FQ-sparing option for the definitive treatment of GN BSIs. Limitations to TMP/SMX efficacy should be interpreted with caution due to the small sample size. Further investigations into optimal and tolerable oral dosing of such agents are needed.

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167. Deep Space Infections in Injection Drug Users (IDU)

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Background. The opioid epidemic in the US has increased attention to infectious complications of injection drug use (IDU). The goal of our study was to ascertain the impact of these infections on the health of our community and institutional burden considering that our institution does not discharge patients with IDU for outpatient IV antibiotic treatments due to lack of safe environment and compliance concerns.

Methods. This retrospective study reviewed IDU-associated deep space infections in an 1100 -bed medical center from 2010 through 2014. Pathogens, site of infection, mortality rates and, length of stay (LOS), 3- month readmission (inpatient + observation), leaving against medical advice (AMA) rates for those alive at discharge, were evaluated. ICD-9/10 coding identified admissions related to opioid use and deep infections (endocarditis, diskitis/osteomyelitis, sepsis/bacteremia, empyema). Only the most severe infection was counted for each patient. Charts were reviewed to determine whether IDU was associated with the entree infections.

Results. A total of 505 patients met criteria for deep space infections associated with IDU over 5 years. Of those, 305 (60%) were male, 146 (29%) black, 335 (66%) white, 271 (54%) were on Medicaid, 246 (49%) had sepsis/bacteremia, 67 (13%) had endocarditis,143 (28%) discitis/osteomyelitis, 22 (4%) empyema and 27 (5%) other. Mean age was 46 ± 12 years. LOS varied by disease state. The overall median was 10 days, from 8 days for bacteremia/sepsis up to 27 for endocarditis. There were 43 (9%) hospital deaths; 30 (6%) patients left AMA and 209 (45%) patients were readmitted within 3 months.

Conclusion. Deep space infections in IDU patients result in long LOS, high mortality and high rates of readmissions and departures AMA. Improved algorithms for management that include psychosocial models and incorporate cost-effective and safe antibiotic administration need to be developed.

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168. Epidemiology, Risk Factors and Outcome of Bloodstream Infection Within the First Year After Kidney Transplantation

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Background. Bloodstream infections (BSIs) are an important cause of morbidity and mortality among kidney transplant (KT) recipients, especially within the first year. We investigated for an epidemiology, risk factors and outcome of this specific infection following KT.

Methods. We conducted a retrospective study of all adult KT recipients who developed BSI within the first year after KT from January to December 2016 at a large referral single transplant center in Bangkok, Thailand. The cumulative incidence of BSI after transplant was estimated with Kaplan–Meier methodology. Clinical characteristics, microbiological data, and outcome were extracted. Risk factors for BSI were assessed with multivariate Cox proportional hazards models.

Results. A total of 26 (15.2%) episodes of BSI occurred in 171 KT recipients, 58.5% of them were men and the mean ± SD age was 43 ± 12 years. The majority received deceased-donor allograft (58.5%) and induction therapy (59%). The Kaplan–Meier estimated for BSIs were 12.3% at 3 months, 13.5% at 6 months, and 15.2% at 12 months after KT. Gram-negative bacteria were responsible for 92% of BSI, with *Escherichia coli* was the most common causative pathogen (65%) and 71% of those produced extended-spectrum β-lactamases enzyme. The genitourinary tracts were the predominant source of BSIs (85%). In a multivariate analysis, the second kidney transplantation [HR, 4.55; 95% CI, 1.24–16.79 (P = 0.02)] and receiving induction therapy [HR, 3.05; 95% CI, 1.15–8.10 ($P < 0.03$)] were associated with BSI. One patient (4%) developed acute cellular rejection and one patient (4%) died from septic shock.

Conclusion. One-sixth of KT recipients could develop gram-negative bloodstream infection within the first year after KT especially those underwent the second transplantation or received induction therapy.

Table 1 Risk factors for bloodstream infection within the first year in kidney transplant recipients by Cox Proportional Hazard Models

Risk factors	Univariate analysis		Multivariate analysis	
	HR (95% CI)	P value	HR (95% CI)	P value
Recipient age (per 10-year)	1.16 (0.85-1.60)	0.36		
Recipient female sex	1.71(0.79-3.70)	0.17		
Donor age (per 10-year)	1.20 (0.90-1.60)	0.21		
Donor infection	0.36 (0.02-1.72)	0.24		
Underlying diabetes mellitus	1.55 (0.58-4.10)	0.38		
Underlying hypertension	0.40(0.18-0.93)	0.03	0.52 (0.21-1.29)	0.16
HLA mismatch $\geq$ 3	1.15 (0.53-2.58)	0.72		
Positive panel-reactive antibody	2.31 (0.84-5.43)	0.10		
Deceased donor kidney transplantation	1.64(0.71-3.76)	0.25		
The second kidney transplantation	6.97(2.09-23.28)	0.002	4.55 (1.24-16.79)	0.02
Carbapenem for peri-operative prophylaxis	0.77 (0.18-3.25)	0.72		
Re-operation	3.50(0.47-25.90)	0.20		
Receiving induction therapy	3.11(1.18-8.27)	0.02	3.05 (1.15-8.10)	0.03
Double filtration plasmapheresis	2.41 (0.13-11.37)	0.45		
Tacrolimus vs. cyclosporine maintenance therapy	1.51 (0.62-4.52)	0.39		
Duration of urinary catheter (per 1-day)	0.98 (0.82-1.02)	0.58		
Duration of drainage (per 1-day)	0.99 (0.90-1.04)	0.73		
Duration of double J stent (per 1-day)	0.97 (0.84-1.02)	0.39		

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169. Multidrug-Resistant Bacteria Are Common Cause of Neutropenic Fever and Increase Mortality Among Patients with Hematologic Malignancies in Uganda

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Background. Cancer patients are at risk of developing severe infections. Empiric management of infections is complicated by emerging antimicrobial resistance and changing local epidemiology of organisms. We sought to determine predominant species causing bacteremia, their antimicrobial resistance profiles, and their contribution to mortality among hematologic cancer patients with febrile neutropenia at the Uganda Cancer Institute.

Methods. Blood drawn from participants during a febrile neutropenic episode (FNE; fever ≥37.5˚C and neutrophil count ≤1,000 cells/μL) was cultured in the BACTEC 9120 blood culture system. Bacteria from positive cultures were identified biochemically. Antimicrobial susceptibility testing was performed with the disc diffusion method. Logistic regression and proportional hazards regression were applied to estimate associations between participant characteristics and FNE, bacteremia, and mortality.

Results. Of 246 participants, 74 (30%) had an FNE. During the first FNE, 6/21 (29%) participants with acute lymphocytic leukemia (ALL) developed bacteremia compared with 16/31 (52%) with acute myeloid leukemia (AML) (OR 2.22 (0.65, 7.4)). AML patients were specifically at higher risk of Gram-negative bacteremia (OR 4.59 (1.09, 19.3). Of the 41 aerobic bacteria isolated, 32 (78%) were Gram-negative, the most common being *Klebsiella pneumoniae* (11; 34%). Seventeen (53%) of the Gram-negative bacteria displayed the extended spectrum β lactamase phenotype and 5 (16%) were resistant to carbapenems. One of the eight Enterococcus species was vancomycin resistant. Overall survival among patients with FNE was 54% at 30 days and 19% at 100 days. Bacteremia was associated with higher mortality within 30 days (HR 2.1 (0.99, 4.45)) and 100 days (31% vs.10%; HR 2.23 (1.09, 4.59)).

Conclusion. Multidrug-resistant bacteria are the main cause of bacteremia and increase mortality in febrile neutropenic hematologic cancer patients at the UCI. Enhanced microbial surveillance, infection control and antimicrobial stewardship programs are needed to guide therapy and address emerging antimicrobial resistance at our institution.

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