

Activity of CEM-101 Tested Against Emerging Telithromycin-Resistant Beta-Haemolytic Streptococci (BHS)

Abstract 1101

R. Jones, L. Woosley, G. Moet, P. Rhomberg

JMI Lab, North Liberty, IA

Objectives:

To assess CEM-101, a macrolide-ketolide in early pre-clinical development, potency against strains observed to be resistant (R) to other agents in the same class. Reports have documented ketolide-R (telithromycin [TEL]) species worldwide, most recently *S. pyogenes* from Europe. CEM-101 was tested against a collection of 43 TEL-R BHS.

Methods:

A total of 53 (1.3%) BHS were identified among 3,958 in the SENTRY Antimicrobial Surveillance Program (2003-2006) that were TEL-R (MIC, ≥ 2 mg/L). 43 strains (36 group A, 1 group C, 6 group G) were available for testing, from 20 hospitals in Europe (31 strains), North America (11) and Latin America (1). Susceptibility (S) testing used CLSI broth microdilution methods and 3 strains were erythromycin (ERY)-R, clindamycin (CC)-S requiring D-test. Nine comparison agents were tested (4 in Table).

Results:

The potency of CEM-101 against each BHS serogroup was the same with an overall MIC₅₀ and MIC₉₀ of 0.12 and 0.5 mg/L, respectively. CEM-101 activity was 32-fold (MIC₅₀ comparisons) greater than TEL. All strains were ERY-R, but quinupristin/dalfopristin (Q/D) was 100% S. Three CC-S strains (*S. pyogenes*) were D-test (+) and 2 had (+) induction of CEM-101. The S rates for other comparators were: penicillin, tetracycline, ceftriaxone, amoxicillin/clavulanate, and levofloxacin (100.0%); and tetracycline (46.8%).

Table. MIC distributions for CEM-101 as MLSB-ketolide comparisons agents.

Antimicrobial	Occurrences at MIC (mg/L):									
	≤ 0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	>4
CEM-101	4	0	1	18	10	6	4	0	0	0
Telithromycin	0	0	0	0	0	0	0	8	16	19
Erythromycin	0	0	0	0	0	0	0	0	-	43
Clindamycin	-	-	-	-	2	1	0	0	-	40
Q/D ^a	-	-	-	-	37	6	0	0	-	0

a. Q/D = quinupristin/dalfopristin

Conclusions:

CEM-101 remained active against all TEL-R (MIC, ≥ 2 mg/L) BHS with all MICs at ≤ 1 mg/L (MIC₅₀, 0.12 mg/L). Highest occurrence of TEL-R strains was in Europe (greatest in Italy). CEM-101 warrants further development for infections caused by BHS.