2270. Initial Treatment Selection Among Patients with Recurrent Pseudomonas aeruginosa (PSA) Infections (Infxs): Does Prior PSA Antibiotic Susceptibility Result Effect Subsequent Empiric Treatment Decisions? Laura Puzniak, PhD, MPH1, Vikas Gupta, PharmD, BCPP2, Ryan Dillon, MS1, Kalvin Yu, MD3, John Murray, MPH4, Thomas Lodise, PharmD, PhD1, Merck & Co., Inc., St. Louis, Missouri;1Becton, Dickinson and Company, Franklin Lakes, New Jersey;2Albany College of Pharmacy and Health Sciences, Albany, New York.

Session: 246. Clinical Outcomes of Infections with Resistant Organisms Saturday, October 5, 2019: 12:15 PM

Background. Resistance to commonly used anti-pseudomonal β-lactams (AP-BLs) like piperacillin/tazobactam (TZP), meropenem (MER) and cefepime (CEF) among patients (patients) with PSA infx is increasing. To minimize receipt of DAT among patients with PSA infx, clinicians need to consider the patient’s risk of having a PSA infx that is NS to commonly used AP-BLs. A well-described risk factor for having a NS AP-BL PSA infx is recent history of an NS AP PSA infx. This study evaluates the likelihood that a patient with a PSA infx receives an AP BL that was found to be NS on a prior PSA culture.

Methods. This was a multi-center (n = 239), retrospective cohort analysis using the 2018 data from the BD Insights Research Database (Becton, Dickinson and Company). Inclusion criteria: age ≥ 18 years; hospitalized; PSA infx (index PSA infx); occurrence of a PSA infx ≤ 1 year of index PSA infx (post-index PSA infx); and Company). Inclusion criteria: age ≥ 18 years; hospitalized; PSA infx (index PSA infx); occurrence of a PSA infx ≤ 1 year of index PSA infx (post-index PSA infx); and

Results. During study period, 16,062 patients had a PSA infx and 2,386 (14.9%) of patients had a post-index PSA infx. The most common culture sites for the index and post-index PSA infx were respiratory and urine. The most commonly prescribed AP-BL for the post-index PSA infx were TZP (41.9%), CEF (40.3%), and MER (30.8%). In total, 1,026 (43%) of patients had an index PSA infx that was NS to ≥ 1 AP-BL. Among the 1,026 patients with an index PSA infx that was NS to ≥ 1 AP-BL, 902 (88%) patients received an AP-BL as initial therapy for the post-index PSA infx and 559 (62%) patients received an AP-BL that was reported as NS on the index PSA culture.
infection, the duration of pre-hospitalization 214 days (P = 0.034), the absolute neutrophil count < 100 (P = 0.048) and steroid use (P = 0.025) were statistically significant risk factors. The mean length of hospital stay was 107 (±103) days. Klebsiella spp. attributable mortality due to infection was 14% and crude mortality was 15%. No statistically significant difference was found in patients who developed resistant and susceptible infections.

Conclusion. Carbenapen resistance in Klebsiella infections was increased. Prolonged hospital stay, neutropenia and steroid use in the last 3 months were identified as significant risk factors for carbenapen-resistant Klebsiella infections.

Table 1: Evaluation of risk factors for carbenapen-resistant and carbenapen-susceptible cases in Klebsiella spp. bloodstream infections

| Risk Factor | Carbenapen Resistant Klebsiella | Carbenapen Susceptible Klebsiella | P value |
|-------------|---------------------------------|-----------------------------------|---------|
| Age [year(s); median (IQR)] | 2.22 (1.33) | 0.45 (1.74) | 0.044 |
| Length of stay in hospital before infection [median(IQR)] | 31 (18) | 14 (46.5) | 0.132 |
| Length of stay in hospital before infection ≤ 14 days [median(IQR)] | 20 (16.9) | 31 (25.2) | 0.044 |
| Length of stay in hospital after infection [median(IQR)] | 55 (57) | 24 (95.1) | 0.331 |
| Laboratory WBC [mm^3/mm^3]; median (IQR) | 9590 (3277) | 8900 (8500) | 0.138 |
| ANC [10^3/mm^3]; median (IQR) | 2165 (1515) | 5770 (7035) | 0.331 |
| Hb [g/dL]; median (IQR) | 10.15 (4.57) | 10.3 (5.3) | 0.480 |
| PLT [10^3/mm^3]; median (IQR) | 122000 (217800) | 162000 (207050) | 0.068 |
| CRP [mg/dL]; median (IQR) | 4.6 (7.5) | 1.7 (8.85) | 0.003 |
| ANC > 5000 [mm^3]; median (IQR) | 7 (n=6.9) | 8 (n=13.6) | 0.136 |
| ANC ≤ 5000 [mm^3]; median (IQR) | 7 (n=6.9) | 6 (n=10.2) | 0.068 |
| Neutropenia Duration [median(IQR)] | 6 (18) | 2 (7) | 0.097 |
| Treatment Change [%] | 17 (n=16) | 23 (n=19.9) | 0.048 |
| Use of steroid [%] | 5 (n=3.6) | 6 (n=13.6) | 0.068 |
| Central Venous Catheter [%] | 21 (n=0.8) | 41 (n=72.9) | 0.077 |
| Foley Catheter [%] | 12 (n=0.6) | 24 (n=40.7) | 0.768 |
| Nasogastric Tube [%] | 21 (n=0.8) | 35 (n=50.3) | 0.055 |
| Tracheostomy [%] | 7 (n=1) | 11 (n=18.3) | 0.414 |
| Mechanical Ventilation [%] | 8 (n=3.2) | 16 (n=27.3) | 0.531 |
| Intensive Care Admission [%] | 18 (n=0.9) | 38 (n=64.6) | 0.068 |
| Mortality [%] | 5 (n=1.9) | 7 (n=11.9) | 0.396 |
| Mortality (1 month) [%] | 6 (n=2.1) | 7 (n=11.9) | 0.186 |
| Mortality (3 months) [%] | 8 (n=3.0) | 13 (n=22) | 0.390 |

Disclosures. All authors: No reported disclosures.

2274. Comparison of Clinical Outcomes in Patients with Extensively Drug-Resistant Pseudomonas aeruginosa Pneumonia Treated with Aminoglycosides vs. Cefotaxime/Tazobactam

Najwa Pervin, MD1; Khandase B. Tate-Nero, BS2; Saad Ullah, MD3; Sajan Korula, MPH2; Vidya Sundaresan, MD, MPH, FACP, FIDSA4; Janak Korula, MD MPH FACP FIDSA5; Southern Illinois University School of Medicine, Springfield, Illinois; SKIE: Statistical Consulting, Springfield, Illinois

Session: 246. Clinical Outcomes of Infections with Resistant Organisms Saturday, October 5, 2019: 12:15 PM

Background. Extensively drug-resistant (XDR) P. aeruginosa (PA), defined as resistant to ≥ 2 agents in all classes of antibiotics except two classes, limits therapeutic options to more toxic agents such as aminoglycosides (AMG) and polymyxins. Majority of the XDR PA isolated in 2 of our teaching hospitals were found to be susceptible to cefotaxime/tazobactam (CT) in addition to AMG and polymyxins. Our study aims to compare treatment outcomes with traditional antibiotics vs. CT in patients with XDR PA pneumonia.

Methods. This is a retrospective case–control study of patients admitted to two local hospitals from 2013 to 2018. Patients were screened by discharge diagnosis for pneumonia. We included patients over 18 years with XDR PA in saprophytic cultures susceptible to ≤ 2 classes of antibiotics. Statistical analyses included ANOVA, T-test, and Chi-square tests.

Results. Among the 48 patients with XDR PA pneumonia, 33 patients met inclusion criteria. Their mean age was 66 years (SD = 16), 30% were female, and 18% were immunocompromised. Similarly, 85% of patients had underlying lung disease and 55% had a tracheostomy tube. Majority of these patients were either nursing home residents (55%) or hospitalized (46%) within past 3 months. Septic shock associated with XDR PA pneumonia was found in 30% of patients, and 73% required mechanical ventilation during treatment. Nineteen patients received an aminoglycoside (AMG group), 9 CT (CT group), and 4 received CT plus an AMG. The average time to clinical improvement was 3.5 (±2.2) days for AMG group and 2.2 (±1.7) days for CT group (P = 0.03). Compared with CT group, AMG group had significantly longer mean duration of hospital stay (19 ± 13 vs. 32.4 ± 17 days, P < 0.05). All patients who had clinical failure to improve requiring change in antibiotics (2 patients) or who died after withdrawal of care (3 patients) were in AMG group. Clinical relapse within 30 days occurred equally in both groups (9 CT, 9 CT; P = 0.3). Six patients who developed acute kidney injury received either an AMG (5) or colistin (1).

Conclusion. Based on our observation, CT is a safe and effective treatment for XDR PA pneumonia. Compared with CT, patients who received AMG had longer hospital stays and sustained more nephrotoxicity.

Disclosures. All authors: No reported disclosures.