Regional Differences in Activity of Tigecycline Tested Against *Acinetobacter* spp.: Results from a Global Surveillance Programme (2003-2005)

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Background: *Acinetobacter* spp. (ASP) can cause serious nosocomial infections that have emerged in most geographic regions, often displaying resistance (R) to expanded spectrum agents, including carbapenems. This study compares the activity of tigecycline (TIG), a novel broad-spectrum glycylcycline recently approved for treatment of skin and soft tissue and intra-abdominal infections, with comparator agents against a large collection of ASP recovered from patients in Europe (EU), North America (NA) and Latin America (LA).
Methods: All clinically significant ASP strains (1,029) collected from a TIG global surveillance program (2003-2005) were centrally processed using CLSI reference broth microdilution methods and interpretive criteria. In the absence of ASP TIG breakpoints, those for Enterobacteriaceae (2/4/8 mg/L for S/I/R) were used for comparative purposes.
Results: TIG was the second most active agent tested against all ASP isolates ($MIC_{50/90}$, 0.5/2 mg/L) with 94.8% of strains being inhibited by ≤ 2 mg/L; only polymyxin B (PB) displayed greater activity ($MIC_{50/90}$, ≤1/≤1 mg/L; ≥ 99.2% S [see Table]).

	MIC_{50}/MIC_{90} (mg/L)/%S		
	Europe	North America	Latin America
Strains tested	395	290	344
Agents:			
Tigecycline	1/2/95.7	0.5/4/89.3	0.5/2/98.5
Ciprofloxacin	>4/>4/33.7	2/>4/49.0	>4/>4/30.8
Amikacin	32/>32/49.1	4/>32/77.9	>32/>32/35.8
Ampicillin/sulbactam	16/>16/47.5	4/>16/70.3	16/>16/46.2
Ceftazidime	>16/>16/35.9	16/>16/49.0	>16/>16/26.7
Piperacillin/tazobactam	>64/>64/33.9	16/>64/51.4	>64/>64/25.9
Imipenem	1/>8/66.8	≤0.5/4/93.4	1/>8/84.3
Polymyxin B	≤1/≤1/99.2	≤1/≤1/100.0	≤1/≤1/99.7

Imipenem coverage varied from a low of 66.8% S in EU to a high of 93.4% in NA. TIG was least active against ASP from NA (MIC_{90}, 4mg/L; 89.3% S), and most active against those from LA (MIC_{90}, 2 mg/L; 98.5% S), a situation reversed for all other agents. All comparators (other than PB) were more active against NA strains (49.0-93.4% S) than against those from EU (33.7-66.8%) or LA (25.9-84.3%, see Table), reflecting the significant emergence of R patterns recognized by other studies.
Conclusions: Remarkable inhibitory effects (94.8% at 2 μg/ml, > 99% at 4 μg/ml) of TIG was observed against this inherently-R population of ASP; only PB exhibited greater activity (> 99% S). TIG may represent a welcome addition to the few remaining parenteral agents highly active against this pathogen group, especially in regions where multidrug-R limits therapeutic options.

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