

# In vitro Activity of Tigecycline and Comparators Against Pathogens in Spain from Patients with Complicated Intra-abdominal (IAI) and Skin and Soft Tissue Infections (SSTI) –TEST Data 2010-2014

D. Hoban<sup>1</sup>, D. Sahn<sup>1</sup>, S. Bouchillon<sup>1</sup>, R. Badal<sup>1</sup>, M. Hackel<sup>1</sup>, B. Johnson<sup>1</sup>, F. Marco<sup>2</sup>, H. Leister-Tebbe<sup>3</sup>

<sup>1</sup>International Health Management Associates, Inc., Schaumburg, USA

<sup>2</sup>Microbiology Department, ISGlobal, Barcelona Ctr. Int. Health Res. (CRESIB), Hospital Clínic - Universitat de Barcelona, Barcelona, Spain

<sup>3</sup>Pfizer Inc., Collegetown, PA, USA

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## Objectives

Gram-positive and Gram-negative bacteria associated with IAI and SSTI can be difficult to eradicate, especially if they are resistant to the agents commonly used to treat these infections. Therefore it is important to monitor the susceptibility trends among the key species associated with IAI and SSTI. This analysis was done to evaluate the *in vitro* activity of tigecycline and comparator antimicrobials against clinically relevant IAI and SSTI pathogens collected from hospitalized patients in Spain.

## Results

The *in vitro* activity of tigecycline and comparators against IAI and SSTI isolates combined is shown below.

Organism (n)	Antimicrobial: Percent Susceptible/MIC <sub>90</sub> (mg/L)							
	AMK	AMC	CRO	LVX	MEM	TZP	TGC	VAN
<i>Enterobacter cloacae</i> (396)	99.0/4	3.0/>32	72.2/>32	90.7/1	99.8/0.25	80.6/64	92.4/1	na
<i>Escherichia coli</i> (497)	98.2/4	63.6/32	82.1/>32	61.4/>8	100/0.12	87.3/16	99.8/0.25	na
<i>Klebsiella oxytoca</i> (98)	100/4	84.7/16	89.5/2	88.8/2	98.0/0.25	85.7/32	98.0/0.5	na
<i>Klebsiella pneumoniae</i> (235)	97.9/4	65.1/32	73.6/>32	73.2/>8	97.9/0.25	77.9/128	90.2/1	na
<i>Serratia marcescens</i> (113)	99.1/4	4.4/>32	91.2/1	92.0/1	98.2/0.25	96.5/4	78.8/2	na
<i>Enterococcus faecium</i> (121)	na	14.1/>8	na	15.7/>32	na	na	100/0.12	100/1
<i>Enterococcus faecalis</i> (143)	na	96.6/1	na	64.3/>32	na	na	100/0.12	98.6/2
<i>Staphylococcus aureus</i> (507)	na	na	na	56.4/16	na	na	100/0.25	100/1

na = breakpoints not defined or non-applicable  
 AMK=Amikacin, AMC=Amoxicillin-Clavulanate, CRO=Ceftriaxone, LVX=Levofloxacin, MEM=Meropenem, TZP=Piperacillin-Tazobactam, TGC=Tigecycline, VAN=Vancomycin

## Frequency distribution for tigecycline vs. IAI/SSTI pathogens in Spain 2010-2014

	N over Cumulative Percentage											
	MIC											
	≤0.008	0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8	16
<i>E. cloacae</i> (396)	1 0.3	-	1 0.5	3 1.3	9 3.5	65 20.0	222 76.0	65 92.4	17 96.7	11 99.5	2 100	
<i>E. coli</i> (497)	22 4.4	5 5.4	12 7.9	55 18.9	216 62.4	138 90.1	39 98.0	1 99.8	-	-	-	1 100
<i>K. oxytoca</i> (98)	3 3.1	-	2 5.1	9 14.3	7 21.4	54 76.5	16 92.9	5 98.0	1 99.0	1 100		
<i>K. pneumoniae</i> (235)	2 0.9	-	4 2.6	7 5.5	5 7.7	58 32.3	92 71.5	44 90.2	12 95.3	11 100		
<i>S. marcescens</i> (113)	-	-	-	-	-	5 4.4	27 28.3	57 78.8	19 95.6	5 100		
<i>E. faecium</i> (121)	-	1 0.8	49 41.3	40 74.4	26 95.9	5 100						
<i>E. faecalis</i> (143)	-	-	6 4.2	69 52.5	55 90.9	13 100						
<i>S. aureus</i> (507)	1 0.2	1 0.4	8 2.0	160 33.5	273 87.4	50 97.2	14 100					

## Conclusions

Against the gram-negative pathogens AMK, MEM, and TGC were the most potent agents, and against gram-positive pathogens TGC and VAN were the most active. However, the variability in activity of the other comparator antibiotics underscores the need to continuously monitor the susceptibility patterns exhibited by the pathogens associated with IAI and SSTI in Spain and other EU countries.

## References

1. Clinical and Laboratory Standards. Performance Standards for Susceptibility Testing M100-S24. 2014
2. EUCAST breakpoint tables for interpretation of MICs and zone diameters Version 4.0 January 2014.

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## Contact Information

IHMA, Inc.  
 2122 Palmer Drive  
 Schaumburg, IL 60173 USA  
 Phone: +1.847.303.5003  
 Fax: +1.847.303.5601  
 www.ihmainc.com

## Materials and Methods

The data were derived as a result of the TEST surveillance program 2010-2014 in Spain. For this analysis 121 cumulative hospital sites in Spain collected 2248 gram-negative and gram-positive isolates (2010-2014) from patients with IAI or SSTI. Broth micro-dilution susceptibility testing was performed locally at each site according to CLSI guidelines and results were interpreted according to EUCAST breakpoints.