

Research Article

Urological Cancers in Douala (Cameroon): Epidemiological and Histological Profile

Epoupa Ngalle Frantz Guy^{1, 2, *} , Nwaha Makon Axel St éphane² ,
Mbouch éLandry Oriol² , Essomba Armel Quentin¹, Glenda Nkeng³,
Soppo Ekoule Christian Aristide¹, Atangana C édrick Paterson² ,
Moby Mpah Edouard Herv é¹, Fouda Pierre Joseph²

¹Urology Unit, Department of General Surgery, Douala General Hospital, Douala, Cameroon

²Department of Surgery and Specialties, Faculty of Medicine and Biomedical Sciences, University of Yaound éI, Yaound é, Cameroon

³Department of Internal Medicine, Faculty of Medicine and Biomedical Sciences, University of Yaound éI, Yaound é, Cameroon

Abstract

Background: According to Globocan 2020, the global burden of cancer has increased to 19.3 million cases and 10 million cancer deaths. The International Agency for Research on Cancer estimates that, in the world, one in five people develop cancer during their lifetime. Urinary tract cancers are common in urology. They are most often of a bad prognosis. While the epidemiology of urological cancers is well known in the Northern Countries, data on these conditions are little available or insufficient. The purpose of this study was to determine the frequency of urological cancers, describe their clinical presentation and classification. **Methodology:** We conducted a transversal study in the urology, oncology and pathology anatomy departments of the Douala General Hospital (DGH) and the Douala Laquintinie Hospital (DLH). Medical records and pathology reports of biopsies carried out on patients with urological cancer and hospitalized over a period of 10 years from January 1, 2010 to December 31, 2019 were included. **Results:** A total of 93 cases were selected. The sex ratio of 8:1. The average age was 64.7 ± 11.51 years for men and 45.8 ± 23 years for women ($p=0.030$). Smoking was the main comorbidity (30.1%). Low back pain, hematuria and urine retention were the main modes of revelation. Prostate cancer was found in 75.3%. Prostate adenocarcinoma was the most found histological type (94.1%) Kidney, bladder and penis cancer were found in 16.1%; 7.5% and 1% of cases. More than half of patients with prostate cancer (68.6%) had metastasis at the time of diagnosis. **Conclusion:** urological cancers affect men more. The symptomatology is dominated by the signs of the upper and lower urinary tract. Prostate adenocarcinoma is the most found histological type.

Keywords

Urological Cancer, Epidemiological and Histological Profile, Douala

*Corresponding author: frantzepoupa@gmail.com (Epoupa Ngalle Frantz Guy)

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1. Introduction

Cancers are the second leading cause of death in the world. In Sub-Saharan Africa (SSA), urgent measures are needed to stop the growing crisis of cancer incidence and cancer mortality [1]. In the absence of rapid interventions, data estimates show a significant increase in cancer mortality from 520,348 in 2020 to about 1 million deaths per year by 2030 [1]. In Cameroon, a total of about 16,000 new cases were recorded with a mortality rate of more than 50%. Cancers of the urinary tract occupy an important place in urological pathology and are a growing problem because of their increasing frequency [2]. Urological cancers (UCs) include tumors affecting the kidney, ureters, bladder and urethra in both sexes, prostate, penis, testicle, scrotum in men [3]. Epidemiological and histological data of UCs are available in northern countries thanks to Cancer registries [2]. All in West Africa, an interest was focused on urological cancers, which found a predominance of prostate cancer [2-6]. In Cameroon, UCs are the leading cause of cancer-related mortality in men and their morbidity represents a heavy burden on the health system due to very late diagnosis [7]. Thus, the need for an epidemiological profile of the UCs would contribute to increasing data on the issue, which remains tiny on the one hand, and on the other hand, will allow the implementation of means of improving secondary and tertiary primary prevention. We therefore conducted a study to determine the frequency of urological cancers and describe their clinical and histological profile.

2. Methodology

We conducted a cross-sectional study in the urology, oncology and pathology departments of DGH and DLH, which are university hospital centers and 1st and 2nd category hospitals in the Cameroon health pyramid. This study was carried out over a period of 5 months and focused on medical records and reports of anatomopathological examinations of biopsies carried out in patients with urological cancer and hospitalized over a period of 10 years from January 1, 2010 to December 31, 2019. The information collected included socio-demographic data, history and comorbidities, history of smoking, symptoms presented, biological and radiological data. The data collected were recorded using the IBM Statistical Package for Social Sciences (SPSS) software version 25 and expressed as a mean \pm standard deviation for variables such as the patient's age, the duration of disease progression, the duration of treatment and patient follow-up, and biological data. Categorical variables were expressed in proportions, including medical, surgical, gynecological-obstetrical and urological history, toxicological history, clinical data on admission, treatment and prognosis. The threshold of statistical significance has been set at $p < 0.05$. This study was carried out after obtaining the ethical agreement of the Institutional Ethics Committee of the University of Douala, as

well as the research authorizations in the various health courses selected, in compliance with medical ethics.

3. Results

After reviewing the files, 263 were suspected of having UCs, of which 170 were excluded because of the lack of pathological confirmation of the diagnosis. In total, 93 files were selected, of which 83 (89.2%) were male and 10 female patients with a sex ratio of 8:1 (M: F). The average age was 64.7 ± 11.51 years for men and 45.8 ± 23 years for women ($p=0.030$), with extremes of one year and 84 years. The age group most affected by urological cancers was 60-69 years old, which accounted for 36.5% of patients. Among the UCs discovered, the most common was prostate cancer in 75.3% of patients ($n=70$), followed by kidney cancer in 16.1% ($n=15$), bladder cancer in 7.5% ($n=8$) and penile cancer in 1.1% of patients ($n=1$), as shown in Table 1. Of the 93 patients, 28 were chronic smokers (30.1%), 24 had high blood pressure (25.8%), 20 were alcoholics (21.5%), 6 had kidney disease (6.4%), and a history of cancer in 2 patients (2.1%). Regarding the clinical presentation, twenty-six patients (28.0%) had an altered general condition at the first consultation, and the initial symptomatology was dominated by urinary signs, in particular low back pain found in 39 patients (41.9%), followed by macroscopic hematuria in 34 patients (36.6%), acute urine retention in 30 patients (32.3%), hypogastric pain in 14 patients (15.1%), pollakiuria in 12 patients (12.9%), dysuria in 9 patients (9.7%). Fifteen patients (16.1%) reported having hypogastric mass, urinary incontinence and genital ulceration in one patient, as shown in Table 2. Among our patients with prostate cancer, 94.1% had adenocarcinoma, while the others had neurosecretory carcinoma. The Gleason score evaluated in our patients had an average value of 4.1 with extremes of 2 and 10. Regarding the differentiation of prostate cancers, 57.1% of patients had moderately differentiated cancer, 28.6% were well differentiated and 14.3% were undifferentiated. For bladder cancer, 57.1% of patients had squamous cell carcinoma ($n=4$), 28.6% urothelial carcinoma ($n=2$) and 14.1% adenocarcinoma ($n=1$). The histological types of kidney cancers were more varied, and we found 46.7% of tubulo-papillary carcinomas ($n=7$), 20.0% of nephroblastoma and 20.0% of clear cell carcinomas ($n=3$), 6.7% of adenocarcinomas and 6.7% of pleomorphic sarcomas ($n=1$). The only patient with penile cancer had squamous cell carcinoma as a histological type. (Table 3). Due to the lower socio-economic status of most patients, the most commonly used imaging modality for a staging check-up was an abdominopelvic ultrasound in 50 patients. 30 patients received a thoracic-abdominal-pelvic CT scan with contrast, a bone scan in 8 patients, a pelvic MRI in 6 patients and a cystoscopy in 2 patients. Metastases were found in 48 (68.6%) patients with prostate cancer and

their main location was bone in 52.8% of cases, liver in 7.1% of cases, lymph nodes in 4.3% of cases and lungs in 4.3% of cases. For bladder cancer, metastases were found in 03 patients, including two in the liver and one in the lymph nodes. For kidney cancer, hepatic metastases were found in one patient and metastases in the lymph nodes in two patients.

Table 1. Type of urological malignancy.

| Type of urological malignancy | Frequency | Percentage (%) |
|-------------------------------|-----------|----------------|
| Prostate cancer | 70 | 75,3 |
| Renal cancer | 14 | 16,1 |
| Bladder cancer | 8 | 7,5 |
| Penile cancer | 1 | 1,1 |
| TOTAL | 93 | 100 |

Table 2. Symptomatology.

| Signs and Symptoms | Frequency | Percentage (%) |
|-------------------------|-----------|----------------|
| Lower Back Pain | 39 | 41,9 |
| Haematuria | 34 | 36,6 |
| Acute urinary retention | 30 | 32,3 |
| Performance score > 2 | 26 | |
| Hypogastric pain | 14 | 15,1 |
| Hypogastric mass | 15 | 16,1 |
| Urinary incontinence | 15 | |
| Genital ulceration | 15 | |
| Pollakiurias | 12 | 12,9 |
| Dysuria | 9 | 9,7 |

Table 3. Histological types of urological malignancies at the different sites.

| Site | Histological Type | Frequency Percentage |
|-----------------|---------------------------|----------------------|
| Prostate cancer | Adenocarcinoma | 94,1 |
| | Neuro-secretory type | |
| | Squamous cell carcinoma | 4 |
| Bladder cancer | Urothelial carcinoma | 2 |
| | Adenocarcinoma | 1 |
| Renal cancer | Tubulopapillary carcinoma | 7 |

| Site | Histological Type | Frequency Percentage |
|---------------|-------------------------|----------------------|
| | Clear cell carcinoma | 3 |
| | Nephroblastoma | 3 |
| | Adenocarcinoma. | 1 |
| | Pleiomorphic sarcoma | 1 |
| Penile cancer | Squamous cell carcinoma | 1 |

4. Discussion

In our study, nearly 90% (83 out of 93) of our patients were men. This result is similar to that found by other studies in Africa that found a sex ratio of ranging from 6 to 16 in favor of men [3-7]. This reflects the fact that cancers of the prostate, testicle and penis only affect men, while cancers of the bladder, kidney and urethra affect both sexes. The average age of our sample was 64 years old. This result is similar to those found by Ouattara and Kouka who had an average age of 62.89 and 63 years in Senegal and Benin [3, 4]. Sando et al had an average age of 49.3 years [7]. The most represented age group was 60 and 69 years old. The peak incidence was also found in the city of Kano in the same age group [5]. Sando et al had a higher incidence in patients aged 70 years [7]. Low back pain, hematuria and acute urine retention were the modes of revelation of our patients. Hematuria can be the clinical manifestation of all urological cancers except testicular, penile and scrotum cancers [8, 9]. Urine retention is a clinical presentation of prostate cancer since low back pain can be due to kidney cancer and/or secondary locations in the lumbar spine of urological cancers [10, 11]. In Senegal, the modes of revelation of urological cancers are dominated by hematuria and low back pain [3]. Alcohol-smoking poisoning, high blood pressure, chronic kidney disease and a history of cancer were the comorbidities found in our patients. Aging, hormonal factors, obesity, family history, abuse of analgesics, exposure to chemicals and heavy metals and air pollution are the other factors of UCs [5, 12, 13]. Prostate cancer was more represented in 75% of cases. All studies also found the prostate of the prostate as the most frequent location of UCs [2-7]. This can be explained on the one hand by the male predominance of the sample. On the other hand, prostate cancer is the most common cancer in men with an estimated incidence in Africa of 22 per 100,000 inhabitants [14, 15]. Kidney and bladder cancers came in 2nd and 3rd position respectively in were found in 16 and 7.5%. In Zambia, prostate cancer is followed by bladder and penile cancers so much so that in Nigeria it is followed by the bladder and kidney [5, 6]. Prostate adenocarcinoma was the most common histological variant recorded. This result corroborates that of a study in Burkina Faso that found 100% adenocarcinoma [16]. On the other hand, most prostate cancers are acineous adenocarcinomas

[17]. Most patients had a moderately differentiated carcinoma (57.1%) and an average Gleason score of 4.1 with extremes of 2 and 10. A study by David C. Miller et al, in the United States, showed similar results with 70.9% of cases of moderately differentiated carcinomas [18]. Sando et al found 52% of undifferentiated carcinomas [7]. Most patients with prostate cancer had metastases (68.6%). Jing Zhang found 26% of bone metastases at the time of diagnosis [19]. This highlights on the one hand the tropism of prostate cancer in for bone tissue and the delayed diagnosis of this condition in our context. This delay could be explained by the fact that patients arrive late for consultation because of the high blow of care compared to the socio-economic level or the low accessibility to qualified health professionals. The second urological cancer found in our study is kidney cancer. The most common histological type was a tubulo-papillary model. This result is opposed to most studies that find a predominance of clear-cell renal tumors [8, 20, 21]. Among the cases of bladder cancer recorded, squamous cell carcinomas were more common. This result is similar to that found in Mali where squamous cell carcinoma was found in 58% [22]. This may be due to a higher prevalence of schistosomiasis in tropical areas [23, 24]. On the other hand, a correlation has been established between squamous cell carcinoma and urinary schistosomiasis [25, 26].

5. Conclusion

Our study shows that men are most affected by UCs, most often at an advanced age. Most of our patients presented at a late stage with metastases. This may be due to a late presentation, misorientation or a long delay between suspicion and confirmation of the diagnosis. A well-structured screening program will reduce the incidence and prevalence of prostate cancer and increase early detection, which will facilitate management.

Abbreviations

| | |
|------|---|
| DGH | Douala General Hospital |
| DLH | Douala Laquintinie Hospital |
| SSA | Sub-Saharan Africa |
| SPSS | Statistical Package for Social Sciences |
| UCs | Urological Cancers |

Authors' Contributions

All authors have read and approved the final version of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest.

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