CEM-101, a novel fluoroketolide, tested against European clinical isolates from 2009 (first year surveillance results)

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Objectives: To determine the potency and spectrum of CEM-101, a new fluoroketolide, tested against contemporary (2009) European (EU) pathogens. Preliminary results suggest that CEM-101 has expanded activity against multidrug-resistant (MDR) pathogens associated with community-acquired bacterial pneumonia (CABP), and skin and skin structure infections (SSSI) when compared to macrolides (erythromycin [ER], azithromycin [AZ], clarithromycin [CL]), clindamycin (CC) and
telithromycin (TE).

Methods: EU CEM-101 surveillance study collected 3,531 strains, as following: S. aureus (SA; 1,398), coagulase-negative staphylococci (CoNS; 454), enterococci (ENT; 613), S. pneumoniae (SPN; 485), viridans group (VGS; 98) and beta-haemolytic (BHS; 212) streptococci, H. influenzae (HI; 242) and M. catarrhalis (MCAT; 29). These consecutive strains were susceptibility (S) tested by CLSI methods and results were interpreted by EUCAST breakpoints; TE interpretive criteria were applied to CEM-101 for comparison purposes only. Thirteen countries and nearly 30 medical centers were sampled.

Results: CEM-101 was very active against SPN (MIC90, <=0.06 mg/L), VGS and BHS (MIC90, <=0.03 mg/L) with 100.0 and 98.1-100.0% of isolates inhibited at <=1 and <=0.25 mg/L, respectively. This potency was >= two fold greater than TE, and CEM-101 inhibited at 3.7% more SPN at <=0.25 mg/L. The tested SPN was only 72.0, 74.2 and 82.1% S to penicillin (PEN), ER and CC, respectively. Against HI and MCAT, CEM-101 was quite active (MIC90/% inhibited at <=4 mg/L): 2/99.6 and 0.06/100.0, respectively (two-fold more active than TE). This activity against Gram-negative CABP pathogens was most like AZ. SA and CoNS (MIC50, 0.06 mg/L for both) were generally S to CEM-101 (92.1 and 71.2% S versus 90.5 and 70.5% S for TE). ENT was only moderately S to CEM-101 (MIC50/90, 1/2 mg/L), but was two-fold more potent than TE. E. faecalis (EF) isolates were usually more S (MIC50 at 0.25 mg/L) than other ENT. The EU collection sampled had 22.7% MRSA, 82.8% MRCoNS, 1.7% vancomycinresistant (VR) EF, 36.8% VR E. faecium, 41% PEN-R VGS, 4.8% TE-R S. pyogenes and 16.9% ampicillin-R HI.

Conclusions: CEM-101 clearly exhibited greater potency than currently available MLSB agents (including TE, another ketolide) against potentially indicated pathogens causing CABP or SSSI. Expanded clinical investigations of CEM-101 appear warranted for oral and parenteral route coverage of emerging MDR Strains.