2015

Treatment Outcomes for Infections Caused by “SPICE” (S–Serratia, P–Pseudomonas aeruginosa, I–Indole positive Proteus, C–Citrobacter, E–Enterobacter) Organisms: Carbapenem Versus Non-Carbapenem Regimens

Stanley Moy

Roopali Sharma

Touro College of Pharmacy

Follow this and additional works at: https://touroscholar.touro.edu/tcopny_pubs

Part of the Bacterial Infections and Mycoses Commons, and the Pharmacy and Pharmaceutical Sciences Commons

Recommended Citation
Treatment Outcomes for Infections Caused by “SPICE” (S–Serratia, P–Pseudomonas aeruginosa, I–Indole positive Proteus, C–Citrobacter, E–Enterobacter) Organisms: Carbapenem Versus Non-Carbapenem Regimens

Stanley Moy, PharmD1; Roopali Sharma, PharmD2; 1State University of New York (SUNY) Downstate Medical Center, Brooklyn, New York; 2SUNY Downstate Medical Center, Brooklyn, New York

Session: 132. Bacteremia and Endocarditis
Friday, October 9, 2015: 12:30 PM

Background. Techniques to identify AmpC β-lactamases in SPICE organisms are not yet optimized for the clinical laboratory and are not routinely done. Clinicians are often left with an uncertainty on the choice of antibiotic when a SPICE organism is isolated. The purpose of this study is to evaluate the outcomes of carbapenem versus non-carbapenem regimens in treating bacteremia or urinary tract infection (UTI) from a SPICE organism in a “real-world” setting.

Methods. This was a single-center, retrospective, case-cohort study consisting of adult patients who had clinical infection with a SPICE organism isolated from blood or urine cultures. Patients were excluded if they did not receive at least 48 hours of antimicrobial therapy, had a polymicrobial infection, or received additional antibiotics due to a concomitant infection. Patients were divided into carbapenem or non-carbapenem regimen groups. The primary endpoint was clinical response defined as resolution of signs and symptoms of infection at the end of therapy.

Results. A total of 145 patients were enrolled in this study. There were 20 patients who received meropenem while 125 received a non-carbapenem regimen. The percentage of patients that were bacteremic was 46.2%. The most common organisms isolated were Enterobacter in 38.6% of patients followed by Pseudomonas in 33.8%. Clinical response overall was achieved in 80% of patients on meropenem versus 90.3% of patients on non-carbapenem regimens (p = 0.24). Microbiologic cure was 90% for patients on meropenem versus 91.2% for patients on non-carbapenem regimens (p = 1). The results were similar after logistic regression controlling for SAPSII score and source of infection. The most common non-carbapenem antibiotic utilized for bacteremia was piperacillin/tazobactam (77.6%) and for UTI was ceftriaxone (41.0%). Piperacillin/tazobactam had an 88.5% rate of clinical response for bacteremia (p = 0.41 versus carbapenem). Ceftriaxone had an 84.4% rate of clinical response for UTI (p = 1 versus carbapenem).

Conclusion. In this “real-world” study, clinical response of patients treated for a SPICE organism did not differ significantly between carbapenem and non-carbapenem regimens. Current CLSI breakpoints set for SPICE organisms may still reliable and may not require additional testing for AmpC β-lactamases.

Disclosures. All authors: No reported disclosures.