

Activity of the Fluoroketolide Solithromycin (SOL) Tested against Bacterial Species Associated with Significant Community-Acquired Bacterial Pneumonia (CABP) and other Gram-positive (GP) Organisms

Abstract 758

DJ Biedenbach, M Castanheira, RN Jones
JMI Labs., N Liberty, USA

Background:

Antimicrobial resistance (R) continues to challenge available antimicrobial therapy choices for infection types acquired in the community. We evaluated the activity of SOL and comparators against bacterial species associated with CABP and GP organisms collected during 2011.

Methods:

12,818 isolates consecutively collected from 49 hospitals (26 in the USA [7,542 isolates] and 23 in Europe [5,276]) in 2011 were susceptibility (S) tested against SOL and comparators by CLSI reference methods.

Results:

Against *S. aureus* (SA), SOL (MIC_{50/90}, 0.06/>4 µg/mL) displayed similar activity to telithromycin (TEL; MIC_{50/90}, ≤0.06/>8 µg/mL) and four-fold greater than erythromycin (ERY; MIC₅₀, 0.5 µg/mL). SOL (MIC_{50/90}, ≤0.03/>4 µg/mL) showed comparable activity to TEL against CoNS (78.2% S). Methicillin (M)R SA (40.2%) and CoNS (68.4%) displayed higher SOL MICs compared to MS strains. SOL was moderately active against enterococci (ENT; MIC_{50/90}, 0.5/2 µg/mL), but was two-fold more potent than TEL (MIC_{50/90}, 1/4 µg/mL). SOL exhibited greater potency against *E. faecalis* (MIC₅₀, 0.06 µg/mL) compared to *E. faecium* (MIC₅₀, 1 µg/mL). SOL was very active against SPN (MIC₉₀, 0.12 µg/mL), Viridans group and β-haemolytic streptococci (VGS and BHS; MIC₉₀, 0.06 and ≤0.03 µg/mL). *S. pneumoniae* (SPN) isolates were only 88.9, 59.2 and 77.2% S to penicillin PEN, ERY and clindamycin (CLI), respectively. SOL was very active against *M. catarrhalis* (MCAT; MIC₉₀, ≤0.12 µg/mL) with lower activity against *H. influenzae* (HI; MIC_{50/90}, 2/2 µg/mL); however, SOL displayed four-fold greater activity than ERY against HI.

Conclusions:

SOL exhibited greater potency than ERY, CLI and TEL against contemporary (2011) GP and fastidious Gram-Negative organisms. This data supports further development of SOL for the treatment of this infection type.

Organism (no.)	Cumulative % at SOL MIC ($\mu\text{g/mL}$): ^a							
	≤ 0.03	0.06	0.12	0.25	0.5	1	2	≥ 4
SA (5,478)	42.6	83.6 ^b	85.0	85.4	85.5	85.7	85.9	100.0
SPN (2,418)	78.2 ^b	84.3	90.6	99.3	99.9	100.0		
HI (1,314)	-	-	0.8	1.8	5.1	46.6	93.4^b	100.0
ENT (1,238)	38.7	42.2	44.7	47.6	57.2 ^b	83.4	99.5	100.0
BHS (909)	92.2^b	97.2	98.9	99.7	100.0			
CoNS (601)	56.7 ^b	74.4	78.0	78.5	78.7	78.9	78.9	100.0
VGS (435)	85.7 ^b	94.9	98.6	100.0				
MCAT (425)	-	-	98.4^b	99.8	100.0			

a. - = not tested; bolded = MIC₉₀.

b. MIC₅₀.