

Joint Meeting on
2nd ANNUAL CONGRESS ON BACTERIAL, VIRAL AND INFECTIOUS DISEASES
&
6th INTERNATIONAL CONFERENCE ON RARE DISEASES & ORPHAN DRUG
June 17-18, 2019 Dubai, UAE



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Bacterial resistance: Public health encounter

Streptococcal pneumonia is a major cause of morbidity and mortality worldwide. Fluoroquinolones are one of the mainstay drugs for treatment of these infections. However emerging resistance poses a threat to the class's future utility. Using Monte Carlo simulation, we evaluated the probable efficacy of Ciprofloxacin, Levofloxacin, Gemifloxacin, Garenoxacin, and Moxifloxacin in eradicating infections and preventing continued growth of resistance. Using patient data from *strep pneumonia* patients in hospitals and MIC data from the cross study; drug regimens were compared to see the likelihood of attaining $fAUC_{0-24}/MI$ Call ratios depicting goal clinical outcomes. Very few regimens are able to prevent further growth of resistant organisms when ParC mutations have occurred. Only garenoxacin and Moxifloxacin were able to eradicate extremely resistant isolates in serum and ELF respectively.

Biography

Ayman Noreddin has received his PhD in Pharmaceutical Sciences from the University of the Pacific, California. His research interest includes Pharmacokinetics/Pharmacodynamics' Modeling of Anti-infective and Anti-cancer Therapy, Clinical Simulation and Monte Carlo Analysis and Bacterial Resistance in Biofilm studies. He served as a Scientific Reviewer for the NIH as well as other national and international research institutions.

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