Management of Recurrent Urinary Tract Infections in Adults

Introduction

This document provides guidance on the management of adult patients with recurrent lower urinary tract infections without a long term catheter in situ. Pregnant women, men and patients with indwelling catheters should not be on long term antibiotic prophylaxis for UTI except under the direction of a specialist (urologist).

Definitions

Recurrent UTI is defined as 2 uncomplicated UTIs in 6 months or, more traditionally as ≥ 3 positive cultures within the preceding 12 months ¹. This is estimated to affect 25% of women with history of UTI.

Urinalysis and midstream urine culture and sensitivity should be performed with the first presentation of symptoms in order to establish a correct diagnosis of recurrent urinary tract infection.

Relapse is defined as a recurrent infection with the same organism despite adequate therapy.

Reinfection is defined as:
- a recurrent UTI caused by a different bacterial isolate, or
- a recurrent UTI caused by the previously isolated bacteria after a negative intervening culture, or
- a recurrent UTI caused by the previously isolated bacteria after an adequate time period (≥ 2 weeks) between infections. ²

Reinfection is more common than relapse. ³ Most recurrence occurs within the first 3 months after the primary infection, and there can often be clustering of infection. ⁴

Risk Factors

Risk factors for recurrent UTIs in women are anatomical, genetic and behavioural.

Premenopausal women

1. Behavioural factors
   - Frequency of intercourse
   - Use of spermicide
   - New sexual partners
2. Non-behavioural factors
   - History of UTI before age 15
   - Maternal history of UTI

Postmenopausal women

1. Mechanical factors
   - Pelvic floor prolapse
2. Physiological factors
   - Urinary incontinence

Developed and approved by: Trust Antimicrobial Stewardship Group (July 2019)
Updated:
Review date: July 2020
When to refer

A) All men with recurrent UTI are by definition considered “complicated” UTI.

B) Routine referral is recommended for women with recurrent UTIs. (See table 1)

Table 1: When to refer women with recurrent UTIs

<table>
<thead>
<tr>
<th>Women with Recurrent UTIs</th>
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<tbody>
<tr>
<td>1) Who have a risk factor for an abnormality of the urinary tract including women with:</td>
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<tr>
<td>• A past history of urinary tract surgery or trauma.</td>
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<td>• A past history of bladder or renal calculi.</td>
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<td>• Obstructive symptoms such as straining, hesitancy, poor stream.</td>
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<td>• Urea splitting bacteria on culture of the urine such as Proteus or Yersinia.</td>
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<td>• Persistent bacteriuria despite appropriate antibiotic treatment.</td>
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<td>• A past history of abdominal or pelvic malignancy.</td>
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<td>• Symptoms of a fistula such as pneumaturia.</td>
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<td>• Gross haematuria after resolution of infection</td>
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<td>2) Who are immunocompromised or who have diabetes</td>
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<td>3) Who have a known abnormality of their renal tract who might benefit from surgical correction, such as cystocele, vesicoureteric reflex, or bladder outlet obstruction</td>
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<td>4) Who have not responded to preventive treatments</td>
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<td>5) When the diagnosis of recurrent uncomplicated UTI is uncertain</td>
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</table>

Management of Recurrent Lower Urinary Tract infection in Women

Initial Management

• Antibiotics is offered if clinical evidence of UTI (symptoms of UTI & positive MSU)
• For recurrent UTIs treatment course can be 3 to 10 days of antibiotics
• 5 - 10 days course for women who have impaired renal function, an abnormal urinary tract and immunosuppressed.
• For all other women 3 days course of treatment is sufficient.
  – Nitrofurantoin 50mg QDS, OR
  – Trimethoprim 200mg BD
  – If the woman has been treated with trimethoprim up to 1 year previously, consider prescribing nitrofurantoin instead of trimethoprim, OR
  – Follow local guidelines that take into local resistance patterns if available

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Updated:
Review date: July 2020
Prevention

For women with recurrent urinary tract infections who do not have an indication for referral:

- Instigate conservative measures such as;
  - In postmenopausal women (use of vaginal oestrogen cream or ring or vagifem pessaries)
  - In premenopausal women (limiting use of spermicide products)
  - In adult women with history of recurrent UTI, Cranberry products (supported by SIGN 88 updated 2012) is used for prevention of symptomatic UTI, high strength capsules may be more effective & acceptable than juice

- Antibiotics prophylaxis
  - Prophylaxis should not be initiated until eradication of active infection is confirmed by a negative culture at least 1-2 weeks after treatment has been discontinued
  - Women with recurrent UTI associated with sexual intercourse should be offered post-coital prophylaxis
    - Trimethoprim 100mg with 2 hours of intercourse (off-label use).
    - Treatment only needs to be once day if multiple intercourse.
  - Women with recurrent UTI not associated with sexual intercourse – a 6 month trial of low dose continuous antibiotic treatment
    - Trimethoprim 100mg every night or
    - Nitrofurantoin 50-100mg every night may be advised by urologist.
  - A self-starter therapy is ideal for in women who are motivated and complaint with medical instruction.
    - Patient is provided UTI diary to record symptomatic episodes
    - Sample pots provided for MSUs if patient develops symptoms of UTI at home (MSU sent to confirm diagnosis and establish sensitivities)
    - Option of home supply of a 3 day course of trimethoprim 200mg BD

Management of Recurrent UTI in Patients with Long Term Urinary Catheter

- Patients with frequent catheter blockages or recurrent symptomatic UTI or recurrent bacteraemia should be referred to an urologist for investigation and intervention as appropriate.
- Common causes of recurrent catheter problems include bladder stones.
- Symptomatic UTI diagnosed whilst the patient is awaiting a urological appointment should be treated with an appropriate antibiotic and catheter change.
Quinolones or cephalosporins should **not** be used for prophylaxis unless no alternative due to risk of *C. difficile* infection and in addition for quinolones induction of resistance including MRSA.

**Patient taking prophylactic antibiotics**

First line choice is Nitrofurantoin 50mg at night OR Trimethoprim 100mg at night (if recent culture sensitive) **Should only** be started on expert advice e.g. by **urologist** (after appropriate investigation)

A breakthrough infection should be treated according to culture & sensitivity results: once the infection is resolved the original prophylaxis should be restarted.

**Duration of treatment ≥ 6 months**

Patients who have been receiving antibiotic prophylaxis long term i.e. for more than 6 months and are no longer under the care of urologist should have their antibiotics **stopped**

**Stop** prophylactic antibiotics. If subsequent UTI refer to urologist

**Duration of treatment < 6 months**

**After 6 months prophylaxis**

**Infection resolved**

Once the infection is resolved the original prophylaxis should be restarted – depending on culture & sensitivity results.

**Breakthrough infection**

**Recurrent infection:** If recurrent UTI occur whilst the patient is receiving prophylactic antibiotics then prophylaxis has proved ineffective and should be stopped. Recurrent infections should be treated as appropriate. The patient should be reviewed and re-assessed by a urologist.

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Review date: July 2020
References


European Association of Urology: Guidelines on Urology infection 2009