Conclusion. About one in 11 admissions with UTI are ESBL + (QF) NS and are more likely to be male, with HCA risk factors and other important comorbidities. Current oral antibiotic therapy is limited in such episodes and oral treatment alternatives are needed.

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1505. Predictive Value of Early Post-Transplant Bacteriuria on Rates of Recurrent Urinary Tract Infections in the First Year After Renal Transplantation

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Session: 150. Urinary Tract Infection
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Background. Urinary tract infection (UTI) is a common post-kidney transplant complication that has been associated with risk for allograft dysfunction. However, prior studies assessing risk factors for recurrent post-transplant UTI (rUTI) did not distinguish between asymptomatic bacteriuria and UTI. We hypothesize that early asymptomatic bacteriuria (EAB) and UTI after renal transplant are risk factors for rUTI.

Methods. A single-center retrospective cohort study of renal transplant recipients at a tertiary care, academic medical center from May 1, 2010 to January 31, 2015. Data on epidemiology, comorbidities, donor cultures, numbers of UTIs, days of Foley catheter use, and antibiotic use were obtained from the electronic medical record and transplant patient database. Inclusion criteria: >18 years old post kidney transplant during the study period. Exclusion criteria: rUTI prior to transplant or anatomical abnormality of native kidney(s). Definitions: Early post-transplant (EPT): <28 days after transplant. Baseline UTI: culture growth of >10^5 cfu/mL. UTI (fever, dysuria, +/− allograft or suprapubic pain) + positive culture. EAB-asymptomatic bacteriuria in the EPT period. rUTI: ≥3 UTIs in 1 year or 2 UTIs in 6 consecutive months within the year post-transplant. UTI episodes were considered separate if occurred >3 weeks after cessation of prior antibiotic. Data were analyzed by Fisher’s exact test and chi-square test.

Results. A total of 369 patients were included; 40.4% had EAB and 6% had a UTI in the EPT (eUTI), UTI occurred in 5.7% of patients (n = 21). In the rUTI group, 8 (18.1%) had EAB, 8 (18.1%) had eUTI, and 5 (23.8%) had neither (P = 0.067). UTI developed in 5.3% (8/149) of the EAB group vs. 36.4% (8/22) of the UTI group (P < 0.005). No other variables were associated with rUTI. Total UTI episodes was greater with eUTI than EAB (mean 2.09 vs. 0.28, 95% CI 2.2–1.4, P < 0.005).

Conclusion. Only eUTI increased the risk for rUTI. Although screening for bacteriuria is a common practice post-transplant, our data indicates that aggressive symptom screening would better predict likelihood of rUTI and in turn graft dysfunction. Future studies should address the potential benefit of prolong prophylactic trimethoprim/sulfamethoxazole in preventing UTI.

Disclosures. All authors: No reported disclosures.

1506. Association of Antibiotic Treatment Duration with First Recurrence of Uncomplicated Urinary Tract Infection in Pediatric Patients

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Background. The optimal antibiotic (ABX) treatment duration for uncomplicated urinary tract infection (UTI) in pediatric patients is unknown. The objective of this study was to investigate the association of pediatric UTI treatment duration (7, 10, and 14 days) with first cystitis or pyelonephritis and without renal/anatomic abnormality was 34% antithymocyte globulin induction, 94% standard IS regimen (tacrolimus/mycophenolate/prednisone), 93% trimethoprim/sulfamethoxazole prophylaxis, and 21% ≥3 UTIs in 1 year or 2 UTIs in 6 consecutive months within the year post-transplant. UTI episodes were considered separate if occurred >3 weeks after cessation of prior antibiotic. Data were analyzed by Fisher’s exact test and chi-square test.

Methods. A retrospective cohort analysis of pediatric patients aged 2–17 years (n = 255). Patients had ≥3 UTIs in 1 year or 2 UTIs in 6 consecutive months within the year post-transplant. UTI episodes were considered separate if occurred >3 weeks after cessation of prior antibiotic. Data were analyzed by Fisher’s exact test and chi-square test.

Results. A total of 369 patients were included; 40.4% had EAB and 6% had a UTI in the EPT (eUTI), UTI occurred in 5.7% of patients (n = 21). In the rUTI group, 8 (18.1%) had EAB, 8 (18.1%) had eUTI, and 5 (23.8%) had neither (P = 0.067). UTI developed in 5.3% (8/149) of the EAB group vs. 36.4% (8/22) of the UTI group (P < 0.005). No other variables were associated with rUTI. Total UTI episodes was greater with eUTI than EAB (mean 2.09 vs. 0.28, 95% CI 2.2–1.4, P < 0.005).

Conclusion. Only eUTI increased the risk for rUTI. Although screening for bacteriuria is a common practice post-transplant, our data indicates that aggressive symptom screening would better predict likelihood of rUTI and in turn graft dysfunction. Future studies should address the potential benefit of prolong prophylactic trimethoprim/sulfamethoxazole in preventing UTI.

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1507. Evaluating the Effects of a “Uricalysis to Reflex Culture” Process Change in the Emergency Department (ED) at a Veterans Affairs (VA) Hospital

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Background. The ED environment makes proactive collection of urine cultures (UCs) favorable. However, unnecessary UCs can result in over-detection and overtreatment of asymptomatic bacteriuria (ASB). A previous analysis at the study site found that UCs were collected frequently despite negative urinalysis (UA), which commonly resulted in unnecessary antibiotics. Our objective was to compare the frequency of inappropriate UC utilization and inappropriate antibiotic prescribing post implementation of a “Uricalysis to Reflex Culture” process change intervention. A secondary objective was to assess the frequency of health encounters for UTIs post implementation.

Methods. After education, an ED process change was implemented in October 2017. This included automatic UC cancellation if UAAs had <5 WBC/HFP. An option for “do not order UC for UC utilization and inappropriate antibiotic prescribing was added to the UA. A secondary objective was to assess the frequency of health encounters for UTIs post implementation.

Results. There were 684 UAAs (37.2% post-intervention) evaluated from ED visits. Post-intervention (n = 255), 37.3% UAAs were negative with UCs cancelled. Of the remaining UAAs, 37.3% were positive with a processed UC, 16.9% were ordered as DNC and 8.6% were ordered without a UC. UC processing decreased by 25.3% post-intervention (P < 0.005). In patients with negative UAAs, inappropriate antibiotic prescribing decreased by 25.3% post-intervention (P = NS). No reports of outpatient, ED, or hospital visits for UTI symptoms were found within 7 days of initial UA.

Conclusion. A “UA to Reflex Culture” process change demonstrated a significant decrease in processing of inappropriate UCs and unnecessary antibiotics for ASB. There were no missed UTIs or other adverse patient outcomes.

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1508. Urinary Tract Infections (UTIs) in the First Year Post-Renal Transplant: Risks and Opportunities

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Background. UTIs are the most common infection after renal transplant (RTX) with an incidence of 6–86%. Post-RTX UTI has been associated with risk for graft loss and mortality, and RTX recipients are at risk for multidrug-resistant (MDR) UTI given immunosuppression (IS) and instrumentation. We sought to evaluate the incidence of UTI, UTI causation, antimicrobial and MDR risk of post-RTX UTI, as well as to characterize asymptomatic bacteriuria (ASB) practices at our center.

Methods. This was a retrospective cohort of subjects with ≥1 positive culture (≥10^5 CFU/mL) during the first year post-RTX that were transplanted from September 1, 2012 to October 1, 2016. Each bacteriuria episode was adjudicated as cystitis, pyelonephritis, or ASB (Figure 1). Subjects without bacteriuria were excluded from primary analysis but used to calculate UTI incidence. The primary outcome was 1-year symptomatic UTI incidence. Secondary outcomes: incidence of cystitis, pyelonephritis, and AOD; time to first UTI; microbiologic trends; and presence of MDR risk factors.

Results. Baseline characteristics: 52% male, median age 57 years, 65% stented, 34% antihypertensive medication, 94% standard IS regimen (tacrolimus/mycophenolate/prednisone), 93% trimethoprim/sulfamethoxazole prophylaxis, and 21% ≥3 UTIs in 1 year or 2 UTIs in 6 consecutive months within the year post-transplant. UTI recurrence was not significant (compared with 7, 10, and 14 days. Results provide support for, without definitively establishing efficacy of, shorter-course ABX treatment.

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