

## 1. Urinary Tract Infection (UTI)

### **What is UTI?**

Urinary tract infections (UTIs) occur when bacteria is present within the urinary tract in significant numbers. UTIs are common in women, with 1 in 5 adult women aged 20-65 years experiencing a UTI at least once a year. Approximately 50% of women will experience UTIs at least once in their life.

Cystitis (bladder infection) makes up the majority of these infections. Involvement of the upper urinary tract (pyelonephritis) is less common compared to that of cystitis but can be associated with more serious complications.

### **What happens when UTI is left unattended?**

If UTI is left untreated, the infection can spread upwards to the kidneys, causing infection in the kidneys and even renal failure. It can also spread via the blood stream (septicaemia) to affect the body in general, which may be fatal.

### **What are the symptoms of UTI?**

The onset of UTIs can be associated with one or more of the following symptoms:

- Pain on passing urine (dysuria)
- Urinary urgency
- Passing urine more frequently than normal
- Passing foul-smelling urine
- Sensation of bladder fullness or lower abdominal discomfort
- Fever
- Blood in the urine (haematuria)
- Flank pain and tenderness over the lower back area next to the spine (may suggest involvement of the upper urinary tract)

As UTI is a common occurrence in women, one should be aware of its symptoms. If you have any of the above symptoms, it is advisable to see a doctor early. Early recognition and appropriate treatment is necessary to prevent complications.

### **How to prevent UTI?**

Although UTIs can be easily treated with antibiotics, the prevention of UTIs or the avoidance of further infection is more important. About 25% of women with acute cystitis develop recurrent UTIs. Most recurrent infections are from bacteria present in the faecal or periurethral reservoirs. Some strategies can be undertaken to reduce the risk of recurrent infections.

1. Lifestyle changes
  - Sexually active women should attempt to void immediately after intercourse to reduce the risk of coitus-related introduction of bacteria into the bladder.
  - As the source of the bacteria comes from one's own bowel, it is important to wipe yourself from front to back in order to avoid faecal contamination of the urinary tract (especially during an episode of diarrhoea) after going to the toilet.
  - Daily consumption of cranberry juice or cranberry tablets.
  - Avoid use of diaphragms and spermicide by considering other forms of contraception.

- Potential irritating vaginal deodorants and bubble baths should be avoided and a high standard of personal hygiene should be maintained at all times. This involves washing the genital area with water during baths and especially after intercourse.
  - Drink plenty of water. In order to prevent recurrent UTI, a minimum fluid intake of two litres a day is recommended (more if exercising strenuously or on hot days). Oral fluids should be increased to three litres or more a day if symptoms of UTI are suspected, irrespective of the degree of frequency of urine. Regular and complete bladder emptying is advisable to prevent the accumulation of infected urine in the bladder.
2. Prophylactic antibiotics
    - A once-daily dose of an appropriate antibiotic may be indicated in patients with a history of multiple episodes of UTI to minimise the risk of recurrence of infection.
  3. Treatment of any existing structural abnormalities
    - If recurrent UTI occurs against a background of structural abnormalities in the urinary tract (e.g., stones, kidney cysts), consideration should be given to the treatment of these conditions to eradicate the source.
  4. Treatment of any vaginal / lower genital tract infection
    - These infections may spread to the urinary tract. As such, they should be treated promptly if present.

### **Urinary Tract Infection (UTI) - Diagnosis**

The diagnosis of a UTI can be suspected from a well-taken history and physical examination. Specific tests to confirm a UTI include a urine dipstick, urine analysis and urine culture. The main emphasis lies with the detection of pyuria (white blood cells or pus cells in the urine) on dipstick and urine analysis.

Associated findings can include microscopic haematuria (blood in the urine which cannot be detected by the naked eye). A urine culture will help in the identification of the organism causing the infection. No imaging studies are indicated in the routine evaluation of an uncomplicated cystitis.

### **Urinary Tract Infection (UTI) - Treatments**

Empirical antibiotics are usually prescribed for UTIs. The patient may be prescribed alternative antibiotics after the urine culture results are available. The duration of treatment of the UTI depends on the antibiotic in use. Some common first-choice agents for the treatment of uncomplicated cystitis in women include nitrofurantoin, Bactrim or beta-lactams such as Cephalexin.

You may also be given medication to make the urine more alkaline and asked to drink more water. Most patients can be treated on an outpatient basis. However, hospital admission for management of complicated UTIs may be indicated in some patients. Complicating factors include the presence of structural abnormalities (e.g., stones, indwelling catheters), metabolic disease (e.g., diabetes, pre-existing kidney disease) or patients who are immunosuppressed and therefore more prone to serious infections (e.g., HIV, patients on chemotherapy).

**Recurrent urinary tract infection**

Recurrent UTI is defined as having UTI three or more times in a year. This can be due to the same or different bacteria. In these cases, further investigations may need to be done (e.g., renal ultrasound, intravenous pyelogram, cystoscopy, urine for tuberculosis and cytology) to look for any underlying causes and complications of recurrent UTIs.

Patients with recurrent UTIs may be given prophylactic antibiotics for a period of six months. They will also be advised on the various preventive measures and the importance of keeping good personal hygiene.