URINARY TRACT INFECTIONS

Lower UTI /Cystitis

(i.e., no fever or flank pain, in men and women)

Organisms

- *Escherichia coli,* Coliforms, *Proteus mirabilis Staphylococcus saprophyticus, Enterococcus* spp.

Treatment

- Advise paracetamol or ibuprofen for pain.
- **Non-pregnant women:** back up antibiotic (to use if no improvement in 48 hours or symptoms worsen at any time) or immediate antibiotic.
- **In patients >65 years, do not treat asymptomatic bacteriuria** as it is not associated with increased morbidity.
- In the presence of a catheter, antibiotics **will not** eradicate bacteriuria; only treat if systemically unwell or pyelonephritis likely (see Complicated UTIs).

Community multi-resistant E. coli is increasing so send a pre-treatment MSU sample and review empirical treatment with the result in all treatment failures and if risk factors for increased resistance as below:

- Risk factors for increased resistance include:
  - >65yrs
  - Care home resident
  - Recurrent UTI
  - Recent travel to a country with increased antimicrobial resistance
  - Hospitalisation >7days in the last 6 months
  - Previously resistant organisms in urine
  - Treatment failures
- Multi-resistant isolates are usually resistant to amoxicillin, co-amoxiclav, cephalosporins, and may also be resistant to trimethoprim and quinolones. However, they are often susceptible to nitrofurantoin, pivmecillinam and fosfomycin.
- **Amoxicillin resistance is common** and there is also an increased risk of *Clostridium difficile* compared to first-line agents, therefore not routinely tested, or used.
- **Trimethoprim resistance** has increased locally to such an extent that it is no longer recommended for empirical treatment when risk factors for resistance are present (including age >65yrs).
- For all male patients and those with risk factors for more difficult to clear infections*, treat for 7 days (or two fosfomycin doses 48 hours apart – on day 1 and day 3).
- For pregnant patients, see UTI in Pregnancy, for children, see UTI in Children.
- For patients with lower UTI symptoms and signs of systemic infections, see Acute Pyelonephritis Guideline.
- The TARGET antibiotics toolkit hub includes leaflets to discuss with patients, diagnostic tools, and other UTI resources.

Antibiotic Treatment for Adults and Non-pregnant Women

Drug	Dose	Duration of Treatment
First line: **(avoid if eGFR<45ml/min – ineffective, if eGFR 30-45mls/min only use if no alternative with safety netting advice)**		
Nitrofurantoin	100mg M/R twice a day *(50mg four times a day if MR caps unavailable)*	**Women:** 3-5 days or if risk factors 7days * **Men:** 7 days
Second line: If <65yrs and no risk factors for resistance:		
Trimethoprim	200mg twice a day	**Women:** 3 days or if risk factors 7days * **Men:** 7 days
Second line: If ≥65yrs or risk factors for resistance		
Pivmecillinam[1] **Or** Fosfomycin[1,2]	400mg stat then 200 mg three times a day ***Women*** 3g one-off dose ***Men or risk factors **** 3g stat day 1 plus a further 3g on day 3 (unlicensed, as per PHE guidance)	**Women:** 3 days or if risk factors 7days * **Men:** 7 days Single dose As described

[1] Not recommended when CrCl<10ml/min.

[2] Most effective when taken an hour before or two hours after food.

* **Risk factors** for more difficult to clear infections: >65 years, diabetes mellitus, recurrent infections, those with structural or functional abnormality of the urinary tract, or recent urinary surgery/instrumentation (excluding urinary tract catheterisation)