COMPARISON OF BROTH MICRODILUTION AND ETTEST METHOD RESULTS WHEN TESTING VANCOMYCIN AND DAPTOMYCIN AGAINST METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS FROM 9 USA HOSPITALS

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ABSTRACT

Background: Increased vancomycin MIC values within the CLSI susceptibility range (1–2 μg/ml) have been correlated with poor clinical outcome. Fewer clinical laboratories to estimate MICs by reference or alternative methods, such as the CLSI 2006 document. Non-compliance is common when testing vancomycin and daptomycin MICs, which are considered the gold standard for antimicrobial susceptibility testing, 18th informational supplement. Wayne, PA: CLSI.

METHODS: Routinely, we used broth microdilution (BMD) and ETTEST methods (Becton Dickinson, Bedford, MA) to determine the MICs of vancomycin and daptomycin. 

RESULTS: Daptomycin was less affected (+0.5–1 dilutions and 0.4% false non-susceptible); microbiologist should use ETTEST with caution.

CONCLUSIONS: Daptomycin MICs results were substantially different from those obtained by broth microdilution method. Although ETTEST was less affected (+0.5–1 dilutions and 0.4% false non-susceptible), MIC results were substantially higher than that obtained with broth microdilution method.

INTRODUCTION

Vancomycin is still extensively used for treatment of methicillin-resistant Staphylococcus aureus (MRSA) infections as well as other MRSA infections. However, vancomycin treatment failure is not uncommon, even when MRSA are fully susceptible to vancomycin by criteria used by the Clinical and Laboratory Standards Institute (CLSI; breakpoint MIC, ≤2 μg/ml). Debates exist regarding an acceptable range of susceptibility to vancomycin by the ETTEST method.

METHODS

Two methods were used to determine MICs of vancomycin and daptomycin: (1) broth microdilution (BMD) method (CLSI guidelines, 2006) and (2) ETTEST method (Becton Dickinson, Bedford, MA) using the following vancomycin and daptomycin dilutions for 0.5–2 μg/ml, respectively.

RESULTS

Comparison of method-specific vancomycin minimum inhibitory concentration values and their predictability for treatment outcome of meticillin-resistant Staphylococcus aureus bloodstream infections.

CONCLUSIONS

Daptomycin MICs results were substantially different from those obtained by broth microdilution method. Although ETTEST was less affected (+0.5–1 dilutions and 0.4% false non-susceptible), MIC results were substantially higher than that obtained with broth microdilution method.

REFERENCES


