

Urinary tract infections: Focus on cystitis

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Introduction

Urinary tract infections (UTIs) are one of the most common conditions for which patients seek medical intervention. Although they affect both men and women, UTIs are more common in women and occur when bacteria invade the urinary tract.

The bladder is a muscular bag or chamber that stores urine filtered from the kidneys. The urethra are tubes which carry the urine from the bladder to exit the body. When bacteria infect the urine via the urethra, the bladder lining becomes inflamed and results in an uncomplicated UTI, commonly known as cystitis. If left untreated, the infection can further invade the urinary tract from the bladder and reach the kidneys. A kidney infection is serious and needs prompt medical intervention.

In contrast to kidney infections, a case of acute cystitis remains confined in the bladder and is most common in women. The most common culprit for cystitis is the bacterium, *Escherichia coli* (E. coli), which, under normal conditions, is found in the digestive tract and bowel. However, these bacteria may flourish in the acidic environment of the bladder, where they multiply and inflame the bladder lining.

The pharmacist's assistant is ideally positioned to offer over-the-counter (OTC) remedies for treating mild cases of cystitis, but to also be aware of signs that indicate more serious infection which warrant referral to the doctor.

Most women will experience the discomfort of cystitis at least once in their lives. Since the female urethra is short, it enables the bacteria to easily access the bladder. Use of bath oils, foam, and salts as well as overuse of vaginal deodorants or douches can introduce an infection by upsetting the balance of normal bacterial flora in the vagina. Women are especially

prone to infection during certain stages of the menstrual cycle (hormonal changes) as well as during pregnancy, menopause or after a total hysterectomy.

Symptoms of cystitis

While symptoms are mild in most cases, some women may experience severe episodes. The first sign of cystitis is most often an itching or a prickling sensation in the bladder or urethra. Common symptoms include:

- burning pain or an intense burning sensation on urination (dysuria)
- the frequent urge to urinate, even if passing only a few drops
- strong-smelling urine
- cloudy or bloody urine
- pain in the lower abdomen
- blood in the urine

Management of cystitis

Treatment should be initiated at the first sign of an infection. Although the conventional first-line approach to manage a UTI is with antibiotics, mild cases of cystitis often resolve spontaneously without antibiotics, with at least 50% of cases resolving within three days even without treatment.

Various OTC options are available to alleviate the discomfort of cystitis. These include:

- Analgesics such as paracetamol or nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen can be used to treat pain and mild fever.
- Urinary alkalinisers for the symptomatic relief of cystitis are commonly used. Dysuria associated with cystitis is thought to be due to the bacterial infection causing the urine to become acidic. Therefore, using a urinary alkaliniser, which works to increase the pH in the urine (making the urine alkaline), will often provide symptomatic

relief. However, urinary alkalinisers have no effect on the bacterial infection and therefore if symptoms have not improved within two days, the patient should be referred to her doctor. The most commonly used urinary alkalisers are potassium citrate, sodium citrate and sodium bicarbonate.

Points to note

- Which patients should not be offered urinary alkalinisers?
 - Potassium citrate should not be given to patients on certain diuretics, medication and certain antihypertensive agents (treatment for high blood pressure).
 - Sodium citrate should not be given to patients with hypertension, or a heart condition, or in pregnancy.
- Maximum dose
 - Patients should be reminded not to exceed the stated dose of products.

- Complementary therapy with cranberry is a home remedy often recommended as a preventative means to reduce the occurrence of UTIs. The use of cranberry in this setting has been studied and evidence suggests that drinking cranberry juice on a regular basis (300 ml per day) is known to have a bacteriostatic effect, although the mechanism by which it works is not fully understood. Capsules containing cranberry extract are available OTC. Cranberry may be used to prevent cystitis. However, it is unlikely to be effective as a treatment option for an acute case of cystitis, and is therefore not recommended for treating cystitis.

Points to note

Patients taking warfarin should be advised against taking any cranberry products.

- Phenazopyridine helps to reduce the pain associated with cystitis by having a “numbing effect” on the bladder and urethra. Phenazopyridine is available as 100 mg tablets, with the recommended dose of two tablets three times a day. However, it should not be taken for more than two days as it has not been shown to be beneficial beyond this period.

Points to note

- Phenazopyridine may discolour the urine reddish-orange. This is not harmful but can stain clothing.
- Common adverse effects (AEs) include headache, dizziness, and upset stomach.
- The chronic use of phenazopyridine is not recommended as it may mask clinical symptoms which require clinical investigation.

- Flavoxate hydrochloride relieves and prevents muscle spasms in the urinary tract. As such, it may be used for the symptomatic relief of dysuria, urgency, nocturia, frequency and incontinence that may occur with cystitis. The recommended dose is 200 mg three times a day.

When to refer?

The pharmacist's assistant may identify cases which warrant referral to the doctor. These include:

- Regular, recurrent or severe attacks of cystitis which need investigation for any underlying cause or trigger.
- Identifying the following symptoms, which suggest infection beyond the bladder and require referral:
 - Fever, chills or rigors; malaise and/or fatigue
 - Severe flank pain (discomfort in the upper abdomen or back and sides, which develops in the area below the ribs and above the pelvis)
- If symptoms have not subsided within two days of beginning the treatment, the patient should see their doctor.

Although most cases of cystitis are mild and resolve within a few days, cystitis can greatly affect patient quality of life. Pharmacist's assistants, under the supervision of the pharmacist, are at the forefront of patient care to offer counsel on OTC treatment options for cystitis.

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