DRAFT May 2018

UTI (recurrent): antimicrobial prescribing

NICE National Institute for Health and Care Excellence

Preventing urinary tract infection in people with recurrent UTI

Non-pregnant woman with no improvement after behavioural and personal hygiene measures?

Advise about behavioural and personal hygiene measures to reduce the risk of UTI

Explain inconclusive evidence that cranberry products and probiotics reduce risk

- Consider self-care with D-mannose
- Consider vaginal (not oral) oestrogen for postmenopausal women

If no improvement (or not appropriate), consider single-dose antibiotic prophylaxis for exposure to triggers

If no improvement or no triggers, consider continuous antibiotic prophylaxis

If no improvement after behavioural and personal measures, consider continuous antibiotic prophylaxis

When single-dose antibiotic prophylaxis given, advise:

- how to use
- possible adverse effects, particularly diarrhoea and nausea
- returning for review after 3 months or other agreed time
- seeking medical help if symptoms of an acute UTI develop

When continuous antibiotic prophylaxis given, advise:

- risk of resistance with long-term antibiotics
- possible adverse effects, particularly diarrhoea and nausea
- returning for review after 3 months or other agreed time
- seeking medical help if symptoms of an acute UTI develop

Pregnant woman, or
Man, or
Child or young person under 16 years, or
Any person with recurrent upper UTI?

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Refer for specialist assessment and investigations

Self-care

- Behavioural and personal hygiene measures include adequate fluid intake, not delaying urination, wiping from front to back, not douching or wearing tight underwear
- When considering D-mannose, take account of severity and frequency of symptoms, risk of complications, and preference for self-care
- Triggers include sexual intercourse

Treatments

- When considering vaginal oestrogen, take account of severity and frequency of symptoms, risk of complications, benefits for other symptoms (vaginal dryness), possible adverse effects (breast tenderness and vaginal bleeding), unknown long-term endometrial safety and preferences for treatment
- Review vaginal oestrogen treatment at least every 6 months
- When considering antibiotics, take account of severity and frequency of symptoms, risk of complications and long-term antibiotic use, previous results of urine culture and susceptibility, previous antibiotic use and preferences for treatment

Background

- Recurrent UTI includes lower UTI (cystitis) and upper UTI (acute pyelonephritis)
- Recurrent UTI may be due to relapse (same strain of bacteria) or reinfection (different strain or species of bacteria)

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

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Choice of antibiotic: people aged 16 years and over

Antibiotic prophylaxis[1, 2]	Dosage and course length[3]
First choice	
Trimethoprim[4]	100 mg single dose, **or** 100 mg at night continuously
Nitrofurantoin - if eGFR ≥45 ml/minute[5]	50 to 100 mg single dose, **or** 50 to 100 mg at night continuously
Second choice	
Amoxicillin	250 mg single dose, **or** 250 mg at night continuously
Cefalexin	125 mg single dose, **or** 125 mg at night continuously
Pivmecillinam[6]	200 mg single dose, **or** 200 mg at night continuously

[1] See BNF for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breast-feeding.
[2] Choose antibiotics according to recent culture and susceptibility results where possible, with rotational use based on local policies. Select a different antibiotic for prophylaxis if treating an acute UTI.
[3] Doses given are by mouth using immediate-release medicines, unless otherwise stated.
[4] Teratogenic risk in first trimester of pregnancy (folate antagonist; BNF, April 2018). Manufacturers advise contraindicated in pregnancy (trimethoprim summary of product characteristics).
[5] Avoid at term in pregnancy; may produce neonatal haemolysis (BNF, April 2018).
[6] Not known to be harmful in pregnancy, but manufacturer advises avoid (BNF, April 2018).

Abbreviations: eGFR, estimated glomerular filtration rate.

Choice of antibiotic: children and young people under 16 years

Antibiotic prophylaxis[1, 2]	Dosage and course length[3]
Children under 3 months	
Refer to paediatric specialist	
Children aged 3 months and over (specialist advice only)	
First choice	
Trimethoprim	3 to 5 months, 2 mg/kg at night (maximum 100 mg per dose) **or** 12.5 mg at night 6 months to 5 years, 2 mg/kg at night (maximum 100 mg per dose) **or** 25 mg at night 6 to 11 years, 2 mg/kg at night (maximum 100 mg per dose) **or** 50 mg at night 12 to 17 years, 100 mg at night
Nitrofurantoin – if eGFR ≥45 ml/minute	3 months to 11 years, 1 mg/kg at night 12 to 17 years, 50 to 100 mg at night
Second choice	
Cefalexin	12.5 mg/kg at night (maximum 125 mg per dose)
Amoxicillin	1 to 11 months, 62.5 mg at night 1 to 4 years, 125 mg at night 5 to 17 years, 250 mg at night

[1] See BNF for children for appropriate use and dosing in specific populations, for example, hepatic impairment and renal impairment.
[2] Choose antibiotics according to recent culture and susceptibility results where possible. If 2 or more antibiotics are appropriate, choose the antibiotic with the lowest acquisition cost.
[3] The age bands apply to children of average size and, in practice, the prescriber will use the age bands in conjunction with other factors such as the severity of the condition and the child's size in relation to the average size of children of the same age. Doses given are by mouth using immediate release medicines, unless otherwise stated.

Abbreviations: eGFR, estimated glomerular filtration rate.

When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.