

Gamut of Urological Diseases in a Tertiary Hospital in North Central Nigeria

Abstract

Context: Worldwide, urological disorders vary from one topography to another. An in-depth understanding of their distribution in each region could serve as a basis for the distribution of manpower, equipment's alongside determine policy formulation and training. **Aims:** This study enumerates the annual frequency and distribution of urological disorders at the Federal Medical Centre, Keffi. **Settings and Design:** A cross-sectional retrospective study from November 2021 to November 2022 of all new patients who attended the urology outpatient clinic, emergency department as well as those who had surgical interventions at the Federal Medical Centre, Keffi, Nasarawa State. **Materials and Methods:** The pertinent records were extracted from the patient's electronic medical records (EMR) and entered into a semistructured questionnaire. **Statistical Analysis Used:** Data were analyzed using the SPSS software version 20. **Results:** A total of 452 new patients were seen over the study period. There were 428 (94.5%) males and 24 (5.3%) females, with a male-to-female ratio of 17.8:1. The median age was 58 years, with the age range of 2–97 years. Urological emergencies were seen in 13.5% patients. Ninety-eight percent of cases were acquired, whereas 1.8% were of congenital etiology. Overall, the most commonly diagnosed urologic diseases among new patients in order of decreasing frequency were benign prostatic enlargement (BPE) (54.7%), urethral stricture disease (11.0%), upper tract urinary calculi (6.3%), prostate adenocarcinoma (5.9%), and male infertility (4.3%). **Conclusions:** BPE, urethral stricture disease, upper tract urinary calculi, prostate adenocarcinoma, and male infertility are common in our environment. An understanding of the urological disease distribution will enhance policy-making and drive manpower needs inspiring core areas of subspecialization with a view at improving the standard of urological care and promoting collaboration with international organizations and funding agencies.

Keywords: Benign prostatic enlargement, prostate adenocarcinoma, urethral stricture disease, urological diseases

Introduction

The burden of urologic disorders is significant on health care providers at all levels, especially in poor resource countries like Nigeria, complicated by the massive exodus of urologists.^[1] Despite the variance of urological diseases from one clime to another, the conditions cut across all ages and sexes. The in-depth comprehension of these conditions will serve as an impetus for efficient service delivery and necessitate extensive training as well as intense research in our tertiary hospital. This will further determine the required manpower and resources to direct areas of subspecialization. Keffi town has a population of 142,900 (2022) and a population density of 709.3/km² with a

land area of 201.5 km².¹ Several patients come from neighboring states of Kaduna, Kogi and the FCT, especially among the suburbs.

The annual distribution of urological disorders in our environment has never been documented following an intense literature search. Studies from Sokoto, North-western Nigeria, recorded the spectrum of urologic conditions, especially prostate and bladder cancer, because of the endemicity of schistosomiasis in the region.^[2,3] This study was necessitated to highlight the commonly experienced urologic conditions in our unit to enhance institution-building and efficient healthcare delivery.^[4] The goal of this study was to determine the annual spectrum of urological diseases in our domain with a

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¹ National Population Commission of Nigeria (web), National Bureau of Statistics (web).

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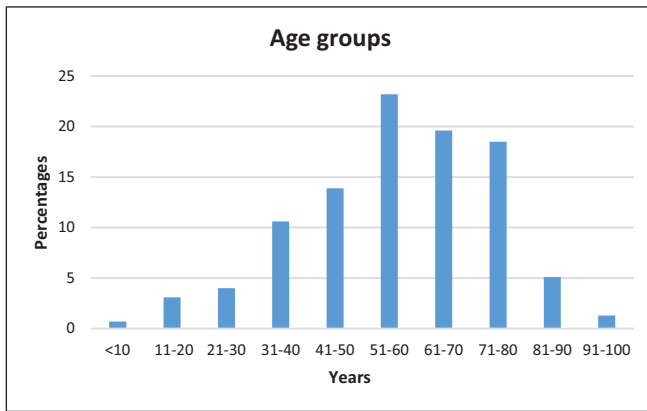


Figure 1: Age distribution with the bimodal peak age of presentation

desire to focus our efforts and aspirations on optimum urological service comparable to saner climes.

Materials and Methods

A cross-sectional, descriptive, retrospective evaluation of all new patients seen from November 2021 to December 2022 at the urology outpatient clinic and emergency department, as well as referrals from other clinical departments of the Federal Medical Centre, Keffi. The pertinent information obtained from the electronic medical records (EMR) included the patients’ age, sex, diagnosis, and appropriate interventions. The data collection was done using a semi-structured questionnaire and Microsoft Excel and then exported to the SPSS, version 20.0 (IBM Corp, Armonk, NY) for the analysis. Simple frequency tables and percentages are documented.

Results

A total of 453 new patients were seen over the study period. There were 428 (94.5%) males and 25 (5.5%) females, with a male-to-female ratio of 17.1:1. The median age was 58 years, with an age range of 2–97 years. The majority of the patients, 104 (23.0%), were between the ages of 51–60 years, whereas only three (0.7%) patients were less than the age of 10 years, representing the least age group [Figure 1]. Elective urological presentations accounted for the majority of cases, 391 (86.3%), whereas urological emergencies were seen in 62 (13.7%) patients. Ninety-eight percent of cases were acquired, whereas 2% were of congenital etiology.

Amongst the 453 new patients seen over the study period, benign prostatic enlargement (BPE), urethral stricture disease as shown in Table 1, upper tract urinary calculi as shown in Table 2, prostate adenocarcinoma, and male infertility accounted for 56.1%, 9.9%, 6.6%, 6.6%, and 4.2% of cases, respectively. The less commonly diagnosed urologic diseases include erectile dysfunction, acute scrotum, and varicocele accounted for 3.5%, 1.3%, and 1.2% of cases, respectively. The grouping of urological diseases in this study based on their organs of origin is shown in Table 3.

Table 1: Annual distribution of kidney diseases

Kidney diseases	Frequency (%)
Kidney stone	18 (64.3)
Kidney cyst	3 (10.7)
Kidney tumor	3 (10.7)
Nonfunctioning kidney	3 (10.7)
Ectopic kidney	1 (3.6)
Total	28 (100.0)

Table 2: Annual distribution of diseases of urethral origin

Diseases of urethral origin	Frequency (%)
Postinflammatory urethral stricture	14 (28.6)
Posttraumatic urethral stricture	6 (12.3)
Urethrocutoaneous fistula	2 (4.1)
Etiology of urethral stricture not documented	22 (44.9)
Hypospadias	3 (6.1)
Posterior urethral valve (PUV)	1 (2.0)
Others (urethritis, etc.)	1 (2.0)
Total	49 (100.0)

Table 3: Yearly distribution of urological diseases based on organ of involvement

Organ involvement	Frequency (%)
Kidney	28 (8.4)
Ureter	10 (2.2)
Bladder	25 (5.5)
Prostate	284 (62.7)
Penile	24 (5.3)
Urethra	45 (9.9)
Scrotum	3 (0.7)
Testis	34 (7.5)
Total	453 (100.0)

Prostatic diseases

The majority of the urological diseases seen during the period under review were of prostatic origin, constituting about 284 (62.7%) of new patients. These include BPE in 254 (89.4) and prostate adenocarcinoma in 30 (10.6%) of prostatic diseases.

Bladder diseases

The spectrum of bladder diseases during the study period was bladder tumor in 4 (16.0%), bladder stone in 11 (44.0%), neurogenic bladder in 6 (24.0%), and bladder injury in 4 (16.0%) patients.

Discussion

Keffi town lies between latitude 8°5’N of the equator and longitude 7°5’E of the Greenwich meridian at an altitude of 850 m above sea level.^[5] Due to its close proximity to the Federal Capital Territory Abuja-Nigeria, it remains one of the fastest-growing cities with a high rate of urban development.^[6]

In the index study, there was a male preponderance, which is congruous with earlier studies from other geographical regions. Most diseases of the genitourinary tract managed by urologists occur in males, while diseases of the urinary tract occur in females and are mainly under the purview of obstetricians and gynecologists.^[7]

The median age of the study population was 58 years. This is significantly higher than the median age of 45 years noted in a study conducted at a urology and nephrology center in northwestern Nigeria.^[7] This observed difference may be due to the proximity of other urological services to our center and the availability of health insurance schemes affording those patients the privilege of alternative care as compared to Sokoto, where most urological patients seek professional care at the referral hospital due to lack of skilled hand in neighboring hospitals. The greater number of the patients were between 51 and 60 years old, which is in keeping with a previous study from Sokoto by Mungadi *et al.*^[7] The leading urological diseases in our environment were BPE and urethral stricture in keeping with the age at presentation. The low number of pediatric cases is likely due to the accessibility of most referrals to the pediatric surgical team, with more pediatric surgeons over the years as against the lone urologist during this period.

The commonly encountered urological presentations were elective in origin, constituting 86.3% of the patients; however, 13.7% of the patients constituted urological emergencies, which may be due to the availability of facilities run by specialists as private facilities between the capital City-Abuja and Keffi with a large number of civil servants, artisans and businessmen/businesswomen residing at this location. This trend does not differ from previous studies. A likely postulation may be due to the high likelihood of most patients being civil servants and able to access the NHIS facility at our facility and nearby facilities.

Acquired urological presentations constitute a predominant part of our practice, reflecting the widespread trend of diseases of urologic origin as depicted in other parts of the world.^[8] Congenital urological conditions are rare due to the challenges of investigative armamentariums in poor resource settings like ours and the poor antenatal facilities available.

BPE is the most commonly diagnosed disease of urologic origin at our hospital, constituting 56%. Our finding is similar to the Sokoto study, whereby BPE constituted the diagnosis in 18.6% of the patients.^[7] The better living conditions associated with an increased life expectancy allow for men to live beyond 50 years within the bracket where LUTS from prostatic diseases preponderates.^[9] Most of the patients in our region have access to more healthcare facilities, especially with regard to the proximity of our center to the capital city with all its skilled manpower.

The second leading cause of urologic diseases in 9.9% of our patients was urethral stricture disease, which was similar to a previous study in northwestern Nigeria reporting urethral stricture as the second leading cause of inpatient admission.^[10] This was followed closely by upper tract urinary calculi, constituting 6.6% in our index study, which may have arisen from the remarkable burden of stone disease arising from the kidneys and ureter due to the climate of Keffi predisposing patients to dehydration and an incriminating risk factor in urinary stone formation.^[11] Another reason may be the cosmopolitan nature of patients in proximity to Keffi from environs to access care at a government facility with the presence of specialist personnel. Previous studies reported another etiology with regard to stones of the lower urinary tract.^[12,13]

Urethral stricture disease constitutes 9.9% of patients seen, making it the 2nd leading cause of urologic malady in this study. Urethral stricture disease of posttraumatic origin appears to surpass those of postinfective etiology, though a group classified as “etiology not documented” may reveal a different etiology.^[14,15] The increasing numbers of posttraumatic urethral stricture may be due to the location of Keffi as a transit town and the majority of the populace use motorcycles as their dominant means of transportation within the city.

The less commonly diagnosed urologic diseases include erectile dysfunction, acute scrotum, and varicocele accounted for 3.5%, 1.3%, and 1.2% of cases, respectively.

Male erectile dysfunction, acute scrotum, and varicocele were infrequent urologic conditions in our environment, constituting 3.5%, 1.3%, and 1.2%, respectively. This study was retrospectively designed and single-centered one with its inherent limitations; however, a prospective and multicenter study would be strongly advocated in the future.

Conclusion

The common urologic disorders in our environment are BPE, urethral stricture disease, upper tract urinary calculi, prostate adenocarcinoma, and male infertility. This study has instituted an important directory on the gamut of urologic ailments or disorders in our clime, hoping that it would be a basis for recommendation for research in the future and stimulate the training of staff to cater for the large population of patients from environs and seek to improve our care.

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Conflicts of interest

There are no conflicts of interest.

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