Moderate to severe ADRs were seen in 12 patients (10%) with 4 admitted to the ED. Therapy with other agents was provided prior to DAL in 58% and following DAL in 6%. (9%), and musculoskeletal infections (3%). 55% were treated from the community. IV regimen. Diagnoses included cellulitis (32%), abscess (22%), diabetic foot infection (15%), and respiratory (40%) and urinary tract (20%). Blood cultures were positive in 10% of cases. Combination therapy (24 h) was used in 40%. Among carbapenem-resistant Klebsiella pneumoniae (n = 34), 97% were susceptible to CZA. The resistant isolate was positive for NDM and OXA. Clinical failure, 30-day mortality, and recurrence were 23%, 25% and 5%, respectively. Independent predictors of clinical failure were immune compromise (0.625, 95% CI 1.30, 30.11), Glasgow Coma scale ≤ 12 (0.376, 95% CI 1.30, 10.68), primary bacteremia or respiratory source (0.296, 1.07–8.17) and age ≤ 65 (0.87, 95% CI 1.09, 7.61).

Conclusion. The use of CZA was associated with a clinical failure rate of 28% which compares favorably with historical controls of MDR GNB infections. Future investigations evaluating long-term outcomes and comparative studies are needed to more precisely define the role of CZA in MDR GNB infections.

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380. Healthcare Resource Utilization for High-Risk Patients Treated With Dalbavancin in Physician Office Infusion Centers (POICs)

Quyen Liu, MD,1 Barry Statner, MD,2 FRPCP, FIDSA3; Robin H. Dettler, MD,1 FRCPA; TT. Barry Smith, MD,1 FACP2,3; Brian S. Winfrey, MD,1 MPH; Thomas K. Nair, MD,1,4,5; C. Hardin, PharmD;6 Claude P. Schroder, PharmD, PhD7 and Lucinda J. Van Anglen, PharmD8;9 Central Georgia Infectious Diseases, Macon, Georgia, 2Mazar, Statner, Datta, Nathan, PC, 3Thomas Oakes, California, 4Infectious Disease Specialties of Atlanta, Atlanta, Georgia, 5Infectious Disease Physicians, Miami, Florida, 6Austin Infectious Disease Consultants, Austin, Texas, 7Healix Infusion Therapy, Sugar Land, Texas

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Background. Medical beneficiaries and patients (patients) who are 65 years or more are the highest risk group for utilization of healthcare resources including emergency department (ED) visits and hospitalizations (hosps). Dalbavancin (DAL) is a long-acting lipoglycopeptide approved for treatment of bacterial skin and skin structure infections, well suited for outpatient therapy due to a 1–2 dose regimen. We investigated the use of healthcare resources following DAL with associated costs compared with national data.

Methods. A multi-center, retrospective chart review was conducted of all high-risk patients receiving DAL during 2017 at participating sites. Data included demographics, diagnosis, Charlson index, prior/post-IV therapies, DAL regimen, and adverse drug reactions (ADRs). ED visits and hoo within 30 days post-DAL were assessed and compared with Healthcare Cost and Utilization Project Nationwide Inpatient Sample and Nationwide Emergency Department Sample stratified by diagnosis. The inpatient length of stay (LOS) was used to calculate hospital charges.

Results. DAL was administered to 124 patients (mean age: 71 ± 10 years, mean Charlson index of 4.6, 55% male) in 10 POICs. Most patients (92%) received a 1-dose regimen. Diagnoses included cellulitis (32%), abscess (22%), diabetic foot infection (13%), osteomyelitis (10%), cutaneous site infections (9%), prosthetic device infection (9%), and musculoskeletal infections (3%). 55% were treated from the community. IV therapy with other agents was provided prior to DAL in 58% and following DAL in 6%. Moderate to severe ADRs were seen in 12 patients (10%) with 4 admitted to the ED and 3 hosp. Median onset of ADRs was 5 days post DAL. All cause ED visits were 10%, compared with a national rate of 10.6% based on diagnosis and age ≥65. All cause 30-day hosp admissions were 11.3% (14/124) compared with a national rate of 16.1% based on diagnosis. Mean inpatient LOS was 4.9 days compared with 5.3 days, resulting in healthcare resource cost savings of $97,014.

Conclusion. Use of DAL in high-risk, comorbid patients treated in POICs was associated with lower usage of both healthcare resources and corresponding costs than national estimates for respective diagnoses. AEs contributed to healthcare resource use. DAL provides a convenient outpatient treatment option for high-risk patients that may save use of healthcare resources.

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2381. Ceftolozane/Tazobactam in the Treatment of Experimental Pseudomonas aeruginosa Pneumonia in Persistently Neutropenic Rabbis: Impact on Strains With Genetically Defined Resistance

Vladimirs Petraitis, MD1; Ruta Petraitienė, MD1; Ethan Naing, MD1; Thein Aung, MD1; Wai Phyo Thi, MD2; Pavlos Kavalaukas, BS2; C. Andrew DeReye, PharmD3; Darren L. Culsaw, PharmD3; Luzelena Caro, PhD2; Michael J. Sati1, MD, MS4 and Thomas J. Walsh, MD, PhD3;5; Department of Medicine, Division of Infectious Diseases, Weill Cornell Medicine of Cornell University; New York, New York, 1Institute of Infectious Diseases and Pathogenic Microbiology, Prienai, Lithuania, 2Merck & Co., Inc., Kenilworth, New Jersey, 3Merck & Co., Inc., Kenilworth, New Jersey

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Background. Pseudomonas aeruginosa is a life-threatening infection with high mortality, particularly in neutropenic patients. The efficacy of current antimicrobial treatments with extended spectrum β-lactam antibiotics (ESBs) and anti-pseudomonal cephalosporins (ASCs) is limited by emergence of resistance. Ceftolozane/tazobactam is a novel cephalosporin with in vitro activity against isolates of Pseudomonas aeruginosa that are resistant to ESBs and ASCs. In order to assess the antimicrobial effect of current and new therapies in the treatment of Pseudomonas pneumonia, we investigated this new agent in the treatment of experimental Pseudomonas pneumonia in persistently neutropenic rabbis infected with different strains of genetically defined mechanisms of resistance.

Methods. Pseudomonas pneumonia was established in a rabbit model by direct endotracheal inoculation of P. aeruginosa 1 × 10^8–10^10 CFUs for tracheobronchial colonization that evolves into bronchopneumonia. Four treatment groups were studied: ceftolozane/tazobactam, ceftazidime (CZA), piperacillin/tazobactam (TZP), and untreated controls (UC). Rabbis were dosed IV to achieve humanized doses of ceftolozane/tazobactam 3g (2g) IQb, CZA 2g IQb, and TZP 4.5g IQb. Four isolates of P. aeruginosa were studied: pan-susceptible (PS), OPDR porin loss (OPDRP), efflux pump expression (EPE), and AmpC hyperexpression (ACP). Pseudomonas pneumonia was established with cytosine arabinoside and methotrexatedepoxindole.

Results. Treatment with ceftolozane/tazobactam resulted in ≥10^3 reduction in residual pulmonary bacterial burden caused by all 4 strains (P < 0.01). This antibacterial activity coincided with reduction of lung weight (P < 0.05), which is a marker of organ-compromised pulmonary. Pseudomonas pneumonia that was less active in ACHIE-infected rabbits, while TZP had less activity in EPE, AChIE, and OPDRP strains. Survival was prolonged in ceftolozane/tazobactam and CZA treatment groups in comparison to that of TZP and UC (P < 0.001).

Conclusion. Ceftolozane/tazobactam is highly active in treatment of experimental P. aeruginosa pneumonia in persistently neutropenic rabbis, including infections caused by strains with the most common resistant mechanisms.

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2382. Ceftolozane/Tazobactam for the Treatment of Multidrug-Resistant Pseudomonas aeruginosa Infections in Immunocompromised Patients: A Multi-Center Study

Abdulrahman Elabeg, MD1,2; Esther Mohnar, MD1; Madeline King, PharmD3; Jason Gallagher, PharmD, FCCP, FIDSA, BCPS4 and TOL-TAZ for Resistant Pseudomonas Study Group;1,2 Infectious Diseases, Temple University Hospital, Philadelphia, Pennsylvania, 1Pharmacy, University of the Sciences, Philadelphia College of Pharmacy, Philadelphia, Pennsylvania, 5Temple University School of Pharmacy, Philadelphia, Pennsylvania

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Background. Ceftolozane/tazobactam (TOL-TAZ) is a novel cephalosporin antibiotic combined with a known β-lactamase inhibitor. It has activity against some extended-spectrum β-lactamase (ESBL)-producing Enterobacteriaceae and multidrug-resistant Pseudomonas aeruginosa (MDRPA). To date, little experience has been published on outcomes with TOL-TAZ for MDRPA infections in immunocompromised patients.

Methods. This was a retrospective study of adult patients (≥18 years) with an immunocompromising condition (solid-organ transplant; hematologic malignancy; solid tumors; metastatic cancer) at 20 academic medical centers who had microbiologically confirmed MDRPA isolated in culture and received TOL-TAZ for at least 24 hours. 30-day survival, in-hospital mortality, and the rates of microbiologic and clinical cure were assessed.

Results. In this study of 65 critically-ill immunocompromised patients, the 30-day survival was 86.1%; clinical cure was 78.4% and microbiologic cure was 75.3%. TOL-TAZ is a viable option for immunocompromised patients with MDRPA infections.

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2383. In Vitro Activity of Ceftolozane–Tazobactam in Comparison With Ceftazidime–Avibactam vs. Antibacterial Non-Susceptible Pseudomonas aeruginosa Clinical Isolates, Including Multidrug-Resistant and Extensively Drug-Resistant Subsets: CANWARD, 2007–2017

Andrew Walkley, MD,1,2; Heather J. Adam, PhD,1,2; Melanie Baxter, MSc2; Philippe Lagace-Wiens, MD,1,2; James Karlowsky, PhD,2; Daryl Hoban, PhD,1,2; and George Zhanel, PhD1; Shared Health, Winnipeg, MB, Canada, ‘Medical Microbiology and Infectious Diseases, University of Manitoba, Winnipeg, MB, Canada

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Background. Pseudomonas aeruginosa (PA) is an important nosocomial pathogen. Treatment options for infections caused by multidrug-resistant (MDR) and extensively drug-resistant (XDR) isolates remain limited. Ceftolozane-tazobactam (C/T) and ceftazidime–avibactam (CZA) are two newer antimicrobials with antipseudomonal activity. The purpose of this study was to directly compare the in vitro activity of C/T and CZA vs. antimicrobial non-susceptible (NS) PA clinical isolates obtained as part of the CANWARD study.

Methods. Annually from 2007 to 2017, sentinel hospitals across Canada submitted blood, respiratory, urinary, and wound isolates (consecutive, one per patient/infected site) from patients attending ERs, medical and surgical wards, hospital clinics, and ICUs (CANWARD). Susceptibility testing was performed using broth microdilution (and breakpoints) as described by CLSI. MDR PA were defined as isolates that tested NS to at least one antimicrobial from ≥2 classes. XDR PA were defined as isolates that tested NS to at least one antimicrobial from ≥2 classes.

Results. 4224 PA isolates were obtained as a part of CANWARD. 628 (14.9%) were MDR, and 129 (3.1%) were XDR. The in vitro activity of C/T and CZA (plus relevant comparators) is presented below.

Conclusion. The in vitro activity of C/T was superior to CZA vs. antimicrobial NS PA clinical isolates (including MDR and XDR isolates) recovered from patients across Canada.

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Sarah Jorgensen, PharmD, BCPS, AHAHPV1; Trang D. Trinh, PharmD, MPH2; Evan J. Zasowski, PharmD, MPH2; Abdulhamid M. Maglin, MPH2; Sahil Bhatia, BS1,3; Samuel Simon, PharmD2; Sandy Estrada, PharmD2, BCPS (AQ-ID)4; Joshua Rosenfeld, MD, PhD1; Molly Steed, PharmD2; Susan L Davis, PharmD and Michael J. Rybak, PharmD, MPH, PhD5; Anti-Infective Research Laboratory, Department of Pharmacy Practice, Wayne State University, Eugene Applebaum College of Pharmacy & Health Sciences, Detroit, Michigan, 2Department of Clinical Pharmacy, University of California, San Francisco, School of Pharmacy, San Francisco, California, 3Anti-Infective Research Laboratory, College of Pharmacy, School of Medicine, Division of Infectious Diseases, Wayne State University, Detroit, Michigan, 4Department of Pharmacy Practice and Translational Research, University of Houston College of Pharmacy, Houston, Texas, 5Brigham Hospital, Brooklyn, New York, 6Department of Pharmacy, Lee Memorial Health System, Fort Myers, Florida, 7University of Kansas, Kansas City, Kansas, 8Pharmacy Practice, Wayne State University, Detroit, Michigan, 259 Mack Ave, Suite 4131, Eugene Applebaum College of Pharmacy & Health Sciences, Detroit, Michigan, 259 Mack Ave, Detroit, Michigan

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Background. Delayed appropriate antibiotic therapy for multidrug-resistant (MDR) Gram-negative bacterial (GNB) infections has been associated with increased mortality. Ceftolozane-tazobactam (C/T) is a novel antipseudomonal cephalosporin and β-lactamase inhibitor combination with excellent in vitro activity against MDR