Dalbavancin Tested Against Staphylococcus spp. and Streptococcus spp. Isolates collected from Five European Countries: Comprehensive DECIDE Program Results (2007)

D. Biedenbach, R. Jones

JMI Laboratories, North Liberty, IA, USA

Background: Dalbavancin is a novel lipoglycopeptide with an extended half-life and intended for treating complicated skin and skin structure infections caused by S. aureus (SA) and β-haemolytic streptococci (BHS). The DECIDE Program was initiated to assess the activity of dalbavancin compared to vancomycin or teicoplanin (Italy only) against recent (2007) clinical isolates from across Europe (EU).

Methods: Eighteen sites in France, Germany, Spain, Italy and UK utilized standardized, reference-quality agar diffusion methods including Etest and CLSI M2-A9 disk diffusion (DD) tests with concurrent QC. 1,127 isolates were tested against dalbavancin and comparison glycopeptides by Etest. DD was used for linezolid, cefotixin, levofloxacin, gentamicin, tetracycline, erythromycin, clindamycin (plus D-test), penicillin and ceftriaxone. Dalbavancin susceptibility was defined at ≤0.25 mg/L.

Results: Dalbavancin exhibited potent activity against the SA and coagulase-negative staphylococci (CoNS; MIC50/90, 0.064/0.19 mg/L) and BHS (MIC50/90, ≤0.016/0.047 mg/L). Overall, vancomycin and teicoplanin were ≥eight-fold less potent. Italy had higher dalbavancin MIC values (two-fold) for SA and the highest MRSA rate ≤≤ among BHS isolates were levofloxacin-non-susceptible. Among SA, resistance rates were: erythromycin (29%), clindamycin (13%), gentamicin (10%), and levofloxacin (29%) with higher resistance rates among MRSA. Inducible clindamycin resistance was high among SA (72%) and CoNS (48%) and less among BHS (25%). Rare strains had non-susceptible MIC values for linezolid (0.3%) and vancomycin (0.1%).

Conclusions: Dalbavancin demonstrated pronounced activity (MIC, ≤0.25 mg/L) against staphylococci and BHS from European countries. Due to dalbavancin’s high molecular weight, like other peptides, care must be taken when interpreting Etest-generated MICs (false resistance). Dalbavancin provides coverage of contemporary Gram-positive pathogens, including resistant isolates recovered from patients in Europe, confirming earlier USA reports.

doi:10.1016/j.ijid.2008.05.1065

66.021

In-vitro Activity of Ertapenem against Bloodstream Isolates of Bacteria at the National University Hospital, Singapore

S. Vasoo1,∗, W.M.C. Ong2, P.A. Tambyah2, G. Kumarasinghe2, K. Singh1

1 Rush University Medical Center, Chicago, IL, USA
2 National University Hospital, Singapore, Singapore

Background: Ertapenem is a relatively new carbapenem with broad activity. There are however limited studies regarding its efficacy in bacteremic patients. We evaluated the in-vitro activity of Ertapenem against blood culture isolates (community onset and nosocomial) at a tertiary hospital.

Methods: Bacteria isolated from blood cultures from hospitalized patients admitted to the National University Hospital, Singapore (Dec 2003–May 2004) were identified using the Vitek instrument (bioMerieux, NC) and Microbact 12A and 12B (Oxoid Australia). Gram-stain, catalase, coagulase (Pastorex Staph Plus, Bio-Rad, CA) and PYR disk testing were done for Staphylococcus and Streptococcus spp. Ertapenem susceptibilities were determined using the Kirby-Bauer disk method on cation-adjusted Mueller-Hinton plates according to the CLSI performance standards. Burkholderia pseudomallei (B. pseudomallei) isolates were further tested using the E-test (AB Biodisk, Sweden).

Results: 333 blood stream isolates were studied, including 157 Enterobacteriaceae (73 Extended spectrum beta-lactamase (ESBL) positive) and 29 isolates of B. pseudomallei. All 157 Enterobacteriaceae isolates were Ertapenem susceptible. 26 B. pseudomallei strains were susceptible and 3 strains intermediate to Ertapenem by disk testing, but the E-test showed that only 5 of the 29 strains were susceptible (MIC ≤2 mcg/ml). Of the non-fermenting gram-negatives, 26 of 64 isolates were susceptible (including 4/6 B. cepacia, 8/26 A. baumannii and 3/10 P. aeruginosa isolates). All isolates of S. maltophilia (9/9) were resistant. Of the gram-positives, 2/2 L. monocytogenes and all S. viridans (5/5), beta-hemolytic Streptococci (11/11), S. pneumoniae (6/6), methicillin susceptible S. aureus (32/32) were susceptible. All 12 strains of penicillin susceptible E. faecalis were non-susceptible to Ertapenem, whilst 9 of the 10 B. fragilis strains tested were.

Conclusions: Ertapenem demonstrates excellent activity against enterobacteriaceae including ESBL producing strains at our institution but is lacking against A. baumannii, P. aeruginosa, S. maltophilia and E. faecalis. It also has poor activity against B. pseudomallei and cannot be recommended as therapy for melioidosis.

doi:10.1016/j.ijid.2008.05.1067