Susceptibilities of *Chryseobacterium indologenes* and *Chryseobacterium meningosepticum* to Cefepime and Cefpirome

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Received 2 September 1997/Returned for modification 16 September 1997/Accepted 26 September 1997

In vitro activities of cefepime and cefpirome against 96 isolates of *Chryseobacterium indologenes* and 21 of *C. meningosepticum* were determined by the agar dilution method. Overall, cefepime was more active than cefpirome against *C. indologenes* (MIC at which 50% of the isolates were inhibited [MIC50] and MIC90 4 and 16 µg/ml, respectively, for cefepime and 8 and 128 µg/ml, respectively, for cefpirome). Both agents had poor potency against *C. meningosepticum* (MIC50 and MIC90 64 and >256 µg/ml, respectively, for cefepime and 128 and >256 µg/ml, respectively, for cefpirome).

Strains of *Chryseobacterium* species, including *Chryseobacterium indologenes* and *C. meningosepticum*, have been documented as human pathogens causing a variety of invasive infections, especially in hospitalized patients with severe underlying diseases who had indwelling devices implanted (3–6, 11). Appropriate choice of effective antimicrobial agents for treatment of infections caused by *Chryseobacterium* species is difficult because of the unpredictability and breadth of antimicrobial resistance of these organisms (1, 10). The “fourth-generation” cephalosporins (especially cefepime and cefpirome) have been demonstrated to have improved activity against a wide array of gram-positive and gram-negative bacteria, including nonfermentative gram-negative bacilli (2, 7, 9, 12). However, data on the susceptibility of *Chryseobacterium* species to fourth-generation cephalosporins are limited (7).

Ninety-six isolates of *C. indologenes* and 21 of *C. meningosepticum* recovered from various clinical specimens of 117 patients seen from January 1992 to June 1997 at the National Taiwan University Hospital were studied. These strains were identified in accordance with previous descriptions (4). MICs for these isolates were determined by the agar dilution method following National Committee for Clinical Laboratory Standards guidelines (8) and using Mueller-Hinton agar (BBL Microbiology Systems, Cockeysville, Md.) and a multipoint inoculator to inoculate an inoculum of 104 CFU per spot. Powdered cefepime with known potency was kindly provided by Bristol-Myers Squibb Laboratories (Princeton, N.J.), and powdered cefpirome was provided by Hoechst Marion Roussel (Frankfurt, Germany). Concentrations of the two drugs ranged from 0.03 to 256 µg/ml. Plates were incubated at 35°C in ambient air, and MICs were read at 16 to 18 h.

The MICs of cefepime and cefpirome for five control strains were as follows: 0.03 and 0.06 µg/ml, respectively, for *Escherichia coli* ATCC 25922; 2 and 2 µg/ml, respectively, for *Pseudomonas aeruginosa* ATCC 27853; 2 and 1 µg/ml, respectively, for *Staphylococcus aureus* ATCC 29213; 0.5 and 0.25 µg/ml, respectively, for *C. indologenes* ATCC 29879; and 64 and 128 µg/ml, respectively, for *C. meningosepticum* ATCC 13253.

Table 1 shows data on the susceptibility of *Chryseobacterium* isolates to cefepime and cefpirome. Cefepime and cefpirome both had poor activity against isolates of *C. meningosepticum*. For *C. indologenes* isolates, cefpirome was less active, with MICs for 50 and 90% of the strains tested (MIC50 and MIC90) that were twofold and eightfold, respectively, higher than those of cefepime. When we applied the cefpirome MIC breakpoints for organisms other than *Haemophilus* species, *Neisseria gonorrhoeae*, and *Streptococcus* species published by the National Committee for Clinical Laboratory Standards in M7-A4 of January 1997 (11) or 20095-1137/97/$04.00 © 1997, American Society for Microbiology

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In summary, cefepime was more active than cefpirome against the *C. indologenes* strains tested. Both cefepime and cefpirome had poor activity against *C. meningosepticum* strains. For treating infections caused by *Chryseobacterium* species, determination of the MIC for each individual isolate is mandatory.

### REFERENCES