Stanford HEALTH CARE

Stanford Antimicrobial Safety and Sustainability Program
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Asymptomatic Bacteriuria and Urinary Tract Infection in Renal Transplant

Background

- Society guidelines recommend against routine screening for and treatment of asymptomatic bacteriuria (ASB) in renal transplant (RT) patients outside the immediate post-transplant period.
- Current data suggests routine treatment of ASB in RT patients increases colonization with resistant organisms without providing clear benefit[1-4].

Asymptomatic Bacteriuria

- In patients >1 month from RT and who have had indwelling urologic devices removed, screening for and treatment of ASB is not recommended.
- There is insufficient data to guide practice in patients who still have ureteral stents in place and those with recurrent pyelonephritis.

Urinary Tract Infection – Diagnosis and Management

- Urinary symptoms should be the primary feature used to distinguish UTI from ASB in the presence of a positive urine culture. Specific symptoms for which a diagnosis of UTI may be considered include:
    - Dysuria, pain with voiding, suprapubic pain
    - Urinary urgency or frequency
    - Fever, chills
    - Allograft pain/tenderness or flank pain
- Routine ordering of urine cultures due to pyuria in the absence of symptoms is not recommended.
- This guideline should not override clinician judgment. Prostatitis is outside the scope of this document.
- The following classification and treatment approach are in accordance with AST guidelines[5]:

Classification	Management Options[a]	Treatment Duration	Notes
Asymptomatic bacteriuria	Observation[b]	N/A	- Pyuria alone does not merit treatment in absence of symptoms
Cystitis	- Nitrofurantoin 100 mg PO BID (avoid if CrCl <30) - Cephalexin 500 mg PO BID - Cefpodoxime 200 mg PO BID - Amoxicillin-clavulanate 875/125 mg PO BID - TMP-SMX 1 DS tab PO BID (if off prophylaxis and isolate is susceptible) - Ciprofloxacin 500 mg PO BID or Levofloxacin 500-750 mg PO daily	7 days	- Narrow based on culture and susceptibilities[c]
Acute pyelonephritis	- Blood cultures - Consider ED evaluation versus hospitalization for IV antibiotics	7-14 days[d]	- SOT ID consult (pager #17008) available to assist with complex cases - Anatomic abnormalities should be considered in cases of recurrent pyelonephritis

[a]Listed doses assume normal GFR and should be adjusted for impaired renal function as appropriate.
[b]Applies primarily to patients >1 month from RT and those without indwelling urologic devices. Emerging evidence also suggests treating ASB may not be helpful (and could cause harm) in the more immediate post-transplant period (see reference 4).
[c]Note that certain organisms that may be isolated in urine culture (*e.g. Staphylococcus epidermidis*, *Lactobacillus* spp., *Gardnerella* spp., etc.) are unlikely to be uropathogens and thus should rarely be considered the etiologic agent of a UTI.
[d]AST guidelines suggest considering 14-21 days for duration of therapy. However, this recommendation is based upon minimal low-quality evidence.

References:

1. Origuen et al. Should asymptomatic bacteriuria be systematically treated in kidney transplant recipients? Results from a randomized controlled trial. *Am J Transplant.* 2016:16(10):2943-53
2. Sabe et al. Antibiotic Treatment Versus No Treatment for Asymptomatic Bacteriuria in Kidney Transplant Patients: A Multicenter Randomized Trial. *Open Forum Infect Dis.* 2019;6(6):ofz243.
3. Coussement et al. Antibiotics versus no therapy in kidney transplant recipients with asymptomatic bacteriuria (BiRT): a pragmatic, multicentre, randomized, controlled trial. Clin Microbiol Infect. 2021;27(3):398-405.
4. Antonio et al. Treatment of asymptomatic bacteriuria in the first 2 months after kidney transplant: A controlled clinical trial. *Transpl Infect Dis*. 2022;24(6):e13934.
5. Goldman and Julian. Urinary tract infection guidelines in solid organ transplant recipients: Guidelines from the American Society of Transplantation Infectious Diseases Community of Practice. *Clin Transplant*. 2019;33(9):e13507.

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