Activity of Ceftolozane-Tazobactam and Comparators against P. aeruginosa from Patients in Different Risk Strata -- SMART United States 2016-2017

INTRODUCTION

Infections caused by Pseudomonas aeruginosa are often difficult to treat. Knowledge of the risk of infection with resistant P. aeruginosa would allow more discriminatory prescribing of broad-spectrum antimicrobials. Using clinical isolates from different risk strata and with different infection sites as part of the Study for Monitoring Antimicrobial Resistance Trends (SMART), we examined the activity of P. aeruginosa and other major pathogens.

METHODS

For SMART, hospitals were requested to collect up to 250 anaerobic or facultatively aerobic gram-negative bacilli per year (100 isolates from lower respiratory tract infections [RTI]; 100 isolates from intra-abdominal infections [IAI]; and 50 isolates from urinary tract infections [UTI]) in 2016 and 2017. In 2018, 50 isolates from IAI were collected as part of the Study for Monitoring Antimicrobial Resistance Trends. For SMART, hospitals were requested to collect up to 250 anaerobic or facultatively aerobic gram-negative bacilli per year (100 isolates from lower respiratory tract infections [RTI]; 100 isolates from intra-abdominal infections [IAI]; and 50 isolates from urinary tract infections [UTI]) in 2016 and 2017. In 2018, 50 isolates from IAI were collected as part of the Study for Monitoring Antimicrobial Resistance Trends. For SMART, hospitals were requested to collect up to 250 anaerobic or facultatively aerobic gram-negative bacilli per year (100 isolates from lower respiratory tract infections [RTI]; 100 isolates from intra-abdominal infections [IAI]; and 50 isolates from urinary tract infections [UTI]) in 2016 and 2017. In 2018, 50 isolates from IAI were collected as part of the Study for Monitoring Antimicrobial Resistance Trends.

RESULTS

Susceptibility to levofloxacin was 68.9% overall with little difference between strata (Table 1). C/T also maintained activity (~80% or higher) against the studied b-lactam-nonsusceptible subsets in almost all strata, whereas susceptibility to the comparators generally varied (20%-60% lower) (Table 2).

CONCLUSIONS

Antimicrobial susceptibility of P. aeruginosa varied according to infection source, ward type, length of hospital stay at time of specimen collection, and patient age. Knowledge of such resistance patterns can help clinicians select appropriate agents for empiric therapy. C/T represents a promising new treatment option even in strata in which the risk of infection with b-lactam-nonsusceptible P. aeruginosa appeared higher.

REFERENCES & ACKNOWLEDGMENTS


Funding for this research was provided by Merck & Co., Inc., Kenilworth, NJ, USA. The authors thank all users of the SMART program for the continued contributions to its success.

S. Lob, D. Hoban, M. Hackel, K. Young, M. Mody, D. Sahn

© 2019 Merck & Co., Inc., Kenilworth, NJ, USA. All rights reserved.