18 (54.5)	0.060
Any Immunosuppression	19 (21.8)	15 (45.5)	0.013
Chemotherapy	9 (10.3)	11 (33.3)	0.005
Admission Service: Medical /Surgical/ICU	56 (64.3) / 22 (26.2) / 8 (9.5)	23 (69.7) / 4 (12.1) / 6 (18.2)	-
Mc Cabe Jackson Index: Non-fatal / Ultimately-fatal / Rapidly-fatal	42 (48.8) / 35 (40.7) / 9 (10.5)	5 (15.2) / 18 (54.5) / 10 (30.3)	0.001
Pitt Index, mean (SD)	0.84 (1.13)	1.9 (2.44)	0.02
BSI origin: Nosocomial / Community / HCA	35 (40.2) / 44 (50.6) / 8 (9.25)	18 (54.4) / 9 (27.3) / 6 (18.2)	-
BSI Source: Urinary/Abdominal/Other	33 (37.9) / 42 (48.3) / 12 (13.8)	7 (21.2) / 15 (45.5) / 11 (33.3)	0.033
Hours from BSI to treatment	8.09 (15.06)	12.51 (15.03)	-
Adequate treatment *	81 (100)	30 (100)	-
Phylogenetic group A/B1/B2/D (%)	29.9 / 11.5 / 42.5 / 16	30.3 / 9.1 / 39.4 / 21.2	-
ESBL production	0	6 (18.2)	<0.0001
Mean virulence score (range)	9 (1-17)	8.94 (3-18)	-

Data are displayed as number (%) unless another thing had been noted. * % of those treated patients.