Sample Abstract

An in vitro Comparison of Gatifloxacin and Levofloxacin against Gram-Positive and Gram-Negative Clinical Isolates

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The fluoroquinolones have been used extensively in the treatment of bacterial infections. Advanced quinolones such as levofloxacin (LEVO) and more recently gatifloxacin (GATI) display enhanced activity against Gram-positive as well as Gram-negative organisms. A study was undertaken to examine the in vitro activity of LEVO, which is currently on formulary at our institution, and GATI against selected Gram-positive and Gram-negative pathogens to determine their comparability. A total of 219 clinical isolates were tested including 35 oxacillin-susceptible *Staphylococcus aureus* (SA), 41 *Streptococcus pneumoniae* (SP), 50 *Escherichia coli* (EC), 49 *Klebsiella pneumoniae* (KP), and 44 *Enterobacter* spp. (ENB). Consecutive, non-duplicate isolates from respiratory specimens, blood and urine were included in the study. Minimum inhibitory concentrations (MIC) for each antimicrobial were determined using the gradient diffusion (Etest) technique. All testing, quality control, and categorical interpretation of results were performed according to NCCLS guidelines. MIC90, MIC50, and percent susceptibility values were calculated for each organism/drug combination. GATI and LEVO MIC90 values were as follows (in mcg/ml): SA-8 and 32; SP-0.19 and 0.75; EC-0.047 and 0.094; KP-0.064 and 0.125; and ENB-0.38 and 0.75, respectively. GATI MIC50 values were also lower than LEVO for all organisms tested. Quantitatively GATI was more active overall than LEVO against the pathogens tested with both lower MIC90 and MIC50 values. The percent susceptibility of SA, SP, EC, and KP to both GATI and LEVO were 80%, 100%, 98%, and 100%, respectively. In ENB GATI demonstrated 4% more susceptible isolates than LEVO (95% vs. 91%). Qualitatively no differences were found between the two fluoroquinolones in susceptibility interpretation with the exception of ENB. Therefore GATI is comparable to LEVO against common Gram-positive and Gram-negative pathogens.