Assessment of Urinary Tract Infection in Different Age Group Patients Visiting a Hospital

Sanjay Sharma[1*], Harish Bhat[2]

[1*]Associate Professor, [2]Junior Resident, Department of Urology,
Saveetha Medical College & Hospital, Saveetha Nagar, Thandalam, Chennai, Tamil Nadu, India.

*Correspondence to:
Dr. Sanjay Sharma,
Associate Professor,
Dept. of Urology,
Saveetha Medical
College & Hospital,
Chennai,
Tamil Nadu, India.

ABSTRACT

Background: Urinary tract infection (UTI) is the third most common infection experienced by humans after respiratory and gastro-intestinal infections. Hence; the present study was undertaken for assessing the occurrence of urinary tract infection in different age-groups patients visiting the hospital.

Materials & Methods: 245 consecutive subjects with presence of urinary tract infection were enrolled for the present study. A questionnaire was framed for obtaining complete clinical, demographic and medical history of all the patients. From all the patients, collection of urine sample was done and was sent to laboratory for assessment of microbiological profile. All the results were recorded in Microsoft excel sheet.

Results: In the present study, a total of 245 patients were analyzed. Mean age of the patients of the present study with UTI was 53.8 years. 32.65 percent of the patients belonged to the age group of more than 50 years. 24.90 percent of the patients of the present study belonged to the age group of 41 to 50 years. 17.14 percent of the patients of the present study belonged to the age group of 31 to 40 years. 16.33 percent and 8.98 percent of the patients belonged to the age group of 20 to 30 years and less than 20 years.

Conclusion: UTI is exceedingly prevalent in elderly subjects.

KEYWORDS: Elderly, Infection, Urinary tract.

INTRODUCTION

Urinary tract infection (UTI) is the third most common infection experienced by humans after respiratory and gastro-intestinal infections. In fact, bacterial infections of the urinary tract are the most common cause of both community acquired and nosocomial infections for patients admitted to hospitals in United States.[1-3] It is distressing and occasionally life threatening. However, the prognosis and management of urinary tract infections depends on the site of infection and any predisposing factors. The localization of the site of infection on the basis of symptoms and signs can be inaccurate. Using ureteral catheterization, it has been shown that approximately 50% of women with asymptomatic bacteriuria had infection in their upper tracts.[4-7]

Hence; under the presence of above mentioned data, the present study was undertaken for assessing the occurrence of urinary tract infection in different age-groups patients visiting the hospital.

MATERIALS & METHODS

The present research was planned in the Department of Urology, Saveetha Medical College & Hospital, Saveetha Nagar, Thandalam, Chennai, Tamil Nadu (India) with aim of assessment of occurrence of urinary tract infection in different age-groups patients visiting the hospital.

Sample size
245 consecutive subjects

Inclusion criteria
- Subjects positive for presence of urinary tract infection
- Subjects with negative history of presence of any metabolic disorder
- Subjects with negative history of diabetes and hypertension

Data collection
A questionnaire was framed for obtaining complete clinical, demographic and medical history of all the

patients. From all the patients, collection of urine sample was done and was sent to laboratory for assessment of microbiological profile.

All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software version 17.0. Chi-square test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

Table 1: Age-wise distribution of patients

Parameter		Number of patients	Percentage of patients
Age group (years)	Less than 20	22	8.98
	20 to 30	40	16.33
	31 to 40	42	17.14
	41 to 50	61	24.90
	More than 50	80	32.65
	Total	245	100
Mean age (years)		53.8	

Table 2: Gender-wise distribution of patients of different age-group

Age group (years)	Gender		Total
	Males	Females	
Less than 20	12	10	22
20 to 30	22	18	40
31 to 40	22	20	42
41 to 50	35	26	61
More than 50	45	35	80
Total	136	109	245

RESULTS

In the present study, a total of 245 patients were analyzed. Mean age of the patients of the present study with UTI was 53.8 years. 32.65 percent of the patients belonged to the age group of more than 50 years. 24.90 percent of the patients of the present study belonged to the age group of 41 to 50 years. 17.14 percent of the patients of the present study belonged to the age group of 31 to 40 years. 16.33 percent and 8.98 percent of the patients belonged to the age group of 20 to 30 years and less than 20 years. Overall, there were 136 males and 109 females. Among patients of more than 50 years of age, there were 35 males and 26 females.

DISCUSSION

Infections of the lower urinary tract (acute cystitis) are one of the most frequent diseases in primary medical care which are treated with antibiotics. Urinary tract infections (UTI) are responsible for significant proportion of all consultations. The prevalence is highly dependent on age and gender (figure). If a female patient presents to a primary care practice with the typical symptoms, the probability is 50% to 80% that she has an infection of the urinary tract.[8,9] UTI may be defined as a condition in which bacteria are established and multiplying within the urinary tract. Diagnosis requires demonstration of bacteriuria. Exceptions to this include patients with pyogenic abscess of kidney or perinephric tissue, obstructed pyonephrosis or bacterial prostatitis in whom the urine may be sterile.[10]

In the present study, a total of 245 patients were analyzed. Mean age of the patients of the present study with UTI was 53.8 years. 32.65 percent of the patients belonged to the age group of more than 50 years. 24.90 percent of the patients of the present study belonged to the age group of 41 to 50 years. 17.14 percent of the patients of the present study belonged to the age group of 31 to 40 years. Associations have been established between UTI and age, pregnancy, sexual intercourse, use of diaphragm and a spermicide, delayed post-coital micturition, menopause and a history of recent UTI. Factors that do not seem to increase the risk of UTI include diet, use of tampons, clothing and personal hygiene including methods of wiping after defecation and bathing practices.[6,7]

Risk factors for urinary tract infections in women include frequent sexual intercourse, lack of urination after intercourse, use of a diaphragm, use of a spermicide, and a history of recurrent urinary tract infections. Although the long-term adverse effects associated with uncomplicated urinary tract infections

appear to be minimal, if left untreated, urinary tract infections can interfere with daily living. As many as 80% of uncomplicated urinary tract infections are caused by Escherichia coli, followed by Staphylococcus saprophyticus in as many as 5% to 15% of cases. Enterococci, Klebsiella species and Proteus mirabilis account for a small percentage of overall infections.[8]

In the present study, 16.33 percent and 8.98 percent of the patients belonged to the age group of 20 to 30 years and less than 20 years. Overall, there were 136 males and 109 females. Among patients of more than 50 years of age, there were 35 males and 26 females. In a recent study of nursing home residents with advanced dementia, mental status change was the most common reason for suspected UTI, accounting for over 40% of cases; localized genitourinary symptoms were infrequent. Dysuria was responsible for only 3.8% of suspected cases, urinary frequency for 1.5% of cases, and no suspected cases of UTI were due to urgency or suprapubic pain.[11] In individuals without anatomical or functional abnormalities, UTIs are generally self-limiting, but have a propensity to recur. Uropathogens have specialized characteristics, such as the production of adhesins, siderophores and toxins that enable them to colonize and invade the urinary tract, and are transmitted between individuals both through person-to-person contact and possibly via food or water. Although generally self-limiting, treatment of UTIs with antibiotics leads to a more rapid resolution of symptoms and is more likely to clear bacteriuria, but also selects for resistant uropathogens and commensal bacteria and adversely affects the gut and vaginal microbiota. As uropathogens are increasingly becoming resistant to currently available antibiotics, it may be time to explore alternative strategies for managing UTI.[12]

CONCLUSION
Under the light of above obtained data, the authors concluded that UTI is exceedingly prevalent in elderly subjects. However; further studies are recommended.

REFERENCES
1. Stamm WE, Counts GW, Running KR, Fihn S, Turck M, Holmes KK. Diagnosis of coliform infection in acutely dysuria women. N Engl J Med. 1982;307:463–8.
2. Baily RR. Single-dose therapy of urinary tract infection. Bolgowlah, Australia: ADIS Health Science Press; 1983.
3. Huland H, Busch R. Pyelonephritic scarring in 213 patients with upper and lower urinary tract infections: Long-term follow-up. J Urol. 1984;132:936–9.
4. Nicolle LE. Asymptomatic bacteriuria: when to screen and when to treat. Infect Dis Clin North Am. 2003;17(2):367–394.
5. Gould CV, Umscheid CA, Agarwal RK, Kuntz G, Pegues DA. Healthcare Infection Control Practices Advisory C Guideline for prevention of catheter-associated urinary tract infections 2009. Infect Control Hosp Epidemiol. 2010;31(4):319–326.
6. Ronald A. The etiology of urinary tract infection: Traditional and emerging pathogens. Dis Mon. 2003;49(2):71–82.
7. Hooton TM, Stamm WE. Diagnosis and treatment of uncomplicated urinary tract infection. Infect Dis Clin North Am. 1997;11:551–81.
8. Stamy TA, Govan DE, Palmer JM. The localizations and treatment of urinary tract infection: The role of bactericidal urine levels as opposed to serum levels. Medicine. 1965;44:1–36.
9. Rodhe N, Molstad S, Englund L, Svardsudd K. Asymptomatic bacteriuria in a population of elderly residents living in a community setting: prevalence, characteristics and associated factors. Fam Pract. 2006;23(3):303–307.
10. Juthani-Mehta M, Quagliarello VJ. Infectious diseases in the nursing home setting: challenges and opportunities for clinical investigation. Clin Infect Dis. 2010;51(8):931–936.
11. Rowe TA, Juthani-Mehta M. Urinary tract infection in older adults. Aging health. 2013; 9(5): 10.2217/ahe.13.38.
12. Foxman B. The epidemiology of urinary tract infection. Nat Rev Urol. 2010 Dec;7(12):653-60. doi: 10.1038/nrurol.2010.190.