

Antimicrobial Activity of a New Fluoroketolide Solithromycin (formerly CEM-101) Tested Against Fastidious Gram-negative Community-Acquired Bacterial Pneumonia Pathogens

Abstract 217

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Background:

Solithromycin (CEM-101) is a novel fluoroketolide selected as a candidate for oral and parenteral therapy of community-acquired bacterial pneumonia (CABP). Solithromycin possesses potency against fastidious Gram-negative species including *H. influenzae* (HI) and *M. catarrhalis* (MCAT).

Methods:

Solithromycin and 10 comparator agents were tested against 727 HI and 313 MCAT strains from USA and European medical centers during 2009 SENTRY Program surveillance. CLSI broth microdilution methods (M07-A8) were utilized to test isolates applying HTM (HI) or Mueller-Hinton (MCAT). Nitrocefin was used to detect β -lactamase production.

Results:

Solithromycin showed comparable activity to azithromycin (AZ; both MIC_{50/90}, 1/2 μ g/mL) and was two-to eight-fold more potent than telithromycin (TELI; MIC₉₀, 4 μ g/mL) and clarithromycin (CLAR; MIC₉₀, 16 μ g/mL) against HI and was active against 99.0% of the isolates at ≤ 4 μ g/mL compared to TELI (98.5%). Solithromycin and other macrolides were eight-fold less active when tested against 7 AZ-resistant (R) strains. Solithromycin activity against MCAT (MIC_{50/90}, 0.06/0.12 μ g/mL) was 2-fold greater than TELI (MIC_{50/90}, 0.12/0.25 μ g/mL). All isolates were inhibited at a solithromycin MIC of 0.25 μ g/mL. Solithromycin activity was unaffected by β -lactamase production (23.6% [HI] and >95% [MCAT]) and antimicrobial activity was similar for all tested agents against isolates from Europe or USA.

Conclusion:

Solithromycin was two-fold more active than TELI against HI and MCAT and had activity similar to that of AZ against HI. β -lactam R did not influence solithromycin activity. The results of this study indicate solithromycin is a promising agent for treatment of CABP, including strains with R to currently used MLS_B class agents (Table 1).