

## Urinary Tract Infection Complications and Prevention

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A urinary tract infection (UTI) is an infection in any part of urinary system, which can happen anywhere includes kidneys, ureters, bladder and urethra. Most infections involve the lower urinary tract which include bladder and the urethra [1]. It occurs when any of the above mentioned part of urinary tract become infected with pathogen most frequently gram negative bacteria *Escherichia coli* (*E. coli*) which is considered the most prominent pathogen however, other bacteria may infrequently be present [1]. Different studies showed no variation in urinary tract uropathogens where *E. coli* revealed the highest predominate although, other causative pathogens were involved over the years [2,3]. Infections typically occur when bacteria enter the urinary tract through the urethra and begin to multiply in the bladder and collapsed defense mechanism that designed to keep out such microscopic invaders out of urinary tract and allow these invaders to take hold and multiply causing a full-blown infection in the urinary tract causing different of kind of illness from simple to severe if they reach the kidney and death if reach blood stream (sepsis).

Report showed that eight million UTIs cases were reported annually and more than one million were hospitalized [4-7]. Patients showed different symptoms although, similar symptoms were found in both genders however, due to female body anatomy that exhibit short distance from urethra to anus and the urethral opening to the bladder they are at higher risk than males. Researcher showed that urinary tract infections don't always cause signs and symptoms, but when they do they may include strong, persistent urge to urinate, dysuria (pain or burning during urination), usually accompanied with cloudy urine in appearance, red, bright pink or cola-colored in color is sign of blood in the urine. Other symptoms may include strong-smelling urine, pelvic pain, in women - especially in the frequency, and pain in the lower abdomen area. UTIs (cystitis) occur when bacteria go into the urethra up to the bladder. Other Infection occurs when bacteria passed the bladder up to the kidneys causing pyelonephritis. Bacteruria, cystitis, vaginitis are other causes of urogenital infections [8,9]. Asymptomatic infections such as hypertension, thrombosis, still birth, abortion, and preterm labour also were reported especially in pregnant women [10-12], leading to significant maternal and fetal morbidity and mortality [13,14]. As a final solution of infection antibiotics treatments are urge and health professional prescribing policy required to prevent formation of multidrug resistance pathogens that proven to be serious matter mainly in hospitals and in pregnant women.

The most common drugs recommended for simple UTIs include: Trimethoprim/sulfamethoxazole (Bactrim, Septra, others) Fosfomycin (Monurol), Nitrofurantoin (Macrochantin, Macrobid), Cephalexin (Keflex) Ceftriaxone these drugs showed less activity in many developing countries. Fluoroquinolones - such as ciprofloxacin (Cipro), levofloxacin (Lеваquin) showed high activity against UTI pathogens however, they are not commonly recommended for simple UTIs but rather to use in complicated cases or kidney infection [1] due to the fact that random use of antibiotic treatment produced multidrug resistance microorganisms in different demographic region due to uncontrolled drug prescription and irresponsible drug policy [15] therefore, proper investigation and correct prescriptions are needed to prevent serious life threatening condition and morbidity rate especially in pregnant women [5].

In addition to the seriousness of the UTI and drug policy treatments using the above mentioned drugs they revealed negative aspect and bad effect on our system. Therefore, other prospect of life individuals should be follow and it is necessarily to familiarize our self to different hygienic life style were individuals can follow in order to protect or at least prevent catching infection. There are many pro-

cedures to follow, some of these simple methods have proven to prevent or reduce infection [16]: one simple method is drinking water frequently during the day which will help dilute the urine and enhance urinating process that allow bacteria to flush from urinary tract before they accumulate, multiply and cause infection in a sense change urination habit [17]. Other report showed the consumption of cranberry juice is also effective in preventing UTIs due the fact that cranberry juice contents includes proanthocyanidins compound that prevents *E.coli* adhering to urinary tract tissue and reduce the chance of causing UTIs, also it contain vitamin C which increase acidity in urine and reduce chance of bacterial growth however, different contradicted studies were reported with in this respect. Drinking sparkling water decaffeinated herbal tea [16,17], smoothies made with fruit and vegetable reported to prevent UTIs. There are other products should be avoided such as caffeinated drinks and alcohol, these types of drinks irritate the bladder and enhance infection. There are other self behaviors factors should be practice such as, avoid holding urine and is better to empty bladder completely because failing to do so can encourage bacterial growth and enhance infection. Prober cleaning like wipe from front to back after urination and bowel movement since rectum is the main source of *E. coli* this habit decreases the risk of bringing bacteria from anal region to spread to vagina and urethra. One is the resent significant recommendation is to encourage self water cleaning system over toilet paper for better hygiene, such system proved validity and more convenience and provide better hygiene during pandemic Covid-19. It is always recommended to empty bladder completely, drink water after intercourse and pee immediately before and after sex to flush any bacterial residue. Washing genital before sex to prevent spreading bacteria to urethra is recommended. Women should avoid using irritate product at urogenital area, this can disrupt the normal flora (*Lactobacillus*) balance and induce pathogens over growth in vagina and enhance transition of pathogens to urethra. One of the reported recommended policies is change method to explore birth control methods from diaphragm; un-lubricated spermicidal- treated condoms were proven to minimize infections [16,17]. Eating fermented food such as yogurts, probiotic supplements and using probiotic suppositories (live microorganisms) can enhance the growth of gut and urinary tract normal flora and might reduce UTIs [16].

The above mention strategy of self behavior control method of life definitely should lead to better hygiene status and will reduce infection incidence in general. Following these policy will defiantly reduce percentage rate of drug prescription, minimize drug treatment and will prevent formation of MDR strains.

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