Letter to the Editor

Chloramphenicol Susceptibility Testing of *Haemophilus influenzae*

Doern et al. recently reported an investigation leading to revised chloramphenicol recommendations for susceptibility testing of *Haemophilus influenzae* strains (2). That study clearly identified two populations of organisms, one susceptible to chloramphenicol (MICs, ≤1.0 µg/ml; zone sizes, ≥26 mm) and the other chloramphenicol resistant (MICs, ≥8.0 µg/ml; zone sizes, ≤22 mm). For several of the chloramphenicol-resistant, acetyltransferase (CAT)-positive isolates, both chloramphenicol MICs and 30-µg-disk zone diameters would have been considered susceptible by current National Committee for Clinical Laboratory Standards (NCCLS) interpretive criteria (5, 6). The recommended revision offered by these investigators appears valid and long overdue (2).

Recently, we tested 72 *H. influenzae* strains from the Centers for Disease Control collection selected as follows: 24 strains that were β-lactamase producers, 24 strains that were ampicillin susceptible and chloramphenicol susceptible, and 24 strains that were ampicillin susceptible and chloramphenicol resistant (96% CAT positive) (1). Susceptibility tests were performed by the NCCLS procedures (5, 6) recommended for fastidious organisms using Mueller-Hinton agar with 1% bovine hemoglobin and 1% IsoVitalex (BBL Microbiology Systems) for disk tests and Mueller-Hinton broth with 2 to 3% lysed horse cells for the microdilution method.

The results of our studies confirm the conclusions of Doern et al. (2). Table 1 summarizes the distributions of chloramphenicol MICs and zones of inhibition. For all 48 chloramphenicol-susceptible strains (24 of them β-lactamase positive), MICs were ≤0.5 to 1.0 µg/ml and zones were ≥26 mm. For the 24 chloramphenicol-resistant isolates, MICs ranged from 8.0 to 32 µg/ml. One isolate was CAT negative (4%), indicating another possible mechanism of resistance. Seven of the CAT-positive strains were susceptible (≤8.0 µg/ml) by the current NCCLS MIC criteria (6), and only the CAT-negative isolate (MIC, 8.0 µg/ml) would have been misinterpreted as susceptible (≥18 mm) by the currently used NCCLS zone breakpoint (5).

The earliest application of the revised chloramphenicol interpretive criteria for *H. influenzae* will allow improved recognition of strains that may produce poor clinical responses to chloramphenicol chemotherapy, especially ampicillin-resistant organisms cultured from spinal fluids. Multicenter susceptibility surveillance studies (3) have identified a low 0.6% chloramphenicol resistance rate among contemporary *H. influenzae* isolates, but this incidence may be higher when these more appropriate interpretive criteria are applied. The potentially elevated frequency of *H. influenzae* chloramphenicol resistance could hasten the growing acceptance of newer broad-spectrum cephalosporins as the treatment of choice for serious *H. influenzae* infections (4).

**LITERATURE CITED**


Ronald N. Jones
The Clinical Microbiology Institute
Tualatin, Oregon 97062

Clyde Thornberry
Centers for Disease Control
Atlanta, Georgia 30333