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Background. Cefotizole/tazobactam is a novel cephalosporin and β-lactamase inhibitor antibiotic that has shown to have potent activity against Pseudomonas aeruginosa including strains exhibiting multi-drug resistance (MDR). The purpose of this study was to evaluate cefotizole/tazobactam efficacy in MDR P. aeruginosa pneumonia compared with historical standard of care.

Methods. This was a retrospective cohort study of patients treated with cefotizole/tazobactam and patients treated with historical standard of care and divided into two groups. Group 1 included 77 patients treated with cefotizole/tazobactam with a median duration of therapy of 102 days (IQR, 35–191 days). Group 2 included 78 patients treated with historical standard of care with a median duration of therapy of 79 days (IQR, 1–127 days).

Results. Cefotizole/tazobactam and historical standard of care groups were similar with respect to age, gender, and cancer-related comorbidities. The majority of patients presented with MDR P. aeruginosa (87% and 75% respectively), with the most prevalent MDR organisms being ESBL-producing Enterobacteriaceae (61% and 32% respectively). There were no significant differences in median duration of therapy between the two groups (p = 0.19). Clinical success was similar between the two groups, with 77% of patients treated with cefotizole/tazobactam achieving clinical cure at 14 days after initiation of therapy compared with 74% of patients treated with historical standard of care (p = 0.76). The median duration of therapy for patients achieving clinical cure was similar between the two groups (126 days vs. 111 days, p = 0.42). There were no significant differences in adverse events between the two groups.

Conclusion. Cefotizole/tazobactam appears to be a safe and effective alternative to historical standard of care for MDR P. aeruginosa pneumonia.

Disclosures. All authors: No reported disclosures.

2289. Role of β-Lactam-β-Lactamase Inhibitors in Indian Tertiary Care Hospitals: Results from a Nationwide Survey
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Background. Broad-spectrum antibiotics, particularly third-generation cephalosporins, are routinely used in the treatment of nosocomial infections. The emergence of Extended Spectrum B-Lactamase (ESBL)-producing pathogens in Indian tertiary care hospitals warrants the need to reassess β-lactam-β-lactamase inhibitors (BL-BLIs) as better alternative treatments.

Methods. An online survey was conducted by Pfizer India to understand the usage of BL-BLIs across Indian hospitals. The survey was administered to 334 clinicians across multiple specialties out of which 195 were from tertiary care hospitals. Results were analyzed using MS-Excel statistical tools.

Results. One-hundred ninety-five (195) clinicians from tertiary care hospitals completed the survey. About 78% of HCPs revealed the resistance to third-generation cephalosporins (e.g., ceftazime, ceftriaxone) to be between 10–60% in their clinical settings. BL-BLIs were mostly preferred for treatment based on hospital antibiograms (84% and 64% respectively) and rationality of BL/BLI combination (63%) and clinical experience with the BL-BLI molecule (63%). Ceferonazone-Sulbactam (CS) and Piperacillin–tazobactam (PT) were most commonly prescribed BL-BLIs and HCPs preferred the latter for pneumonia (67%), skin and soft-tissue infections (57%), bloodstream infections (67%) and cancer-associated febrile neutropenia (64%); while they preferred former for urinary tract infections (64%). CS and PT were preferred for intra-abdominal infections (57% and 64% respectively) and post-surgical infections (56% and 53% respectively).

Conclusion. CS and PT were the most commonly prescribed BL-BLIs probably due to their wide antimicrobial spectrum, rationality of BL/BLI combination and the clinical experience with the molecules. BL-BLIs are still a mainstay of treatment for infections due to ESBL producing organisms.

Disclosures. All authors: No reported disclosures.

2288. Role of Β Lactam-Β Lactamase Inhibitors in Indian Tertiary Care Hospitals: Results from a Nationwide Survey
Shweta Kamar, MD; Pankaj Gupta, MD; Akshata Mane, MD; Pfizer India, Mumbai, Maharashtra, India

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Background. Cefotizole/tazobactam is a novel cephalosporin and β-lactamase inhibitor antibiotic that has shown to have potent activity against Pseudomonas aeruginosa including strains exhibiting multi-drug resistance (MDR). The purpose of this study was to evaluate cefotizole/tazobactam efficacy in MDR P. aeruginosa pneumonia compared with historical standard of care.

Methods. This was a retrospective cohort study of patients treated with cefotizole/tazobactam and patients treated with historical standard of care and divided into two groups. Group 1 included 77 patients treated with cefotizole/tazobactam with a median duration of therapy of 102 days (IQR, 35–191 days). Group 2 included 78 patients treated with historical standard of care with a median duration of therapy of 79 days (IQR, 1–127 days).

Results. Cefotizole/tazobactam and historical standard of care groups were similar with respect to age, gender, and cancer-related comorbidities. The majority of patients presented with MDR P. aeruginosa (87% and 75% respectively), with the most prevalent MDR organisms being ESBL-producing Enterobacteriaceae (61% and 32% respectively). There were no significant differences in median duration of therapy between the two groups (p = 0.19). Clinical success was similar between the two groups, with 77% of patients treated with cefotizole/tazobactam achieving clinical cure at 14 days after initiation of therapy compared with 74% of patients treated with historical standard of care (p = 0.76). The median duration of therapy for patients achieving clinical cure was similar between the two groups (126 days vs. 111 days, p = 0.42). There were no significant differences in adverse events between the two groups.

Conclusion. Cefotizole/tazobactam appears to be a safe and effective alternative to historical standard of care for MDR P. aeruginosa pneumonia.

Disclosures. All authors: No reported disclosures.

2289. Bacterial Causes of Acute Bacterial Skin and Skin Structure Infections (ABSSSI) in Patients with Intravenous Drug Use (IVDU): Phase 3 REVIVE Studies
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Background. Opioid addiction in the United States has reached epidemic proportions threatening public health. This analysis evaluates the baseline characteristics and bacterial causes of ABSSI in patients who were IVDU from two parallel Phase 3 trials comparing the treatment of icaprim with vancomycin.

Methods. A total of 621 patients who were IVDU from two parallel Phase 3, double-blind, randomized (1:1), active-controlled, multinational, multicenter trials (REVIVE-1 and REVIVE-2) were analyzed both separately and pooled. This post-hoc analysis summarizes the baseline bacterial causes of ABSSI identified among IVDU. Per protocol, ABSSI (major abscesses, cellulitis, or wound infections) were defined as having either the presence of purulent or seropurulent drainage before or after surgical intervention of the wound or at least 3 of the following signs and symptoms: discharge, erythema (extending at least 2 cm beyond the wound edge in any direction), swelling and/or induration, heat and/or localized warmth, and/or pain and/or tenderness to palpation. IVDU was defined based on self-reported medical history. At the baseline visit, ABSSI were sampled for microbiological culture. Cultures were performed locally, and isolates were submitted to the central microbiology laboratory.

Results. Among IVDU with ABSSI, average age was 44 years, 67.6% were male, average lesion size was 322 cm², 10.8% had abnormal renal function (CrCl < 90 mL/minute), and 3.9% had bacteremia. The bacterial causes of ABSSI among IVDU are shown in the Table.

Conclusion. IVDU, a growing population, are vulnerable to ABSSI. S. aureus, including MRSA, and S. anginosus group were the most commonly identified bacterial causes of ABSSI in patients who are IVDU. Therefore, antibiotic selection should cover these bacteria among IVDU who present with an ABSSI.

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2290. Carbapenem vs. Piperacillin–tazobactam Definitive Therapy for Patients with Bloodstream Infections Due to Ceftiraxone Not Susceptible Escherichia coli or Klebsiella species
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Background. Definitive therapy with piperacillin-tazobactam (TZP) for ceftiraxone (CRO)-resistant E. coli or K. pneumoniae bloodstream infections (BSI) has been shown to be inferior to carbapenem therapy in a randomized trial.

Methods. The Premier US database was queried for hospitalized patients with monomicrobial E. coli or Klebsiella spp BSI that were not susceptible (NS) to CRO between January 2015 and May 2018. Adults with index positive blood culture(s) drawn within the first 2 hospital days who were treated with active antibiotic therapy that continued for ≥3 consecutive days were included. We defined antibiotics administered on or prior to Day 3 as empirical therapy and all subsequent days as definitive therapy. Outcomes among patients who received definitive therapy with a carbapenem vs. TZP were evaluated.

Results. There were 954 patients (mean age, 67.6 years; 52.4% women) who met selection criteria and received active empirical therapy. 729/954 received carbapenem definitive therapy and 38/954 received TZP definitive therapy. Median Charlson Comorbidity Index scores were similar between carbapenem and TZP definitive therapy groups (6 vs. 5, P = 0.78). Crude 14-day in-hospital mortality for CRO-NS BSI due to E. coli or Klebsiella spp was 4.4%. Definitive therapy with TZP (6/38; 15.8%) was associated with an increased likelihood of 14-day mortality relative to that of carbapenem therapy (3/729; 0.4%; P = 0.0001). The increased 14-day mortality observation was consistent in a multivariate Cox proportional hazards model (adjusted hazard ratio, 5.70; 95% CI 2.09 to 13.23; P = 0.002). Of patients who received carbapenem definitive therapy, 14-day mortality was 2.7% (19/693) if a carbapenem was part of empirical therapy and 8.3% (3/36; P = 0.06) if empirical therapy did not include a carbapenem. Median post-blood culture length of stay (7 vs. 6 days; P = 0.65) and hospital costs ($13,886 vs. $13,559; P = 0.62) were similar between carbapenem and TZP definitive therapy groups/p.

Conclusion. In this large US database, definitive therapy with TZP was associated with an increased likelihood of 14-day mortality relative to that of definitive carbapenem therapy in patients with CRO-NS BSI due to E. coli or Klebsiella spp.

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2291. Evaluation of Multidrug-Resistant Pseudomonas aeruginosa Isolates in Patients Receiving Cefetolozane/tazobactam
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Background. Multidrug-resistant (MDR) Pseudomonas aeruginosa is a challenging pathogen to treat. Cefetolozane/tazobactam (C/T) is a combination cephalosporin and β-lactamase inhibitor that has demonstrated activity against MDR P. aeruginosa, including carbapenem-resistant isolates. The objective of this study was to evaluate multidrug resistance in P. aeruginosa isolates obtained from patients treated with C/T across the Veterans Affairs (VA) Healthcare System nationally.

Methods. Hospitalized patients who received at least 1 dose of C/T between January 2015 and April 2018 and had a positive P. aeruginosa culture were included in this retrospective study. Culture source and antimicrobial susceptibility reports were assessed for each P. aeruginosa isolate. Isolates were categorized as multidrug-resistant based on the Centers for Disease Control (CDC) definition. Resistance rates were categorized by source of culture.

Results. We identified 174 positive P. aeruginosa cultures among 154 patients who received at least one dose of C/T during the study period. The most common sources of isolates were lung (40% of patients), urine (21%), skin and soft tissue (15%), blood (14%), and bone/joint (14%). Most patients (98.1%) had isolates that were MDR, with high-level resistance to carbapenem (84.4%), extended-spectrum cephalosporin (85.5%), and fluoroquinolone (79.9%) resistance. In this cohort, 50.6% of patients received at least one antibiotic prior to initiating C/T to which their clinical culture was not susceptible.

Conclusion. Antibiotic resistance was high in this cohort of patients with P. aeruginosa, and as a result, use of non-susceptible antibiotics occurred in 50.6% of patients before C/T was started. The high carbapenem resistance rates are of great clinical concern, but highlight an area of utilization for C/T given its activity against carbapenem-resistant P. aeruginosa.

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2292. Incidence of Acute Kidney Injury Associated with Duration of Vancomycin and Piperacillin/tazobactam Combination Therapy
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Background. Empiric antibiotic therapy for serious and healthcare-acquired infections often requires coverage for resistant pathogens, including methicillin-resistant Staphylococcus aureus (MRSA) and Pseudomonas aeruginosa. These regimens commonly consist of vancomycin plus an antipseudomonal β-lactam. Recent studies have reported increased acute kidney injury (AKI) risk associated with concomitant vancomycin and piperacillin/tazobactam therapy compared with each agent alone. The objective of this study was to determine whether vancomycin with piperacillin/tazobactam had an increased AKI incidence compared with vancomycin plus cepfime or meropenem. Furthermore, data were analyzed to determine whether a specific duration was associated with an increased AKI incidence.

Methods. A retrospective cohort study was conducted analyzing patients who received vancomycin in combination with piperacillin/tazobactam (V+PT), cepime (V+CM), or meropenem (V+M) by January 1, 2018 through June 30, 2018. Adult patients with normal baseline renal function and receipt of at least 48 hours of combination therapy, with the two antibiotics initiated within 24 hours of one another, were included. AKI events, evaluated using the Acute Kidney Injury Network (AKIN) criteria, during antibiotic therapy and up to 72 hours after antibiotic discontinuation were recorded. This data were used to calculate the AKI incidence with each regimen and AKI incidence associated with each day of therapy.

Results. A total of 181 patients were included in the study. The incidence of AKI in the V+PT group was 22.8% vs. 5.6% and 16.7% in the V+CM and V+M groups, respectively (P = 0.237). Median duration of therapy when AKI occurred was 3 days for V+PT, 4 days for V+CM, and 2 days for V+M (P = 0.015). Patients in the V+M group received more nephrotoxic agents compared with V+PT and V+CM (P = 0.004). Statistical analysis did not find a specific day of V+PT therapy predictive of AKI. However, a time to event analysis demonstrated a steady increase in AKI risk with V+PT, 4 days for V+C, and 2 days for V+M (P = 0.004).

Conclusion. Although not statistically significant, V+PT therapy was associated with a higher incidence of AKI compared with V+CM or V+M. Future studies are needed to further assess the impact of duration of therapy on AKI incidence.

Disclosures. All authors: No reported disclosures.