

Session: EV028 Surveillance - global

**Category: 3b. Resistance surveillance & epidemiology: Gram-negatives**22 April 2017, 08:45 - 15:30  
EV0537**Characterization and profiling of multidrug-resistant (MDR) Enterobacteriaceae from Europe 2013-2016 (TEST Program)**Daryl Hoban<sup>1</sup>, Daniel Sahm<sup>2</sup>, Martha Renteria<sup>1</sup>, Brian Johnson<sup>\*3</sup>, Heidi Leister-Tebbe<sup>4</sup><sup>1</sup>*International Health Management Associates, Inc.*<sup>2</sup>*Ihma; Microbiology*<sup>3</sup>*Ihma, Inc.*<sup>4</sup>*Pfizer, Inc.*

**Background:** MDR Enterobacteriaceae are becoming more prevalent as various species continue to acquire and transfer genetic resistance elements. Multiple countries in Europe now document significant bacterial resistance problems, particularly in enteric species. To analyze the most recent situation in Europe, four years of data from the Tigecycline European Surveillance Trial (TEST) were analyzed for MDR rates and the impact on seven broad spectrum antimicrobial agents.

**Material/methods:** Five species of Enterobacteriaceae presented 8630 isolates with a MDR phenotype (R to  $\geq 3$  drugs) obtained from patients with numerous infection sources in 28 European countries during 2013-2016. MICs were determined using supplied broth microdilution panels. Susceptibility was interpreted according to EUCAST guidelines.

**Results:** The % of MDR isolates susceptible to tigecycline and comparative antimicrobial agents are shown for each of the five organism groups analyzed in the following table:

Drug	Organism (n)/%Sus.				
	<i>C. freundii</i> (440)	<i>E. coli</i> (2257)	<i>Enterobacter</i> spp. (2930)	<i>Klebsiella</i> spp. (2549)	<i>Serratia</i> spp. (454)
%MDR	33.7	27.4	38.3	31.9	14.4
AMK	97.7	93.5	95.7	78.6	87.0
FEP	65.9	29.3	40.9	11.6	60.8
CRO	6.4	25.6	5.4	6.5	18.1

<b>LVX</b>	69.1	8.6	67.3	25.9	67.2
<b>MEM</b>	96.6	98.7	96.1	75.5	93.8
<b>TZP</b>	38.6	70.4	28.3	33.1	50.9
<b>TGC</b>	96.4	98.8	82.1	73.7	60.1

AMK=Amikacin, FEP=Cefepime, CRO=Ceftriaxone, MEM=Meropenem LVX=Levofloxacin,  
TZP=Piperacillin-Tazobactam, TGC=Tigecycline

**Conclusions:** The MDR phenotype substantially impacts the % susceptibility for several different agents used to manage infections caused by Enterobacteriaceae, regardless of the genus or species being considered. The fluoroquinolones and advanced generation cephalosporins appeared to be most affected, while TGC, AMK, and MEM exhibited the highest level of activity against MDR phenotypes. The serious impact that the MDR phenotype can have on therapeutic choices warrants careful and continuous monitoring of this phenotype.