**ABSTRACT**

WCK 771 is a potent parenteral anti-MRSA *Staphylococcus aureus* (S. aureus) drug that is currently in phase I clinical trials. In a recent study, WCK 771 showed significant activity against a panel of MRSA strains, including a line MRSA strain (MRSA 13). The study aimed to determine the pharmacodynamic (PD) parameters for WCK 771 in an in vitro pharmacokinetic model (IVPM) and in vivo studies.

**Materials and Methods**

- **Antibacterial agents**: WCK 771 was evaluated against MRSA strains isolated from clinical specimens.
- **Antibiotic susceptibility of MRSA**: MICs were determined by broth microdilution method as per NCCLS guidelines.
- **In vivo pharmacokinetic model (IVPM)**: The IVPM model was used to simulate the pharmacokinetic and pharmacodynamic profiles of WCK 771.

**RESULTS & DISCUSSION**

- **Pharmacokinetic analysis**:
  - **In vitro pharmacokinetic model (IVPM)**: The IVPM model was used to simulate the pharmacokinetic and pharmacodynamic profiles of WCK 771.
  - **In vivo studies**: The in vivo studies showed that WCK 771 had a high therapeutic index and effective against MRSA strains.

**CONCLUSION**

- WCK 771 shows superior eradication ability compared to moxifloxacin.
- WCK 771 is consistently bactericidal using dynamically changing concentrations against S. aureus strains with MIC ranging from 0.03 to 0.2 mg/mL.
- WCK 771 has superior eradication ability compared to moxifloxacin.
- Eradication of MRSA is proportionate to AUC/MIC ratio.
- **AUC/MIC ratio of 43 - 112 is required for eradication of MRSA having WCK 771 MIC in the range of 0.03 - 0.12 mg/mL.
- WCK 771 could effect a log 2 loss in viability of S. aureus at 24 h and 2.7 log kill at 48 h under in vitro conditions.

**REFERENCES**