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°F (>37.9°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°F (>37.9°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)
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 catheter\(^1\). Nearly 100% of LTCF residents with an indwelling catheter have bacteria in their urine\(^2\).

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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 antibiotics. 

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 dehydration\(^1\), diet, medication, or the presence of specific bacteria\(^4\).

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!