Efficacy of WCK 771 A in Systemic Infections Caused by MSSA and MRSA, Pharmacodynamic (PD) Parameters at Effector Dose and MRSA Eradication from Mouse Vital Organs

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ABSTRACT

Background: WCK 771 A is an experimental antimicrobial agent with potent antibacterial activity against MSSA and MRSA.

Methods: In vivo antibacterial efficacy of WCK 771 A was evaluated in a murine model of systemic infections. The study was conducted in the presence of normal and immunosuppressed mice to evaluate the effect of the drug on the immune system.

Results: WCK 771 A demonstrated significant antibacterial activity against MSSA and MRSA in both normal and immunosuppressed mice. The drug was effective in reducing the bacterial load in various organs, including the liver, spleen, and kidney.

Conclusion: WCK 771 A shows promise as a potential therapeutic agent for the treatment of systemic infections caused by MSSA and MRSA.

INTRODUCTION

Methods>vancomycin (VAN) and linezolid (LIZ) are the current standard treatments for MSSA and MRSA infections. However, the emergence of resistant strains has necessitated the development of new, more effective antimicrobial agents.

Bacterial Strains: The strains used in the study were obtained from the University of Texas Southwestern Medical Center, Dallas, TX.

Antibacterial Agents: The study involved the use of different concentrations of WCK 771 A and other antibiotics, including imipenem, vancomycin, and linezolid.

MIC Determination: The MICs of WCK 771 A were determined against different bacterial strains using the agar dilution method.

RESULTS & DISCUSSION

In vivo systemic mouse infection model:
- A group of 6 Swiss mice consisting of 3 male and 3 female weighing 18-22 g were infected with MSSA and MRSA strains by i.p. route. The infection was monitored for 5 days post-infection by计数 and culture. WCK 771 A at a dose of 50 mg/kg i.p. significantly reduced the bacterial load in the liver, spleen, and kidney compared to the control group.

Table 1: WCK 771 A In Vivo Efficacy for MSSA infections

Table 2: WCK 771 A In Vivo Efficacy for MRSA infections

Table 3: WCK 771 A: PD Parameters at Systemic Effective Dose for MRSA

REFERENCES