In Vitro Activity of Plazomicin Against Gram-Negative and Gram-Positive Pathogens Isolated from Patients in Hospitals in 2011-2015: CANWARD Surveillance Study

G. G. ZHANEL,1 H. J. ADAM,1,2 M. BAXTER,1 A. DENSIUK,1 A. WALKTY,1 P. R. S. LAGACÉ-WIENS,1,3 F. SCHWEIZER,1 D. J. HobAN,3,4 J. A. KARLOWSKY1,3

1University of Manitoba, 2Health Sciences Centre, and 3,4St. Boniface Hospital, Winnipeg, Canada

ABSTRACT

Background: Plazomicin (formerly ACHN-490) is a next-generation aminoglycoside that was synthetically generated against clinical isolates of Enterobacteriaceae and Staphylococcus aureus. This study was conducted by the Canadian Antimicrobial Resistance Surveillance (CANWARD) Network Caring for Patients with Infections Due to Antimicrobial Resistant Organisms (CAPP-IO) in 2011-2015. This surveillance study was conducted in all Canadian hospitals and included patients in whom a presumed infectious disease was identified and who were treated with antimicrobials. The objective was to determine the in vitro activity of plazomicin against Gram-negative and Gram-positive pathogens isolated from patients in medical and surgical wards, intensive care units, clinics, and emergency rooms at 15-20 Canadian hospitals (2011-2015).

METHODS: Antimicrobial susceptibility testing was performed using in-house broth microdilution panels following the method recommended by CLSI. Results: In vitro activity of plazomicin and comparators is summarized below.

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INTRODUCTION

Plazomicin (formerly ACHN-490) is a next-generation aminoglycoside that was synthetically derived from plazomicin, a bactericidal peptide isolated from Streptomyces sp. (Zhanel et al., 2013). Plazomicin is a next-generation aminoglycoside with activity against Gram-negative and Gram-positive bacteria, including isolates harboring all clinically relevant aminoglycoside-modifying enzymes. However, like other aminoglycosides, plazomicin is not active against bacterial isolates expressing phosphoethanolamine transferases conferring resistance to phosphoethanolamine-specific aminoglycosides (Zhanel et al., 2013). The activity of plazomicin and comparators is summarized below. The activity of plazomicin, along with aminoglycoside and non-aminoglycoside comparators, was measured in patients from a Canadian hospital in 2011.

CONCLUSION

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- Plazomicin demonstrated potent activity in vitro against clinical isolates of Enterobacteriaceae, including strains resistant to gentamicin as well as other aminoglycosides including colistin.
- Plazomicin activity against P. aeruginosa, S. aureus, and vancomycin-resistant Enterococcus faecium (VRE) was similar to that of comparators.
- Plazomicin demonstrated potent activity in vitro against clinical isolates of Enterobacteriaceae and Staphylococcus aureus. This study was conducted by the Canadian Antimicrobial Resistance Surveillance (CANWARD) Network Caring for Patients with Infections Due to Antimicrobial Resistant Organisms (CAPP-IO) in 2011-2015. The objective was to determine the in vitro activity of plazomicin against Gram-negative and Gram-positive pathogens isolated from patients in medical and surgical wards, intensive care units, clinics, and emergency rooms at 15-20 Canadian hospitals (2011-2015).

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REFERENCES


