

## More and more third generation cephalosporin-resistant enteric bacteria everywhere?

## Antimicrobial susceptibility profiles of key intra-abdominal (IAI) bacterial isolates from western Europe

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**Objectives:** The evolution of resistance in gram-negative bacilli commonly found in intra-abdominal infections (IAI) requires careful monitoring. Surveillance studies are key in assessing both resistance rates and trends in resistance for antimicrobials commonly used to treat IAs. *Enterobacteriaceae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii* are common causes of serious infections, particularly among hospitalized patients, and are increasingly difficult to treat, due in part to increased dissemination of extended-spectrum  $\beta$ -lactamases (ESBLs). In this analysis, data from the Tigecycline European Surveillance Trial (TEST) were used to evaluate the *in vitro* activity of several key drugs against recent intra-abdominal isolates from western European countries.

**Methods:** A total of 2,138 IAI isolates collected from 19 western European countries during 2012-2014 were identified and tested locally by broth microdilution. Susceptibility testing was performed following CLSI guidelines and interpreted using EUCAST clinical breakpoints.

**Results:** The ESBL rates for 653 *E. coli* and 324 *Klebsiella pneumoniae* were 14.9% and 21.2%, respectively. The activities of the various drugs according to organism group are provided in the table below.

Drug	<i>Enterobacteriaceae</i> (1869) ESBL+* (164)			<i>P. aeruginosa</i> (177)			<i>A. baumannii</i> (92)					
	%S	MIC <sub>50</sub>	MIC <sub>90</sub>	%S	MIC <sub>50</sub>	MIC <sub>90</sub>	%S	MIC <sub>50</sub>	MIC <sub>90</sub>			
Tigecycline	94	0.25	1	90	0.25	2	na	8	> 8	na	0.5	1
Amikacin	96	2	4	95	4	8	90	4	8	47	16	> 64
Cefepime	80	≤ 0.5	16	7	32	> 32	84	4	16	na	32	> 32
Ceftazidime	67	≤ 1	> 16	12	16	> 16	82	2	> 16	na	> 16	> 16
Levofloxacin	80	0.06	8	34	8	> 8	66	0.5	> 8	30	8	> 8
Meropenem	97	≤ 0.06	0.25	96	≤ 0.06	0.25	69	1	16	40	> 16	> 16
Pip-Tazo	79	2	64	62	4	> 128	84	4	128	na	> 128	> 128

\**E. coli* (97), *K. pneumoniae* (64), *K. oxytoca* (3)

na: no EUCAST breakpoints available

**Conclusions:** Tigecycline, amikacin, and meropenem were the most active agents against *Enterobacteriaceae* from IAI, with % susceptible ≥ 94%, including ESBL-producers. Amikacin was the most active agent against *P. aeruginosa* with > 90% susceptible. Tigecycline had the lowest MIC<sub>90</sub> against *A. baumannii* at 1 mg/L, while the other agents tested showed very little activity. Decreasing antimicrobial susceptibilities and the increasing prevalence of ESBLs in western European countries substantiate the need for continued monitoring of resistance trends among these clinically important organism groups.