# **Cystitis**

(!) Changes in urine color, odor or cloudiness are not independently associated with infection and should not be the sole prompt for urine testing



### **Diagnostic Microbiology**

- Urinalyses **should not** be used as the sole diagnostic marker of infection
- Up to 90% of patients with asymptomatic bacteriuria will have some degree of pyuria
- A negative urinalysis typically indicates that a urinary tract infection is not present



#### Non-catheterized

#### **Uncomplicated**

Acute dysuria Suprapubic pain/tenderness **Urinary frequency** CVA/flank tenderness

#### **Complicated**

Fever (T > 38°C), hypotension or tachycardia

**AND** any of the following:

Acute dysuria Suprapubic pain/tenderness Urinary frequency CVA/flank tenderness



## Catheterized<sub>(indwelling)</sub>

Fever  $(T > 38^{\circ}C)$ Rigors/chills Hypotension Tachycardia Suprapubic pain/tenderness CVA/flank tenderness New onset delirium



#### **Older Adults**

Patients unable to provide verbal history of urinary symptoms still have physical signs of infection. Assess for fever, hemodynamic instability, or suprapubic pain on palpation.



Alterations in mental status/LOC. lethargy, weakness, falls or delirium in isolation should not be used to infer a urinary tract infection.

Assess non-infectious causes (e.g. dehydration, medications, etc.)



### Watch & Wait Approach

In the absence of localizing urinary tract symptoms or systemic signs of infection (i.e. fever, hypotension) alternative causes for cognitive changes should be evaluated.

Careful observation & reassessment is recommended rather than antimicrobial therapy.



### **Unique Populations**

## **Acute Pyelonephritis**

**Pyelonephritis** 

- $\square$  Fever (T > 38°C)
- ☐ Hemodynamic instability
- ☐ Flank pain
- ☐ +/- lower urinary tract symptoms



Bacteremia is a common finding in pyelonephritis and is not considered a complicating factor that merits extension of antibiotic therapy



#### **Empiric Antibiotics**

Ceftriaxone 1 g q24h x 7d

If known colonization/suspected infection with ESBL pathogens:

Ertapenem 1 g q24h x 7d

Alternative therapy
If known allergic anaphylaxis to beta-lactams



Ciprofloxacin 400mg q12h x 7d Ertapenem 1 g q24h x 7d

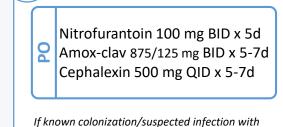
If E.faecalis suspected, consider adding Ampicillin 2g IV q6h to the above options



#### **Complicated Pyelonephritis**

Patients with obstructive uropathy, foreign objects (e.g. nephrostomy tubes) or renal abscesses require prolonged antimicrobial therapy (10-14+ days) depending on clinical context.

Consider an ID or Urology consult to guide duration



**Uncomplicated (non-catheterized)** 

ESBL pathogens:

Fosfomycin 3 g q48h x 2 doses



#### Complicated (non-catheterized)/Catheterized

Amox-clav 875/125 mg BID x 7d Cephalexin 500 mg QID x 7d

Ceftriaxone 1 g q24h x 7d

If known colonization/suspected infection with ESBL pathogens:

Ertapenem 1 g q24h x 7d



Patients with multiple sclerosis or those with spinal cord injury may not present with classic urinary symptoms.