intravenous immunoglobulin; WBC: white blood cell count; ANC: absolute neutrophil count; ALC: absolute lymphocyte count.

Table 2. Characteristics of the 113 Infections in the 35 Subjects Who Developed Infections

Total Infections by Category*	113 Total Infections
Bacterial (Total #,% infections)	77 (68.1)
Proven bacterial infections	34
Gram positive (# infections, % proven bacterial)	12 (35.3)
Gram negative (# infections, % proven bacterial)	19 (55.9)
Other+ (#infections, % proven bacterial)	3 (8.8)
Proven bacterial infections by body site	
Pulmonary (# infections, % proven bacterial)	19 (55.9)
Urinary (# infections, % proven bacterial)	17 (50.0)
Sinus (# infections, % proven bacterial)	14 (41.2)
Other (# infections, % proven bacterial)	27 (35.1)
Probable bacterial infection+	43
Viral (Total #, % infections)	27 (23.9)
Proven viral infections	20
Non-respiratory virus (# infections,% proven viral)	5 (25.0)
Respiratory virus (# infections,% proven viral)	15 (75.0)
Proven viral infections by body site	
Pulmonary (# infections,% proven viral)	22 (81.5)
Urinary (# infections,% proven viral)	0 (0)
Skin (# infections,% proven viral)	1 (3.7)
Other (# infections,% proven viral)	4 (4.8)
Probable viral infections	7
Fungal (Total #, % infections)	9 (8.0)

*Patients could have more than one infection in each group and could have infections in each of the categories. Gram positive organisms included the following: Enterococcus faecium, Enterococcus spp, Staphylococcus spp, Coagulase negative Staphylococcus, Staphylococcus epidermidis. Gram negative organisms included: Klebsiella pneumoniae, Escherichia coli, Enterobacter spp, Stenotrophomonas, Acinetobacter spp, Citrobacter spp, Pseudomonas aeruginosa, Salmonella spp, Serratia marcescens. +Additional bacterial infections included Clostridium difficile infection and Lyme disease (Borrelia burgdorferi). Non-respiratory viruses included: included human papillomavirus and Cytomegalovirus. Respiratory viruses included: Coronavirus (non-SARS-CoV2), SARS-CoV2, Enterovirus, Human metapneumovirus, Influenza, Parainfluenza, Rhinovirus. Fungal infections included: Aspergillus spp, Cryptococcus spp, Candida glabrata. +Probable bacterial infections were treated with systemic antibiotics but did not have a confirmed pathogen.

Conclusion. Infectious complications, particularly of bacterial etiology, are common in the first year following CAR-T therapy. These data may inform future prophylactic strategies in this patient population.

Disclosures. **Matthew Frigault, MD**, **Arcellx** (Consultant)**BMS** (Consultant)**Iovance** (Consultant)**Kite** (Consultant)**Novartis** (Consultant) **Jay A. Fishman, MD**, Nothing to disclose **Jon Arnason, MD**, **BMS/Juno** (Advisor or Review Panel member)**Regeneron** (Advisor or Review Panel member)

926. COVID-19 Infections After SARS-CoV-2 Vaccination in Solid Organ Transplant Recipients

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Session: P-53. Infections in Immunocompromised Individuals

Background. Solid organ transplant recipients (SOTR) have lower humoral responses following SARS-CoV-2 vaccination. Whether this equates to reduced vaccine effectiveness in SOTR or impacts disease severity is not yet known. We used the IDSA Emerging Infections Network (EIN) to identify SARS-CoV-2 cases in vaccinated SOTR. We describe their clinical characteristics and outcomes.

Methods. On 4/7/21, we requested case reports via the EIN listserv of COVID-19 infection following SARS-CoV-2 vaccination in immunocompromised individuals. Case reports were collected until June 7th. Online data collection included patient demographics, dates of SARS-CoV-2 vaccine administration and clinical data related to COVID-19 infection. We performed a descriptive analysis of these patient factors and compared differences between early onset (< / = 21 days after completing vaccine series) and late onset infection (> 21 days after completing vaccine series).

Results. As of 6/7/21, 34 cases of COVID-19 infection after vaccination in SOTR were submitted. Most cases (79%) occurred in individuals who were fully vaccinated. Only 3 cases (8.5%) occurred in SOTR within their first year after transplantation. Clinical characteristics are listed in Table 1. The vaccine administration date was known for 26 SOTR among whom symptoms occurred a median of 26.5 days (IQR 21.75 days, range 5-79 days) after completing the COVID-19 vaccine series. Twenty-three SOTR (68%) required hospitalization of which 12 had critical illness. Outcome data was available for 29 individuals of whom 20 (69%) demonstrated improvement. When comparing SOTR with early versus late onset COVID-19 infection in relation to vaccination timing, there were no differences in disease severity (80% vs 75% with severe or critical disease, p=NS) or outcome (30% vs 31% died or deteriorating, p=NS).

Table 1: Characteristics of Solid Organ Transplant Recipients with COVID-19 Infection Following SARS-CoV-2 Vaccination

Characteristics	N=34 (%)
Gender	
Female	13 (38%)
Male	10 (29%)
Unknown	11 (32%)
Age Group	
18-44	4 (12%)
45-64	10 (29%)
65-74	14 (41%)
75-84	5 (15%)
Unknown	1 (3%)
Vaccine Administered	
Pfizer/BioNTech	21 (62%)
Moderna	10 (29%)
Janssen	1 (3%)
Unknown	2 (6%)
Completed Vaccine Series	
Yes	27 (79%)
No	2 (6%)
Unknown	5 (15%)
Organ Transplanted	
Lung	10 (29%)
Heart	7 (21%)
Kidney	12 (35%)
Liver	1 (3%)
Dual	4 (12%)
Time from Transplant to COVID-19 Infection	
< 1 year	3 (9%)
1-5 years	15 (44%)
>5 years	13 (38%)
Unknown	3 (9%)
Disease Severity	
Mild/Moderate	11 (32%)
Severe	11 (32%_
Critical	12 (35%)
Outcomes	
Improving/Recovery	20 (59%)
Died/Deteriorating	9 (26%)
Unknown	5 (15%)

Conclusion. SARS-CoV-2 infections after vaccination are occurring in SOTR, including cases of critical illness, suggesting reduced vaccine effectiveness within this vulnerable population. We did not appreciate any correlation between time from vaccination and COVID-19 disease severity or outcome. Further studies evaluating the true incidence of and risk factors for breakthrough infections among vaccinated SOTR are needed.

Disclosures. **Matthew Kuehnert, M.D.**, **American Association of Tissue Banks** (Board Member)**ICCBBA** (Board Member)**Musculoskeletal Transplant Foundation** (Employee) **John W. Baddley, M.D.**, **Eli Lilly** (Consultant)**Pfizer** (Consultant)**R-Pharm** (Consultant)**Viela Bio** (Consultant)

927. Clinical Characteristics and Outcomes of Norovirus Infection in Patients with Hematologic Malignancies: A Retrospective, Single Center Study

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Session: P-53. Infections in Immunocompromised Individuals

Background. Norovirus (NV) gastroenteritis has been identified as a cause of significant morbidity among hematopoietic stem cell transplant (HSCT) recipients, often with associated complications. Current guidelines recommend symptomatic relief with antimotility agents, rehydration, and reduction in immune suppression. Nitazoxanide (NTZ) is an anti-parasitic agent but some literature suggests a benefit of nitazoxanide therapy for NV.

Methods. We conducted a single center, retrospective chart review study and evaluated adult patients (age >18 years) who had NV infection and either: 1) underwent stem cell transplantation; or 2) received myeloablative chemotherapy within 4 weeks of NV diagnosis by positive test on gastrointestinal pathogen panel during the time period from January 2015 through March 2020.

Results. 26 patients were reviewed. 14 patients (54%) had a history of HCST prior to infection. Three patients (12%) received both myeloablative chemotherapy and HSCT within four weeks of NV infection. Six patients (46%) had autologous, six (46%) had matched unrelated donor, and one (8%) had haploidentical allogeneic transplants. Nine (69%), three (23%), and one (8%) underwent myeloablative, reduced intensity and non-myeloablative conditioning, respectively. Median duration of diarrhea was 4.5 days (IQR = 2.25-7 days). Three (12%) patients received NTZ or intravenous immune globulin. The 6 month mortality was 42% (11/26), however, none of the deaths were directly attributable to NV infection.

Conclusion. NV infection led to severe diarrheal disease in our cohort. Overall mortality was high, and a trend toward increased mortality was seen among patients receiving NV-directed therapy; these patients likely received NV-directed therapy due to the severity of their illness. Clinicians must have a high suspicion for this illness and obtain PCR testing for timely diagnosis and management.

Table 1. Characteristics of patients with hematologic malignancies and norovirus infection

Characteristics	Supportive care N=23 (88%)	N-V directed therapy N=3 (12%)
Age at time of NV diagnosis, median (IQR)	58 (41-65)	69 (60-76)
Days from transplant, at the time of NV diagnosis, median (IQR)	10 (4-26)	195
Female gender	5 (21.7)	1 (33.3)
Cancer type		
Hodgkin's lymphoma	3 (13)	0 (0)
Non-Hodgkin's lymphoma	5 (21.7)	1 (33.3)
Acute myeloid leukemia	6 (26)	0 (0)
B cell lymphoma	3 (13)	1 (33.3)
Multiple myeloma	3 (13)	0 (0)
Other	4 (17)	1 (33.3)
Myeloablative chemotherapy <4 weeks from NV infection	14 (53.8)	1 (33.3)
Autologous transplant	6 (26)	0 (0)
Allogeneic transplant	5 (17.4)	2 (66.6)
Matched unrelated	4 (80)	2 (100)
Haploidentical	1 (20)	0 (0)
Transplant conditioning		
Myeloablative	8 (72.8)	1 (50)
Reduced intensity	3 (27.2)	0 (0)
Non-myeloablative	0 (0)	1 (50)
ANC, median (IQR)	2.05 (0.25-1.0)	0.9 (0.1-6.9)
ALC, median (IQR)	0.4 (0.2-1.3)	0.2
Patients with GI co-infections	7 (30.4)	2 (66.6)
Days of documented diarrhea, median (IQR)	4 (2-7)	6 (1-7)
Hospitalization required	19 (82.6)	3 (100)
Length of stay, median (IQR)	16 (6-20)	7 (2-54)

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928. Clinical Characteristics and Microbiology Testing Patterns Among Transplant Recipients Admitted to Acute Care Hospitals for Suspected Infection

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Session: P-53. Infections in Immunocompromised Individuals

Background. Solid organ transplant (SOT) is a growing option for patients with end-stage organ diseases. Immunosuppressive therapy (IT) is utilized in this population to minimize risk of allograft rejection, which increases infection risk particularly of atypical pathogens that can complicate the infection-related diagnostic journey. The purpose of this analysis was to evaluate baseline clinical characteristics and microbiological testing utilization patterns among a cohort of patients with a history of SOT and IT.

Methods. This retrospective cohort study utilized a US hospital-based, service-level database. Patients were selected from a subsample of database facilities utilizing plasma microbial cell-free DNA diagnostic assays. The study period was 1/1/2017-3/21/2020. Eligible patients were identified by 1st observation of SOT status and IT. Subsequent inpatient admissions for suspected infection were analyzed.

Results. We identified 749 patients with SOT history and use of IT, 56.4% were male, and the mean age was 52.8 (18.7) years. Kidney was the most prevalent transplant category (49.1%), followed by liver (14.1%), lung (10.9%), and heart (10.3%), and 9.7% were multi-organ. Patients experiencing multiple transplants had the most chronic conditions with a mean Elixhauser comorbidity score of 26.3 (14.7). The median length of stay was 4 [3-7] days. The median number of tests per encounter was 6 [IQR=3-11]. Culture was the most utilized test category (2 [1-4]). Blood culture was the highest utilized culture and overall test at 13.5% of all tests observed, while CMV PCR (7.8%) and multi-panel EIA (2.7%) were the most frequent molecular and antigen tests, respectively. Lung transplant recipients had the greatest utilization of tests overall (9 [3.5-17]) versus other transplant categories (6 [3-10]), consistent with the observed test rate in the 1st 48 hours of presentation (4 [1-7] vs. 2 [1-5]).

Table 1: Baseline demographic and clinical characteristics

	All	Kidney	Liver	Lung	Heart	Multiple	p
	N=749	n=391	n=112	n=87	n=82	n=77	
Age (mean (SD))	53.01 (18.54)	53.16 (17.09)	51.89 (18.45)	54.52 (17.04)	52.20 (24.38)	52.99 (20.48)	0.884
Gender = M (%)	423 (56.5)	197 (50.4)	75 (67.0)	49 (56.3)	57 (69.5)	45 (58.4)	0.002
Race (%)							<0.001
White	516 (68.9)	232 (59.3)	95 (84.8)	72 (82.8)	59 (72.0)	58 (75.3)	
African American	147 (19.6)	96 (24.6)	12 (10.7)	12 (13.8)	15 (18.3)	12 (15.6)	
Other	86 (11.5)	63 (16.1)	5 (4.5)	3 (3.4)	8 (9.8)	7 (9.1)	
Payer Type (%)							0.067
Commercial	187 (25.0)	88 (22.5)	30 (26.8)	31 (35.6)	20 (24.4)	18 (23.4)	
Medicare	451 (60.2)	256 (65.5)	61 (54.5)	41 (47.1)	47 (57.3)	46 (59.7)	
Other	111 (14.8)	47 (12.0)	21 (18.8)	15 (17.2)	15 (18.3)	13 (16.9)	
LOS (median [IQR])	4.00 [3.00, 7.00]	5.00 [3.00, 8.00]	4.00 [2.00, 6.00]	4.00 [2.00, 7.00]	5.00 [3.00, 8.00]	5.00 [3.00, 8.00]	0.075
Elixhauser Comorbidity Score (AHRQ)	21.29 (14.12)	20.23 (13.53)	22.06 (14.55)	20.11 (15.30)	21.82 (13.59)	26.31 (14.72)	0.011
Time to admission (in days) (Subgroup with observed acute transplant encounter)	N=190	n=85	n=34	n=35	n=20	n=16	
Mean (SD)	341.9 (324.4)	292.2 (294.2)	351.0 (301.7)	376.5 (360.6)	306.6 (311.7)	555.19 (395.7)	
Median [IQR]	249 [85.5-494.5]	198 [84-385]	321 [83-550.5]	216 [90-549]	207 [76.3-444.2]	524.5 [222.5-753.3]	

Table 2: Utilization of microbiological tests

	All	Kidney	Liver	Lung	Heart	Multiple
Tests across the entire LOS* (mean (SD), Median [IQR])	n=749	n=391	n=112	n=87	n=82	n=77
Total micro tests	8.51 (9.48), 6 [3-11]	7.53 (7.63), 5 [3-10]	8.84 (9.25), 7 [3-11]	12.07 (14.72), 9 [3.5-17]	8.35 (8.99), 5 [3-13.75]	9.14 (10.45), 6 [2-11]
Cultures	3.38 (4.17), 2 [1-4]	3.08 (2.81), 2 [1-4]	3.53 (4.28), 2 [1-4]	4.43 (7.19), 3 [1-6]	3.15 (4.69), 1 [1-4]	3.69 (4.43), 2 [1-5]
Molecular	2.94 (3.5), 2 [0-4]	2.55 (3.09), 1 [0-4]	2.99 (3.31), 2 [1-4]	4.57 (5.06), 4 [1-6]	3.04 (3.46), 2 [1-4.75]	2.9 (3.1), 2 [1-4]
Antigen tests	1.16 (1.83), 0 [0-2]	1.16 (1.98), 0 [0-2]	1.2 (1.53), 1 [0-2]	1.21 (1.82), 0 [0-1]	1.02 (1.36), 0.5 [0-2]	1.22 (1.94), 1 [0-2]
Other tests	1.03 (1.94), 0 [0-1]	0.74 (1.5), 0 [0-1]	1.12 (2.02), 0 [0-1.25]	1.86 (2.54), 1 [0-3]	1.15 (1.91), 0 [0-1]	1.34 (2.61), 0 [0-1]
Tests within first 48 hours (mean (SD), Median [IQR])	n=743	n=388	n=111	n=86	n=81	n=77
Total micro tests	3.42 (3.61), 3 [1-5]	3.29 (3.12), 3 [1-5]	3.41 (3.32), 3 [1-5]	4.97 (5.83), 4 [1-7]	2.74 (3.44), 1 [0-4]	3.1 (2.81), 2 [1-5]
Cultures	1.54 (1.44), 1 [0-2]	1.66 (1.4), 1 [1-2]	1.39 (1.35), 1 [0-2]	1.77 (1.86), 1 [0.25-2]	1.05 (1.28), 1 [0-1]	1.43 (1.25), 1 [0-2]
Molecular	1.29 (2.03), 0 [0-2]	1.12 (1.71), 0 [0-1]	1.39 (1.89), 0 [0-2]	2.16 (3.33), 1 [0-4]	1.16 (1.81), 0 [0-2]	1.17 (1.78), 0 [0-2]
Antigen tests	0.37 (0.81), 0 [0-0]	0.35 (0.81), 0 [0-0]	0.41 (0.84), 0 [0-0.5]	0.51 (0.99), 0 [0-1]	0.32 (0.7), 0 [0-0]	0.3 (0.61), 0 [0-0]
Other tests	0.22 (0.6), 0 [0-0]	0.15 (0.49), 0 [0-0]	0.22 (0.51), 0 [0-0]	0.52 (1), 0 [0-1]	0.21 (0.59), 0 [0-0]	0.21 (0.55), 0 [0-0]

* Multiple unique tests on each day of service were de-duplicated before contributing to totals. For example, two blood cultures obtained on a single hospital day contributed a single test to the analysis.

Conclusion. This analysis suggests that the infection-related diagnostic journey among patients with a history of SOT involves high utilization of microbiological testing, with greater utilization among lung transplant recipients versus other SOT recipients. Variation in clinical characteristics and microbiological testing patterns were observed across SOT categories.

Disclosures. **T Matthew Hill, PharmD, PhD**, **Karius, Inc** (Employee, Shareholder) **Erick R. Scott, MD, MHS**, **Karius, Inc** (Employee, Shareholder) **Sivan Bercovici, PhD**, **Karius** (Employee)

929. Recurrent Nocardiosis in Solid Organ Transplant Recipients: An Evaluation of Post-Treatment Prophylaxis

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Session: P-53. Infections in Immunocompromised Individuals

Background. *Nocardia* more commonly causes infection in immunocompromised individuals, notably with a relapse rate of approximately 5%. Solid organ transplant recipients will often receive post-treatment prophylaxis as the underlying immunosuppression is unable to be completely removed. However, data supporting this practice is sparse. We sought to evaluate recurrence of nocardiosis in solid organ transplant recipients, specifically evaluating the role of post-treatment prophylaxis.

Methods. We conducted a retrospective cohort study of solid organ transplant (SOT) recipients at our medical center diagnosed with nocardiosis from 2000 through 2020. We included adult SOT recipients who completed their course of *Nocardia* therapy. Patients were excluded if they had not yet completed therapy, died prior to completing therapy, or there was no post-therapy follow-up. The primary outcome was *Nocardia* recurrence. Continuous variables were presented as mean or median with interquartile range (IQR).

Results. 108 patients meeting inclusion criteria were analyzed. 72 (66.7%) were male and median age was 60 years (IQR 52-65). Most common SOT types were kidney (47.2%), heart (17.6%), kidney-pancreas (11.1%), and lung (11.1%). Median time from transplantation to diagnosis of nocardiosis was 396 days (IQR 154-1071). Most common sites of infection were lung (88.0%), skin (16.7%), brain (13.9%), and blood