

Urinary Tract Infections in Long-term Care Residents

Help
prevent
antibiotic
resistance!



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Urinary Tract Infection



Definition:

- A urinary tract infection (UTI) is an infection in the urinary tract (bladder, kidney, ureters) that is characterized by bacteria in the urine (bacteriuria) and clinical symptoms.
- The presence of bacteria in the urine is determined by a urine culture.

Asymptomatic bacteriuria



- Asymptomatic bacteriuria is defined as a bacterial count of $\geq 10^5$ cfu/ml without clinical symptoms of UTI (see symptoms on next slide).
- The presence of bacteria in the urine is common among the elderly, especially those with functional impairments or underlying chronic medical conditions.

Clinical symptoms of UTI



For residents WITH indwelling urinary catheters

- Fever $>100^{\circ}\text{F}$ ($>37.9^{\circ}\text{C}$) or 2.4°F (1.5°C) increase above baseline
- New costovertebral angle tenderness
- Rigors (shaking chills) with or without identified cause
- Delirium (new onset)
- Altered mental status
- Malaise
- Lethargy with no other identified cause
- Acute hematuria
- Pelvic discomfort

If recent catheter removal:

- Dysuria
- Urgent or frequent urination
- Suprapubic pain or tenderness

For residents WITHOUT indwelling urinary catheters

- Acute dysuria (painful urination)
OR
- Fever $>100^{\circ}\text{F}$ ($>37.9^{\circ}\text{C}$) or 2.4°F (1.5°C) increase above baseline and at least one of the following:
 - New or worsening:
 - Suprapubic pain (pain over the bladder)
 - Urinary frequency or urgency
 - Urinary incontinence
 - Gross hematuria (blood in the urine)
 - Costovertebral angle (CVA) tenderness (flank pain)

Question #1



True or False:

Catheter-associated urinary tract infections are the most common cause of bacteremia (bloodstream infection) in long-term care facilities (LTCF).

Answer: True. Residents with an indwelling urinary catheter are 30 times more likely to develop bacteremia than residents without a chronic indwelling catheter¹. Nearly 100% of LTCF residents with an indwelling catheter have bacteria in their urine².

1. Brooks S, et al. *Arch Intern Med.* 1994;154(8):902-8.
2. Warren JW. *Clin Geriatr Med.* 1992;8(4):805-819.

Question #2



True or False:

Bacteriuria (bacteria in the urine) *always* indicates that the resident needs to be treated with antibiotics.

Answer: False. Bacteria in the urine without clinical symptoms of UTI is very common and considered a benign condition among LTCF residents. With few exceptions, it does not need to be treated with antibiotics. 98% of residents with bacteriuria do not have clinical symptoms of a UTI, and therefore do not need antibiotics³.

Question #3



A catheter alone increases a resident's risk of catheter-associated UTI. What other factors can further increase the risk of a UTI?

- a. Duration of catheterization
- b. Quality of catheter care
- c. Resident factors like advanced age, debilitation, and immune status
- d. All of the above

Answer: D. Avoid unnecessary urinary catheterization and limit indwelling urinary catheter use when possible. Clean hands immediately before and after touching the catheter or catheter site.

Question #4



Yes or No:

Does foul-smelling urine need to be treated with antibiotics?

Answer: No. Foul-smelling urine without clinical symptoms of a UTI does not need to be treated with antibiotics.

CDC's definition of a UTI does not include urine odor as a valid symptom of a UTI. Urine can be malodorous due to dehydration¹, diet, medication, or the presence of specific bacteria⁴.

CDC: Centers for Disease Control & Prevention

1. Brooks S, et al. *Arch Intern Med.* 1994;154(8):902-8.

4. Brunzel N. *Fundamentals of Urine and Body Fluid Analysis.* Philadelphia, PA: W.B. Saunders; 1994.

Question #5



Which of the following steps are necessary to prevent catheter-associated UTIs?

- a. Clean hands immediately before and after touching the catheter or catheter site
- b. Use as small a catheter as possible to promote good drainage and minimize urethral trauma
- c. Secure indwelling urinary catheter tubing after insertion to prevent movement
- d. All of the above

Answer: D. All of the above are important steps to prevent catheter-associated UTIs. Indwelling catheters should only be changed when obstructed or there has been a break in the closed drainage system.

Question #6



What is the most important way to prevent catheter-associated urinary tract infections?

Answer: Get the catheters out!

Conclusions



- ➔ Asymptomatic bacteriuria generally does not require treatment with antibiotics.
- ➔ **Get the catheters out!**