

Acute Urinary Retention among Adult Men at Bobo-Dioulasso University Teaching Hospital: Epidemiology, Aetiologies and Initial Management

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Abstract

We conducted a cross-sectional study between February 1st, 2012 and September 30, 2012 at Bobo-Dioulasso University Teaching hospital. The target population was all patients seen at the emergency services for acute urinary retention. Among the 155 patients admitted for urological emergencies, 104 (67.1%) had acute urinary retention. The average age of patients was 65 years, ranging from 23 to 89 years and the majority was more than 60 years old (77.8%) and lived in rural areas (64.4%). Prostate tumor pathology and urethral stricture were the most frequent diagnosis, and the renal function was impaired in 33.7% of cases. Urethrovessical drainage, cystocatheterism, and suprapubic cystostomy were the treatment approach in 56.0%, 28.0% and 15.2% of the cases. Acute urinary retention is the most common urological emergency and many complications are associated with urethrovessical sounding. These complications should therefore be prevented by improving acute urinary care.

Keywords

Acute Urinary Retention, Epidemiology, Management, Prostate

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1. Introduction

Acute urinary retention (AUR), also known as full bladder urinary retention, is the sudden and complete inability to pass urine despite an irresistible need. It is the most frequent reason for consultation in urology. It epitomizes the urological emergency, and requires immediate treatment through catheterization or cystocatheterism [1]. In developed countries, its management is part of a well-established medical emergency practice. However, in developing countries such as Burkina Faso, the management of the complete urine retention encounters many difficulties [2]-[4]. The purpose of this study is to determine the frequency of the acute urinary retention in at the Sourou Sanou Teaching Hospital and to assess the etiologies and to describe its initial management in that health facility.

2. Materials and Methods

It was a descriptive cross-sectional study, carried out from February 1st, 2012 to September 30th, 2012 in the medical and surgical emergencies division of Bobo-Dioulasso University Teaching hospital. The target population was all patients seen at the emergency services for acute urinary retention or patients who are already supported in another health centers. After a brief physical cross-examination, we fill our data collection form. Depending on the general condition of the patient, he may be admitted as in patient or managed on out-patient basis. The following parameters were studied: frequency, epidemiological characteristic of patient, a etiological diagnosis, emergency care modalities.

3. Results

During the study, 155 patients were admitted for urological emergencies, 104 (67.1%) had acute urinary retention. The incidence was 12 cases per month.

The average age of the patients was 65, ranging from 23 to 89 years. Patients over the age of 60 years formed the majority (77.8%). Farmers were most predominant in the study; they represented 75% of the patients studied. Majority of the patients (64.4%) were from rural areas. In the medical history, the notion of UTI was noted in 83.8% of cases and the bladder catheterization in 86.4% of cases.

The average time interval between the onset of urinary retention and patient admission to the emergency department was 22 hours. In the study, 97% of the patients had lower urinary tract symptoms (LUTS) prior to urinary retention.

On digital rectal examination, the prostate was enlarged in 77.9% of the cases. It had benign aspect in 68.3% of the cases and malignant aspect in 9.6% of the cases.

About the etiologies of acute urinary retention, benign prostate enlargement (BPE) and urethral stricture were the two common causes respectively in 62.5% and 15.4% (**Table 1**).

Acute urinary retention should be managed by immediate and complete decompression of the bladder through catheterization. **Table 2** presented the distribution of patient according to emergency management and the practitioner who perform the procedure. Urethral catheterization and suprapubic cystostomy were the main procedures doing for bladder drainage.

Table 1. Distribution of patients according to the etiological diagnosis.

Etiologicdiagnosis	Frequency	Percentage (%)
Benign Prostate Enlargement	65	62.5
Urethral stricture	16	15.4
Prostate cancer	9	8.6
Disease of the bladder neck	6	5.8
Lowurinary tract trauma	5	4.8
Urolithiasis	2	1.9
Bladder tumor	1	1
Total	104	100

Diagnostic testing in patients was done in our patients with urinary retention such as serum blood hemoglobin, creatinine and blood sample for measurement of serum prostate-specific antigen level was obtained. The hemoglobin level was lowered in 65.4% of cases. Moreover 63.5% of patients had moderate anemia (Figure 1). The third of patient (33.7%) presented renal function impairment (Figure 2). Blood serum PSA level was obtained in 90 cases. In 43.3% of cases, PSA level is more than 4 ng/ml. The distribution of patient based on PSA level was shown on Figure 3.

Ultrasonography was done by 86 patients. Ultrasound has a very important role in imaging of the lower urinary tract because its implicity and no ionizing radiation used. The ultrasound was contributive to the etiological diagnosis in 96.5% as stated in Table 3. Urinary retention was caused by BPH in 82.6% of patients.

Retrograde urethrography (RUG) is performed to visualize the adequately distended anterior urethra, and voiding cystourethrography (VCUG) is then performed to properly evaluate the posterior urethra. In all, 26 patients had done this imaging. The results were abnormal in 24 cases (92.3%). The RUG revealed a stenosis in 69.2% of cases. Distribution of the patient according to RUG and VCUG is presented in Table 4.

4. Discussion

The prevalence of acute urinary retention among urological emergencies was 67.1%. This high prevalence in our study may be due to the fact that our patients do not consult for lower urinary tract symptoms (LUTS). This could be due to the lack of information about these conditions, the lack of economic resources, and an inadequate coverage of health facilities. The average age of our patients was 65 years, ranging from 23 to 89 years.

Table 2. Distribution of patients according to emergency management.

Health Worker	Management				Total
	Urinary Catheter	Suprapubicpuncture	Cystocatherism	Open cystostomy	
Nurse	64	1	0	0	65
Extern	5	0	0	0	5
Internship	1	0	9	0	10
Assistant	7	0	0	6	13
General Practitioner	0	0	0	11	11
Total	77	1	9	17	104

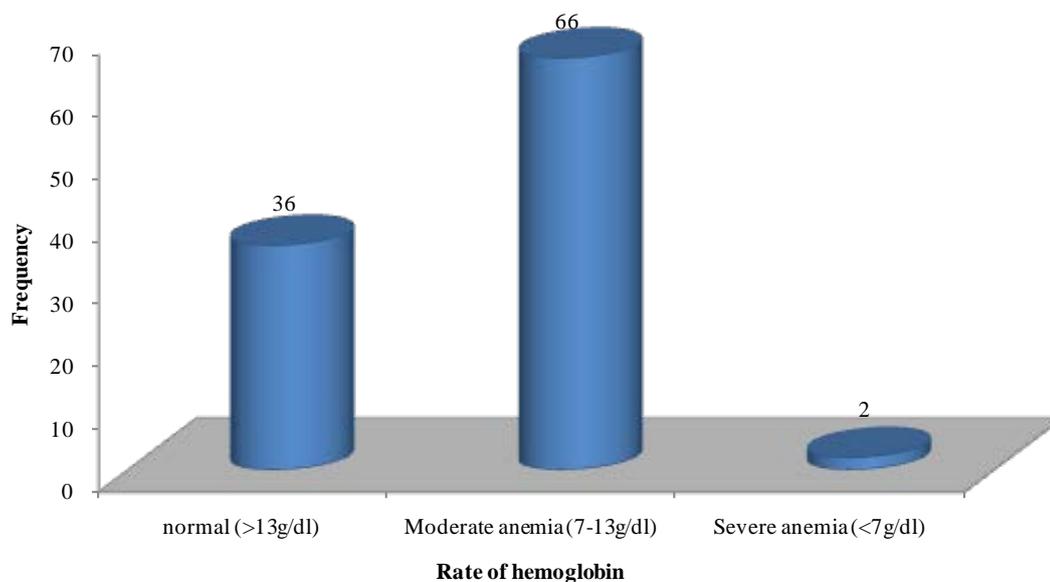


Figure 1. Distribution of patients based on the hemoglobin level.

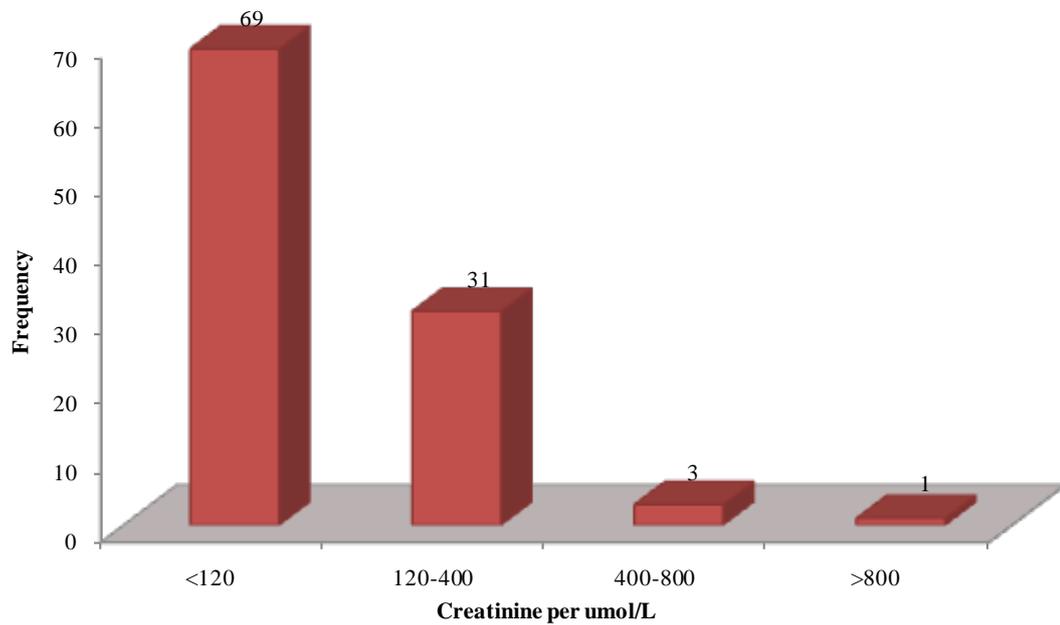


Figure 2. Distribution of patients based on the creatinine level.

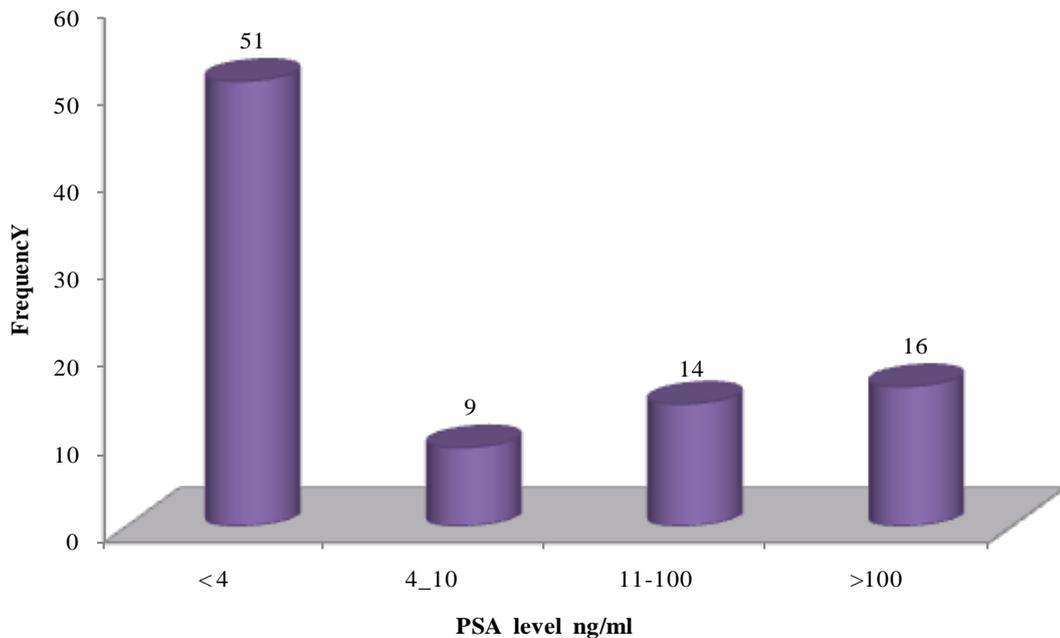


Figure 3. Distribution of patients based on PSA.

The most represented age group was that of 61 - 75 years. This finding is congruent with Diallo AB *et al.*'s figures in Conakry at Guinea and Senegalese authors in their work on acute urinary retention [4] [5].

The average time interval between the onset the acute urinary retention symptoms and the patient admission to the hospital was 22 hours. We believe that this timeframe is too long and could be explained by the fact that many of our patients still use traditional treatment for socio-economic reasons.

Prostate tumor pathology was the most frequent diagnosis, and this is justified by the old age of our patients. The renal function was impaired in 33.7% of cases. This deficiency may be related to the insidious onset of obstructive kidney disease culminating in the acute urinary retention, self-medication and the use decoctions of plants which usually bear renal toxicity.

Table 3. Distribution of patients according to the results of ultrasound.

Ultrasound findings	Frequency (n)	Percent (%)
Normal	3	3.5
Benign Prostate Enlargement	71	82.6
Prostate cancer	10	11.6
Chronic prostatitis	1	1.5
Bladder tumor	1	1.5
Total	86	100

Table 4. Distribution of patients according to the retrograde urethrography (RUG) and voiding cystourethrography (VCUG) results.

Site of stricture	Frequency (n)	Percent (%)
Normal	2	7.7
Bladder neck disease	6	23.1
Posterior urethra	5	19.2
Bulbar urethra	8	30.8
Narrowing of the penile urethra	3	11.5
Multiple urethral stricture	2	7.7
Total	26	100

Anemia was noted in 65.4% of the cases. Plausible reasons for this high frequency of anemia include hematuria found in several diseases, inadequate food intake related to the advanced age of our patients, renal failure. As our country is in the area of malaria endemicity, this could contribute to the low levels of hemoglobin observed in these patients.

The UCR revealed a stenosis in 69.2% of cases. The location of the stenosis was bulbar (30.8%), membranous (11.5%), penile (16.7%) or multiple (7.7%). Several authors have also noted a high incidence of stenosis at the bulbar and membranous portions [6] [7].

Ibrahima Ga *et al* and Oguike *et al*, [8] [9], both studies conducted in Nigeria, reported similar proportions with respectively 38.8% and 35.3% for bulbar location and only 10.4% and 10.3% for the penile location.

The only treatment that prevails in the acute urinary retention is the drainage of urine in emergency service. Urethrovaginal catheterization, cystocatheterism and suprapubic cystostomy were the treatment approach in 56.0%, 28.0% and 15.2% of the cases. These findings were similar to reports from several series. Diallo and colleagues at Conakry in their series had recorded 69.6% of urethrovaginal catheterization and 30.4% cystostomy urethrovaginal [4] [10] [11].

Catheterization is thus the most frequently method used for the drainage of AUR as directed, unless contraindicated [12]. However, it is erroneously considered as a trivial act, and several steps are neglected during its implementation, resulting in immediate or long term complications [13] [14]. The Foley catheter is the most commonly used for the catheterization; its material and the long term use could cause irritation of the urethral mucosa with a plausible local inflammation that may cause a stenosis in the medium term.

In addition, the majority of patients require surgery and will have to wear the device for several months while waiting for surgery. During this waiting period these patients are exposed to urinary infections and the deterioration of their lives standards. This delineates the difficulties encountered in the acute urinary retention and its management in our setting.

5. Conclusion

AUR is the most common urological emergency. Care in emergency unit is medical and surgical through bladder drainage and urethral sounding; it is the most frequently used approach. Many complications are associated

with urethrovesical sounding such as urethritis, urethral strictures and urinary tract infections. These complications should therefore be prevented by improving AUR care and by avoiding trauma of the urethra sounding, by increasing the capacity of our health units in general, and more specifically urology units for a better AUR care.

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Abbreviations

AUR: Acute Urinary Retention
BPE: Benign Prostate Enlargement
CHU Souro Sanou: Sourou Sanou University Teaching Hospital
RUG: Retrograde Urethrogram
LUTS: Lower Urinary Tract Symptoms
PSA: Prostate Specific Antigen
UTI: Urinary Tract Infection
VCUG: Voiding Cystourethrography