Resistance Patterns of Methillin- and Mupirocin-resistant S. aureus from Uncomplicated Skin and Skin Structure Infections (SSSIs) in the United States from March 2004–March 2005: Retapamulin Surveillance Study

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Abstract

Background: Retapamulin is a novel semi-synthetic pleuromutilin currently in development as a topical antimicrobial for the treatment of skin and skin structure infections (SSSIs). The mode of action for retapamulin is unique and shows no cross-resistance to other classes of antibiotics and is fully active against skin bacterial isolates commonly resistant to established agents including β-lactams, macrolides, quinolones, fusidic acid and mupirocin.

Methods: Clinical isolates of S. aureus were collected from 9 sites in the United States during 2004 and 2005. All isolates were sent to the central laboratory for testing, identification confirmation and quality control. Susceptibility testing was performed using broth microdilution panels. Quality controls were performed each day following Clinical and Laboratory Standards Institute (CLSI) guidelines.

Results: A total of 994 S. aureus isolates were collected from 9 sites (n) Range MIC (µg/mL) for Retapamulin and Comparators

Materials and Methods

MIC endpoints were determined by broth microdilution and interpreted according to Clinical and Laboratory Standards Institute (CLSI) guidelines.

Conclusions

Retapamulin demonstrated excellent in vitro activity against methillin-resistant, mupirocin-resistant, and mupirocin-resistant/methillin-resistant S. aureus isolates from uncomplicated SSSIs, with MIC values at least 8-fold lower than those of any comparator in this study including linezolid, mupirocin, and fusidic acid.

Against all 994 S. aureus isolates tested, retapamulin was the most potent agent in vitro and inhibited all 5 S. aureus at a MIC of ≤0.06 µg/mL, including methillin-resistant, mupirocin-resistant, and mupirocin-resistant/methillin-resistant isolates.

Retapamulin’s retention of potent in vitro activity against S. aureus strains resistant to one or more of the agents commonly used in the treatment of SSSIs could potentially provide a useful option for treatment of such infections.

Clinical trial data is needed to assess the clinical significance of these in vitro findings.

References

7. Table 1. MIC (µg/mL) Summary for Retapamulin Activity against 994 S. aureus Isolates from SSSIs

Table 2. MIC (µg/mL) Summary for Retapamulin and Comparators against 911 S. aureus Isolates from the USA

Acknowledgements

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