27th ECCMID Vienna, Austria 22 – 25 April 2017

The congress of ESCMID

Session: EV028 Surveillance - global

Category: 3b. Resistance surveillance & epidemiology: Gram-negatives

22 April 2017, 08:45 - 15:30
EV0545

In vitro susceptibility of multi-drug resistant (MDR) Escherichia coli (EC) and Klebsiella pneumoniae (KPN) from Eastern and Western Europe during 2014-2016 surveillance years (TEST program)

Daryl Hoban[1], Martha Renteria[1], Daniel Sahm*[2], Brian Johnson[3], Heidi Leister-Tebbe[4]

[1]*International Health Management Associates, Inc.*

[2]*Ihma; Microbiology*

[3]*Ihma, Inc.*

[4]*Pfizer, Inc.*

Background: MDR gram-negative pathogens including EC and KPN are increasing in prevalence in many parts of the world including Europe. Europe is a continent with multiple countries dispersed geographically over long distances with varying antimicrobial resistance trends. To analyze the most recent situation in Europe three years of data from the Tigecycline European Surveillance Trial (TEST) were analyzed for MDR rates and impact that the MDR phenotype has on the activity of seven broad spectrum antimicrobial agents.

Material/methods: EC and KPN presented 3015 isolates with a MDR phenotype (R to ≥3 drug classes) obtained from patients presenting with numerous infection sources in Eastern Europe and Western Europe during 2014-2016. MICs were determined using supplied broth microdilution panels following CLSI guidelines. Susceptibility was interpreted according to EUCAST guidelines.

Results: The % susceptible for MDR isolates for tigecycline and comparative antimicrobial agents is shown for EC and KPN in the following table:

	Organism: All/MDR (n)		**%Susceptibility**	
	Eastern Europe		**Western Europe**	
Drug	**EC** (392/106)	**KPN** (313/189)	**EC** (5052/1350)	**KPN** (3740/1370)
%MDR	27.0	60.4	26.7	36.6
AMK	91.5	88.4	94.3	77.2

FEP	33.0	6.9	28.6	8.5
CRO	19.8	3.7	24.9	6.7
LVX	10.4	27.5	7.4	21.9
MEM	100	90.5	98.8	71.2
TZP	74.5	43.9	71.0	33.5
TGC	98.1	75.7	98.7	71.2

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

Conclusions: The MDR phenotype substantially impacts the % susceptibility for several different agents used to manage infections caused by EC and KPN. Susceptibilities were most affected in KPN isolates in comparison to EC isolates. Levofloxacin, cefepime and ceftriaxone appeared to be most affected, while TGC, AMK, and MEM exhibited the highest level of activity against MDR phenotypes. The MDR phenotype dramatically affects the activity of many first line antimicrobials used to treat serious infections and can limit therapeutic choices.