the frequency of UTIs in selected non-transplant patients, but which is not recommended in renal insufficiency. We conducted a retrospective study to determine the efficacy of methenamine prophylaxis in our kidney transplant population, and identify subgroups for which efficacy is greatest.

Methods: Retrospective chart review of adult kidney transplant patients at Montefiore Medical Center who were prescribed methenamine during January 1, 2016–December 31, 2017, with extraction of clinical data in the year before and after prophylaxis. Variables included demographics, creatinine clearance and hemoglobin A1c levels at the time of prescription, incidence of UTIs as determined by standardized literature definitions, hospital admissions for infections, and antibiotic use.

Results: The incidence of UTIs per 1000 patient-days decreased significantly, from 9.66 (95% CI 7.53–12.40) the year before to 3.24 (95% CI 2.00–5.24) the year after ($P < 0.001$). The effect was significantly more pronounced in patients who were transplanted due to diabetic nephropathy, with a decreased incidence of 13.05 (95% Cl 10.00–17.02) UTIs/1000 patient-days to 2.90 (95% Cl 1.58–5.32) in diabetics ($P < 0.001$), vs. 5.50 (95% Cl 3.65–8.28) UTIs/1000 patient-days to 3.81 (95% Cl 1.70–8.55) in non-diabetics ($P = 0.44$). The number of days of antibiotics for UTIs per 1000 days also decreased significantly for all patients, from 128.58 (95% CI 94.87–174.28) the year before to 49.78 (95% CI 31.74–78.07) the year after ($P = 0.001$). No significant differences in efficacy were seen based on sex or renal function. Three patients with indwelling urinary catheters or who required intermittent catheterization did not appear to benefit

Conclusion: Methenamine prophylaxis decreases the incidence of UTIs and number of antibiotic days in adult renal transplant recipients. This effect was seen even in patients with reduced creatinine clearance. Patients with diabetes benefited the most. The small number of patients who required catheterization did not appear to benefit.

Table 1: Demographics

Age, years, median (25%Q, 75%Q)	59.5 (50, 65)
Patients given methenamine, n	30
Female, sex, n (%)	14 (46.67%)
Presence of 2nd organ transplant, n (%)	
Heart, n (%)	1 (3.33 %)
Pancreas, n (%)	3 (9.99 %)
Chronic foley , n (%)	2 (6.67 %)
Intermittent catheterization, n (%)	2 (6.67 %)
Primary etiology of end stage renal disease	
Diabetic nephropathy, n (%)	18 (60 %)
Hypertensive nephrosclerosis, n (%)	9 (30 %)
Graft failure, n (%)	4 (13.33 %)
Systemic Lupus Erythematous, n (%)	1 (3.33 %)
Polycystic kidney disease, n (%)	4 (13.33 %)
Other, n (%)	3 (9.99%)
GFR pre-methanamine, mL/min, median (25%Q, 75%Q)	62.3 (43.6, 68.2)
GFR post-methenamine, mL/min, median (25%Q, 75%Q)	59.5 (43.5, 78)
A1C at first methenamine dose, median (25%Q, 75%Q)	6.45% (5.7%, 8.2%)
A1C at first methenamine dose<8%, n (%)	19 (63%)
A1C at first methenamine dose≥8%, n (%)	11 (37 %)
Methenamine discontinued, n (%)	5 (16.67 %)
Methenamine intolerance, n (%)	1 (3.33 %)

Table 2: UTI/1000 person days pre/post methenamine

Patient Population	(n)	Pre-methenamine (95% CI)	Post-methenamine (95% CI)	p
All patients	30	9.66 [7.5 – 12.4]	3.24 [2.00 – 5.24]	**<0.001**
Male	16	10.11 [6.93 – 14.73]	4.37 [2.36 – 8.09]	**<0.001**
Female	14	9.17 [6.64 – 12.6]	2.06 [0.99 – 4.28]	**<0.001**
DM nephropathy,	18	13.05 [10.00 – 17.02]	2.90 [1.58 – 5.32]	**<0.001**
Other nephropathy	12	5.50 [3.65 – 8.28]	3.81 [1.70 – 8.55]	0.44
A1C≥8%	19	12.37 [8.98 – 17.05]	2.02 [1.16 – 3.51]	**<0.001**
A1C<8%	11	8.27 [5.79 – 11.81]	4.05 [2.20 – 7.47]	0.059
CrCl≥50 ml/min	20	9.28 [6.71 – 12.82]	3.59 [2.03 – 6.34]	**0.014**
CrCl<50 ml/min	10	10.48 [7.01 – 15.67]	2.41 [1.04 – 5.58]	**<0.001**
Chronic foley	2	2.73 [0.38 – 19.44]	16.24 [10.76 – 24.52]	**0.141**
Intermittent cath	2	8.21 [2.22 – 30.35]	5.46 [0.76 – 38.79]	0.81

Table 3: Hospitalizations for UTI/1000 person days pre/post methenamine

Patient Population	(n)	Pre-methenamine (95% CI)	Post-methenamine (95% CI)	p
All patients	30	5.86 [4.06-8.45]	2.53 [1.44-4.45]	0.011
Male	16	6.99 [4.0 – 11.9]	3.58 [1.78 – 7.16]	????
Female	14	4.58 [3.10 – 6.78]	1.44 [0.58 – 3.56]	????
Diabetic nephropathy	18	7.27 [4.64 – 11.38]	2.09 [1.03 – 4.25]	????
Other nephropathy	12	4.13 [2.17 – 7.84]	3.27 [1.31 – 8.13]	????
A1C <8	19	5.61 [3.59 – 8.77]	3.38 [1.75 – 6.50]	????
A1C ≥8	11	6.33 [3.26 – 12.30]	1.26 [0.50 – 3.18]	????
CrCl<50	10	7.36 [4.14 – 12.86]	2.06 [0.93 – 4.59]	????
CrCl≥50	20	5.17 [3.19 – 8.38]	2.72 [1.35 – 5.51]	????

Table 4: Antibiotic days/1000 person days pre/post methenamine

Patient Population	(n)	Pre-methenamine (95% CI)	Post-methenamine (95% CI)	p
All patients	30	128.58 [95.87 – 174.28]	49.78 [31.74 – 78.07]	**<0.001**
Male	16	145.63 [92.06 – 230.38]	71.61 [40.98 – 125.12]	0.074
Female	14	109.43 [77.84 – 153.85]	27.08 [14.16 – 51.80]	**<0.001**
Dm nephropathy	18	176.20 [126.46 – 245.51]	42.60 [24.24 – 74.86]	0.776
Other nephropathy	12	69.98 [41.40 – 118.29]	61.92 [29.74 – 128.92]	**<0.001**
A1C <8%	19	114.85 [75.78 – 174.06]	66.80 [39.11 – 114.09]	0.102
A1C ≥8%	11	155.14 [99.30 – 242.39]	24.30 [15.51 – 38.06]	**<0.001**
CrCl<50 ml/min	10	132.46 [83.22 – 210.84]	46.51 [20.76 – 104.22]	**<0.001**
CrCl ≥50 ml/min	20	126.73 [84.91 – 189.13]	51.14 [29.56 – 88.47]	**0.021**

Disclosures. **All authors:** No reported disclosures.

2663. Impact of Pre-Transplant Microbiology on Acute Outcomes in Cystic Fibrosis Patients Receiving Bilateral Lung Transplants

Xincheng (Michael) Ji, BS; Raksha Jain, MD; David E. Greenberg, MD; University of Texas Southwestern Medical Center, Dallas, Texas

Session: 273. Transplant ID: Bacterial Infections
Saturday, October 5, 2019: 12:15 PM

Background: Lung transplantation is a life-prolonging intervention for cystic fibrosis (CF) patients; however, their tendency to be colonized with multiple respiratory pathogens poses a unique risk for post-transplant complications. While infections with certain CF-related pathogens have been identified as contraindications for transplant, much remains uncertain about the influence of pre-transplant microbiological factors on post-transplant outcomes.

Methods: A retrospective cohort study was performed for all CF patients receiving bilateral lung transplants at a single center during the 2016–2018 period. Patient and microbiological data were collected and analyzed from 1 year pre-transplant to 3 months post-transplant. Patients were categorized according to pre-transplant microbiology, with consideration to multidrug-resistant organisms (MDROs) and chronic organisms (positive culture in ≥ 50% of encounters).

Results: Twenty-seven CF patients received a transplant during this time period. Twenty-five patients (92.6%) had re-isolation with ≥ 1 pre-transplant organism in the 3 month period post-transplant, with 16 (59.3%) developing infectious complications, and 11 (40.7%) developing rejection. Isolates associated with chronic infections were the principal factor in determining re-isolation post-transplant (OR = 4.353, 95% CI = 1.455–13.027, $P = 0.009$). Multidrug-resistance ($P = 0.095$) and species ($P > 0.3$) were not significant predictors of re-isolation. There was no difference in early post-transplant outcomes (infectious complications, rejection, FEV1% predicted, ICU and hospital LOS) for patients chronically infected with MDROs vs. those who were not ($P > 0.3$). Chronic infections with *Pseudomonas aeruginosa* or methicillin-resistant *Staphylococcus aureus* were not predictors of poor outcomes ($P > 0.3$). However, chronic fungal infections ($n = 7$) produced more infectious complications (median 2 vs. 0, $P = 0.0453$) and longer ICU stays (median 22 days vs. 5 days, $P = 0.0191$).

Conclusion: Chronic infections are associated with a greater risk of post-transplant re-isolation of pathogens in CF patients, more so than drug resistance or species. Chronic infections with fungi were associated with worse transplant outcomes.

Disclosures. **All authors:** No reported disclosures.

2664. Impact of Multidrug-Resistant Bacterial Infections in Solid-Organ Transplantation: The Value of Electronic Health Records-Based Registries and Data Extraction Tools

Alfredo G. Puing, MD[1]; Donglu Xie, MS[1]; Beverley Adams-Huet, MS[1]; Nicolas Barros, MD[2]; Christina Yek, MD[1]; Ashley Wallace, BS[1]; Terrence Liu, BS[1]; Robert W. Haley, MD[1]; Ricardo M. La Hoz, MD[1]; [1]UT Southwestern Medical Center, Dallas, Texas; [2]Massachusetts General Hospital, Boston, Massachusetts

Session: 273. Transplant ID: Bacterial Infections
Saturday, October 5, 2019: 12:15 PM

Background: Antimicrobial usage is the most important driver of antimicrobial resistance. Despite compelling reasons to use antimicrobials judiciously, it has been challenging to implement antimicrobial stewardship programs (ASP) in the solid-organ transplant (SOT) population. The objective of our study is to assess the impact of multidrug-resistant bacterial infections (MDRBI) on the 1-year post-transplant survival in SOT recipients.

Methods: In this retrospective cohort study, we included all patients with a first SOT from January 1, 2010–December 31, 2016 at our institution. Patients were followed for a year. Data extraction tools retrieved information from the electronic health record (EHR) and merged it with data from the Social Security Death Index (SSDI) and Standard Transplant Analysis and Research (STAR) files. Charts of subjects with positive cultures were manually reviewed and adjudicated using CDC/ECDC and CDC/NHSN criteria. The 1-year MDRBI cumulative incidence and survival were estimated using the Kaplan–Meier method and compared using the Log-rank test. A Cox proportional hazards model was used to identify predictors of 1-year mortality.

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)

	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-	1.39 (0.63-3.03)	0.42
D+/R+;D-/R+	1.57 (0.77-3.22	0.21
CMV Infection	0.98 (0.43-2.20)	0.95
Pre-Transplant ECMO	0.66 (0.15-2.95)	0.59
Post-Transplant ECMO	2.08 (0.74-5.92)	0.16
Renal Replacement Therapy	17.77 (10.31-30.63)	< 0.01
Type of Infection		
None	Reference	--
Non-MDRO	4.12 (2.18-7.79)	< 0.01
MDRO	6.28 (3.54-10.93)	< 0.01

Figure 1. Cumulative incidence MDRBI

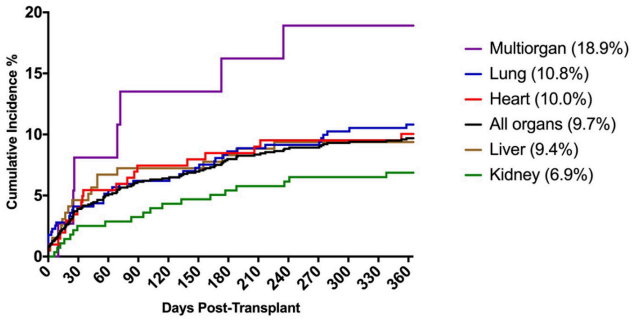
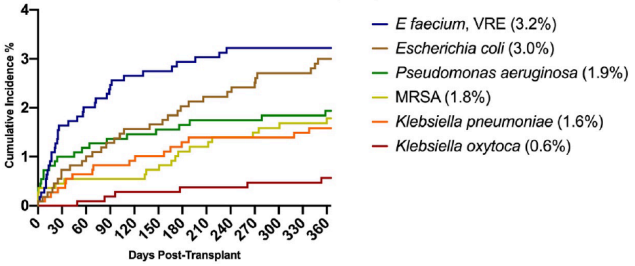
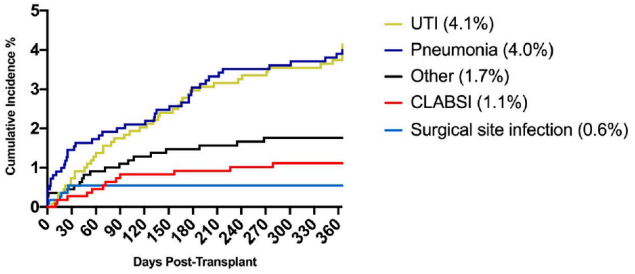


Figure 2.

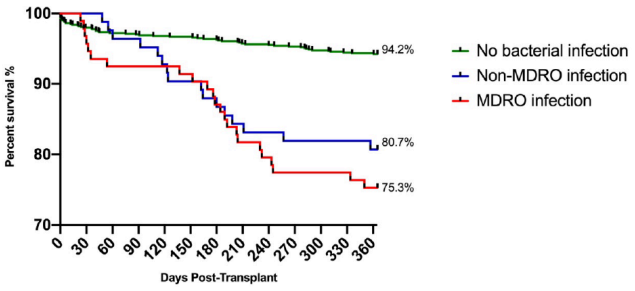
A. Cumulative incidence MDRBI by organism



B. Cumulative incidence MDRBI by site of infection



C. 1-year survival after MDRBI



Disclosures. **All authors:** No reported disclosures.

2665. Intestinal Microbiome of Patients Submitted to Hematopoietic Stem Cell Transplantation Using *Lactobacillus plantarum* to Decolonized Multidrug-Resistant Bacteria

Bruna G C. Moraes, BSc Nutrition[1]; Roberta C R. Martins, MSc, PhD[2]; Lucas A M. Franco, MSc, PhD[2]; Victor A C C. Lima, MD[1]; Gaspar C O. Pereira, Bsc[2]; Juliana T. Santos, Nurse, BSc[3]; Tamiris H. Fernandes, Pharmaceutical, BSc[3]; Thais Guimaraes, MD,MSc, PhD[4]; Vanderson G. Rocha, MD, Full Professor[5]; Ester C. Sabino, MD, Associate Professor[6]; Silvia F. Costa, MD,MSc, PhD[5]; [1]Faculdade de Medicina FMUSP, Sao Paulo, Brazil; [2]Institute of Tropical Medicine, Sao Paulo, Brazil; [3]Hospital das Clinicas HCFMUSP, Sao Paulo, Brazil; [4]University of Sao Paulo, Sao Paulo, Brazil; [5]Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, Brazil; [6]Institute of Tropical Medicine, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, Brazil