Dalbavancin Activity in the USA: Reported from the SENTRY Programme (2012)

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ABSTRACT

Objective: To determine the activity/potency of dalbavancin (DAL), a late Phase III investigational lipoglycopeptide, against Enterococcus spp., in an extended serum half-life offering once weekly parenteral administration. DL potency was assessed in the 2012 SENTRY Antimicrobial Surveillance Programme among 1,589 isolates sampled from the nine USA Census regions (27 medical centres) to update the 38,813 organism collections reported for 2006-2011 (2011 and 2012 ICAC).

Methods: Monitored Gram-positive cocci included Staphylococcus aureus (SA; 1,000/500 MSSA, MRSA), coagulase-negative staphylococci (CoNS), Enterococcus faecalis (E. faecalis; 30), Enterococcus faecium (E. faecium; 151); S. agalactiae (134; 336 β-haemolytic streptococci overall) and viridans group streptococci (VGS; 71). All susceptibility (S) testing used CLSI reference broth dilution methods and EUCAST interpretations for comparison agents.

Results: DAL (MIC90, 0.06/0.06 mg/L) was eight to 16-fold more active than daptomycin (DAP), linezolid (LZD) and vancomycin (VAN), against SA; with MSSA and MRSA having the same MIC90 (1,000/500 SA; 1,000/500 MRSA), coagulase-negative staphylococci for DAL in the 2012 SENTRY Antimicrobial Surveillance Programme among 1,589 isolates sampled from the nine USA Census regions (27 medical centres) to update the 38,813 organism collections reported for 2006-2011 (2011 and 2012 ICAC).

Materials and methods

The sampling protocol for 2012 tested nearly 1,600 Gram-positive isolates for susceptibility as follows (Table 1): S. aureus (1000; 500% MSSA coagulase-negative staphylococci [CoNS], 500 MRSA, 500), Staphylococcus epidermidis (252), and 336 β-haemolytic streptococci (MRSA Group A and B), viridans group Streptococcus spp. (71), and 60 Enterococcus faecalis and E. faecium for vancomycin-resistant (VRE) and wildtype (WT) susceptible representatives. All isolates were identified by the clinical laboratory and confirmed by the participant medical center. Data were provided to the monitoring reference laboratory (JMI Laboratories, North Liberty, IA, USA) and the Antimicrobial Surveillance Program (1,589). DAL potency was assessed in the 2012 SENTRY Antimicrobial Surveillance Programme among 1,589 isolates sampled from the nine USA Census regions (27 medical centres) to update the 38,813 organism collections reported for 2006-2011 (2011 and 2012 ICAC).

Results

• Table 1 presents the dalbavancin MIC distributions for organisms possibly associated with documented ABSSSI (27,589 strains from 27 medical centres in USA).

• Dalbavancin MIC50 results for the staphylococci were consistent with ≤0.03-0.06/0.06-0.12 mg/L and identical to those reported for year 2011 samples; see Jones et al. (2013).

• Dalbavancin MIC90 values for MRSA and MSSA have been stable at ≤0.06/0.06 mg/L for more than 10 years.

• Only MR-CoNS strains had slightly higher dalbavancin MIC90 values at ≤0.12 mg/L, a finding noted previously among 9,472 strains from 33 countries and reported in 2009.

• A slightly greater variability in dalbavancin potency has been identified among streptococci, ranging from a MIC90 of ≤0.03 mg/L for S. pyogenes to 0.06 mg/L for viridans group species and S. agalactiae (Table 1).

• Enterococcal susceptibility results for dalbavancin were highly influenced by the VRE phenotype and genotype. Vancomycin-susceptible strains of either E. faecalis or E. faecium had dalbavancin MIC values at ≤0.25 mg/L (33 strains), but VRE isolates of the VanA phenotype exhibited dalbavancin MIC values at ≥4 mg/L (25 strains). VanB phenotype isolates in this collection had very low MIC values (<0.06 mg/L) (Table 1).

Conclusion: The in vitro potency of dalbavancin against Gram-positive organisms has remained unchanged since 2002.

REFERENCES