Activity of the oxazolidinones AZD2563 and linezolid against Corynebacterium jeikeium and other Corynebacterium spp.

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Sir,

Aerobic diphtheroids are commonly isolated from clinical specimens, but were long dismissed as contaminants. This view changed in the 1970s when several groups reported cases of sepsis caused by a previously undescribed Corynebacterium species resistant to multiple antibiotics. In 1979, Riley et al. reported that 95 such isolates submitted to the CDC over the previous 15 years comprised a homogeneous group, based on their cultural and biochemical characteristics. They designated these organisms ‘group JK coryneforms’. Subsequently, on the basis of DNA hybridization patterns and protein profiles, these organisms were assigned to a new species, Corynebacterium jeikeium.

C. jeikeium is now recognized as a cause of infections in hospitalized patients, particularly those who are immunocompromised, have in-dwelling devices and have received broad-spectrum antibiotics. Reported infections include those of skin and soft tissue, septicaemia, native and prosthetic valve endocarditis, osteomyelitis, arthritis and ventricular cerebrospinal fluid shunts. Many infections are thought to be endogenous, as C. jeikeium is recoverable from the skin flora, although it can also be recovered from the hospital environment.

C. jeikeium is resistant to a wide but variable range of antibiotics including β-lactams, aminoglycosides, macrolides, tetracycline, rifampicin and quinolones. Resistance to glycopeptides and quinupristin/dalfopristin has not been described, but there is, nonetheless, a need for new agents, both to increase the range of treatment options and to minimize selective pressure for spread of vancomycin-resistant enterococci and staphylococci.

In this study, we evaluated the activity of the oxazolidinones AZD2563 (AstraZeneca, Macclesfield, UK) and linezolid (Pharmacia, Milton Keynes, UK), against 72 isolates of C. jeikeium, 17 isolates of seven other Corynebacterium species and three isolates of Corynebacterium that could not be identified to species level (Table 1). Comparator agents included penicillin, erythromycin, gentamicin, vancomycin (all from Sigma, Poole, UK), levofloxacin and teicoplanin (Aventis, West Malling, UK). The isolates were selected from those referred to the Laboratory of Hospital Infection between 1999 and 2002, with the exception of four strains of C. jeikeium obtained from the National Collection of Type Cultures (Colindale, London, UK). They were identified by phenotypic tests using serum water sugars with plate tests, as described previously, and the API CORYNE kit (bioMérieux, Basingstoke, UK). MICs were determined in air on Mueller–Hinton agar supplemented with 5% sheep blood. As there are no NCCLS or other recommended breakpoints for coryneforms, for the purposes of this study, NCCLS breakpoints for staphylococci were adopted.

Among the 72 isolates of C. jeikeium, 97% were resistant to penicillin (MIC range for all isolates 0.03–128 mg/L; mode MIC > 128 mg/L), 93% were resistant to erythromycin (MIC range 0.06–128 mg/L; mode MIC > 128 mg/L), 60% were resistant to gentamicin (MIC range 0.06–128 mg/L; mode MIC > 128 mg/L) and 80% were resistant to levofloxacin (MIC range 0.25–32 mg/L; mode MIC 32 mg/L). Resistance to glycopeptides was not seen. Among the 20 isolates of other Corynebacterium species tested, 19 were resistant to penicillin (MIC range 0.06–128 mg/L; with a bimodal distribution), 15 were resistant to erythromycin (MIC range 0.125–128 mg/L; mode MIC > 128 mg/L), nine were resistant to gentamicin (MIC range 0.125–128 mg/L, with a bimodal distribution) and 10 were resistant to levofloxacin (MIC range 0.25–32 mg/L; mode MIC 32 mg/L). Resistance to glycopeptides was not seen apart from the two isolates of C. aquaticum, which had low-level resistance to vancomycin (MIC 8 mg/L), although they remained susceptible to teicoplanin (MIC 2 mg/L).

Both AZD2563 and linezolid exhibited good activity against the isolates of C. jeikeium and other Corynebacterium spp., with MICs in the range 0.25–2 and 0.5–4 mg/L, respectively (Table 1), a pattern comparable to their activities against other Gram-positive pathogens. Oxazolidinones may provide a treatment option for infections caused by C. jeikeium.
and other *Corynebacterium* spp. that are resistant to other classes of antimicrobial agent.

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**References**


