

# UTI (catheter): antimicrobial prescribing

DRAFT May 2018

Urinary tract infection (catheter-associated)



Treatment is only needed for symptomatic infection

Consider removing or changing a catheter before treatment if it has been in place for more than 7 days. Removing the catheter is preferable

Send a urine sample for culture and susceptibility testing

Offer an antibiotic:

- consider waiting until culture and susceptibility results are available

Advise managing symptoms with self-care

Advise:

- possible adverse effects of antibiotics include diarrhoea and nausea
- seeking medical help if symptoms worsen rapidly or significantly at any time or do not start to improve within 48 hours, or the person becomes systemically very unwell



When results of urine culture are available:

- review choice of antibiotic
- change antibiotic according to susceptibility results if bacteria are resistant and symptoms are not already improving, using narrow spectrum antibiotics when possible

Reassess at any time if symptoms worsen rapidly or significantly or do not start to improve within 48 hours, taking account of:

- other possible diagnoses
- any symptoms and signs suggesting a more serious illness or condition, such as sepsis
- previous antibiotic use, which may have led to resistant bacteria



Refer to hospital if person has a severe systemic infection

Consider referring to hospital or for specialist assessment and investigations, if the person:

- is significantly dehydrated or unable to take oral fluids or medicines
- is pregnant
- has a higher risk of developing complications
- has recurrent catheter-associated UTIs



Do not offer routine antibiotic prophylaxis to people with a short-term or long-term catheter

Advise seeking medical help if symptoms of acute UTI develop



## Self-care

- Consider paracetamol for pain
- Advise an adequate intake of fluid



## Background

- Catheter-associated UTI occurs when bacteria in a catheter bypass the body's defence mechanisms and enter the bladder
- Bacteriuria is more likely the longer the catheter is in place. Treatment is only needed for symptomatic UTI, and for asymptomatic bacteriuria in pregnant women (see the NICE guideline on lower UTI)



## Antibiotics

- When prescribing antibiotics, take account of severity of symptoms, risk of complications, previous urine culture and susceptibility results, previous antibiotic use

NICE uses 'offer' when there is more certainty of benefit and 'consider' when evidence of benefit is less clear.

# UTI (catheter): antimicrobial prescribing

## Choice of antibiotic: non-pregnant women and men aged 16 years and over

Antibiotic <sup>1</sup>	Dosage and course length
First choice oral antibiotic if no upper UTI symptoms <sup>2</sup>	
Nitrofurantoin – if eGFR ≥45 ml/minute	50 mg four times a day or 100 mg modified-release twice a day for 7 days
Trimethoprim – if low risk of resistance and not used in the past 3 months	200 mg twice a day for 7 days
Amoxicillin (if susceptible)	500 mg three times a day for 7 days
Second choice oral antibiotic if no upper UTI symptoms (first choice not suitable) <sup>2</sup>	
Pivmecillinam	400 mg initial dose then 200 mg three times a day for a total of 7 days
Fosfomycin	3 g single dose sachet
First choice oral antibiotic if upper UTI symptoms <sup>2</sup>	
Co-amoxiclav	625 mg three times a day for 7 days
Ciprofloxacin	500 mg twice a day for 7 days
Levofloxacin	500 mg once a day for 7 days
Trimethoprim (if susceptible)	200 mg twice a day for 14 days
First choice intravenous antibiotic (if vomiting, unable to take oral antibiotics or severely unwell). Antibiotics may be combined if sepsis a concern <sup>2,3</sup>	
Co-amoxiclav	1.2 g three times a day
Ciprofloxacin	400 mg twice or three times a day
Ceftriaxone	1 to 2 g once a day
Gentamicin	5 mg/kg to 7 mg/kg once a day
Amikacin	15 mg/kg once a day
Second choice intravenous antibiotic if higher risk of developing resistance <sup>2,3</sup>	
Consult local microbiologist	
<sup>1</sup> See <a href="#">BNF</a> for use and dosing in hepatic and renal impairment, and breast-feeding. <sup>2</sup> Check any previous urine culture and susceptibility results and antibiotic prescribing and choose antibiotics accordingly. <sup>3</sup> Review intravenous antibiotics by 48 hours and consider stepping down to oral antibiotics where possible for a total antibiotic course of 7 days.	
Abbreviations: eGFR, estimated glomerular filtration rate	

## Choice of antibiotic: pregnant women aged 12 years and over

Antibiotic <sup>1</sup>	Dosage and course length
First choice oral antibiotic <sup>2</sup>	
Cefalexin	500 mg twice or three times a day for 7 days
First choice intravenous antibiotic (if vomiting, unable to take oral antibiotics, or severely unwell) <sup>2,3</sup>	
Cefuroxime	750 mg three or four times a day
Second choice intravenous antibiotic if higher risk of developing resistance <sup>2,3</sup>	
Consult local microbiologist	
<sup>1</sup> See <a href="#">BNF</a> for appropriate use and dosing in specific populations, for example, hepatic impairment and renal impairment. <sup>2</sup> Check any previous urine culture and susceptibility results and antibiotic prescribing and choose antibiotics accordingly. <sup>3</sup> Review intravenous antibiotics by 48 hours and consider stepping down to oral antibiotics where possible for a total antibiotic course of 7 days.	

# UTI (catheter): antimicrobial prescribing

## Choice of antibiotic: children and young people under 16 years

Antibiotic <sup>1</sup>	Dosage and course length <sup>2</sup>
<b>Refer children under 3 months</b> to paediatric specialist and treat with intravenous antibiotics in line with the NICE guideline on <a href="#">fever in under 5s</a>	
<b>Children aged 3 months and over</b> - First choice oral antibiotic if no upper UTI symptoms <sup>3,4</sup>	
Trimethoprim – if low risk of resistance and not used in the past 3 months	3 to 5 months, 4 mg/kg or 25 mg twice a day for 7 days; 6 months to 5 years, 4 mg/kg or 50 mg twice a day for 7 days 6 to 11 years, 4 mg/kg or 100 mg twice a day for 7 days; 12 to 17 years, 200 mg twice a day for 7 days
Nitrofurantoin – if eGFR ≥45 ml/minute	3 months to 11 years, 750 micrograms/kg four times a day for 7 days 12 to 17 years, 50 mg four times a day or 100 mg modified-release twice a day for 7 days
<b>Children aged 3 months and over</b> - Second choice oral antibiotic if no upper UTI symptoms (first choice not suitable) <sup>3,4</sup>	
Cefalexin	3 to 11 months, 125 mg or 12.5 mg/kg twice a day for 7 days; 1 to 4 years, 125 mg three times a day or 12.5 mg/kg twice a day for 7 days 5 to 11 years, 250 mg three times a day for 7 days; 12 to 17 years, 500 mg two to three times a day for 7 days
Amoxicillin (if susceptible)	1 to 11 months, 125 mg three times a day for 7 days; 1 to 4 years, 250 mg three times a day for 7 days 5 to 11 years, 500 mg three times a day for 7 days; 12 to 17 years, 500 mg three times a day for 7 days
<b>Children aged 3 months and over</b> - First choice oral antibiotic if upper UTI symptoms <sup>3</sup>	
Co-amoxiclav	3 to 11 months, 0.25 ml/kg of 125/31 suspension three times a day for 7 to 10 days (dose doubled in severe infection) 1 to 5 years, 5 ml of 125/31 suspension or 0.25 ml/kg of 125/31 suspension three times a day for 7 to 10 days (dose doubled in severe infection) 6 to 11 years, 5 ml of 250/62 suspension or 0.15 ml/kg of 250/62 suspension three times a day for 7 to 10 days (dose doubled in severe infection) 12 to 17 years, 250/125 mg or 500/125 mg three times a day for 7 to 10 days
Cefalexin	As above, but for 7 to 10 days
<b>Children aged 3 months and over</b> - First choice intravenous antibiotic (if vomiting, unable to take oral antibiotics or severely unwell). Antibiotics may be combined if sepsis a concern <sup>3,5,6</sup>	
Co-amoxiclav	3 months to 17 years, 30 mg/kg three times a day (maximum 1.2 g three times a day)
Cefotaxime	50 mg/kg twice or three times a day (four times a day for severe infections; maximum 12 g per day)
Ceftriaxone	3 months to 11 years (up to 50 kg), 50 to 80 mg/kg once a day (maximum 4 g per day); 9 to 11 years (50 kg and above), 1 to 2 g once a day 12 to 17 years, 1 to 2 g once a day
Gentamicin	7 mg/kg once a day
Amikacin	15 mg/kg once a day
<b>Second choice intravenous antibiotic if higher risk of developing resistance<sup>3,5,6</sup> - Consult local microbiologist</b>	
<sup>1</sup> See <a href="#">BNF for children</a> for use and dosing in specific populations. If a young woman is pregnant, refer to the prescribing table on choice of antibiotic for pregnant women aged 12 years and over. <sup>2</sup> Age bands apply to average size and, in practice, age bands will be used with other factors such as the severity of the condition and the child's size. <sup>3</sup> Check any previous urine culture and susceptibility results and antibiotic prescribing and choose antibiotics accordingly. <sup>4</sup> If 2 or more antibiotics are appropriate, choose the antibiotic with the lowest acquisition cost. <sup>5</sup> Review intravenous antibiotics by 48 hours and consider stepping down to oral antibiotics where possible for a total antibiotic course of 10 days. <sup>6</sup> If intravenous treatment is not possible, consider intramuscular treatment.	