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Review Article

UROLOGICAL EMERGENCIES AT THE UNIVERSITY OF ABUJA TEACHING HOSPITAL GWAGWALADA, NIGERIA: SPECTRUM AND INITIAL OUTCOME

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ABSTRACT

INTRODUCTION: Urological emergencies are urologic conditions that may require urgent treatment. With the exception of acute urinary retention, urological emergencies are not common compared to other fields of medicine. Immediate management of urologic emergencies will forestall complications.

AIMS AND OBJECTIVES: To present the spectrum of urological emergencies and the initial outcome in the emergency unit.

METHODS: This is a prospective study carried out in the emergency department of UATH. The authors conducted a 6month study starting from January 2014. Data collected were age, sex, working diagnosis and initial outcome in the emergency room within the first 24 hours.

RESULTS: A total of 92 patients were seen, most of them (65.2%) were above 40 years. The majority of the patients (53.3%) had acute urinary retention. The conditions that presented as emergencies were benign prostatic enlargement (42.4%), prostate cancer (16.3%), genitourinary infections (13.1%), urethral stricture diseases (9.8%), urolithiasis (3.3%), testicular torsion (9%). Of these patients, 51.1% were admitted for further treatment while 44.6% were treated and discharged from the emergency room.

CONCLUSION: Acute urinary retention was the commonest urological emergency in our center. The incidence of benign prostatic enlargement was quite high. The large number of patients discharged from the emergency room after treatment implied they could have had medical attention at other nearby health facilities and not overburdens the emergency services at our center which is a referral center or perhaps they preferred the services in our center.

Keywords: Urological emergencies, emergency room, acute urinary retention.

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INTRODUCTION

Urological emergencies are urologic conditions that require emergency intervention and treatment. Urological emergencies constitute 6% of total surgical emergency admissions and 27% of urologic admission.[1,2] In Nigeria, urological emergencies constitutes 21.6% of the total urologic patient population.[3]

Urological emergencies can be classified into traumatic and non-traumatic. Non-traumatic urologic emergencies are urinary retention, hematuria, testicular torsion, priapism, phimosis, urosepsis, renal colic and hemorrhagic testicular tumor. Traumatic urologic emergencies result from an external impact to the genitourinary system.

With the exception of acute urinary retention, urological emergencies are rare compared to other specialties. The commonest urological emergency is urinary retention. According to Fall et al, urinary retention occurred in 53%.[4] Diallo et al also reported that the incidence of urinary retention in Conakry University Teaching Hospital was 73.9%.[5]

Urinary retention refers to the inability to micturate or completely empty the bladder due to functional or mechanical obstruction of the bladder outlet. It has a male to female ratio of 10:1 probably due to the

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presence of prostate gland in males.[6] It can be acute, acute-on-chronic or chronic. Acute retention of urine is commoner and is defined as a painful, palpable or percussable bladder, when the patient is unable to pass urine.[7] Prostatic pathology is a known cause of urinary retention especially in the elderly with benign prostatic enlargement (BPE) occurring in 64% of cases.[8] Other causes of urinary retention are urethritis, urethral rupture, urethral stricture, anticholinergic drugs and neurogenic bladder.[9]Minardi et al reported an incidence of 2.7-29% in women.[10]

The 10 years risk of developing AUR in men with BPE is between 4%-73% however.[11] Pickard et al reported 42% in men with BPE.[12, 13] The initial management involves urethral catheterization/suprapubic catheter insertion to relief the retention until the etiology is evaluated and tackled.

Hematuria refers to presence of blood in urine. The surgical causes of hematuria are urinary tract malignancies, BPE, calculi, post procedural bleeding and trauma. Macroscopic hematuria is commonly seen in the emergency because it can lead to clot retention with consequent AUR and cardiopulmonary compromise. According to Dereck et al, more than 66% of patients with painless macroscopic hematuria harbor malignancy of the urothelium.[14] Generally hematuria accounts for 4-20% of urologic emergencies.[15] The immediate intervention may include resuscitation before the etiology of the hematuria is tackled.

Testicular torsion is the commonest scrotal emergency. It is a true emergency because of poor salvage rate that occurs after 4-6 hours. Other emergencies affecting the scrotum are torsion of appendix testis, acute epididymorchitis, fourniers gangrene and hemorrhagic testicular tumor.Fournier's gangrene is an acute, rapidly progressive and potentially fatal, infective necrotizing fasciitis affecting the external genitalia, perineal or perianal regions that may require extensive debridement, drainage of pus with parenteral antibiotics. Recent series reported a mean age of 50.[16]Mbibu et al reported that testicular torsion is seen in 50% of all the cases of acute scrotum with a mean age of 23 years and occurred more in the cold season. Epididymitis which is a close differential of testicular torsion was seen in 12%.[17] According to Dakum et al the prevalence of testicular torsion is 62.1%.[18] Most cases of acute scrotum will require emergency scrotal exploration which may be therapeutic or diagnostic.

Renal colic refers to excruciating pain that fluctuates in intensity between exacerbations due to passage of stone in the kidney. Talreja et al reported renal colic as the commonest non-traumatic urological emergency and was seen in 24% of patients.[19] Aisuodionoe-Shadrach noted that the prevalence of urolithiasis in adult female was 68.8% though it is lower in the general patient population.[3] Management involves analgesia, hyperhydration and medical expulsion therapy enabling over 90% of stones less than 0.5cm to pass spontanoeously. Larger stones may require endoscopic surgical intervention which is seen as the gold standard.

Priapism refers to prolong penile erection lasting for more than 4 hours despite the absence of physical and psychological stimulation. While it is common amongst sickle cell disease (SCD) patients, it is generally a rare condition with overall incidence of 1.5 cases per 100,000 individuals' annually.[20] Priapism can be low flow (ishaemic/veno-occlusive), high flow (non-ishaemic) or stuttering. Low flow priapism is the commonest type of priapism and remains an absolute emergency characterized by painful persistent erection. Badmus et al reported mean age of 20.4 years with 87.5% occurring in SCD.[21] Treatment can be non-surgical including cavernous aspiration and irrigation with normal saline and phenylephrine or surgical which involves various types of distal and proximal shunts.

Urosepsis is a consequence of urogenital tract infection with features of systemic inflammatory response syndrome. It occurs in 9-31% of all cases of sepsis with a mortality of 20%-40%.[22]Wagenlehner et al noted that urosepsis is seen in 30% of septic patients in which the infectious foci is in the urogenital tract.[23] Treatment includes resuscitation and use of specific antimicrobial therapy as well as other adjuncts such as bladder irrigation.

Genitourinary tract is fairly protected from direct external impact except for male urethra and scrotum. Afolayan et al reported road traffic accident (RTA) as the commonest etiology with urethral and renal injuries accounting for 66% and 11.5% of cases respectively.[24] 10% of multiple injured patients have urogenital trauma with 90% occurring in males.[25] Trauma to genitourinary tract is preventable through policy to create road safety network, public awareness with prompt emergency response aiming at reducing morbidity and mortality.

Redmond et al reported that 41% of referrals were discharged directly from the emergency unit.[26]
This study is focused at presenting the spectrum, nature and initial management outcome of urological emergencies in our center.

METHODOLOGY

This is a prospective 6month study carried out at the

Accident and Emergency unit of University Abuja Teaching Hospital (UATH) Gwagwalada from January 2014. All patients presenting to the emergency room with urological conditions were included in the study. Data collected included age, sex, diagnosis and outcome within the first 24 hours. Data was analyzed with Statistical Package for Social Sciences Version 20(SPSS 20).

RESULTS

During the study period, a total of 92 patients were seen by the urology team. There were 85 males and 7 females as shown in table 1.

Sex	Frequency	Percentage
Male	85	92
Female	7	8
Total	92	100

Table 1: Sex distribution.

Majority of the patients were above 40 years (65.2%) as shown in table 2. More patients presented due to acute urinary retention (41.3%). Benign prostatic enlargement was the commonest pathology that presented as an emergency and was seen in 42.4% of patients as shown in table 3. Other pathology noted were bladder tumor (3.3%), cervical cancer (1.1%), prostate cancer (16.3%), genitourinary infections (13.1%), urethral stricture disease (9.8%), urolithiasis (3.3%), testicular torsion (9%).

Age	Frequency	Percentage
<20	4	4.3
20-40	24	26.1
41-60	30	32.6
61-80	30	32.6
81-100	4	4.3
Total	92	100

Table 2: Age distribution.

Disease	Frequency	Percentage
Bladder tumor	3	3.3
BPE	39	42.4
Cervical cancer	1	1.1
Prostate cancer	15	16.3
Infections	12	13.1
Urethral stricture	9	9.8
Urolithiasis	3	3.3
Testicular Torsion	9	9.8
Total	92	100

Table 3: Disease presenting as urologic emergency

The commonest urologic emergency in our study is acute urinary retention (AUR) which occurred in 53.3% of cases followed by urinary tract infection/urosepsis which was seen in 13%. 9.9% had testicular torsion and hematuria was seen in 8.7% of cases. Metastatic prostate cancer leading to paraplegia accounted for 6.5% of cases whereas 3.3% had renal colic as shown in table 4.

Spectrum	Frequency	Percentage
AUR	49	53.3
Paraplegia due to prostate cancer	6	6.5
Testicular torsion	9	9.8
Renal colic	3	3.3
Urosepsis	12	13
Hematuria	8	8.7
Obstructive uropathy	1	1.1
Dysuria	1	1.1
Total	92	100

Table 4: Frequency distribution

Spectrum	<20	21-40	41-60	61-80	81-100
AUR	-	7	21	18	3
Paraplegia	-	-	1	5	-
Testicular torsion	2	7	-	-	-
Renal colic	1	2	-	-	-
Urosepsis	1	4	5	2	-
Hematuria	-	3	1	4	-
Obstructive uropathy	-	-	1	-	-
Dysuria (urethral polyp)	-	1	-	-	-
Total	4	24	29	29	3

Table 5: Age distribution of spectrum of emergency.

47 (51.1%) patients were admitted after resuscitation for further evaluation and management, while 41(44.6%) patients were discharged. Of the 3 remaining patients, 1 died, 1 left against medical advice (LAMA) and 1 signed against medical advice (table 6).

Outcome	Frequency	Percentage
Admission	47	51.1
Absconded	1	1.1
Died	1	1.1
Discharged	41	44.6
LAMA	1	1.1
SAMA	1	1.1
Total	92	100

Table 6: Frequency distribution of outcome in the emergency unit.

DISCUSSION

The broad spectrum of urologic emergencies and the numerous mimics may pose a diagnostic dilemma. AUR was the commonest urologic emergency seen in our center and occurred in 53.3% of patients. This is similar to the findings of Fall et al who reported 53%.[4] The incidence of Benign Prostatic Enlargement (BPE) was high in our center (42.4%) and this may be due to the fact that majority of the patients were above 40 years (65.2%). This also corresponds with the high incidence of AUR reported by Pickard et al in men with BPE. [11, 12] The male to female ratio of AUR in our center was 48:1 which is far higher than the 10:1 reported by Tawfiq most probably due to the fact that our gyneacology emergency unit is housed in a separate building within the hospital and as such most female emergencies present there initially.[6] Hematuria was noted in 8.7% of our patients and this corresponds to the findings of Nikhil and Dereck.[14, 15] Testicular torsion also featured in our study and was seen in only 9.8% which is far less than the 50% and 62.1% reported elsewhere in Nigeria by Mbibu and Dakum respectively.[17, 18] This may be due to the geographical peculiarities of our center and the period our study was conducted which did not fall during cold harmattan season compared to these studies .[18] Several series abroad had reported a higher incidence in winter which is at its peaks from November but our study was conducted between January to June. Moreso, Gwagwalada where our hospital is situated has a tropical climate with mostly high temperatures throughout the year. Similar to the findings by Dakum et al we noted that testicular torsion is commoner in younger age group as all the patients were less than 40 years. .[17]Urosepsis was the second commonest urological emergency observed in our study and it occurred in 13% of cases which falls in the range of 9-31% reported by Dreger and Wagenlehner.[22, 23] Renal colic occurred infrequently in 3.3% far lower than 24% reported by Talreja et al.[19] A large number of patients were discharged from emergency department (44.6%) and this is similar to 41% reported by Redmond et al.[26] This implies that they could have had medical attention at other health facilities and not necessarily at our center which is a referral center. On the contrary those who consulted on their own initiative probably did so because of the confidence they had with our emergency services.

CONCLUSION

Acute urinary retention was the commonest urologic emergency in our center. The incidence of benign prostatic enlargement was high in our study and the variety of cases we observed shows that our center remains a tertiary referral center. However, improving the quality, availability and standard of lower levels of health care services in our region would reduce the burden of stretching the emergency services in a referral center and thus help maintain focus on attending to truly very tasking clinical conditions.

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