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Editorial

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Recurrent Urinary Tract Infections in Women

Recurrent urinary tract infections carry a big toll on female health including her mental health. Among the female population, it is one of the most common causes for seeking primary health care. About 60% of women will experience at least one UTI in their life and 30%–40% will experience recurrence[1]. In a study in the primary care setting, 53% of women aged more than 55 years, and 36% of younger women, reported a recurrence within 1 year[2].

The widely accepted definition of '**recurrent UTI**' is, Two separate culture-proven episodes of acute bacterial cystitis and associated symptoms within six months or three episodes within one year [AUA/CUA/SUFU Guideline (2022)]. This does not include episodes of bacteriuria without UTI symptoms (asymptomatic bacteriuria). These definitions typically consider these episodes to be separate infections with the resolution of symptoms between episodes and do not include those who require more than one treatment or multiple antibiotic courses for symptomatic resolution, as can occur with inappropriate initial or empiric treatment.

UTI Recurrence rate of 0.3-7.6 infections per patient per year, with an average rate of 2.6 infections per year[3]. Because of the short nature of the female urethra combined with its close proximity to the vaginal vestibule and rectum, recurrent UTIs is more frequent in women than men. A recent hypothesis stemming from animal experiments suggested that bacteria invade and persist within the bladder epithelium and cause recurrences by re-emerging into the bladder.

Recurrent UTI is associated with significant morbidity and decrease in quality of life with a subsequent economic impact on health care. In the USA, costs are estimated in excess of $2 billion/year.Burden on our nation is yet to measure but we can presume its will be a mammoth amount. Repetitive use of antimicrobial therapy can also cause antimicrobial resistance.

E coli, Staphylococcus aureus, Candida species, Staphylococcus saprophyticus, Klebsiella, Proteus, and Enterobacter spp, enterococci and Mycobacterium tuberculosis are mostly causative organisms and among them *E coli* is most common.

In case of acute onset, symptoms generally include dysuria with variable degrees of increased urinary urgency and frequency, hematuria and new or worsening incontinence. Acute onset of dysuria is a highly specific symptom, with more than 90% accuracy for recurrent UTI in young women. In case of older women in addition to dysuria, cloudy urine, vaginal dryness, vaginal/perineal burning, bladder or pelvic discomfort, urinary frequency and urgency, or urinary incontinence are common.

Urine culture remains the mainstay of diagnosis with urine analysis provides little increase in diagnostic accuracy[4] [AUA Guideline,2022]. Clinicians should obtain a complete patient history and perform a pelvic examination in women presenting with recurrence. In most cases extensive investigations like imaging or cystoscopy is not necessary[5]. We also have to remember that the molecular techniques like DNA sequencing, polymerase chain reaction-based detection methods, are not necessarily beneficial. In fact, in some cases, they cause overdiagnosis and associated overtreatment.

Over the time many guidelines have established in management of recurrent UTI. Main theme of treatment is more or less same. Due to increase number of antimicrobial resistance, antimicrobial stewardship program is now introduced. Antimicrobial stewardship is defined as a rational, systematic approach to the use of antimicrobial

agents in order to achieve optimal outcomes. This means using the right agent, at the correct dose, for the appropriate duration in order to cure or prevent infection, while minimizing toxicity and emergence of resistance[6]. It will be helpful in attempts to reduce inappropriate treatment, decrease broad-spectrum antibiotic use and may significantly mitigate increasing fluoroquinolone and cephalosporin resistance.

Clinicians should obtain urinalysis, urine culture and sensitivity report to initiate treatment but they should never treat a patient with asymptomatic bacteriuria except in pregnancy. Clinicians should use first-line therapy (i.e., nitrofurantoin, TMP-SMX, Fosfomycin) dependent on the local antibiogram for the treatment of symptomatic recurrence cases and duration generally should no longer than seven days as per recommendation of AUA guideline, 2022.

Following discussion of the risks, benefits, and alternatives, clinicians may prescribe antibiotic prophylaxis to decrease the risk of future UTIs in women of all ages previously diagnosed with UTIs. The duration of preventive treatment ranged from 6 to 12 months. Nitrofurantoin, TMP-SMX, cephalexin, Fosfomycin-all those drugs efficacy found similar across all trials. But Fluoroquinolones, such as ciprofloxacin, for prophylactic antibiotic use is not recommended in current clinical practice (AUA Guideline,2022).

Non antimicrobial therapies like Cranberry supplement, Vaginal estrogen replacements, Intravesical GAG therapy, Lactobacillus probiotics, Urinary alkalization are currently used as trial basis but none is still not strongly recommended by any guideline.

Behavioral modification like maintaining personal Hygiene and increase water intake is also important in prevention of recurrence. Amount of water should take per day is still a matter of debate but studies suggested it should not be less than 1.5L/day. Clinicians should repeat urine cultures to guide further management when UTI symptoms persist following antimicrobial therapy

So, it's now a national issue that needs proper attention from primary health workers to top level officials. Only in that way, we can counter this old nemesis of ours.

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