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Abstract (poster session)

In vitro activity of delafloxacin and other agents against S. aureus isolates from a phase II trial for acute bacterial skin and skin structure infections

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Background: Antimicrobial resistance among S. aureus (SA) continues to present challenges for effectively managing serious infections caused by this common pathogen. To help meet these challenges delafloxacin (DFX), a potent anti-staphylococcal fluoroquinolone, is currently under clinical development as a broad spectrum oral and intravenous compound for the treatment of acute bacterial skin and skin structure infections involving SA and other pathogens. This report documents SA resistant phenotypes encountered in an ongoing clinical trial and provides information on the activity spectrum of DFX against these resistant phenotypes. Methods: The Phase 2 trial was USA based and included approximately 35 sites and occurred over the 2011 year. Isolates were obtained from clinical specimens using the preferred microbiology processes of the investigator microbiology sites. SA isolates were transported to Eurofins, Chantilly for confirmatory identification and antimicrobial susceptibility testing by broth microdilution according to CLSI guidelines. In addition to DFX, a range of various gram-positive drugs were also tested. Results: 187 SA isolates were available for analysis; 115 (62%) were oxacillin-resistant (MRSA), 52.9% were ciprofloxacin (CP) -resistant, and 43.9% were levofloxacin (LV)-resistant. For the 187 strains the DFX MIC range was < 0.001 – 2 mcg/ml with an MIC90 of 0.12; LV and CP MIC90‘s were 4 and 16 mcg/ml, respectively. For MSSA and MRSA the DFX MIC90‘s were 0.06 and 0.12 mcg/ml, respectively. The MIC90‘s for LV against MSSA and MRSA were the same at 4 mcg/ml, and for CP they were 8 and 16 mcg/ml, respectively. Among LV-non-susceptible strains the LV MIC90 was 8 mcg/ml and the DFX MIC90 was 0.12 mcg/ml; for CP-non-susceptible strains the CP MIC90 was 16 mcg/ml and the DFX MIC90 of 0.12 mcg/ml. Conclusion: MRSA continue to be a prevalent cause of skin infections and resistance to current fluoroquinolones remains a prominent feature among these organisms. DFX exhibited potent in vitro activity against fluoroquinolone-resistant MRSA encountered in this trial. This feature suggests that DFX can be developed as a potent new therapeutic choice for SA based infections.