In Vitro Sensitivity of Levonadifloxacin in Staphylococcus Aureus, Coagulase negative Staphylococcus species and Enterococcus species in a tertiary care Centre in North east India:

Introduction:

Antimicrobial resistance is one of the major global threats is already a well-established fact humanity and even WHO (World Health Organization) express that the mortality of infection due to Methicillin Resistance Staphylococcus Aureus (MRSA) may be as high as 64% more than infection due to infection by Methicillin Sensitive Staphylococcus Aureus (MSSA)1. Even the infection atypical bacteria are also on the rise so the concern of resistance is also rising2,3.

A benzoquinolizine subclass of fluoroquinolone Levonadifloxacin (intravenous) and alalevonadifloxacin (oral prodrug) were licensed for clinical use in India in 2019. This broad-spectrum antibiotic with active moiety, levonadifloxacin, has high potency against methicillin-resistant Staphylococcus. aureus, multi-drug resistant pneumococci, and anaerobes which is good news to the medical fraternity of the world4.

Aims and Objectives:

In this study, we tried to analyze in vitro efficacy of Levonadifloxacin in respiratory, urinary, and bloodstream infections from both community and nosocomial sources.

Materials and Methods:

We collected 250 consecutive gram-positive bacterial isolates from both community and hospital-acquired infections, including Staphylococcus Aureus, and Enterococcus strains, sourced from respiratory tract, urine, and blood samples at the Microbiology department. These isolates underwent antimicrobial susceptibility testing using the Kirby-Bauer disc diffusion method on Mueller-Hinton agar (Hi-Media), with interpretation based on the latest CLSI guidelines.

Results:

All the isolates were sensitive to Levonadifloxacin which were Staphylococcus including MRSA, MSSA, and Coagulase negative Staphylococcus Species (CONS). All Enterococcus isolates were sensitive to Levonadifloxacin except Vancomycin Resistant Enterococcus (VRE) which were all resistant to Levonadifloxacin (total no 16).

Conclusion:

In our in vitro analysis we found that Levonadifloxacin is a good drug to be used in MSSA, MRSA, and CONS where needed to be treated. VRE seems to be not a good target. However further studies are needed.

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