

Urinary Tract Infection Management in Elderly People : Approach Beyond the Pills and Needles

Abhijit Chowdhury¹
Jannatul Ferdoush^{2*}
Mokhlesur Rahman³
Binayok Das⁴
Prasenjit Sarker⁵

¹Centre for Clinical Epidemiology and Biostatistics
Hunter Medical Research Institute
The University of Newcastle, Australia.

²Department of Pharmacology & Therapeutics
Chattagram Maa-O-Shishu Hospital Medical College
Chittagong, Bangladesh.

³Monash University, Australia.

⁴Department of Oncology & Radiotherapy
Anwar Khan Modern Medical College & Hospital
Dhaka, Bangladesh.

⁵Department of Pediatrics
Chattagram Maa-O-Shishu Hospital
Chittagong, Bangladesh.

*Correspondence to:

Dr. Jannatul Ferdoush
Assistant Professor
Department of Pharmacology & Therapeutics
Chattagram Maa-O-Shishu Hospital Medical College
Chittagong, Bangladesh.
Mobile : +88 01856189977
Email : jannat_fkh@yahoo.com

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Abstract

This review article focuses on critical analyses of the approach towards the management of older adults suffering from urinary tract infections. The article sheds light on the better scopes of management for these patients beyond the conventional treatment strategies to deal with the disease complexities with a goal to achieve patient satisfaction as well as fulfilling their psychosocial needs.

Medline (1946) Scopus, Embase, CINAHL and PsycINFO were searched for articles published from 1980 to 2015 using the keywords Urinary Tract Infection, Older Adults, Elderly, Aged and Aged Care Facilities. The reference lists of the selected publications were also reviewed. Articles published only in English have been chosen.

Key words :

Urinary Tract Infection; Elderly Patients; Bacteria.

INTRODUCTION

Urinary Tract Infections (UTI) is the infection of the urinary system. It has two subtypes, upper and lower UTI. At least 10% male and 20% female over 65 years have the presence of bacteria in their urine which makes this infection a major concern for geriatrics practitioners¹. Unlike the younger individuals where female outnumber the male patients, UTI occurs with equal frequency in both senior men and women¹. Swollen prostatic gland with impaired prostatic secretion in older men is the reason for the change in that ratio. If not asymptomatic, burning during urination, increased urgency and frequency with lower abdominal, back or flank pain and sometimes fever with chills and rigour are the predominant clinical presentations in persons suffering from UTI^{1,2}. People may also have complaints of nausea, vomiting and passage of blood in urine. Fever is less common in lower urinary tract infections and diabetic patients. Interestingly these manifestations are almost absent in the vast majority of elderly patients³. The management of patients with UTI is challenging, not only from a medical perspective but also from their psychosocial aspects. This group of patients need significant mental support while they are treated in the hospital settings¹⁻⁵. Some of these subjects may live in the aged care facilities as well. Therefore health professionals like doctors and nurses need to adopt a comprehensive approach to manage this group of patients which feed both the medical and psychological needs of the patients and patient parties⁴.

UTI in the Hospital and Aged Care Settings

As UTI is the most common infection in hospitals or aged care centres, dwellers with reduced functional status residing in these facilities are more vulnerable to have this infection⁵. There is a higher incidence of complicated UTI in this group of patients. Elderly hospital patients with indwelling catheters very often suffer from this notorious infection¹. This increasing rate of infection with age may be due to the progressive decline of kidney function due to ageing, inefficient micturition or any underlying conditions or disease which causes immune suppression like malnutrition, Diabetes Mellitus, malignancies or chronic corticosteroid use⁶. Reduced mobility and usage of bedpans may contribute to diminished bladder evacuation which is another potential risk factor for this infection in elderly. Poor hygiene in female hospital or nursing home patients also potentiates the risk^{4,7}.

The presence of bacteria in urine with no symptoms requires no treatment². However, typical symptoms in elderly patients prompt quick intervention as there is the chance of sudden deterioration of mental status^{3,4}. Alongside urinalysis, Gram staining and various blood and biochemical test, obtaining the urine specimen by catheterization for culture should be the norm of diagnosis for elderly female nursing home dwellers in which group reinfections are quite common⁸. On the other hand, relapsing UTIs in the male may be the result of bacterial prostate infection for a prolonged period, which is also very common with ageing. Drug-related side effects in the elderly also make the treatment very challenging^{6,8}. In a case of sexually active elderly, there is always a chance to have sexually transmitted urethritis and cystitis⁷.

Dangers of UTI in Elderly Patients

As the lower UTIs are often asymptomatic in elderly, there is always a high probability for ascending infection to the kidneys. Genitourinary tract having anatomic or physiologic abnormalities are highly vulnerable to contract this disease⁹. Hospitalised elderly patients who underwent a cerebrovascular accident or patients with neuromuscular disorders are also very prone to suffer from UTIs. Faecal incontinence in demented women is another potential way of introducing the infection which is very challenging to manage in aged care or hospital settings. Prolonged hospital stay is another issue in this regard¹⁰.

Sufferers of stroke, patients with Alzheimer's disease, Parkinson's disease or any other disorder which leads to dementia and cognitive impairment, living in the aged care or nursing homes cannot take proper care of themselves. They cannot express their discomfort or pain properly, which makes the communication between the caring staff and patients very challenging⁹⁻¹¹. Hence special attention and care are sought for this group of subjects. Their urinary habit needs to be carefully observed. Otherwise, if they develop sudden deterioration of kidney function due to an infection, there is the high chance of

brain involvement causing delirium or uraemic encephalopathy that may result in patient's death^{11,12}. Many of the aged women having uterine prolapse have an increased risk of UTI because of urine entrapment in the bladder. This issue also needs to be closely monitored as the stagnant flow of urine in the bladder gives the microorganism scope to colonise the urinary bladder, from where they can ascend to the kidneys and ultimately may reach the blood stream giving rise to bacteraemia or even septicaemia and shock¹³. Involvement of the central nervous system may cause challenging behaviours in patients with UTI which may cause fall and injury to the patients. That is why every elderly patient in nursing homes requires the person-centred approach of management^{13,14}.

How to Fight UTI in The Elderly People

E. Coli is the most common organism for this infection which has its susceptibility to many antibiotics¹. In the case of older patients, particular caution is needed before prescribing an agent taking the progressive decline of kidney function with ageing into account. Drug tolerance evaluation is necessary, and patients need to be compliant towards the treatment regimen⁴⁻¹⁰. Carers need to make sure that patients complete the full course of prescribed drug. Urological evaluation, proper patient education, personalised patient care plan all play the key role in the management strategy. Bacterial resistance is a crucial issue to be kept in mind while treating these patients as resistance from non-compliance to antimicrobial agents may help to spread out the infection very quickly in different systems¹⁵. As a result, there may be the sudden loss of kidney functions commonly referred to as Acute Renal Failure which gives rise to accumulation of nitrogenous metabolic waste products (eg, urea, creatinine, etc.) in the body making the patient unstable and sometimes delirious^{13,15}.

Relapse or reinfection is another important issue to be considered in patients living in nursing homes or aged care settings. Chronicity of infection makes it difficult to clear up completely from the system^{15,16}. On the other hand, Chronic Kidney Disease (CKD) from causes like diabetes, hypertension, long-term ingestion of painkillers may make the kidneys more prone to develop the infection and hard to treat. Infected kidney stones in elderly may also give rise to life-threatening events depending on patient's health status¹³⁻¹⁷. Hence prompt diagnosis and availability of adequate treatment are vital. The risk of side effects from the pharmacotherapy prescribed should never be forgotten. Refractory cases should be taken care of with more caution. Vigorous treatment strategy with drugs in elderly patients is discouraged as this increases the possibilities of adverse drug effects¹⁴. In elderly, if possible, catheterization should be avoided in all instances. A condom catheter is a good option in older males with less chance of infection^{14,15}.

Emotional Aspects in Treating Elderly Patients Suffering from UTI

Psychological support and reassurance for the patients with complicated UTI sometimes play a pivotal role in patient healing alongside the appropriate medical or surgical intervention [18]. Most of the elderly patients suffer from other concomitant illnesses which sometimes mask the UTI and may give rise to the unwanted situation like acute confusion¹⁷. Sometimes altered mental status may result from an infection at another site. A patient suffering from delirium may be hard to handle for the doctors and nursing staff. These patients can harm themselves. That is why they may need to be restrained which is emotionally stressful for the relatives of the patients¹⁵⁻¹⁹. Patients' health status should be discussed with the patient party by maintaining full professionalism, and at every stage of the management plan, the patient should be treated with proper respect and dignity¹⁹.

Preventing UTI in Hospitals and Aged Care Facilities

To avoid contamination in aged care facilities, urine samples should be transported promptly to laboratories. As the elderly patients may have poor perineal hygiene, nursing home staff should maintain the personal and patient hygiene properly at all instances²⁰. Residents with indwelling catheter should be followed up carefully for any sign of infection and mental deterioration^{19,20}. If there is any suspicion of brain involvement (eg, uraemia) due to high blood urea level, appropriate measures need to be taken for preventing further damage to the patient¹⁸. Sources of infection like incontinence pads and bedpans should be disposed of properly. The overall standard of sanitation in the hospitals or nursing home settings must be maintained meticulously²¹. Antibiotics for treatment should be chosen on the basis of culture and sensitivity report to prevent bacterial resistance. Conditions like the kidney stone, diverticula and stricture should be investigated properly to avoid further complication^{21,22}. For diabetic patients, blood glucose will regularly be monitored, and the appropriate drug should be given as blood sugar increases the risk of relapse and reinfection²³. Patients on immunosuppressive agents also demand particular attention in this regard^{23,24}.

CONCLUSION

Debilitating diseases with functional impairments cause high prevalence of UTI in patients residing in hospitals or aged care facilities¹⁵⁻²⁰. Complicated UTI may give rise to sudden mental deterioration, the state of acute confusion or delirium. It imposes challenges for doctors and nursing staff to manage the patients. As long-term catheters play a fundamental role in contracting UTI in elderly patients, it should only be reserved for serious urinary retention conditions like the neurogenic bladder, etc²⁰. People with poor health status should be given more attention, and sudden instability of the patient must be evaluated cautiously and should be treated promptly to prevent any unfortunate consequences¹⁹⁻²⁴. Health professionals should be trained up adequately to take care of these conditions ensuring the delivery of high-quality healthcare for elderly patients suffering from UTI. The doctors, nursing staff and allied health professionals should always consider the psychological aspects of managing these conditions. Thus the health system will attain the proper standard of treatment strategy which will successfully fulfil the patients' needs and will contribute to lower down the overall morbidity and mortality related to this condition.

DISCLOSURE

All the authors declared no competing interest.

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