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FREQUENCY OF UROLOGICAL DISEASES IN AYUB TEACHING HOSPITAL

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Abstract:

This study aims to determine the frequency of urinary tract diseases in urology ward of Ayub teaching hospital.

Materials and Methods: *This study was conducted in the urology ward of Ayub teaching hospital. The design was descriptive cross sectional study. The study period was of 6 months on a sample size of 100 patients.*

Results: *Sample size was 100. Regarding the diagnosis of the common diseases in patients, 36% of the patients suffered from nephrolithiasis, 14% from benign prostatic hyperplasia, 10% from hydronephrosis, 8% from urinary tract diseases and 5% from ureteric calculi. Regarding gender, 75% were males while 25% were females.82% of the patients were poor and 71 % of patients belonged to rural areas. 83% of the patients were married and 75% of the patients were illiterate.*

Conclusion: *Urinary tract diseases are frequent in males, with increased prevalence in illiterate married patients of poor socioeconomic status, living in rural area and having poor dietary intake.*

Keyword: *Prevalence of urinary tract diseases, benign prostatic hyperplasia, urinary tract infections.*

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INTRODUCTION:

The mammalian urinary tract is a contiguous hollow-organ system which collects, transports, stores and expels urine periodically in a highly coordinated way. [1,2] Proximally to distally, it comprises of renal papillae, renal pelvis, ureters, urinary bladder and urethra and each of these components of the urinary tract has distinct anatomic and physiologic features which enables it to perform critical functions in the formation of the urine. [3] However, the constant flow of urine in the upper urinary tract and its intermittent elimination from the lower urinary tract has cleansing action too because it also eliminates the microbes that might have entered the urinary tract. [3]

Over the years it has been observed that there is a progressive lack of population based data of frequency of occurrence of urinary tract diseases which has resulted in high costs of chronic kidney disease in particular, and in increased morbidity. [4-6] One of the most common urinary tract associated diseases is Urinary tract infections (UTIs). [7] Around 150 million people suffer from Urinary tract infection each year. [8] UTI is more common in women than in men. [9] Approximately 7 million females in the United States(US) suffer from acute cystitis anually. [10]

It has been observed that colonization of different bacteria in the distal urethra and introtius cause ascending UTIs. [11] UTIs are mostly ascending infections caused by bacteria present in the stools. [12] Susceptibility of the bacterial invasion is either due to damage to the renal parenchyma or due to decreased blood supply to the tissue; damage to the urothelium can be caused by trauma, foreign bodies including catheters or calculi while decreased blood supply to the bladder is due to increased intravesical pressure or its over distension. [13]

Catheter associated infection is the most common hospital acquired urinary tract infection accounting for almost 40% of the nosocomial infections in the US each year. [14] In order to prevent catheter associated urinary tract infections, excessive antimicrobial drugs are used which has ultimately led to proliferation of the antimicrobial resistant strains of many bacteria. [15] As patients of neurogenic bladders need long term treatment with catheters hence catheter associated UTIs cannot be prevented in them. [15]

Risk factors for UTIs include recent sexual intercourse, delayed postcoital micturition, use of diaphragm with a spermicide, ABO-blood-group nonsecretor phenotype, urinary incontinence and history of previous UTI. [16-21]

MATERIALS AND METHODS:

Study Design: Descriptive cross sectional study.
Setting: Urology ward of Ayub teaching hospital, Abbottabad.
Study Duration: 6 months.
Sample technique: Non-probability convenience sampling.
Sample Selection:
Inclusion Criteria:

- Patients suffering from urinary tract diseases.
- Patients of all age.
- Patients of both the gender.

Exclusion Criteria:

- Debilitated patients.
- Patients brought to urology ward as cases of emergency.

Data collection Procedure: Data was collected using a preformed, structured questionnaire. The students of batch C filled the questionnaire by themselves.
Data analysis: Data was entered and analyzed using statistical software of SPSS, 16.0. Frequencies and percentages were calculated for categorical variables like gender, sex, marital status etc. Mean and standard deviation were calculated for quantitative variables like age, monthly family income etc.

RESULTS:

Among 100 patients, 36(36%) patients suffered from nephrolithiasis, 14(14%) from benign prostatic hyperplasia(BPH), 10(10%) from hydronephrosis,8(8%) from UTIs and 5(5%) from ureteric calculi. 2(2%) patients suffered from carcinoma of prostate, epididymo orchitis, hydrocele, nerogenic bladder, renal cell carcinoma and vesicolithiasis each. 1(1%) patient suffered from adenomyosis, bilateral PUJ obstruction, bladder rupture, fournier gangrene, hematuria, incisional hernia, obstructive uropathy, pelvo ureteric junction obstruction, renal stenosis, renal tuberculosis, right renal fossa residual tissue, scrotal abscess, urethral stricture, urinary bladder rupture and urinary incontinence each. Regarding gender of patients, 75(75%) out of 100 patients were males while only 25(25%) out of 100 patients were females. This research shows that mean age of patients was 46.77 $^{\pm}$19.2 years and the mean monthly income of the patients was Rs. 38560 $^{\pm}$198574.125. Regarding marital status, 83(83%) patients were married while 17(17%) patients were unmarried. Regarding residence of patients, 71(71%) out of 100 patients belonged to rural areas and only 29(29%) patients belonged to urban areas. Regarding the time since the

suffering of disease, 56(56%) patients had been suffering from the disease since upto 6 months. 44(44%) patients had been suffering for more than 6 months. Regarding source of treatment, 34(34%) patients got treatment from public sector. 12(12%) patients got treatment from private sector. 3(3%) patients got treatment from other sources and 51(51%) patients did not get any treatment. Regarding occupations of the 100 admitted patients, 1(1%) was businessman, 22(22%) were manual labourers, 20(20%) were house wives, 4(4%) were farmers, 1(1%) was vocational worker, 1(1%) was office worker and 51(51%) patients belonged to other occupations.

Regarding educational qualification of the patients, 75(75%) patients were illiterate, 11(11%) patients had done primary, 10(10%) patients had done SSC, 1(1%) patient had done FA/FSc and only 3(3%) patients were graduates.
Regarding co-morbidity of disease, 58(58%) patients had no other disease. 4(4%) patients suffered from diabetes and 20(20%) from hypertension. 18(18%) patients out of 100 had any other co-morbidity.

Regarding history of episode of current disease during the last six months, 40(40%) patients had suffered from this disease during the last six months and only 21(21%) patients did not suffer. On 39(39%) patients, this question was not applicable.

Regarding history of previous treatment, 43(43%) patients had no previous treatment. 14(14%) patients had surgical and 42(42%) patients had medical treatment previously. Only 1(1%) patient had any other treatment.

DISCUSSION:

The study was conducted on a sample of 100 patients in Urology ward of Ayub teaching hospital. Being a 1000-bedded tertiary care hospital, it is the largest health care facility of northern areas of Pakistan. Hence, it was most suitable for our hospital based study.

Urinary tract diseases are a worldwide problem, not merely associated to Pakistan. According to our study, out of 100 patients, 36(36%) patients suffered from nephrolithiasis. This is in accordance to the study conducted by Victoriano Romero etal in which 75 articles were identified, containing kidney stone related incidence or prevalence from 20 countries. Out of these only 34 provided suitable information for review. It was concluded in this study that there has been increase in incidence and prevalence of kidney stones in United States and other parts of the world because of the genetic and environmental factors. The genetic factors have their effect slow but the environmental factors are varied and complex and their effect is apparent much earlier. [22]

Benign prostatic hyperplasia (BPH) is the second most common urinary tract disease in our study. 14(14%) out of 100 patients suffered from BPH. This high incidence of the disease endorses study conducted by Nishant D. Patel etal which had concluded in 2014 that there would be rise in patients suffering from BPH because more population would get old and due to the already prevalent metabolic syndromes and their components

Frequency of UTIs in our study was 8(8%) out of 100 patients. They are few of the most common diseases of our study. A study was conducted by Anis-ur-Rehman etal in 2008 in which they found out that 375(37.5%) out of 1000 children suffered from UTIs. It concluded that frequency of UTIs in Hazara division is same as that in other developing and developed countries. Besides 60% of the patients in their study belonged to Kohistan and Batagram districts which are rural areas. This is in accordance to our study because 71% of our patients belonged to rural areas, forming greater portion of the patients.

Incidence of urinary tract diseases can be associated to gender. According to our study 75(75%) out of 100 patients were males. However this is the overall frequency of the incidences of urinary tract diseases. Frequency of individual urinary tract diseases in males or females might be different. According to a study conducted by Foxman B on epidemiology of UTIs, women are more prone to UTIs than men. Nearly 1 in 3 women will have had at least 1 episode of UTI requiring antimicrobial therapy by the age of 24 years and almost half of all women will experience one UTI during their lifetime. [6] Another study was conducted by Iftikhar Ahmad etal on frequency of metabolic abnormalities in urinary stones patients. [41] Mean age of patients was 38 ± 7.75 years. Male to female ratio was of 2:1 which clearly indicated that there is high incidence and prevalence of kidney stones in males than in females. BPH being another common disease in men has high prevalence in the world. [24] It forms a major portion in the overall frequency of urinary tract diseases in males and females.

In our study 82% of the patients belonged to poor background with lack of proper education, employment, quality lifestyle and proper diet. Only

18% of the patients belonged to middle class families. It has also been concluded by the study of Kontiokari T etal that frequent consumption of fresh juices, especially berry juices, and fermented milk products containing probiotic bacteria was associated with a decreased risk of recurrence of UTIs. [20]

CONCLUSION:

Urinary tract diseases are a widespread public health problem. However estimates of the prevalence of urinary tract diseases vary widely and accurate data are often lacking. According to our study, urinary tract diseases are frequent in males, with increased prevalence in married males of poor socioeconomic status, living in rural area and having poor dietary intake. Regarding the diagnosis of the common diseases in patients, 36% of the patients suffered from nephrolithiasis, 14% from BPH, 10% from hydronephrosis, 8% from UTIs and 5% from ureteric calculi**.**

Recommendations:

- Another ward of urology should be established in Ayub teaching hospital as the inflow of the patients is very high.
- Different seminars should be conducted to create awareness for the patient care in medical students about the urinary tract diseases since their incidence is increasing day by day.
- Free medicines and proper diet should be provided by the hospital administration to the patients who belong to poor backgrounds.
- Hygiene of the ward and the patients admitted in the ward should be ensured.

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