Antimicrobial Activity of Daptomycin and Comparator Agents Tested against Methicillin-Resistant S. aureus and Vancomycin-Resistant Entercocci: Analysis of Five-Year Trends in Europe and USA Hospitals (2009-2013)

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ABSTRACT

Objective: To evaluate daptomycin activity trends among clinical isolates of Methicillin-Resistant Staphylococcus aureus (MRSA) vancomycin-resistant enterococci (VRE) in a 5-year period (2009-2013) in Europe and USA. Methods: Daptomycin and comparative agents were tested against MRSA and VRE collected from EU (six cities in four countries) and USA (six states) with no increasing trend observed for 5 years. Results: A. Activity was consistent over the period. France had the lowest susceptibility rates for MRSA, whereas highest VREFM rates were observed in the USA. Conclusion: Daptomycin susceptibility was not adversely influenced by increasing nosocomial infections, though all EU countries reported increasing rates of daptomycin-nonsusceptible VRE. Material and method: Daptomycin was evaluated against 3,043/2,848 (26.3/49.8% MRSA), 1,827/1,537 (26.3/49.8%) S. aureus and E. faecalis or resistance to vancomycin (MIC, >4 mg/L; EUCAST, 2013). Activity was consistent over the period.

INTRODUCTION

Methods: Consecutive, unique patient isolates of clinical significance were collected from inpatient and emergency care units in EU and USA medical centers and susceptibility tested in a central reference laboratory against comparator agents. Methods for VREF were approved by CLSI both microdilution methods. Mueller- Hinton broth was supplemented with 30 mg/mL of calcium when testing daptomycin. MIC results were interpreted according to EUCAST and CLSI breakpoint criteria (2015). Results: A total of 3,043/2,848 (26.3/49.8% MRSA), 1,827/1,537 (26.3/49.8%) S. aureus and E. faecalis or resistance to vancomycin (MIC, >4 mg/L; EUCAST, 2013) were evaluated. Isolates were mainly from USA (58.4% and 55.2%) and Europe (41.6% and 44.8%) countries). Results: MIC50/90, 1/1 mg/L; 100.0% susceptible) and linezolid MRSA, only 7/6 (0.19/0.05%) daptomycin-nonsusceptible active against MRSA overall, but were two- to four-fold less.

RESULTS

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METHODOLOGICAL

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REFERENCES

• The overall MRSA rate in EU was 25.9%, with the highest rates found in Portugal (66.3%), Russia (52.2%) and Ireland (54.5%). VREFM and intermediate and resistant. A daptomycin susceptibility

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CONCLUSIONS

• Daptomycin demonstrated sustained activity against an extensive collection of clinical isolates of MRSA, VREFM and VRE from EU and USA hospitals over the last 5 years.

• More than 98% of contemporary clinical isolates were susceptible to daptomycin tested against MRSA and VRE from EU and USA hospitals over the last 5 years.

• The clinical significance of daptomycin-resistant VRE is unclear.

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