

Antimicrobial Activity of a New Fluoroketolide (CEM-101) Tested Against *Streptococcus pneumoniae* Tested by the SENTRY Surveillance Program (2008-2009)

Abstract 218

DJ Biedenbach, RN Jones, HS Sader and DJ Farrell
JMI Laboratories, North Liberty, Iowa, USA

Background:

Ketolides are semisynthetic antimicrobials designed to overcome macrolide-resistant (R) *S. pneumoniae* (SPN). CEM-101 (solithromycin) is a fluoroketolide for oral and/or parenteral therapy of community-acquired bacterial pneumonia (CABP) with superior activity compared to other MLS_B agents.

Methods:

A total of 1,737 (USA, Latin America [LA] and Europe [EU]) and 1,363 (USA and EU) SPN strains were collected in 2008 and 2009, respectively. Solithromycin and comparator agents were susceptibility (S) tested in Mueller-Hinton supplemented with lysed horse blood using CLSI broth microdilution methods (M07-A8).

Results:

In 2008 and 2009, ≥99.8% of the strains displayed solithromycin MIC values ≤0.5 µg/mL, and 100.0% were inhibited at 1 µg/mL (CLSI breakpoint for telithromycin [TELI]). Six strains showed solithromycin MIC results at 1 µg/mL (3 EU countries and Israel). Solithromycin was among the most active agents tested against SPN (MIC₉₀, 0.12 or 0.25 µg/mL) each year with some observed regional variation. Erythromycin/clindamycin-R was 36.3/20.0% in 2008 and 34.0/18.1% in 2009. Linezolid and vancomycin provided complete coverage (100.0% S). Solithromycin exhibited reduced activity against penicillin (PEN)-R SPN (MIC₉₀ 0.25 µg/mL) compared to PEN-S strains (MIC₉₀ ≤0.03 µg/mL). Non-β-lactam compounds, such as tetracycline, trimethoprim/sulfamethoxazole and macrolides were also compromised in the PEN-R population.

Conclusion:

Solithromycin was observed to be among the most active antimicrobials tested against SPN. solithromycin had greater potency than TELI (two-fold) and was active against all TELI-R SPN. These study results suggest that solithromycin is a promising agent for CABP treatment including strains R to currently used MLS_B ketolide agents.

Year/Continent (no. tested)	Cumulative % inhibited at solithromycin MIC (µg/ml) of:							
	≤0.008	0.015	0.03	0.06	0.12	0.25	0.5	1
2008 (1,737)	30.7	70.5	80.4	87.3	89.6	97.4	99.8	100.0
North America (765)	26.4	64.2	71.9	79.1	82.1	96.6	100.0	
Latin America (145)	47.6	82.1	85.5	95.9	98.6	99.3	100.0	
Europe (827)	31.7	74.2	87.3	93.2	95.0	97.8	99.5	100.0
2009 (1,363)	- ^a	-	79.5	86.1	90.8	98.8	99.9	100.0
USA (796)	-	-	70.6	79.8	86.8	98.5	100.0	
Europe (567)	-	-	92.1	95.1	96.5	99.1	99.6	100.0

a. - = MIC not tested