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Abstract (poster session)

Longitudinal assessment of tigecycline activity tested against Gram-positive and Gram-negative organisms from European medical centres: results from the SENTRY Programme (2004-2012)

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Objective: To evaluate the in vitro activity of tigecycline and comparators agents overtime tested against key bacterial pathogens isolated from European (EU) medical centres. Tigecycline presents a therapy option for emerging multidrug-resistant (MDR) Gram-positive (GP) and -negative (GN) organisms and was approved by the European Medicines Agency for the treatment of complicated skin and soft tissue (cSSTI) as well as intra-abdominal infections (IAI) in April 2006. Methods: A total of 59,612 GP and GN clinically-significant non-duplicate isolates from multiple types of infections were collected from 18 EU countries from January 2004 to September 2012. Susceptibility (S) testing was performed by a central monitoring laboratory (JMI Laboratories) against a large panel of antimicrobials using CLSI methods (M07-A9, 2012). S interpretations were performed according to EUCAST breakpoint criteria. Results: Staphylococci (MIC50/90, 0.12/0.25 mg/L), enterococci (MIC50/90, 0.06-0.12/0.12-0.25 mg/L), and streptococci (beta-haemolytic and viridans group; MIC50/90, <=0.03/<=0.03-0.06 mg/L) S rates were >=99.6% (Table). Tigecycline activity was not adversely affected by oxacillin resistance (R) among staphylococci or vancomycin-R among enterococci. Among Enterobacteriaceae species (22,103 strains), S rates varied from 93.9% for S. marcescens to 100.0% for C. koseri (98.2% overall), and MIC90 values ranged from 0.25 mg/L (C. koseri and E. coli) to 1 mg/L (E. aerogenes, E. cloacae, K. pneumoniae and S. marcescens). Tigecycline retained activity against ESBL-phenotype strains as well as carbapenem-non-S Enterobacteriaceae. Tigecycline inhibited 95.0, 72.7 and 95.3% of Acinetobacter spp., B. cepacia and S. maltophilia strains at <=2 mg/L, respectively; and MIC50 and MIC90 values for these organisms ranged from 0.5 to 1, and 2 to 4 mg/L, respectively. Conclusions: Tigecycline continues to demonstrate quality antimicrobial activity against common pathogens associated with cSSSI and IAI occurring in EU patients. Tigecycline was active against antimicrobial-R as well as MDR strains, including MRSA, VRE and ESBL-phenotype Enterobacteriaceae. No tendency towards increasing tigecycline MIC values was observed across 9 years for any of the pathogens or R subsets evaluated. Based on the potency and spectrum exhibited here, tigecycline continues to have an important role for treating indicated bacterial pathogens in EU nations.

Organism	N	MIC (mg/L)			%S[a]	%R[a]
		Range	MIC_{50}	MIC_{90}		
Staphylococcus aureus	20323	≤0.03 – 1	0.12	0.25	>99.9	<0.1
Staphylococcus epidermidis	2844	≤0.03 – 1	0.12	0.25	>99.9	<0.1
Staphylococcus haemolyticus	533	≤0.03 – 0.5	0.12	0.25	100.0	0.0
Enterococcus faecalis	4767	≤0.03 – 1	0.12	0.25	99.6	<0.1
Enterococcus faecium	2365	≤0.03 – 0.5	0.06	0.12	99.9	0.0
Group A *Streptococcus*	1596	≤0.03 – 0.25	≤0.03	≤0.03	100.0	0.0
Group B *Streptococcus*	1703	≤0.03 – 0.25	≤0.03	0.06	100.0	0.0
Streptococcus anginosus group	345	≤0.03 – 0.12	≤0.03	≤0.03	-[b]	-
other Viridans gr. streptococci	1302	≤0.03 – 0.5	≤0.03	0.06	-	-
Enterobacteriaceae	22103	≤0.03 – 4	0.25	0.5	98.2	0.4
Acinetobacter spp.	1200	≤0.03 – >4	0.5	2	-	-
Burkholderia cepacia	22	0.25 – 8	1	4	-	-
Stenotrophomonas maltophilia	509	0.12 – >4	0.5	2	-	-

a. According to EUCAST breakpoint criteria. b. - = No breakpoint has been established for this organism.