Oxazolidinone-Resistant Enterococci Emerging in 2001: Patient Reports from the SENTRY Antimicrobial Surveillance Program (USA)

A. Mutnick,1 R. N. Jones,1 R. P. Rhomberg,2 G. Moste2
1The JONES Group; 2Merck & Co., North Liberty, Iowa, USA [www.jmlabs.com]; 3University of Iowa, College of Pharmacy, Iowa City, Iowa, and 4Tufts University School of Medicine, Boston, Massachusetts, USA

AMENDED ABSTRACT

INTRODUCTION

• Vancomycin-resistant Enterococcus faecium (VREF) has emerged as a clinically significant pathogen in North America (NA), Europe (EU), and the Asia-Pacific (APAC) regions.
• Between 1998-2000, the percentage of isolates resistant to vancomycin increased from 0.7% to 1.1%.
• This review aims to present a summary of the characteristics of the first seven cases of oxazolidinone-resistant VREF (OXA-R) strains reported through the SENTRY Antimicrobial Surveillance Program (December 1998-December 2000).

MATERIALS AND METHODS

Isolates in this study were recent clinical isolates obtained from the SENTRY Antimicrobial Surveillance Program (December 1998-December 2000), which are considered clinical isolates isolated from in-patient or out-patient infections (clinical samples). A microbroth dilution method was used for susceptibility testing. Inocula sizes of 1 × 10⁶ colony forming units (CFU) per ml were used. The 20 microdilution trays were incubated at 35°C for 48 hours.

RESULTS

• Seven bacterial isolates originating from 5 different states across the United States demonstrated oxazolidinone resistance.
• Isolates were Enterococcus faecalis (E. faecalis) and E. faecium (E. faecium), one each (E. faecalis and E. faecium, respectively).
• Vancomycin resistance was present in one E. faecalis and one E. faecium isolate, both of which demonstrated susceptible MIC levels for vancomycin.
• Phenoxymethylpenicillin demonstrated susceptible MIC levels for the remaining isolates.
• Alternative antibiotic therapy with vancomycin MBC values against both E. faecalis isolates and E. faecium isolates is summarized in Table 1.
• The two E. faecium isolates demonstrated susceptibilities to quinupristin-dalfopristin, rifampin, and doxycycline.

CONCLUSIONS

• Oxazolidinone resistance has now extended beyond enterococcal spp., and has been reported in vancomycin-negative enterococcal and endocarditis gangrenous (very low) streptococcal (low) virulence mutations (M263G/L).
• Oxazolidinone resistance should not preclude the use of other antimicrobials, and requires a careful examination of susceptibility patterns in order to identify the best drug of choice.
• Routine monitoring for linezolid resistance needs to occur within the microbiology laboratory, along with timely reporting to practitioners to adequately select treatment options.
• Longitudinal surveillance programs facilitate the discovery of resistance, and allow for the characterization of resistance with advanced epidemiological procedures (SENTRY Program).

SELECTED REFERENCES


