Materials and Methods

Bacterial Strain and Antimicrobials

Both Staphylococcus aureus ATCC 25923, all strains were clinically isolated from various sources. Strains were maintained on Tryptic Soy Agar slants (HTO) and regularly checked for their sensitivity to fluoroquinolones and other antimicrobials. 

S-(-)-nadifloxacin and S- (+)-nadifloxacin as well as sparfloxacin with equal levels of AUC in healthy volunteers in mouse model in vivo.

Conclusion: S-(-)-nadifloxacin has increased bioavailability compared to (RS)-(±)-nadifloxacin and sparfloxacin were 0.4 and 0.35 mg/kg, respectively.

Introduction

Staphylococcal have a peculiar propensity to acquire drug resistance resulting in development of MDR strains such as MRSA particularly in clinical settings. Moreover, the majority of methicillin-resistant strains of staphylococci are the most resistant to other quinolones. Nadifloxacin, an orally administered fluoroquinolone is reported to retain potent activity against MRSA. Nadifloxacin is also superior to sparfloxacin in terms of antibacterial activity against MRSA. Nadifloxacin has demonstrated increased bioavailability compared to sparfloxacin and has shown superior efficacy.

Discussion

In vivo efficacy against Staphylococcus aureus 25923

In systemic infection, both sparfloxacin and S-(-)-nadifloxacin had comparable efficacies with ED50 values of 7.9 mg/kg and 8.7 mg/kg, respectively (Fig. 3A & B).

In vivo efficacy of S-(-)-nadifloxacin and sparfloxacin in mouse model of staphylococcal septicemia

Conclusion: S-(-)-nadifloxacin has increased bioavailability compared to (RS)-(±)-nadifloxacin and showed superior efficacy in the mouse model of staphylococcal septicemia.

References

2. Guptha SK., Agarwal NJ., Patel R., and Garg S. Bioavailability and Bioefficacy of Mouse Model of Staphylococcal Septicemia

S-(-)-NADIFLOXACIN: Oral Bioavailability and Bioefficacy in Mouse Model of Staphylococcal Septicemia

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