

# Epidemiological, Diagnostic and Therapeutic Aspects of Urological and Andrological Conditions Treated during the “Blue November” Campaign in 2023 at Owendo University Hospital

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## Abstract

**Introduction:** Uro-andrological conditions encompass all disorders affecting the urinary tract in both men and women, as well as the male reproductive system. These conditions are numerous and varied, affecting people of all ages, but are more common in older men due to prostate-related conditions. The aim was to study their management during Blue November 2023 at Owendo University Hospital. **Patients and Methods:** This was a prospective cross-sectional study conducted in November 2023. Epidemiological, diagnostic and therapeutic data were recorded and analysed. **Results:** At the conclusion of this study, 1156 consultations had been carried out, of which 745 (64.4%) were for urological and andrological complaints. The average age of patients was  $53.7 \pm 12.1$  years. Hypertension and diabetes were the most common comorbidities. Of the 770 patients seen, 318 (57%) were diagnosed with a urological or andrological condition. The most common condition was erectile dysfunction, accounting for 88.7% of cases. Prostate conditions (benign hyperplasia and adenocarcinoma) were found in 9.2% of cases. Medical treatment was administered in 49% of cases. Surgical treatment accounted for 4% of therapeutic activity. **Conclusion:** Uro-andrological conditions were more common among men over the age of 50. Erectile dysfunction was the most common condition. Prostate conditions were the second most common. It is essential to

place particular emphasis on all uro-andrological conditions during these campaigns.

## Keywords

Uro-Andrological Pathology, Blue November, Epidemiology

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## 1. Introduction

Uro-andrological conditions encompass all diseases that can affect the urinary tract (in both men and women) and the male reproductive system [1]. They are numerous and varied, affecting either the kidneys, the urinary tract (ureters, bladder, urethra), or the genital organs [2]-[4]. They affect people of all ages, but are more common in older men due to prostate conditions [2] [3]. They are a daily occurrence in consultations and hospital admissions in healthcare facilities worldwide [2]-[4]. In France, Boissier *et al.* at the Institut de Veille Sanitaire found that urological conditions accounted for 4.2% of all visits to A&E departments [5]. In Africa, some authors have reported in their series that 18.9% of monthly hospital visits to urology and andrology departments were due to acute urinary retention in an emergency setting [2]. In Gabon, as part of “Blue November”—a period dedicated to men’s health worldwide—there is a high volume of hospital visits to urology and andrology departments. During the 2020 Blue November campaign at the urology and andrology department of the Libreville University Hospital Centre, Mbethe *et al.* reported 488 urology and andrology consultations in one month [3]. Led since 2020 by the urology and andrology departments of the University Teaching Hospitals, in partnership with the Gabonese Society of Urology (SOGUR) and the National Cancer Control Programme (PNLC), under the auspices of the Ministry of Health, this campaign places particular emphasis on prostate cancer. However, apart from this cancer, several other urological and andrological conditions are frequently diagnosed, yet data on them are scarce in the literature. The aim of this study is therefore to map all urological and andrological conditions treated during Blue November 2023 at the Owendo University Hospital, taking into account epidemiological and diagnostic aspects as well as therapeutic approaches.

## 2. Patients and Methods

This was a single-centre, cross-sectional, descriptive study conducted between 1 and 30 November 2023 at Owendo University Hospital. We included all men patients aged 18 years or older who attended the urology and andrology clinic during the “Blue November” 2023 campaign and who gave their informed consent. The variables studied were epidemiological (age, occupation, socioeconomic status), diagnostic (comorbidities, urogenital history, reason for consultation, general condition, hypogastric mass, lumbar mass, prostate on TR, imaging, laboratory tests,

and histopathological results of biopsy or surgical specimens) and therapeutic (medications, surgical procedures). Data analysis was carried out using the statistical software “Epi Info 7”. The tables and graphs were produced using Microsoft “Excel 2021” and “Word 2021”.

Informed consent was obtained prior to each interview and the confidentiality of the data collected was maintained.

### 3. Results

#### 3.1. Epidemiological Aspects

During the study period, 745 cases were identified out of 1156 men who attended the clinic, representing a prevalence of 64.4%.

The mean age of the patients was  $53.7 \pm 12.1$  years, ranging from 18 to 94 years. More than half of the patients, 478 (64.2%), were over 50 years of age (**Table 1**).

**Table 1.** Age distribution of consultants who took part in Blue November 2023 at Owendo University Hospital.

| Age group (years) | Number     | Percentage (%) |
|-------------------|------------|----------------|
| <50               | 267        | 35.8           |
| [50 - 59]         | 228        | 30.6           |
| [60 - 69]         | 182        | 24.4           |
| [70 - 79]         | 59         | 7.9            |
| $\geq 80$         | 9          | 1.2            |
| <b>Total</b>      | <b>745</b> | <b>100.0</b>   |

The majority of consultants, 696 (93.4%), had completed secondary education or higher. Five hundred and thirteen consultants, or 69%, were in employment. Those residing in the municipality of Libreville accounted for 46.6%. The others (12.4%) came from more than 40 km away (Ntoum and Akanda). Only 1.5% came from other locations in the interior of the country. Five hundred and ninety-two (592), or 79.3%, of our consultants were insured with the National Health and Social Security Fund (CNAMGS). Two hundred and seventeen (217) consultants (29.1%) had already participated in previous campaigns.

Diagnostic aspects: Eight out of ten patients had a medical history. Alcohol and tobacco use were the most common addictive behaviours, affecting 41.6% and 21.7% of patients, respectively. The presence of comorbidities such as hypertension and diabetes was reported in 25.9% and 7.7% of patients, respectively. Fifty-seven patients, or 7.7%, had a history of chlamydia, and urinary lithiasis was found in 4.4%. Furthermore, a history of urinary schistosomiasis and syphilis was noted.

Of the 745 patients seen, 318 (57%) were diagnosed with a urological or andrological condition following a clinical examination and a series of laboratory and radiological tests (**Table 2**). The most common condition found among the patients was erectile dysfunction, accounting for 88.7% of cases. The assessment of

erectile dysfunction relies primarily on a targeted clinical interview and the use of standardised assessment tools such as the IIEF score. For the diagnosis of benign prostatic hyperplasia and prostate adenocarcinoma, the assessment of lower urinary tract symptoms, a digital rectal examination, a bladder and prostate ultrasound scan, a total PSA test, and a prostate biopsy in the event of abnormal PSA levels constituted the diagnostic work-up. Smoking and alcohol consumption were the most common addictive behaviours, accounting for 41.8% and 30.5% of cases, respectively. Tobacco use and alcohol consumption were measured in pack-years of tobacco consumption and standard drinks per week, respectively. A decrease in libido was associated with this erectile dysfunction in 43.3%. Among these patients with erectile dysfunction, 56.4% had hyperglycaemia and 65.3% had hypercholesterolaemia.

Prostate conditions (benign hyperplasia and adenocarcinoma) were found in 9.2% of cases (**Table 2**). With regard to the specific diagnosis of prostate cancer, dysuria and pollakiuria were the most common reasons for consultation, accounting for 75% and 56.3% of cases, respectively. In 75% of these patients, the prostate was suspected of being malignant on digital rectal examination, and the total PSA level was above 100 ng/mL in 75% of these patients. Prostate cancer was metastatic in 68.7% of cases. Post-surgical histopathological staging of the resected tissue using the pTNM classification (pathological, T: tumour, N: node, M: metastasis) revealed a pT3N1M1 stage in 43.7% of patients. Patients with benign prostatic hyperplasia presented with pollakiuria and dysuria in 92.3% and 85% of cases, respectively. Digital rectal examination was suggestive of cancer in 61.5% of patients. PSA levels were elevated in 77% of our patients, and 7.7% of them had levels above 10 ng/mL. A renal-vesical-prostatic ultrasound had been performed in 84.6% of these patients, 61.5% of whom had a prostate volume of between 30 and 40 g, with a normal echostructure in all cases.

**Table 2.** Breakdown of patients screened during “Blue November” 2023 at Owendo University Hospital by urological and andrological condition diagnosed.

| Uro-andrological pathology | Number (n = 318) | Percentage (%) |
|----------------------------|------------------|----------------|
| Erectile dysfunction       | 282              | 88.7           |
| Prostate adenocarcinoma    | 16               | 5.1            |
| Prostate adenoma           | 13               | 4.1            |
| Bladder cancer             | 2                | 0.6            |
| Polycystic kidney disease  | 2                | 0.6            |
| Kidney cancer              | 1                | 0.3            |
| Pyonephrosis               | 1                | 0.3            |
| Ureteral stone             | 1                | 0.3            |

### 3.2. Therapeutic Aspects

Among cases of erectile dysfunction, 52.5% were placed under observation with

strict adherence to lifestyle and dietary measures, and 47.5% received medical treatment based on phosphodiesterase type 5 inhibitors. A consultation with a psychologist was also sought.

Hormone therapy was the most common treatment for prostate cancer. It was administered to 11 patients, representing 68.7% of cases. Radical prostatectomy was performed on 5 patients (31.3% of cases). For benign prostatic hyperplasia, patients received initially medical treatment based on alpha-blockers, 5-alpha-reductase inhibitors or herbal extracts, whilst 11 (84.6%) underwent surgery: 8 patients via endoscopic procedures, notably TURP, and 3 patients via open surgery according to the Freyer-Hryntschak technique. Cases of bladder tumours underwent transurethral resection of the bladder. An extended left nephrectomy had been performed in the case of kidney cancer. The consultant with pyonephrosis had undergone a total nephrectomy following an initial percutaneous nephrostomy combined with antibiotic therapy. The patient with ureteral lithiasis required intracorporeal lithotripsy via flexible ureteroscopy with a laser.

#### 4. Discussion

During our study, we recorded 745 urological and andrological consultations (64.4%). These figures are double those reported by Mbethe *et al.*, who recorded 335 urological and andrological consultations in 2024 [3]. They are also higher than those reported by Botcho *et al.* [2] in Togo, who reported a monthly frequency of urological and andrological consultations of 21.02%. This difference may be explained by media publicity during the “Blue November” campaign, as well as the provision of free care.

The mean age in our study was  $53.7 \pm 12.1$  years, with ages ranging from 18 to 94 years. This finding is similar to those reported by Mbethe *et al.* in 2024, who reported a mean age of  $57.7 \pm 9.9$  years for urological and andrological conditions [3]. This reflects the particular emphasis placed on prostate cancer during this campaign. In our study, 86.2% of patients came from Libreville and Owendo. This finding could be explained by the fact that the “Blue November” awareness campaign is concentrated in urban areas, on the one hand, but also by the financial difficulties faced by people living in the suburbs in travelling to the city.

Alcohol and tobacco were the most common addictive behaviours in our study, accounting for 41.6% and 21.7% of cases, respectively. This finding is supported by Mimbila-Mayi *et al.*, who reported in 2021 that the prevalence of alcohol and tobacco use in Gabon was 55.5% and 21.5%, respectively [6]. High blood pressure and diabetes were the comorbidities present in 25.9% and 7.7% of patients, respectively. These results are comparable to those noted by Mbethe *et al.* during the “Novembre Bleu” campaign in 2024 at Libreville University Hospital, with 25.9% and 11.1% of cases, respectively [3].

With regard to erectile dysfunction, tobacco and alcohol were the most common addictive behaviours, accounting for 41.8% and 30.5%, respectively. These results are similar to those of Avakoudjo *et al.*, who also identified alcohol and

tobacco as the main addictive behaviours in erectile dysfunction, at 36.2% and 12.1% respectively [7]. Alcohol and tobacco may be risk factors for erectile dysfunction. A decrease in libido was associated with erectile dysfunction in 43.3% of those consulted. This finding is comparable to that of Essafi *et al.* in 2021 in Morocco, who reported a decrease in libido associated with erectile dysfunction in 46% of cases [8]. Among the patients in our study, 56.4% had hyperglycaemia and 65.3% had hypercholesterolaemia. This finding is supported by Essafi *et al.*, who identified diabetes and dyslipidaemia as risk factors for erectile dysfunction [8].

With regard to the specific diagnosis of prostate cancer, dysuria and pollakiuria were the most common reasons for seeking medical advice, accounting for 75% and 56.3% of cases, respectively. These findings are similar to those of Mbethe *et al.*, who reported 55.6% and 37% of cases of dysuria and pollakiuria, respectively [3]. Sangaré *et al.* also found dysuria to be the most common reason for consultation, accounting for 68.3% of cases [9]. This could be explained by the delay in seeking medical advice due to embarrassment. In our study, 75% of patients presented with a prostate suspected of malignancy on digital rectal examination. This result is similar to those reported by Ntama *et al.* in Cameroon [10] and Halidou *et al.* in Niger [11], who also found a prostate suspected of malignancy on digital rectal examination in 61.2% and 77% of cases, respectively. These findings may be linked to the late diagnosis of the disease in our setting. Similarly, the rate of total PSA levels exceeding 100 ng/mL that we observed is comparable to the results of Halidou *et al.* [11] and Cissé *et al.* [12], who reported PSA levels exceeding 100 ng/mL in 77% and 72% of cases, respectively. The PSA level is a key parameter in the diagnostic management of prostate cancer.

It is often high due to late presentation and the high cost of diagnostic tests. Prostate cancer was metastatic in 68.7% of cases and at stage T3N1M1 in 43.7% of cases. These results are similar to those reported by Ntama *et al.* [10] and Yevi *et al.* [13], who found metastatic prostate cancer in 56.3% and 53% of cases, respectively. In Africa, and in Gabon in particular, prostate cancers are detected at advanced stages, unlike in the West, where cancers are predominantly detected at a localised stage [4] [14]. In our study, the symptoms of benign prostatic hyperplasia were dominated by pollakiuria and dysuria, occurring in 92.3% and 85% of cases, respectively. These findings are consistent with those of Cissé *et al.* [12] and Diakité *et al.* [15], who reported dysuria as the most common symptom in 52.9% and 56% of cases, respectively. Digital rectal examination was suggestive in 61.5% of patients. This result is similar to those of Diakité *et al.* and Halidou *et al.*, who also found a suggestive digital rectal examination in 76.5% and 93.5% of cases, respectively [15] [16]. The PSA level was elevated in 77% of our patients, with 7.7% of patients having a PSA level above 10 ng/mL. This finding is similar to that reported by Bagayogo *et al.*, who found elevated PSA levels in 61% of their patients [17]. The PSA level is certainly a useful tool in the diagnostic approach to benign prostatic hyperplasia, but the frequent presence of a urogenital infection undoubtedly explains this elevation. In our study, 84.6% of patients had undergone a renal-

vesical-prostatic ultrasound, and 61.5% had a prostate volume of between 30 g and 40 g, with a normal echostructure in all cases. This result is similar to that reported by Diakité *et al.*, who found homogeneous hypertrophy in 74.51% of cases [15].

From a therapeutic point of view, among the cases of erectile dysfunction, 147 patients (52.5%) were placed under supervision, with strict adherence to lifestyle and dietary measures, cessation of certain harmful behaviours, and discontinuation of self-medication. The remaining patients in this study, *i.e.*, 47.5%, received medical treatment consisting of phosphodiesterase type 5 inhibitors, notably tadalafil 20 mg. Ndiath *et al.* also found this molecule to be used in 52.7% of cases [18]. The treatment of erectile dysfunction depends on its underlying cause. This requires a multidisciplinary approach. Treatment options include lifestyle and dietary changes, as well as medication. Phosphodiesterase inhibitors have revolutionised the management of this condition. They are the standard pharmacological class for the symptomatic oral treatment of erectile dysfunction.

Treatment for prostate cancer depended on the stage of the disease. The majority of patients had received hormone therapy. This reflects the advanced nature of these cancers. Patients with locally advanced cancer had received hormone therapy alone due to a lack of adequate facilities in our centres, whereas combined hormone and radiotherapy is recommended [19]. These results are comparable to those of Mbethe *et al.* and Tengue *et al.*, where hormone therapy was the most frequently used treatment, accounting for 70.3% and 93.1% of cases respectively [3] [20]. Radical prostatectomy was performed in 5 (31.3%) patients. In the series by Mbethe *et al.*, 18.5% of patients had undergone radical prostatectomy [3]. Tengue *et al.* found that 2% of patients had undergone radical prostatectomy [20].

Treatment for prostate cancer depends on the stage of the disease. Hormone therapy is used for metastatic prostate cancer, whilst radical prostatectomy is the standard treatment for localised prostate cancer in patients with a life expectancy of 10 years. Robot-assisted radical prostatectomy is currently the standard method, but it is not available in Gabon [21].

With regard to benign prostatic hyperplasia, medical treatment is the first-line approach. Surgery is indicated only in patients with troublesome obstructive symptoms or in whom well-managed medical treatment is either insufficiently effective or poorly tolerated [22] [23]. In the present study, 11 patients (84.6%) underwent surgery, 8 of whom via an endoscopic approach. In contrast, according to Bagayogo *et al.*, transvesical prostatectomy was performed in 83.3% of patients, and via a retropubic approach in 16.7% of patients [24]. The same is true in several teams in sub-Saharan Africa, where high-approach adenomectomy is still widely practised [15] [16]. Inadequate technical facilities and the average prostate volume are often decisive factors in the choice of this technique. In our context (Gabon), as technical facilities are satisfactory, endoscopic resection remains the gold standard for prostates with a volume of less than 60 g, as in developed countries.

With regard to bladder tumours, transurethral resection of the bladder (TURB)

was performed in all our patients. This procedure was also used by Niang *et al.* in 49% of patients admitted for bladder tumours [25]. Botcho *et al.* in Togo found a rate of 33.33% [2]. These results could be explained by the fact that the necessary technical facilities were not always available in their setting. TURB allows for histopathological diagnosis and radical treatment of superficial lesions.

The patient with kidney cancer had undergone a left extended nephrectomy. This result is similar to those of Fall *et al.* in Senegal, where 87.3% of patients who underwent surgery had undergone an extended nephrectomy [26]. It is also similar to those of Ndiath *et al.*, where 78.9% of patients underwent an extended nephrectomy in 93.3% of cases and a partial nephrectomy in 6.7% of cases [27]. Extended nephrectomy is the standard treatment for kidney cancer.

The patient with pyonephrosis initially underwent a percutaneous nephrostomy followed by antibiotic therapy effective against *Escherichia coli*. A total nephrectomy was subsequently performed. Other authors have also employed this treatment regimen, notably Ondongo Atipo *et al.* in 2018 in the Congo, who administered medical treatment in 100% of cases and performed a nephrostomy followed by a nephrectomy in 50% of cases [28]. Allah-Syengar *et al.*, in 2014 in Senegal, reported 96.86% of cases undergoing nephrectomy [29]. The treatment of choice for pyonephrosis is nephrectomy preceded by percutaneous nephrostomy and antibiotic therapy tailored to the antibiogram. This therapeutic approach remains a matter of debate between those who advocate immediate nephrectomy and those who prefer to precede it with nephrostomy combined with appropriate antibiotic therapy [30].

The patient with ureteral lithiasis was treated endoscopically. In the 2021 study by Julien *et al.*, ureteroscopy was performed in 100% of cases [31]. However, according to several authors from sub-Saharan Africa, open surgery remains the treatment of choice [32] [33].

## 5. Conclusion

Uro-andrological conditions are of particular importance as they affect men of all ages. Our study shows that during the Blue November 2023 campaign, the number of consultations regarding these conditions increased significantly. Uro-andrological conditions were more common among men over the age of 50. The most common condition was erectile dysfunction, followed by cancer and benign prostatic hyperplasia.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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