

Activity of Solithromycin and Comparators Against *Streptococcus pneumoniae* Isolated from Respiratory Samples Collected from European Hospitals in 2012-2013

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Background: Solithromycin is a fourth-generation macrolide, the first fluoroketolide, undergoing Phase III clinical trials for the treatment of moderate to moderately-severe community-acquired bacterial pneumonia. This study evaluated the *in vitro* activity of solithromycin against *Streptococcus pneumoniae* (SP) collected in 2012-2013 from patients located in various European countries.

Methods: A total of 423 SP isolated from respiratory samples were collected from Europe. Isolates were tested in a central laboratory with MIC and susceptibility for solithromycin and comparators determined according to CLSI broth microdilution methodology and breakpoints. Provisional breakpoints of ≤1 (S), 2 (I) & ≥4 (R) were used for solithromycin and FDA breakpoints for tigecycline. Susceptibility was analyzed for sub-sets of SP from European countries were n ≥30.

Results: %S is shown in the Table (>90 %S in bold). Solithromycin was fully active against all isolates. Penicillin susceptibility was only above 80% in Denmark and azithromycin susceptibility was only at this high level in Denmark and Russia. Overall antibiotic susceptibility was particularly low in Turkey.

Drug (%S)	Belgium (n=53)	Denmark (n=30)	France (n=58)	Germany (n=42)	Italy (n=55)	Russia (n=70)	Spain (n=70)	Turkey (n=33)
Solithromycin	100	100	100	100	100	100	100	100
Telithromycin	100	100	100	100	100	100	100	100
Penicillin	75.5	86.7	56.9	71.4	63.6	75.7	48.6	30.3
Azithromycin	77.4	93.3	65.5	73.8	56.4	84.3	70.0	42.4
Amoxicillin Clavulanic Acid	98.1	100	100	92.9	96.4	94.3	71.4	66.7
Ceftriaxone	98.1	100	96.6	92.9	92.7	92.9	90.0	63.6
Clindamycin	83.0	93.3	74.1	78.6	67.3	90.0	75.7	42.4
Levofloxacin	100	100	100	97.6	96.4	97.1	95.7	90.9
Tigecycline	100	100	100	100	98.2	100	100	100

Conclusions: Solithromycin showed very good activity against antimicrobial-resistant isolates, despite low susceptibility to azithromycin and penicillin in most countries and multi-drug resistance in Turkey. These data positively support the continued development of solithromycin for the treatment of respiratory infections caused by SP.