Background: Tigecycline (TIG) is approved for the treatment of cSSSI and has shown activity against key Gram-positive and -negative bacterial pathogens worldwide, including multidrug-resistant Acinetobacter spp., ESBL-producing Enterobacteriaceae, MRSA and VRE; pathogens frequently isolated in the APAC region.

Methods: TIG was susceptibility (S) tested by CLSI broth microdilution methods. Isolates were collected from 27 USA hospitals during 2009 and derived from patients with cSSSI. MRSA and VRE rates were 54.6 and 22.9%, respectively. ESBL rates were 8.0 and 26.6% for E. coli (EC) and Klebsiella spp. (KSP), respectively.

Results: TIG was highly active against S. aureus (MIC90, 0.25 mg/L; 100.0% susceptible). Vancomycin and linezolid were also very active against this pathogen (100.0% susceptible), while 54.6, 35.2 and 13.0% of strains were resistant to oxacillin (MRSA), levofloxacin and clindamycin, respectively (Table 1).

Tigecycline also exhibited good activity against other frequently isolated Gram-positive pathogens, including β-haemolytic streptococci (MIC90, 0.06 mg/L; 100.0% susceptible). Enterococcus spp. (MIC90, 0.25 mg/L; 98.6% susceptible), and coagulase-negative staphylococci (MIC90, 0.25 mg/L; 100.0% susceptible).

Linezolid and vancomycin were also very active against Gram-positive organisms, but generally eight- to 16-fold less potent than tigecycline (Table 1).

Tigecycline was active against the most frequently isolated Gram-negative pathogens, including Enterobacteriaceae isolates with ESBL phenotypes and those resistant to imipenem. In contrast, tigecycline exhibited limited activity against P. aeruginosa (only less than 5% of cSSSI pathogens; Tables 1 and 2).

Tigecycline and imipenem were the most active compounds tested against E. coli and Klebsiella spp., respectively. Furthermore, 22.0% of Enterobacter spp. strains were resistant to ceftazidime (MIC, ≥16 mg/L) and 14.1% of Klebsiella spp. strains were resistant to imipenem (MIC, ≥2 mg/L).

Conclusions: Tigecycline has provided a new class of antimicrobial agents to combat serious, resistant infections which continue to increase globally.

This study demonstrates the continuing in vitro efficacy of TIG against isolates associated with cSSSI, including MRSA, VRE and multidrug-resistant Enterobacteriaceae.

Continued monitoring of tigecycline activity on a global scale is needed to determine the overall role of this novel, broad-spectrum antimicrobial agent.