
INTRODUCTION

Background: Susceptibility testing accuracy is critical to individual patient care, local epidemiology and surveillance of emerging resistance. Tigecycline (TGC), a novel tetracycline derivative, is a semisynthetic agent and possesses unique and distinct properties (method reference broth microdilution [BMED], Etest [AB BIODISK] and disk diffusion [DD]) using nearly 1,000 Japanese clinical isolates.

Methods: Strains included Acinetobacter spp. (100), Enterobacter spp. (100), S. aureus (200), E. coli (300), P. aeruginosa (100) and other streptococci (100) each concurrently tested by CLSI BMED, DD and Etest. Interpretive criteria were those of the USA-FDA product package insert, or proposed by Jones et al. for ACB. Gentamicin (GM), minocycline (MIN) and tetracycline (TET) were used as controls and for interpretative accuracy comparisons.

Results: When testing strains from Japan, the categorical concordance study between BMED and DD by strain size (CC>96.0%) was excellent. The testing of these representative strains was performed on those organisms of greatest concern regarding antimicrobial resistance. Tigecycline susceptibility rates varying from 99.3 (Enterobacteriaceae) to 100.0 (other streptococci) and 98.2 (with acceptable levels of false-susceptible [very major error] at 4.7%)(Table 1). The study was supported by a grant from Wyeth Pharmaceuticals Inc.

Materials and Methods

Electrical assay: A total of 999 bacterial isolates collected from 19 Japanese medical centers located in Japan were evaluated as part of the Japanese component for the CLSI 2006 MRSA study. The strains were consecutively collected from bloodstream infections, skin and soft tissue infections, urinary tract infections and clinical isolates from hospitals and research centers in Japan. The susceptibility testing was performed using a CLSI-approved protocol. Rapid susceptibility testing was performed using the CLSI-approved protocol required minimal numbers by species or genus. Interim results were made available for the study. The serotypes identified was confirmed by the central laboratory of the Clinical and Laboratory Standards Institute (CLSI, broth microdilution and disk diffusion methods), and comparisons to Etest results (AB BIODISK, Solna, Sweden).

RESULTS

• Figure 1: Tigecycline MIC vs. Etest (µg/ml) for S. aureus, E. coli, K. pneumoniae and P. aeruginosa. The MIC values are compared between the CLSI (M100-S20) and Etest. CLSI-BMD MIC results were 92-2.8% with acceptable levels of false-susceptible (very major error) at 16.3% (S. aureus), indicating possible clinical significance.

• Figure 2 shows the Etest/reference MIC comparisons of tigecycline. The tigecycline MIC values generated by Etest trend toward higher values.

CONCLUSIONS

Tigecycline demonstrated broad-spectrum activity against a collection of recent clinical isolates tested in 2007. Tigecycline MIC values generated by Etest trend toward higher versus the CLSI. Tigecycline MIC values generated by Etest trend toward higher versus the CLSI. Tigecycline MIC values generated by Etest trend toward higher versus the CLSI. Tigecycline MIC values generated by Etest trend toward higher versus the CLSI. Tigecycline MIC values generated by Etest trend toward higher versus the CLSI.