

Urinary tract infections: A review

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Abstract

Urinary tract infections are common infections of urinary tract which includes urethra, kidneys and bladder that irritates the lining of urinary tract and it becomes inflamed. Males are less prone to the infection as compared to females. Sexual intercourse is one of major risk factor responsible for urinary tract infections. *E. coli* is the common causative bacteria responsible for complicated and uncomplicated UTI's.

Keywords: Urinary tract infections; Types of UTI; Clinical Manifestations of UTI; Risk factors associated with UTI; Pathogenesis of UTI

1. Introduction

An infection of the urinary system, which includes the kidneys (a condition called pyelonephritis), bladder (a condition called cystitis), ureters, and urethra (a condition called urethritis), is known as a urinary tract infection as shown in figure 1. Though, UTI's are more common in females as compared to males.

The majority of UTIs are caused on by germs that enter the urethra and then the bladder. Even though it can travel to the kidneys, the infection usually begins in the bladder. Your body can usually get rid of these microorganisms. But other health issues make UTIs more likely. Since a woman's urethra is shorter and situated closer to the anus than a man's, she is more likely to experience them. As a result, women are more prone to get an infection during sexual activity or when using a diaphragm for contraceptive methods. A UTI risk is also raised by menopause it will affect between 40 to 60 percent of women at some point in their lives.

Urinary tract infections are classified as:

- Complicated urinary tract infections
- Uncomplicated urinary tract infections

A complicated UTI is defined as the infection that extends beyond the bladder to the kidneys and is often more serious. Complicated UTIs are usually associated with indwelling catheters, urinary tract abnormalities, immunosuppressant or an exposure to antibiotics. For complicated UTIs, the causative agents are (in order of prevalence) ,E.Coli, Enterococcus species., Klebsiella pneumoniae, Candida spp., S. aureus, Proteus mirabilis.

An uncomplicated urinary tract infection is an infection in the lower urinary tract i.e. bladder and urethra. Uncomplicated UTIs usually affect women, children and elderly patients. For uncomplicated UTIs, other causative

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agents are (in order of prevalence) ,*E. coli*, *Klebsiella pneumoniae*, *Staphylococcus saprophyticus*, *Enterococcus faecalis*, group B *Streptococcus (GBS)*, *Proteus mirabilis*, *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Candida spp.*

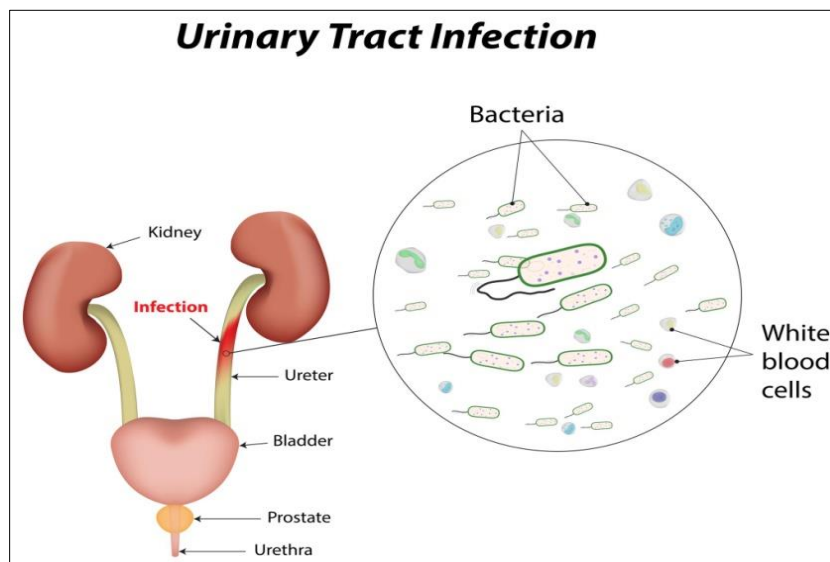


Figure 1 Urinary tract infections

1.1. Clinical Manifestations

The lining of the urinary tract becomes inflamed and red leading to a urinary tract infection, which may result in some of the symptoms listed below:

- Pain in the flank region, abdomen or pelvic area
- Urge to urinate at nocturnal time and urine Incontinence (urine leakage)
- Painful urination (dysuria) and blood in the urine
- Changes in urine color (cloudy or reddish urine)
- Burning micturition
- Foul-smelling urine

Other symptoms associated with a urinary tract infection include:

- Pain during sexual intercourse
- Pain in penis
- Flank pain or lower back pain.
- Fatigue and tiredness
- Fever with chills.
- Vomiting and nausea
- Changes in mental state or confusion.

1.2. Risk factors

As urinary tract infection are common in women. Every women experience more than one UTI during their lifetimes.

Risk factors which are specific to women include:

- Female anatomy-Women have a smaller urethra than men. Therefore, there's less distance for bacteria to travel to reach the bladder.
- Sexual activity-Being sexually active leads to more UTIs. Having sex with multiple partners also increases risk.
- Birth control pills- Using diaphragms for birth control may increase the risk of UTIs. Spermicidal agents can also increase risk.
- Climacteric - A decline in circulating estrogen causes changes in the urinary tract. These changes can increase the risk of UTIs.

1.3. Pathogenesis

Cystitis is the medical term for an infection that affects the bladder, while pyelonephritis is used to describe an illness that affects the upper urinary system (kidneys). These specific areas become infected when this happens, which causes inflammation, which then leads to discomfort that frequently radiates from the area that is infected. Because women's urethras are shorter, the danger of an infection spreading into the tract is higher, making infections more likely in women. Due to the fact that men are less likely to experience UTIs without anatomical anomalies, it is vital to remember that men's UTI cases are treated as difficult cases (e.g. BPH).

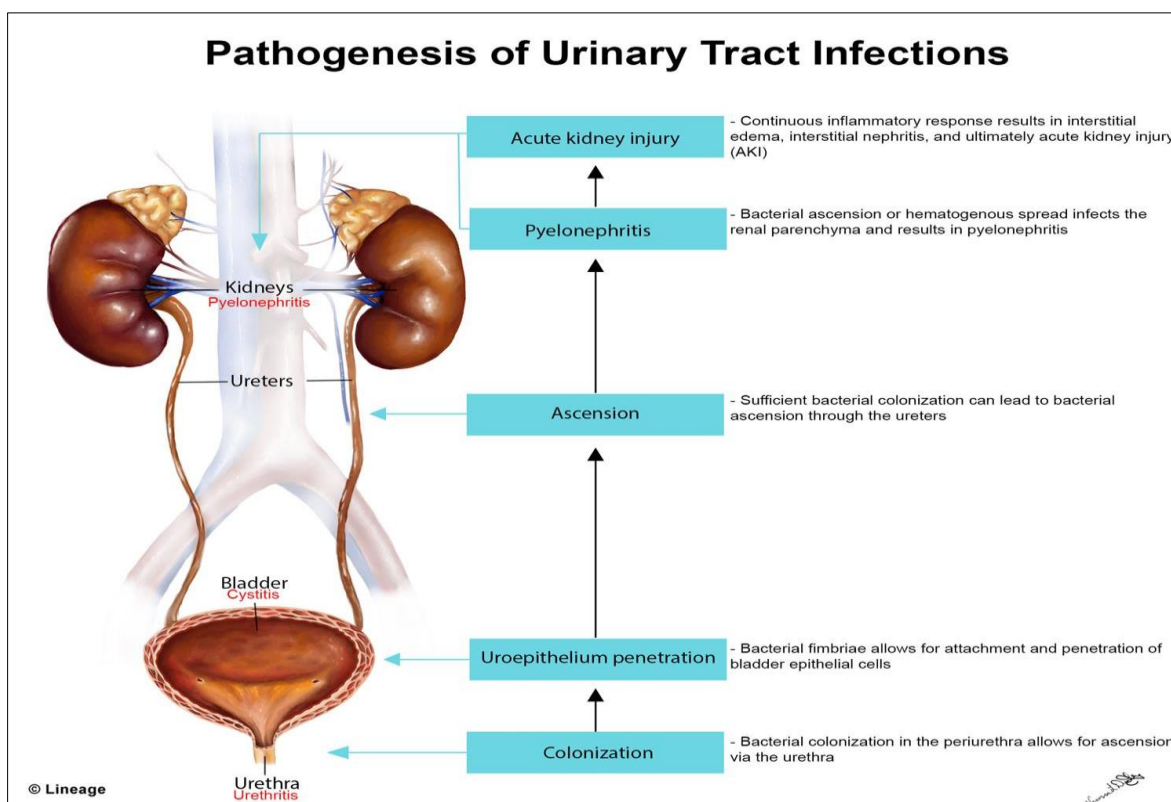


Figure 2 Pathogenesis of urinary tract infection

2. Conclusion

Women are more likely to develop urinary tract infections than men because women have narrower urethras than men, which make it easier for germs to spread. The authors of this review looked at a variety of research publications on PubMed, which results in that urinary tract infections affect about 4 out of 10 women. The most common clinical symptoms reported in people with UTIs are painful urination and the need to urinate at night. E. coli is a common pathogen that causes both complicated and uncomplicated UTIs.

Compliance with ethical standards

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Disclosure of conflict of interest

There is no conflict of interest to be disclosed.

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