

## P-GU-008 URINARY TRACT INFECTION

### DEFINITION & EPIDEMIOLOGY

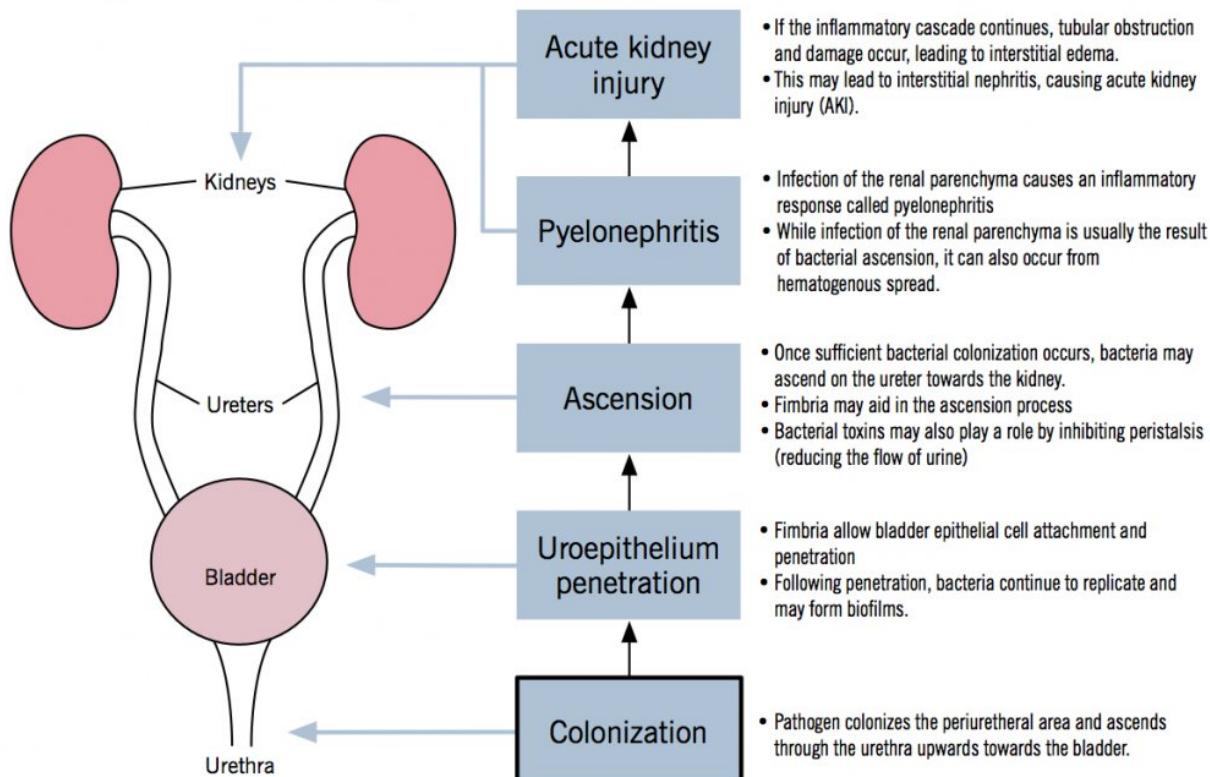
- Urinary tract infection (UTI) refers to a symptomatic bacterial infection within the urinary tract. This includes a lower urinary tract infection – cystitis (symptomatic infection of the bladder), or an upper urinary tract infection – acute pyelonephritis (symptomatic infection of the kidney).
- The condition is prevalent in both males and females. However the females are more susceptible during reproductive age while males are susceptible post reproductive age. Female predilection is higher with male: female ratio 1: 2. (1)
- Globally 150 million individuals are affected by the condition leading to hospitalization. In India the incidence is around 8 million cases per year for year 2014.(2)

### ETIOLOGY (2-4)

Etiology	Risk factors
The main causative organism is <i>Escherichia coli</i> species (80-90% of cases). Other causes include <i>Klebsiella</i> , <i>Enterococcus</i> , <i>Proteus mirabilis</i> and <i>Staphylococcus saprophyticus</i> .	<ul style="list-style-type: none"><li>• Indwelling catheter</li><li>• Immunocompromised conditions</li><li>• Poor personal hygiene</li><li>• Unsafe sexual practices</li><li>• Voiding dysfunction</li><li>• Vesicouteral reflux leading to urine retention</li><li>• Diabetes</li></ul>

### PATHOPHYSIOLOGY (2)

#### Pathogenesis of urinary tract infection



## Signs & Symptoms (1-6)

Specific symptoms	Common symptoms
<ul style="list-style-type: none"> <li>Burning micturition, frequency, urgency, dysuria</li> </ul>	<ul style="list-style-type: none"> <li>Burning micturition,</li> <li>Increased frequency</li> <li>Urgency</li> <li>Dysuria</li> <li>Smelling urine</li> <li>Fever and chills</li> <li>Suprapubic pain &amp; discomfort</li> <li>Blood in urine</li> <li>Nausea and vomiting</li> <li>Malaise</li> </ul>

## History

<b>H/O Present Illness</b>
<ul style="list-style-type: none"> <li>Onset of symptoms: when it started</li> <li>Duration : duration of illness</li> <li>Character of pain: Pain occurring at the beginning of or during urination suggests a urethral site of disease, whereas pain after voiding implies pathology within the bladder or prostate area.</li> <li>Urine color: is urine in red or black color?</li> <li>Any genital discharge?</li> </ul>
<b>Past H/o</b>
<ul style="list-style-type: none"> <li>Previous H/o similar illness</li> <li>H/o catheterization</li> <li>H/o renal calculus</li> <li>K/c/o diabetics, vesicoureteral reflux (VUR), Benign prostatic hypertrophy, Urethral stricture</li> <li>H/o NSAIDs intake or any drug intake</li> </ul>
<b>Personal H/o</b>
<ul style="list-style-type: none"> <li>Voiding habits</li> <li>Perineal hygiene practices (especially among women)</li> </ul>

## Vital Signs

- Body temperature: Possible raised body temperature
- Heart rate: No specific changes
- Respiratory rate: No specific changes
- Blood Pressure: No specific changes

## Patient Examination (5-9)

Systems	Inspection	Palpation	Percussion	Auscultation	Positive sign
General examination	None	None	None	None	No specific finding
CVS	None	None	None	Routine CVS	No specific finding

<b>Systems</b>	<b>Inspection</b>	<b>Palpation</b>	<b>Percussion</b>	<b>Auscultation</b>	<b>Positive sign</b>
<b>RS</b>	None	None	None	Routine RS-	No specific finding
<b>Abdomen</b>	None	Palpate lower abdominal region	None	Bowels sound	Mild lower abdominal pain or discomfort may present
<b>Musculoskeletal system</b>	None	None	None	None	No specific finding
<b>CNS</b>	None	None	None	None	No specific finding

#### **Diagnostic Test(9-12)**

- Urine routine and urine microscope to see the pus cells.
- For culture and sensitivity patient has to be referred to higher center

#### **Diagnosis**

Urinary Tract Infection

#### **Differential Diagnosis**

- Acute Pyelonephritis
- Benign Prostatic Hypertrophy
- Prostatitis
- STI/RTI

#### **Treatment (4, 8-11)**

##### **Non-pharmacological Management**

- Plenty of fluids orally
- Maintain proper hygiene

##### **Pharmacological Management**

###### **Adults:**

###### **Antibiotics**

- Tab. Ciprofloxacin 500 mg BD for 3-5days **OR**
- Tab. Trimethoprim/sulfamethoxazole 160/800 mg BD for 3-5days

###### **For fever**

- Tab. Paracetamol- 500 mg 6<sup>th</sup> hourly for 3- 5days

###### **Complicated UTI refer to Higher center**

###### **Special Groups:**

###### **Children:**

###### **Antibiotics**

- Syr. Amoxicillin 30-50 mg/kg/day in 3 divided doses for 7 to 10 days. **OR**
- Syr. Cotrimoxazole (Trimethoprim) 6-10 mg/kg/day in 2 divided doses for 7- 10 days.

###### **For fever**

- Tab. Paracetamol 10-15 mg/kg/dose 6th hourly till fever subsides

###### **Pregnancy:** Refer to specialist

###### **Geriatrics:** similar dose as adult

## **When to Refer**

- Complicated UTI
- High grade fever
- Recurrent cases
- Non-responsive to treatment

## **References**

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