STANDARDIZATION OF A MODIFIED BROTH MICRODILUTION METHODOLOGY FOR DALBAVANCIN AGAINST NEISSERIA GONORRHOEAE

Laura M. Koeth, Jeanna Fisher
Laboratory Specialists, Inc, Westlake, OH

ABSTRACT

INTRODUCTION

The CLSI-recommended BC protocol for testing Neisseria gonorrhoeae is an age-old 24-hour methodology. Based on our prior studies, which have shown high reproducibility and accurately predict susceptibility of N. gonorrhoeae, a broth microdilution method (BMD) with some modifications to the BC protocol is in development. In this study, we sought to determine if adding P80 to the broth would improve reproducibility of results, and whether broth method results would be comparable with the agar dilution method (AD) for testing the susceptibility of N. gonorrhoeae to dalbavancin.

METHODS

Dalbavancin MIC results were determined with a broth microdilution method (BMD), direct inoculum method, and agar dilution method (AD) using the CLSI guidelines. BMD media included glucose instead of starch and growth curves were performed which showed sufficient growth (>2 log10 increase in optical density) within 24 hours. The media was modified to add 0.002% P80 for testing our prior studies, which have shown significantly higher dalbavancin MICs with AD, a broth microdilution method (BMD) with 5% CO2. ANOVA 2: results from prior study

RESULTS

Dalbavancin MIC results based on BMD testing in GC+5% LHB in 5% CO2 and incubated for 24 hours (Table 1). The average dalbavancin MIC for S. aureus ATCC 49226 was 0.5 μg/mL, and the average dalbavancin MIC for Neisseria gonorrhoeae ATCC 49226 was 2 μg/mL. The dalbavancin MIC results for S. aureus ATCC 49226 were all within 1 doubling dilution of the dalbavancin MIC results for Neisseria gonorrhoeae ATCC 49226. The dalbavancin MIC results for S. aureus ATCC 49226 were all within 1 doubling dilution of the dalbavancin MIC results for Neisseria gonorrhoeae ATCC 49226. No growth was observed in the AD method for S. aureus ATCC 49226.

CONCLUSIONS

Both BC broth+5% lysed horse blood (LHB) and MTGE broth provides sufficient growth and activity against all strains. MTGE broth was selected for further testing because it is a broth with a set of 5 isolates (3 susceptible and 2 resistant) that were tested against dalbavancin and ciprofloxacin. MTGE broth was selected for further testing because it is a broth with a set of 5 isolates (3 susceptible and 2 resistant) that were tested against dalbavancin and ciprofloxacin. MTGE broth was selected for further testing because it is a broth with a set of 5 isolates (3 susceptible and 2 resistant) that were tested against dalbavancin and ciprofloxacin. MTGE broth was selected for further testing because it is a broth with a set of 5 isolates (3 susceptible and 2 resistant) that were tested against dalbavancin and ciprofloxacin.