An Evaluation of Tigecycline and Comparators in Asia/Pacific Rim for Often Difficult to Treat Pathogens

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Background: Tigecycline (TIG), a new glycylcycline demonstrates enhanced activity against many multi-drug resistant phenotypes of community and nosocomial pathogens causing serious disease. The T.E.S.T. program was designed to elucidate the activity of TIG vs. comparators in clinical use to worldwide organisms.

Methods: Between 2004—2007, over 3880 organisms deemed clinically significant isolated from both inpatients and outpatients in 23 Asia/Pacific Rim centers underwent site directed CLSI specified MIC testing utilizing supplied broth microdilution panels.

Results: Selected Asia/Pacific Rim pathogens tested against TIG are shown below: Conclusions: Tigecycline MIC_{90} of $\leq$1 mcg/ml and % susceptible of 100% (at $\leq$2 mcg/ml B.P.) for gram positive pathogens (including resistant phenotypes) and MIC_{90} of $\geq$95% of gram negative pathogens (excluding *P. aeruginosa*) validate the potent activity of TIG against community/hospital pathogens isolated in 23 Asia/Pacific Rim centers.

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Tigecycline and Comparators Against Extended Spectrum Beta-Lactamase (ESBL) Isolates Worldwide

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Background: Tigecycline (TIG), a member of a new class of antimicrobials (glycylcyclines), has been shown to have potent expanded broad spectrum activity against most commonly encountered species responsible for community and hospital acquired infections. The T.E.S.T. program determined the in vitro activity of TIG compared to amoxicillin-clavulanic acid, piperacillin-tazobactam (PT), levofloxacin, ceftriaxone, cefepime, ampicillin (AMP), amikacin (AK), minocycline, ceftazidime and imipenem (IMP) against ESBL isolates collected from hospitals globally throughout 2004—2007.

Methods: A total of 1,387 ESBL clinical isolates were identified to the species level from participating site and confirmed by the central laboratory. Minimum Inhibitory Concentrations (MICs) were determined by the local laboratory using supplied broth microdilution panels and interpreted according to CLSI guidelines with tigecycline susceptible breakpoint defined as $\leq$2 mcg/mL

Results: %S for all ESBL-producing isolates vs. TIG, IMP, and AK was 94.1, 98.3, and 86.2%, respectively; %S for other respectively compared to 6.9% for AK. $MIC_{50/90}$ for TIG, IMP, and AK were 0.5/2, 0.25/1, and 4/32 mcg/ml; the MIC_{90} for all other drugs was in the resistant range. There were minor regional differences in levels of activity, with either TIG (North America) or IMP (Europe, Asia/Pac) being the most active

Conclusions: TIG exhibited similar in vitro as IMP against ESBL strains. Its expanded broad spectrum of activity, including strains resistant or multiply-resistant to other agents, should make it a useful treatment option for a wide range of gram-negative and gram-positive pathogens.

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Evaluation of Tigecycline in the United States Against Antimicrobial Resistant Acinetobacter

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Background: Tigecycline (TIG) has potent expanded broad spectrum activity against most commonly encountered species responsible for community and hospital acquired infections. The T.E.S.T. program determined the in vitro activity of TIG against *Acinetobacter* resistant to one or more of piperacillin-tazobactam (PT), levofloxacin (LVX), ceftriaxone (CAX), cefepime (CPE), amikacin (AK), minocycline (MIN), ceftazidime (CAZ), and imipenem (IMP). Study strains were collected from hospitals in the United States from 2004—2007.

Methods: A total of 2,367 clinical isolates were identified to species level from participating sites and confirmed by the central laboratory. Minimum Inhibitory Concentrations (MICs) were determined by the local laboratory using supplied broth microdilution panels and interpreted according to CLSI guidelines

Results: Resistance rates for comparator drugs were CAZ 42%, CAX 41%, LVX 41%, CPE 34%, PT 17%, AK 7%, MIN 7%, and IMP 2%. TIG inhibited 98% of all isolates at = 8 mcg/ml. TIG $MIC_{50/90}$ for strains resistant to 0, 1, 2, 3, 4, or $\geq$5 drug classes were 0.12/0.5, 0.5/1, 0.5/2, 1/2, 1/2, and 1/4, respectively, demonstrating a gradual diminishment of TIG activity in strains resistant to multiple drug classes

Conclusions: TIG had good in vitro activity against most *Acinetobacter* strains resistant to one or more other drugs in this study, although the higher TIG MICs seen for these strains suggests some linkage to resistance mechanisms for other drugs (efflux). TIG remained effective in inhibiting multi-drug resistant *Acinetobacter* spp., further demonstrating its wide spectrum of activity vs. drug-resistant bacteria.

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