Tablet Press EXTRA
The prescribing newsletter for GPs, nurses and pharmacists
NHS Northamptonshire March 2017

Uncomplicated Lower Urinary Tract Infection in adults

There have been several updates to advice on diagnosing and treating uncomplicated lower urinary tract infections. Links to more detailed advice may be found at the end of the document.

Key Points

- Not every UTI needs a culture sent. See below for advice on when to send a MSU for culture. .
- In non-pregnant women who are not catheterised, with mild or ≤ 2 symptoms, non-cloudy urine has a negative predictive value of 97% ie if urine is NOT cloudy there is only a 3% chance of a UTI.
- Dipstick tests are not always necessary. See below for advice on when to use dipstick tests.
- The first line empiric antibiotic treatment for UTI is nitrofurantoin (½ a 100mg tablet qds or MR 100mg capsule bd if unable to halve tablets) for patients with GFR>45mls/min (3 days for uncomplicated UTI in women; 7 days if pregnant or in men, or if catheterised and symptomatic).
- If GFR is 30-44mls/min, only use nitrofurantoin if the usual alternative antibiotics (see below) are not appropriate e.g. resistance, allergy etc.
- Pivmecillinam is an alternative (if not allergic to penicillin) 400mg tds for 3 or 7 days as above.
- Fosfomycin 3g **STAT** may be used if resistant to other options e.g. ESBL**. For men repeat dose 3 days later.**
- Trimethoprim 200mg bd is an option if previous cultures indicate sensitivity or in younger women with no resistance risks.
- All patients should be advised to seek medical attention if they develop fever, loin pain or do not respond to treatment **whether they have been prescribed antibiotics or not.**
- All patients who are symptomatic should be advised to take OTC paracetamol. If this is insufficient an OTC NSAID may be added provided there are no contra-indications and the patient is not pregnant.
- The RCGP UTI leaflet contains helpful self-care, diagnostic and safety–netting information. See link

Key points for the following patients groups:

- **Non-pregnant women under 65 years** not catheterised or severely unwell – see flow chart
- **Pregnant women,** no visible haematuria.

- Send MSU for culture, for investigation of possible UTI , indicating clearly that the patient is pregnant, if symptomatic, before treatment is started and in all patients, at first antenatal visit. (Asymptomatic bacteriuria is associated with pyelonephritis and premature delivery)**.**
- Offer symptomatic relief with OTC paracetamol.
- Prescribe an antibiotic to **all** pregnant women with a suspected urinary tract infection. First line is **nitrofurantoin MR 100mg bd for 7 days** unless close to term when specialist advice should be sought.
- Send MSU for culture 7 days after completion of antibiotic course as a test of cure.
- If a group B streptococcus is isolated, inform the antenatal care service, as prophylactic antibiotics will be offered during labour and delivery.
- Advise all women to seek medical attention if they develop fever, loin pain, or do not respond to treatment with the first-choice antibiotic.

This edition is also available on PathfinderRF http://nww.pathfinder-rf.northants.nhs.uk/nene

Men with symptoms of UTI, who are not catheterised or severely unwell

- If symptoms are mild/non-specific, test urine with a dipstick. If the result is negative this excludes a UTI.
- If symptoms are more severe consider prostatitis and send MSU for culture.
- Advise symptomatic relief with OTC paracetamol. If this is insufficient an OTC NSAID may be added provided there are no contraindications.
- Start empirical antibiotic treatment – first line is **nitrofurantoin MR 100mg bd for 7 days** if GFR >45mls/min. In men with impaired renal function, or if prostate involvement is suspected, consider alternative empirical antibiotics including Pivmecillinam 400mg stat then 200mg tds (7 days) or Trimethoprim 200mg BD (7 days).
- If aged over 65 years: treat if fever ≥ 38C or 1.5 above base twice in 12 hours AND dysuria OR ≥ 2 other symptoms even if mild.
- Arrange follow up, for example after 48 hours**,** depending on clinical judgement, to check response to treatment and the urine culture results.
- Advise all men to seek medical attention if they develop fever, loin pain, or do not respond to treatment with the first-choice antibiotic.

Asymptomatic elderly patients

- Do not dipstick urine
- Do not send urine for culture in **asymptomatic** elderly patients (men and women >65years)
- **Do not treat asymptomatic bacteriuria** in the elderly as it is very common and treating does not reduce mortality or prevent symptomatic episodes, but increases side effects and antibiotic resistance.

Patients with indwelling urinary catheters.

- Do not treat **asymptomatic** bacteriuria in those with indwelling catheters. Only treat if systematically unwell or pyelonephritis likely.
- Do not use prophylactic antibiotics for catheter changes unless there is a history of catheter-change associated UTI or trauma.
- Do not use dipstick tests for diagnosis of UTI in catheterised patients.
- If urine is clear, UTI is highly unlikely.
- Exclude other causes of infection.
- Check the catheter drains correctly and is not blocked.
- If the patient has 2 or more signs or symptoms of UTI or one or more of rigors, costro-vertebral tenderness or new onset or worsening of pre-existing delirium or agitation, **treat as UTI.**
    - Send urine for culture
    - Start empirical antibiotic therapy – first line is **nitrofurantoin MR 100mg bd for 7 days** if GFR >45mls/min. Nitrofurantoin may be used with caution if GFR 30-44 mls/min.
    - If the catheter has been in place for > 7 days consider changing it before/when starting antibiotic treatment. Consider ongoing need for a long term catheter.
    - Advise symptomatic relief with paracetamol. If this is insufficient an NSAID may be added **provided there are no contraindications**.
    - Review response daily.
    - Adjust treatment as necessary once sensitivity results become available.
- Catheter irrigation with antimicrobials should not be used routinely to reduce UTI.
- Where appropriate consider alternatives such as urinary sheaths for men, male and female urinals, incontinence pads or intermittent or suprapubic catheterisation all of which reduce incidence of UTI.

Additional information

1. **Diagnosis of UTI** Diagnosis of UTI - a quick reference guide for primary care https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323398/UTI_guidelines_with_RCGP_logo.pdf
2. **Urinary tract infection (lower) women** - NICE –CKS https://cks.nice.org.uk/urinary-tract-infection-lower-women#!topicsummary
3. **UTI in pregnancy** https://cks.nice.org.uk/urinary-tract-infection-lower-women#!scenario:3
4. **Urinary tract infection (lower) men** - NICE –CKS https://cks.nice.org.uk/urinary-tract-infection-lower-men
5. **Management of Common Infections: Guidance for Primary Care** Feb 2017 PHE. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/524986/2016ManagingCommonInfectionsSummaryTable.pdf
6. **RCGP target website including patient leaflet on UTI http://www.rcgp.org.uk/clinical-and-research/toolkits/target-antibiotics-toolkit/patient-information-leaflets.aspx**
7. **RCGP TARGET Webinars http://www.target-webinars.com/**

This edition is also available on PathfinderRF http://nww.pathfinder-rf.northants.nhs.uk/nene

Uncomplicated Lower Urinary Tract Infection in Women

Not pregnant, Not catheterised, Not severely unwell

Symptom Relief

- **Advise symptomatic relief for all patients with OTC paracetamol. If this is insufficient an OTC NSAID may be added provided there are no contraindications.**
- **Advise all women to seek medical attention if they develop fever, loin pain, or do not respond to treatment with first choice antibiotic**

Microbiology Sensitivity Testing

- **Do NOT routinely send MSU for culture in adult women less than 65 years with urinary symptoms**
- **Send** urine for culture from women with a first presentation of a UTI if they have: impaired renal function, an abnormal urinary tract (e.g. renal calculus, vesicoureteric reflux, reflux nephropathy, neurogenic bladder, urinary obstruction or recent instrumentation), immunosuppression (eg poorly controlled diabetes or receiving immunosuppressive treatment)
- In sexually active young women with urinary symptoms consider *Chlamydia trachomatis*
- If increased resistance risk send culture for susceptibility testing (e.g. care home resident, recurrent UTI, hospitalisation >7 d in the last 6 months, unresolving urinary symptoms, recent travel to a country with increased antimicrobial resistance (outside Northern Europe and Australasia) especially health related, previous known resistant UTI.)

To Treat or Not to Treat

Severe or ≥ 3 symptoms of UTI

- *Dysuria*
- *Frequency*
- *Suprapubic*
- Urgency
- Polyuria
- Haematuria

AND → No vaginal discharge or irritation → 90% culture positive →

- Nitrofurantoin MR 100mg bd for 3 days (If GFR 30 – 44mls/min only use if resistance and no suitable alternative)
- pivmecillinam 400mg tds for 3 days (if NOT allergic to penicillin)
- trimethoprim 200mg bd (if low risk of resistance or known sensitivity)
- fosfomycin 3g stat (if resistant to other options e.g. ESBL)

In women who have impaired renal function, an abnormal urinary tract or immunosuppression a longer course of 5-10 days may be indicated.

Mild or ≤ 2 symptoms of UTI (As above) → Obtain urine specimen → Urine NOT cloudy 97% NPV → Consider other diagnosis

URINE CLOUDY
Perform urine dipstick test with nitrite
When reading test WAIT for the time recommended by the manufacturer

Positive nitrite, and leucocytes and blood 92% PPV
Or
positive nitrite alone
→ Probable UTI
→

- Nitrofurantoin MR 100mg bd for 3 days (If GFR 30 – 44mls/min only use if resistance and no suitable alternative)
- pivmecillinam 400mg tds for 3 days (if NOT allergic to penicillin)
- trimethoprim 200mg bd (if low risk of resistance or known sensitivity)
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In women who have impaired renal function, an abnormal urinary tract or immunosuppression a longer course of 5-10 days may be indicated.

Negative nitrite
Positive Leucocyte
→ UTI or other diagnosis equally likely
→ Review time of specimen (*morning is most reliable).*
Treat if severe symptoms or consider delayed antibiotic prescription and **send urine for culture**
→ **Severe symptoms**

Negative nitrite, leucocytes and blood 76% NPV
Or
Negative nitrite and leucocyte
Positive blood or protein
→ Laboratory microscopy for red cells is less sensitive than dipstick- UTI unlikely
→ Consider other diagnosis
Reassure and give advice on management of symptoms