

## Management of bacterial UTI in adult women

### Diagnosis

**D** Consider empirical treatment with an antibiotic for otherwise healthy women aged less than 65 years presenting with severe or  $\geq 3$  symptoms of UTI.

**B** Explore alternative diagnoses and consider pelvic examination for women with symptoms of vaginal itch or discharge.

**D** Consider the possibility of UUTI in patients presenting with symptoms or signs of UTI who have a history of fever or back pain.

**B** Use dipstick tests to guide treatment decisions in otherwise healthy women under 65 years of age presenting with mild or  $\leq 2$  symptoms of UTI.

✓ Discuss the risks and benefits of empirical treatment with the patient and manage treatment accordingly.

✓ In elderly patients (over 65 years of age), diagnosis should be based on a full clinical assessment, including vital signs.

### Antibiotic treatment of LUTI

**A** Do not treat non-pregnant women (of any age) with asymptomatic bacteriuria with an antibiotic.

**B** Treat non-pregnant women of any age with symptoms or signs of acute LUTI with a three day course of trimethoprim or nitrofurantoin.

✓ Particular care should be taken when prescribing nitrofurantoin in the elderly, who may be at increased risk of toxicity.

✓ Investigate other potential causes in women who remain symptomatic after a single course of treatment.

**D** Take urine for culture to guide change of antibiotic for patients who do not respond to trimethoprim or nitrofurantoin.

### Treatment of UUTI

Upper urinary tract infection can be accompanied by bacteraemia, making it a life threatening infection.

✓ Consider hospitalisation for patients unable to take fluids and medication or showing signs of sepsis.

**D** Where hospital admission is not required, take a midstream urine sample for culture and begin a course of antibiotics. Admit the patient to hospital if there is no response to the antibiotic within 24 hours.

**D** Treat non-pregnant women with symptoms or signs of acute UUTI with ciprofloxacin (7 days) or co-amoxiclav (14 days).

✓ A 14 day course of trimethoprim can be considered where the organism is known to be sensitive to the antibiotic.

### Treatment of recurrent UTI

**A** Advise women with recurrent UTI to consider using cranberry products to reduce the frequency of recurrence.

✓ Women should be advised that cranberry capsules may be more convenient than juice and that high strength capsules may be most effective.

## Management of bacterial UTI in pregnant women

### Diagnosis

Symptomatic bacteriuria occurs in 17–20% of pregnancies and is associated with pre-labour, premature rupture of membranes (PPROM) and pre-term labour. Untreated upper urinary tract infection in pregnancy also carries risks of morbidity, and rarely, mortality to the pregnant woman.

**A** Standard quantitative urine culture should be performed routinely at first antenatal visit.

**A** Confirm the presence of bacteriuria in urine with a second urine culture.

**A** Do not use dipstick testing to screen for bacterial UTI at the first or subsequent antenatal visits.

### Antibiotic treatment

**B** Treat symptomatic UTI in pregnant women with an antibiotic.

✓ Take a single urine sample for culture before empiric antibiotic treatment is started.

✓ Refer to local guidance for advice on the choice of antibiotic for pregnant women.

✓ A seven day course of treatment is normally sufficient.

✓ Given the risks of symptomatic bacteriuria in pregnancy, a urine culture should be performed seven days after completion of antibiotic treatment as a test of cure.

Antibiotic treatment of asymptomatic bacteriuria in pregnancy reduces the risk of upper urinary tract infection, pre-term delivery and low birth weight babies.

**A** Treat asymptomatic bacteriuria detected during pregnancy with an antibiotic.

✓ Refer to local guidance for advice on the choice of antibiotic for pregnant women.

✓ A seven day course of treatment is normally sufficient.

**D** Do not prescribe trimethoprim for pregnant women with established folate deficiency, low dietary folate intake, or women taking other folate antagonists.

**C** Women with bacteriuria confirmed by a second urine culture should be treated and have repeat urine culture at each antenatal visit until delivery.

✓ Women who do not have bacteriuria in the first trimester should not have repeat urine cultures.

## Management of bacterial UTI in adult men

### Diagnosis

Urinary tract infections in men are generally viewed as complicated because they result from an anatomic or functional anomaly or instrumentation of the genitourinary tract.

Conditions like prostatitis, chlamydial infection and epididymitis should be considered in the differential diagnosis of men with acute dysuria or frequency and appropriate diagnostic tests should be considered.

✓ In all men with symptoms of UTI a urine sample should be taken for culture.

✓ In patients with a history of fever or back pain the possibility of UUTI should be considered.

### Antibiotic treatment

Due to their ability to penetrate prostatic fluid, quinolones rather than nitrofurantoin or cephalosporins are indicated.

**B** Treat bacterial UTI empirically with a quinolone in men with symptoms suggestive of prostatitis.

A four week course is appropriate for men with symptoms suggestive of prostatitis.

**D** Refer men for urological investigation if they have symptoms of upper urinary tract infection, fail to respond to appropriate antibiotics or have recurrent UTI.

### General principles

Broad spectrum antibiotics (eg co-amoxiclav, quinolones and cephalosporins) should be avoided as they increase the risk of Clostridium difficile infection, MRSA and resistant UTIs. Guidance from the Health Protection Agency (HPA) suggests considering narrow spectrum antibiotics such as trimethoprim or nitrofurantoin as first line treatments.

Resistance is increasing to all of the antibiotics used to treat UTI and there is no clear first choice alternative to trimethoprim or nitrofurantoin.

Infections due to multiresistant organisms including extended-spectrum beta-lactamase (ESBL) E. coli are increasing. Susceptibility results are essential to guide treatment. Oral antibiotics such as nitrofurantoin, pivmecillinam and occasionally trimethoprim are often effective.

Nitrofurantoin is contraindicated in the presence of significant renal impairment. The British National Formulary advises against its use in patients with GFR < 60.

## Management of bacterial UTI in patients with catheters

### Diagnosis

**D Do not rely on classical clinical symptoms or signs for predicting the likelihood of symptomatic UTI in catheterised patients.**

Signs and symptoms compatible with catheter-associated UTI include:

- new onset or worsening of fever, rigors, altered mental status, malaise, or lethargy with no other identified cause
- flank pain
- costovertebral angle tenderness
- acute haematuria
- pelvic discomfort and
- dysuria, urgent or frequent urination, or supra-pubic pain or tenderness in those whose catheters have been removed.

**B Do not use dipstick testing to diagnose UTI in patients with catheters.**

### Antibiotic treatment

**B Do not treat catheterised patients with asymptomatic bacteriuria with an antibiotic.**

**A Do not routinely prescribe antibiotic prophylaxis to prevent symptomatic UTI in patients with catheters.**

Prophylactic antibiotics are not routinely required when changing catheters in patients at increased risk of endocarditis such as those with a heart valve lesion, septal defect, patent ductus, or prosthetic valve. Routine use of antimicrobial prophylaxis during catheter change should be avoided.

✓ Consider antibiotic prophylaxis in patients for whom the number of infections are of such frequency or severity that they chronically impinge on function and well-being.

✓ When changing catheters, antibiotic prophylaxis should only be used for people with a history of catheter-associated urinary tract infection following catheter change.

**C In a hospital setting, when prophylaxis for catheter change is required, consider using a narrow spectrum agent such as gentamicin rather than ciprofloxacin to minimise the risk of *C.difficile* infection.**

**B Change long term indwelling catheters before starting antibiotic treatment for symptomatic UTI.**

IDSA guidelines recommend:

- a seven day course of antibiotic treatment for patients with symptomatic catheter-associated UTI who have prompt resolution of symptoms
- 10-14 days of antibiotic treatment where there is a delayed response, regardless of whether or not the catheter is withdrawn during that time
- a three day course of antibiotics for women aged <65 years who develop a catheter-associated infection without upper UTI symptoms following removal of an indwelling catheter.

## Provision of information

There is no conclusive association between lifestyle factors, such as diet, hydration, clothing, toileting and sexual activity, and susceptibility to bacterial UTI in adult, non-pregnant women. There may be a link between a second UTI and sexual activity.

✓ Do not offer routine advice about adopting or discontinuing any particular lifestyle factors to patients with bacterial UTI.

✓ For an individual with recurrent and/or complicated urinary tract infection, consider discussing the features of the patient's own situation that may particularly contribute to the problem.

## Sources of further information

Age Scotland Helpline  
Tel: 0845 833 0200  
Website: [www.ageuk.org.uk/scotland/](http://www.ageuk.org.uk/scotland/)

**Bladder and Bowel Foundation**  
SATRA Innovation Park, Rockingham Rd, Kettering, NN16 9JH  
Helpline: 0845 345 0165 Tel: 01536 533 255  
Website: [www.bladderandbowelfoundation.org](http://www.bladderandbowelfoundation.org)  
Email: [information.officer@bladderandbowelfoundation.org](mailto:information.officer@bladderandbowelfoundation.org)

**Bladder Pain Syndrome Association**  
Tel: 020 8310 8729  
Website: [www.self-help.org.uk/directory/incontinence/?entryid54=30294](http://www.self-help.org.uk/directory/incontinence/?entryid54=30294)

**NHS24**  
Tel: 08454 24 24 24 • Textphone: 18001 08454 24 24 24  
Website: [www.nhs24.com](http://www.nhs24.com)

This Quick Reference Guide provides a summary of the main recommendations in **SIGN 88 Management of suspected bacterial urinary tract infection in adults**. Recommendations are graded **A B C D** to indicate the strength of the supporting evidence. Good practice points ✓ are provided where the guideline development group wishes to highlight specific aspects of accepted clinical practice.

Details of the evidence supporting these recommendations can be found in the full guideline, available on the SIGN website: [www.sign.ac.uk](http://www.sign.ac.uk) A version of the guideline for patients, carers and the public is available on the SIGN website: [www.sign.ac.uk](http://www.sign.ac.uk). Printed copies for use by individuals or healthcare service providers are also available from the SIGN Executive.

This Quick Reference Guide is also available as part of the SIGN Guidelines app.

