Dalbavancin (formerly BI397) Activity Against Selected Populations of Antimicrobial-Resistant Gram-Positive Pathogens

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AMENDED ABSTRACT

Gram-positive (GP) pathogens have lately evolved resilient variants (R) mechanisms in new antibiotic candidates such as DAL, a long-acting glycopeptide, which were developed in the wake of an international collection of GP organisms with defined R mechanisms.

Seemingly, DAL activity was more potent than vancomycin or teicoplanin. However, teloraparin-susceptible coagulase-negative staphylococci had elevated dalbavancin MIC values when compared to those from wild-type strains, but remained ≤ 0.015. DAL susceptibility was ≥ 90% for all teicoplanin-resistant GP isolates, including methicillin-resistant staphylococci (MRSA). The resistant subset included: E. faecium at 32 µg/ml (3), S. sciuri at 16 µg/ml (3), S. mitis at 0.03 µg/ml (3), and S. oralis at 8 µg/ml (3). The range of dalbavancin MICs for non-enterococcal species was 0.015–0.03 µg/ml. Dalbavancin activity with specific resistant subsets of Gram-positive cocci.

 Dalbavancin activity was independent of resistances to 5-lactam, macrolides or tetracyclines. All resistant isolates tested, with the exception of enterococci, were inhibited by dalbavancin. Vancomycin-resistant enterococci showed dalbavancin MIC values higher (three strains at 32 µg/ml) than those from wild-type strains. Dalbavancin resistance is likely to occur more frequently in enterococci and Staphylococcus species than in other Gram-positive species. While dalbavancin activity was not related to the presence of resistance patterns or the presence of two weekly dosing, it was documented to be active against numerous GP-R species, strains (wild-type strains), but remained ≤ 0.015.

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