Comparison of Solithromycin MIC Against Respiratory Streptococci Determined by EUCAST and CLSI Broth Microdilution Methodology

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Revised Abstract

Objectives: Solithromycin is a fourth generation macrolide, the first fluoroalkaloid, that is currently undergoing Phase III clinical development for the treatment of community-acquired bacterial pneumonia and is being developed as oral capsules, intravenous and pediatric suspension. This study evaluated the in vitro activity of solithromycin against respiratory streptococcal isolates tested by the Clinical Laboratory and Standards Institute (CLSI) and European Committee on Antimicrobial Susceptibility Testing (EUCAST) broth microdilution methods.

Methods: A total of 165 streptococci, 113 S. pneumoniae and 52 S. pyogenes, collected from Europe, Asia-Pacific and North America in 2012-13 were investigated. Minimum inhibitory concentration (MIC) for solithromycin was determined by broth microdilution in Mueller Hinton broth supplemented with 3% lysed horse blood (CLSI) and in Mueller Hinton broth supplemented with 5% defibrinated horse blood & 5 mg/L NAD (EUCAST).

Materials and Methods

A total of 113 S. pneumoniae and 52 S. pyogenes were tested from Europe, Asia-Pacific and North America (Table 1). Isolates were identified to the species level and MICs determined at a central testing laboratory (BMA Europe, located in Epalinges, Switzerland). These isolates are a sub-set of the clinical isolates presented in Paster P-3544. Minimum inhibitory concentrations (MICs) were determined by the CLSI recommended broth microdilution testing method [2] and the EUCAST broth microdilution testing method using panels prepared at BMA Europe [3].

Results: Very similar MIC values were obtained by either method. When CLSI MIC was plotted against EUCAST MIC the r² was 0.75 for S. pneumoniae and 0.79 for S. pyogenes. MIC distribution for combined streptococci is given in the Figure (r² = 0.75).

Conclusions: Solithromycin showed very consistent activity against pneumococci and S. pyogenes using CLSI or EUCAST methods. Although susceptibility breakpoints are not yet available for solithromycin these data suggest that testing by either method in the future will be comparable.

References


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