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Poster Session IV

Resistance surveillance in Gram-negatives

DIFFERENCES AMONG BACTERIAL RESISTANT OBSERVED AMONG PATHOGENS COLLECTED FROM THE TEST PROGRAM (2004-2012) FOR INDIVIDUAL COUNTRIES AND REGIONS IN EASTERN AND WESTERN EUROPE.

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Background: The rate of infections caused by multi-drug resistant (MDR) pathogens is increasing worldwide and is confirmed by global surveillance programs for these isolates. The Tigecycline European Surveillance Trial (TEST) has been monitoring tigecycline and comparators activity against multiple pathogens including the resistant pathogens collected globally and in the European countries since 2004. **Methods:** 86,869 key Gram-positive and Gram-negative isolates were collected in 12 Eastern European and 16 Western European countries from multiple infection sources (2004-2012). MIC values were determined by each participating laboratory using commercially-prepared broth microdilution panels. Results were interpreted according to EUCAST clinical breakpoints criteria.

Results: The rate for methicillin-resistant *S. aureus* (MRSA) was 29% for Eastern Europe and 27.4% for Western European countries. *Acinetobacter* spp. multidrug-resistant (MDR) rate for Eastern Europe was 63.5% and 34.9% for Western European countries. Penicillin resistance *Streptococcus pneumoniae* (PRSP) rate was 15.3% for Eastern Europe and 9.5% for Western European countries. Against *Acinetobacter* spp. MDR, tigecycline showed an MIC₉₀ value of 2 mg/L followed by imipenem with a MIC₉₀ value of 16/>16 mg/L in Eastern and Western Europe, respectively. Tigecycline MIC₉₀ values against MRSA were 0.5/0.25 mg/L followed by vancomycin with 1/1 mg/L in Eastern/Western Europe, respectively. Against *S. pneumoniae* penicillin resistance (PRSP) tigecycline MIC₉₀ values were 0.06/0.03 mg/L, followed by vancomycin with 0.5/0.5 mg/L in Eastern/Western European countries, respectively. The susceptibility and resistance rates and the MIC₉₀ values for tigecycline are shown in the following table.

Organism	Eastern Europe				Western Europe			
	n	%S	%R	MIC ₉₀	n	%S	%R	MIC ₉₀
<i>Acinetobacter</i> spp	1251	na	na	2	6458	na	na	1
MDR	794	na	na	2	2252	na	na	2
<i>Enterobacteriaceae</i>	6935	89.3	2.6	2	42604	90.9	2.7	1
CRE	1	100	0	0.25	56	98.2	0	1
<i>Enterococcus</i> spp	1217	99.9	0.1	0.25	7417	99.7	0.1	0.25
VRE	44	100	0	0.25	353	98.9	0.6	0.25
<i>Staphylococcus aureus</i>	2271	100	0	0.25	12912	100	0	0.25
MRSA	658	100	0	0.5	3532	100	0	0.25
<i>S. pneumoniae</i>	777	na	na	0.06	5027	na	na	0.03
PRSP	119	na	na	0.06	481	na	na	0.03

na: no breakpoint available, S: susceptible, R: resistant

CRE:carbapenem-resistant *Enterobacteriaceae* VRE:vancomycin-resistant *Enterococcus*.

Conclusions: Tigecycline demonstrated excellent *in vitro* activity versus selected Gram-negatives and Gram-positive species from both Eastern and Western European countries.

Eastern European countries showed a significantly higher rate for *Acinetobacter* spp. MDR (p< 0.0001), *S. pneumoniae* penicillin resistance (p<0.0001), and CRE (p<0.01) when compared to Western European countries. Differences in VRE (p=0.102) and MRSA (p=0.232) rates among Eastern and Western European countries were not statistically significant during the course of this study.