O317
2-hour Oral Session
Updates in bloodstream infection epidemiology and management

Previous scores for extended-spectrum beta-lactamase-producing Enterobacteriaceae in community-onset bloodstream infections show low predictive ability

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Background: Predicting ESBL-producing *Enterobacteriaceae* (ESBL-E) in community-onset bacteraemic infections is important to avoid both late appropriate therapy and overuse of broad spectrum antibiotics. Two predictive scores for the isolation of ESBL-E producers in any sample at hospital admission were previously developed in Italy and USA. The aim of this study is to validate these scores in a prospective cohort of patients with community-onset bacteremia (COB) due to *Enterobacteriaceae* (EB).

Methods: A prospective multicentre (13 Spanish hospitals) cohort of patients with community-onset BSI due to *Enterobacteriaceae* (*E. coli*, *Klebsiella* spp., *Proteus* spp.) who received initial monotherapy was performed. Demographic, epidemiological and clinical data were collected. The variables included in the scores were: recent beta-lactams and/or fluoroquinolones, previous hospitalization, transfer from another healthcare facility (both scores); Charlson score ≥4, recent urinary catheterization, and age ≥70 years (only Italian model); and immunosuppression (only USA model. ESBLs were characterized by double disk test when phenotype showed decreased susceptibility to 3rd generation cephalosporins. Values for sensitivity (Se), specificity (Sp), positive predictive value (PPV) and negative predictive value (NPV) for two different cut-offs for both scores were determined. The overall predictive abilities were assessed by the area under the ROC (AUROC).

Results: We included 735 episodes (595 due to *E. coli*); 47 (6.3%) were ESBL-producers. Median age was 74 (range, 18-97). The most common source was the urinary tract (57.9%). The number of patients, Se, Sp, PPV and NPV for 2 cut-off values for both scores are shown in the Table 1. The AUROC for both models were 0.56 and 0.58, respectively, showing very low predictive ability.

Conclusions: Both scores developed for any clinical samples were not predictive in patients with community-onset bacteraemia due to Enterobacteriaceae. Due to their low predictive abilty, these scores are not useful to identify the patients who should received empirical therapy with carbapenems. New predictive scores are needed to inform clinical decisions.

Table 1. Sensitivity (Se), Specificity (Sp), positive predictive value (PPV) and negative predictive value (PPV) for Italian and USA scores.

Score	Cut-off	ESBL-E cases (%)	Non-ESBL-E cases (%)	Se	Sp	PPV	NPV
Italy	≥3	39 (52.7)	299 (45.2)	47.3	32.7	7.3	84.7
	≥9	6 (8.1)	28 (4.2)	8.1	95.8	17.6	90.3
USA	≥3	36 (48.6)	251 (38)	48.6	62	12.5	91.5
	≥11	2 (2.7)	6 (0.9)	10.3	95.6	21.6	90