

## URINARY TRACT INFECTIONS

### Acute Pyelonephritis in Adults / Upper UTI

- Define as:
  - ✓ Patients with pyelonephritis usually have
    - **flank/ loin pain**
    - **vomiting**
    - **rigors or fever of  $\geq 38^{\circ}\text{C}$  or  $<36^{\circ}\text{C}$**
    - **kidney tenderness**
  - ✓ Patients with lower urinary tract symptoms and signs of systemic infection
  - ✓ Patients with known or possible structural or functional abnormalities of the urinary tract and signs of systemic infection.
- Send a pre-treatment MSU sample and review empirical treatment with the result. ([See Diagnosis of UTI in Adults - Quick Reference](#)).
- Advise patients to represent for admission if they have no response to treatment within 24 hours or their condition deteriorates.
- If multi-resistant infection with no suitable oral options and are systemically well, consider referral for IV antibiotics as an outpatient (OPAT).
- If signs and symptoms are limited to dysuria, new nocturia, and/or cloudy urine, then see [Lower UTI/Cystitis Guideline](#).

#### Antibiotic Treatment:

Drug	Dose	Duration of Treatment
<b>First line:</b> Cefalexin	500mg BD or TDS (up to 1g to 1.5g TDS or QDS for severe infections)	7-10 days
<b>Second line:</b> Trimethoprim ( <i>only if lab report shows sensitive strain</i> )	200mg BD	14 days
<b>Third line:</b> <a href="#">Ciprofloxacin</a> <sup>1^</sup>	500mg BD	7 days

<sup>1</sup> Stop treatment at the first signs of serious adverse reaction, such as tendinitis or tendon rupture, muscle pain, muscle weakness, joint pain, joint swelling, peripheral neuropathy, and central nervous system effects.

<sup>^</sup> Note fluoroquinolones can cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses. Please refer [here](#) for further information on MHRA alerts.

- For pregnant patients, see [UTI in Pregnancy](#).
- For children, see [UTI in Children](#).
- For information on complicated UTIs, see [Complicated UTIs](#).
- The [TARGET antibiotics toolkit hub](#) includes leaflets to discuss with patients, [diagnostic tools](#), and other UTI resources.