UTI (recurrent): antimicrobial prescribing

NICE National Institute for Health and Care Excellence

Preventing urinary tract infection in people with recurrent UTI

Non-pregnant woman

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

Advise about behavioural and personal hygiene measures, and self-care to reduce the risk of UTI

- Consider vaginal (not oral) oestrogen for postmenopausal women if behavioural and personal hygiene measures not effective or appropriate
- Review within 12 months (or earlier if agreed)

If no improvement, consider single-dose antibiotic prophylaxis for exposure to an identifiable trigger

- If no improvement or no identifiable trigger, consider a trial of daily antibiotic prophylaxis
- Refer or seek specialist advice if underlying cause unknown or cancer suspected

If no improvement after behavioural and personal hygiene measures, consider a trial of daily antibiotic prophylaxis with specialist advice

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Refer or seek specialist advice

When single-dose antibiotic prophylaxis given, advise:

- how to use
- possible adverse effects of antibiotics, particularly diarrhoea and nausea
- returning for review within 6 months
- seeking medical help if symptoms of an acute UTI develop

When a trial of daily antibiotic prophylaxis given, advise:

- risk of resistance with long-term antibiotics
- possible adverse effects of long-term antibiotics
- returning for review within 6 months
- seeking medical help if symptoms of an acute UTI develop

Review at least every 6 months should include:

- assessing prophylaxis success
- reminders about behavioural and personal hygiene measures, and self-care
- discussing whether to continue, stop or change antibiotic prophylaxis

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

Background

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

Self-care

- Non-pregnant women may wish to try D-mannose
- Non-pregnant women may wish to try cranberry products (evidence uncertain)
- Under 16s may wish to try cranberry products with specialist advice (evidence uncertain)
- Advise people taking cranberry products or D-mannose about the sugar content of these products
- Inconclusive evidence for probiotics

Treatments

- 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
- Antibiotics - ensure any current UTI is treated and take account of severity and frequency of symptoms, risk of complications and long-term antibiotic use, previous urine culture and susceptibility results, previous antibiotic use, local antimicrobial resistance, and preferences for treatment

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Choice of antibiotic: people aged 16 years and over

Antibiotic prophylaxis[1, 2]	Dosage[3]
First choice	
Trimethoprim[4]	200 mg single dose when exposed to a trigger, **or** 100 mg at night
Nitrofurantoin - if eGFR ≥45 ml/minute[5]	100 mg single dose when exposed to a trigger, **or** 50 to 100 mg at night
Second choice	
Amoxicillin[6]	500 mg single dose when exposed to a trigger, **or** 250 mg at night
Cefalexin	500 mg single dose when exposed to a trigger, **or** 125 mg at night

[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, August 2018). Manufacturers advise contraindicated in pregnancy (trimethoprim summary of product characteristics).
[5] Avoid at term in pregnancy; may produce neonatal haemolysis (BNF, August 2018).
[6] Amoxicillin is not licensed for preventing UTIs, so use for this indication would be off label. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Good practice in prescribing and managing medicines and devices for further information.

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.

Choice of antibiotic: children and young people under 16 years

Antibiotic prophylaxis[1, 2]	Dosage[3]
Children under 3 months - Refer to paediatric specialist	
Children aged 3 months and over (specialist advice only) - First choice	
Trimethoprim[4]	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 15 years, 100 mg at night
Nitrofurantoin – if eGFR ≥45 ml/minute[5]	3 months to 11 years, 1 mg/kg at night 12 to 15 years, 50 to 100 mg at night
Children aged 3 months and over (specialist advice only) - Second choice	
Cefalexin	3 months to 15 years, 12.5 mg/kg at night (maximum 125 mg per dose)
Amoxicillin[6]	3 to 11 months, 62.5 mg at night; 1 to 4 years, 125 mg at night; 5 to 15 years, 250 mg at night

[1] See BNF for children (BNFC) 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, with rotational use based on local policies. Select a different antibiotic for prophylaxis if treating an acute UTI. 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.
[4] Teratogenic risk in first trimester of pregnancy (folate antagonist; BNFC, August 2018). Manufacturers advise contraindicated in pregnancy (trimethoprim summary of product characteristics).
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