Cytomegalovirus (CMV) infection, renal replacement therapy (RRT), and post-transplant extra-corporeal membrane oxygenation (ECMO) were analyzed as a time-dependent covariate.

Results: 1,112 SOT recipients met inclusion criteria. Patient characteristics are shown in Table 1. 105 patients had at least one MDRBI. The cumulative incidence of MDRBI was 9.7% (95% CI 14.6–5.9) (Figure 1). The most common MDR pathogens were Vancomycin-resistant Enterococci and E. coli (Figure 2A), and the most common sites of infection were urinary tract infection and pneumonia (Figure 2B). The 1-year post-SOT survival in patients with MDR infection was 75.3% (95% CI 82.8–65.2) (Figure 2C). In multivariable analysis, MDRBI (HR = 6.2 [3.5–10.9]) and post-SOT RRT (HR = 17.8 [10.3–30.6]) were associated with an increased risk of 1-year mortality (Table 2).

Conclusion: MDRBI significantly impacts the 1-year survival of SOT recipients. Our results highlight the need to strengthen ASP measures in SOT. Additionally, this study illustrates the versatility of EHR-based registries and data extraction tools in the field of transplantation.

Table 1. Patient Characteristics (Solid Organ Transplant Recipients, N=1,112)

| Variable                  | n   | % or IQR |
|---------------------------|-----|----------|
| Age (median)              | 57  | 40–74    |
| Gender (Male)             | 725 | 65.2%    |
| Race/Ethnicity            |     |          |
| African American          | 182 | 16.4%    |
| Caucasian                 | 662 | 59.5%    |
| Hispanic                  | 217 | 19.5%    |
| Other/Unknown             | 51  | 4.6%     |
| Diabetes                  | 313 | 28.1%    |
| Transplant type           |     |          |
| Heart                     | 203 | 18.3%    |
| Kidney                    | 278 | 25.0%    |
| Liver                     | 199 | 17.9%    |
| Lung                      | 395 | 35.5%    |
| Multiorgan                | 37  | 3.3%     |
| CMV serostatus            |     |          |
| D+/R-                     | 309 | 27.8%    |
| D+/R+; D-/+R+             | 676 | 60.8%    |
| D-/R+                     | 127 | 11.4%    |
| CMV infection             | 109 | 9.8%     |
| Post-Transplant RRT       | 176 | 15.8%    |
| Pre-Transplant ECMO       | 17  | 1.5%     |
| Post-Transplant ECMO      | 10  | 0.9%     |

Table 2. Multivariable Analysis of Risk Factors for All-Cause 1-year Post-Transplant Mortality

| Variable                  | HR (95% CI) | P value |
|---------------------------|-------------|---------|
| Age                       | 1.02 (1.00–1.03) | 0.13 |
| Female                    | 0.97 (0.62–1.52) | 0.89 |
| Race/Ethnicity            |             |         |
| Caucasian                 | Reference   | –       |
| African American          | 0.67 (0.34–1.30) | 0.24 |
| Hispanic                  | 1.12 (0.58–2.16) | 0.74 |
| Other/Unknown             | 0.96 (0.36–2.57) | 0.92 |
| Diabetes                  | 0.90 (0.53–1.51) | 0.68 |
| Transplant type           |             |         |
| Kidney                    | Reference   | –       |
| Heart                     | 4.62 (1.69–12.59) | <0.01 |
| Liver                     | 2.51 (1.03–6.15) | 0.04 |
| Lung                      | 14.59 (6.03–35.29) | <0.01 |
| Multiorgan                | 0.85 (0.17–4.17) | 0.84 |
| CMV serostatus            |             |         |
| D+/R-                     | Reference   | –       |
| D+/R+; D-/+R+             | 1.39 (0.63–3.03) | 0.42 |
| CMV Infection             | 0.98 (0.43–2.20) | 0.95 |
| Post-Transplant ECMO      | 0.66 (0.15–2.95) | 0.59 |
| Renal Replacement Therapy | 2.08 (0.74–5.92) | 0.16 |
| Type of Infection         |             |         |
| Non-MDRO                  | Reference   | –       |
| MDRO                      | 4.12 (2.18–7.79) | <0.01 |
| Renal Replacement Therapy | 6.28 (3.54–10.93) | <0.01 |
2666. Does Ceftazidime–Avibactam (CAZ-AVI) Improve Short- and Long-Term Outcomes Among Solid-Organ Transplant (SOT) Recipients with Carbapenem-Resistant Enterobacteriaceae (CRE) Infections?
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Background: CRE infections are an ideal population in which to study the impact of new antibiotics, since they are particularly dependent upon drug activity to clear infections. In 3/15, FDA approved CAZ-AVI, the first new anti-CRE agent to arrive of new antibiotics, since they are particularly dependent upon drug activity to clear infections. In 3/15, FDA approved CAZ-AVI, the first new anti-CRE agent to arrive of new antibiotics, since they are particularly dependent upon drug activity to clear infections. In 3/15, FDA approved CAZ-AVI, the first new anti-CRE agent to arrive.

Methods: We performed a retrospective study of SOT recipients infected with CRE since 2012, who were treated with CAZ-AVI or salvage agents for ≥ 3 days.

Results: 35 CRE-infected SOT recipients (14 liver, 11 lung, 6 kidney, 3 intestine, 1 heart) with bacteremia (20), pneumonia (11), intra-abdominal abscess (3) and soft-tissue infection/osteomyelitis (1) were enrolled. 16 and 19 patients (pts) were treated with CAZ-AVI and salvage agents, respectively. Types of infection or SOT, salvage agents, respectively, as measured by Kaplan–Meier (Figures). CAZ-AVI significantly reduced short-term mortality among SOT recipients with CRE infections compared with salvage regimens, both 30- and 90-day mortality rates were significantly lower among SOT recipients treated with CAZ-AVI (0% and 6%, respectively) compared with salvage agents (26% and 37%; P = 0.049 and 0.047). Among patients who survived 90 days, recurrent CRE infections were diagnosed in 53% and 17% of those treated with CAZ-AVI and a salvage regimen, respectively (P = 0.10). Median time from end of therapy for the 1st CRE infection to recurrent infection was 116 days (max 1,242) and 361 days (max 799) for CAZ-AVI and salvage regimens, respectively. Survival and recurrence-free survival were greater for treatment with CAZ-AVI and salvage agents, respectively; as measured by Kaplan–Meier (Figures). CAZ-AVI resistance developed in 37% (n = 3) of patients with recurrent infections. Recurrent isolates were genetically indistinguishable from parent isolates by core genome SNP phylogeny (< 15 SNP).

Conclusion: CAZ-AVI significantly reduced short-term mortality among SOT recipients with CRE infections compared with salvage regimens, but was limited by recurrent infections and emergence of resistance. The same strains caused recurrent and initial infections, suggesting that CAZ-AVI did not eliminate CRE from GI sites that serve as sources of recurrence. Optimizing outcomes in SOT recipients with CRE infections will require new agents like CAZ-AVI, and strategies to eliminate long-term colonization.

Disclosures. All authors: No reported disclosures.