

RESEARCH ARTICLE

Urogenital Cancer Mortality in the Urology Department of CHU Gabriel Touré

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Abstract

Purpose: To study urogenital cancer mortality in the urology department of Gabriel Touré University Hospital.

Patients and Methods: This was a cross-sectional, retro-prospective, descriptive study spread over a 3-year period (January 2021 to December 2023).

Results: We recorded 37 deaths among 1077 hospitalized patients, equivalent to an overall mortality rate of 3.4%. Of these 37 deaths, 27 (72.9%) were due to urological cancer, representing a cancer mortality rate of 2.5%. The average age of the deceased patients was 57.70 years, ranging from 26 to 76 years. Among the study population, farmers predominated at 33.3%, followed closely by housewives at 29.6%. Hematuria was the most frequent reason for consultation at 48.1%, followed by back pain at 29.6%. In 92.5% of cases, death occurred before one month's hospitalization, with 48.1% of deaths occurring before one week's hospitalization. The only cancers to have led to death on the ward in the last three years were bladder cancer, prostate cancer and kidney cancer. Cancer mortality was dominated by bladder cancer at 66.7%, followed by prostate cancer at 22.2%. Among patients, 85.1% had severe anemia.

Conclusion: Bladder cancer emerges as the leading cause of mortality in the department. The majority of patients with cancer in the department die in associated contexts of anemia, renal failure and/or ionic disorders.

Keywords: Morality, Cancer, Urogenital.

1. Introduction

Urogenital cancers are quite common in routine urological practice, and urologists devote a significant proportion of their time to their management. In both sexes, they include cancers of the kidney, ureter, bladder and urethra, and in men, cancers of the prostate, testicle, scrotum and penis [1].

The World Health Organization (WHO) reported 19,292,789 new cases of cancer worldwide in 2020,

among which urological cancers had a significant incidence. Prostate cancer predominated, registering 1,414,259 new cases during the year.

In terms of mortality, according to the World Health Organization (WHO), cancer is the second leading cause of death worldwide. In 2020, cancer was responsible for almost 10 million deaths, representing around 1 in 6 deaths. Among these cancers, urological cancers account for a significant

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proportion. For example, prostate cancer is currently the most common cancer in men worldwide, and after bronchopulmonary cancer, it is the second leading cause of cancer mortality in men [2].

In Mali, according to the 2008-2010 cancer registry, bladder cancer was the 4th most common cancer in men and 5th in women [3]. Prostate cancer ranked 6th, accounting for 4.4% of cancers nationwide. Kidney cancer accounted for 3.7% of cancers, with an incidence of 1.6 per 10,000 inhabitants from 2006 to 2010 [3]. Testicular cancer is rarer, accounting for 1-2% of male cancers and 3.5% of urological cancers.

Unfortunately, epidemiological data on urological cancer mortality are poorly available in many African countries, due to the lack of effective collection tools, such as cancer registries [1].

However, it is imperative to understand the magnitude of urological cancer mortality in Africa in order to identify the specific challenges facing healthcare systems and develop appropriate approaches to prevention and management.

The paucity of epidemiological data on urological cancer mortality in Mali underscores the crucial relevance of our study. By helping to fill this gap, this study could make a significant contribution to understanding the specific situation in this region, thereby facilitating better prevention and management strategies.

2. Patients and Methods

This was a cross-sectional, retro-prospective, descriptive study, spread over a 3-year period (January 2021 to December 2023).

Patients who died of urogenital cancer during hospitalization in the department or following transfer to the intensive care unit were included in the study.

Not included in the study were patients who died on admission, and patients who died of causes other than cancer.

Data were collected from patients' medical records and the hospitalization register.

The following parameters were studied: age, sex, geographical origin, ethnicity, profession, reason for consultation, comorbidities, medical and surgical history, lifestyle, length of hospitalization, year of death, type of cancer, hemoglobin level, creatininemia, ionic disorders, total PSA, impact on the upper urinary tract, TNM classification and treatment received.

3. Results

During our study, conducted from 2021 to 2023, we recorded 37 deaths among 1077 hospitalized patients, equivalent to an overall mortality rate of 3.4%. Of these 37 deaths, 27 (72.9%) occurred as a result of urological cancer, representing a cancer mortality rate of 2.5%. The average age of deceased patients was 57.70 years, with a range from 26 to 76 years.

The most common age groups were 50 to 59 and 60 to 69, each accounting for 29.6%, followed by 70 to 79, accounting for 22.2%. 63% of cases were male. Patients from Bamako clearly predominated, accounting for 74.1%, followed by those from Ségou at 11.1%. Among the patients studied, the Bambara ethnic group was in the majority at 22.2%, followed by the Dogon ethnic group at 18.5%, while the Bozo ethnic group was the least represented at 3.7%.

Among the population studied, farmers predominated at 33.3%, closely followed by housewives at 29.6%. Shopkeepers also accounted for a significant share, reaching 14.8%. Hematuria proved to be the most frequent reason for consultation at 48.1%, followed by lumbar pain at 29.6%.

The majority of patients (74.1%) had no comorbidities. Among those who did, hypertension was the most common, affecting 22.2% of cases. In our series, 66.7% of patients had no known medical history. The most frequent medical history was childhood urogenital bilharziasis, found in 33.3% of cases, and in 50% of patients who died of bladder cancer. The vast majority of patients, 74.1%, had never undergone surgery. In 81.5% of cases, patients had no particular high-risk lifestyle, while 18.5% smoked tobacco and none consumed alcohol.

In 92.5% of cases, death occurred within one month of hospitalization, with 48.1% of deaths occurring within one week of hospitalization. In 48.1% of cases, death occurred during the year 2022, while in 29.6% of cases, death occurred during the year 2021. The only cancers leading to death in the department in the last three years were bladder cancer, prostate cancer and kidney cancer.

Cancer mortality was dominated by bladder cancer at 66.7%, followed by prostate cancer at 22.2%. 85.1% of patients had anemia, including 18.5% with a hemoglobin level below 6 g/dl, 44.4% with a level between 6 and 7 g/dl, and 22.2% with a level between 8 and 9 g/dl. Among cancer deaths, 66.6% had elevated creatinine levels, with 48.1% having a value greater than 3 times normal. Ionic disorders were found in 66.7% of cases.

All patients who died of prostate cancer had a PSA greater than or equal to 40 ng/ml, with 50% having a PSA greater than 100 ng/ml. In 70.4% of cases studied, ureterohydronephrosis was present. All patients who died of prostate cancer were metastatic. Similarly, 83.4% of patients who died of bladder cancer were metastatic, and none were localized.

For kidney cancer, 33.4% of patients who died were metastatic, and none were localized. In our study, 40.7% of patients received symptomatic medical treatment, while nephrostomy was the most frequently performed surgical procedure, involving 18.5% of patients.

4. Discussion

4.1 Epidemiological Aspects

During our study period, the urological cancer mortality rate reached 72.9%, significantly exceeding the rates observed by B. Sine et al in Dakar (51.5%) [70] and Mariko in Mali (57%) [71]. Nevertheless, it remains lower than that reported by A.

Dekou et al in Côte d'Ivoire, who observed a urological cancer mortality rate of 87.5% [72]. The recurrent observation of a high mortality rate from urological cancer, both in our study and in numerous international surveys, consistently highlights that cancer remains the leading cause of death in urology departments.

4.2 Socio-Demographic Aspects

4.2.1 Age

The most represented age groups were 50-59 and 60-69, each accounting for 29.6%. The average age was 57.7, with extremes of 26 and 76. This average is lower than those reported by AM Ondongo et al in Brazzaville (66.69 years) [73], B. Sine et al in Senegal (63.6 years) [70], and A.

Dekou et al in Côte d'Ivoire (63.4 years) [72]. However, it is comparable to that found by Mariko in Mali (57.6 years) [71]. These results suggest that urological cancers occur more frequently and are a more significant cause of mortality in elderly patients.

4.2.2 Gender

The study population showed a marked predominance of the male sex, representing 63% of the sample. The sex ratio was 1.7 in favor of men. Although this predominance is similar to that observed by Mariko in Mali (sex ratio 1.72) [71], it remains lower than that reported by A. Dékou et al in Senegal, and by

R. Salah et al in Algeria, who respectively reported ratios of 13.6 [72] and 10.22 [74] men to one woman. This strong male predominance observed worldwide is mainly explained by the high frequency of male-specific prostate cancer, which remains the leading cause of urological cancer mortality. However, in our study, this trend was mitigated by the pre-eminent role of bladder cancer. This cancer, present in both men and women, is the leading cause of mortality in urology, according to various studies carried out in our country.

4.2.3 Occupation

Farmers were the most represented, accounting for 33.3% of bladder and prostate cancer deaths. This reflects the high proportion of self-identified farmers in the Malian population, often associated with their rural lifestyle. In addition, this result illustrates the high prevalence of bladder cancer among people living near rivers, due to the prevalence of bilharzia.

4.3 Clinical Aspects

4.3.1 Reason for Consultation

Hematuria was the reason for consultation in 48.1% of patients who died of urological cancer in our department. This proportion is similar to that reported by Mariko, although in his study hematuria accounted for 62.9% of the reasons for consultation in patients who died of urological cancer [71]. The predominance of hematuria as a reason for consultation in patients who died of urological cancer can be explained by the fact that this symptomatology, whether it occurs early or late, is common to all urological cancers that were lethal in our study.

4.3.2 Medical History

The notion of childhood urogenital bilharziasis was identified in 50% of patients who died of bladder cancer. This result reflects the established causal correlation between urogenital bilharziasis and the development of bladder cancer.

4.3.3 Length of Hospital Stay

In our study, 92.5% of cancer-related deaths occurred within one month of hospitalization, of which 48.1% occurred before one week of hospitalization. This length of hospital stay was significantly longer than that reported by Mariko, who mentions a length of hospital stay of less than a week in 64% of recorded cancer deaths. This observation, reflecting a short hospital stay, is attributable to the fact that most of the patients who died had consulted a doctor at an advanced stage of their cancer.

Table 1. Distribution of Patients According to Age

Age	Frequency	Percentage
De 20 à 29 ans	1	3,7
De 30 à 39 ans	1	3,7
De 40 à 49 ans	3	11,1
De 50 à 59 ans	8	29,6
De 60 à 69 ans	8	29,6
De 70 à 79 ans	6	22,2
Total	27	100,0

4.3.4 Year of Death

The year with the highest number of cancer deaths in our study was 2022, totaling 48.1% of cases, followed by 2021 with 29.6%. The year 2023 accounted for 22.2% of cancer deaths.

The variation in cancer mortality over the last three years does not seem to be attributable to the quality of care provided, but rather to the fluctuation in the number of hospitalizations observed from one year to the next.

Table 2. Distribution of Patients According to Reason for Consultation

Reason for consultation	Frequency	Percentage
Hematuria	13	48,1
Lower back pain	8	29,6
Dysuria/pollakiuria	3	11,1
Impaired general condition	3	11,1
Total	27	100,0

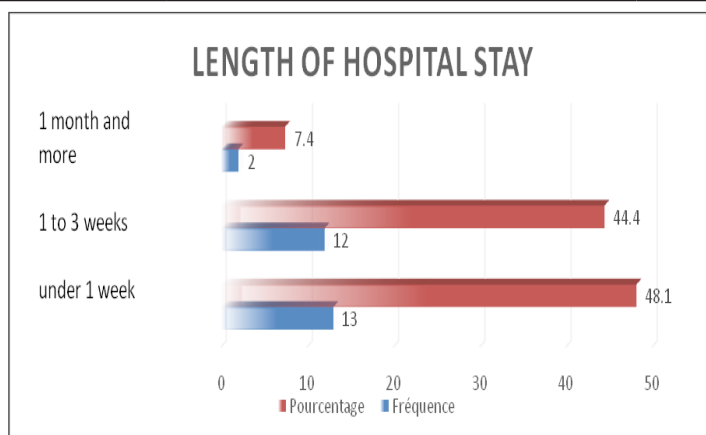


Figure 1. Distribution of patients by length of hospital stay

Table 3. Distribution of patients by cancer type

Type of cancer	Frequency	Percentage
Bladder cancer	18	66,7
Prostate cancer	6	22,2
Kidney cancer	3	11,1
Total	27	100,0

Table 4. Distribution of Patients By Hemoglobin Level

hemoglobin level	Frequency	Percentage
Less than 6 g/dl	5	18,5
6 - 7 g/dl	12	44,4
8 - 9 g/dl	6	22,2
10 g/dl and more	4	14,8
Total	27	100,0

4.4 Para Clinical Aspects

4.4.1 Type of Cancer

In our study cancer mortality was largely dominated by bladder cancer, accounting for 66.7%, followed by prostate cancer with 22.2%. Although this result is comparable to that found by Mariko, who observed a mortality dominated by bladder cancer with 77.6%, followed by prostate cancer with 20.2% [71], it contrasts with that observed by A.

Dekou et al, who instead found a mortality dominated by prostate cancer with 62.4%, followed by bladder cancer with 16.2% [72]. The predominance of bladder cancer in terms of mortality at national level is linked to the high prevalence of urogenital bilharziasis in the Malian population. Indeed, Touré reported in 2020 that 73.5% of bladder cancer patients included in his study had a history of urinary bilharziasis [75].

It is recognized, however, that urogenital bilharziasis favors the development of squamous cell carcinoma of the bladder; a histological type associated with rapid progression and often more limited therapeutic options.

4.4.2 Hemoglobin Levels

In our study, among cancer-related deaths, 85.1% were associated with anemia, of which 62.9% had severe anemia. This result is similar to that obtained by Mariko, who observed anemia in 73.2% of cancer deaths [71]. The high frequency of anemia in patients with advanced urological cancer is mainly due to hematuria, a common manifestation of urological cancers, especially in the terminal stage.

4.4.3 Effects on the Upper Limb

Ureterohydronephrosis was present in 70.4% of cancer deaths, and elevated creatinine levels were observed in 66.6% of patients who died, 48.1% of

Table 5. Distribution of patients according to treatment received

Treatmentreceived	Frequency	Percentage
Symptomaticmedicaltreatment	11	40,7
Nephrostomy	5	18,5
Hormone therapy	4	14,8
Palliative endoscopicresection	3	11,1
Curative surgery	2	7,4
Pulpectomy	2	7,4
Total	27	100,0

4.5 Therapeutic Aspects

During our study period, 92.6% of patients who died of cancer in our department were limited to receiving palliative treatment, whether medical or surgical.

whom had a value greater than three times normal. This suggests that renal failure is one of the main causes of death in patients with urological cancer. The frequent occurrence of ureterohydronephrosis, resulting from obstruction of the urinary tract due to cancer progression, seems to play a decisive role in this association.

4.4.4 Ionic Disorders

The results of our study indicate that 66.7% of patients who died of cancer in our department presented with ionic disorders. Because of their frequency and the complexity of their management, ionic disorders frequently led to transfers to the intensive care unit or the seeking of specialist medical advice, thus posing a major challenge in the management of patients with terminal cancers at our facility.

4.4.5 Tnm Classification

All patients who died of prostate cancer were metastatic. Similarly, 83.4% of patients who died of bladder cancer were in the metastatic stage, and none in the localized stage.

For kidney cancer, 33.4% of patients who died were metastatic, and none were localized. On the one hand, this result can be explained by the delay in diagnosing urological cancers in our social context, where the elderly find it difficult to express problems related to the urogenital system, concealing them until a terminal stage.

This is also explained by the silent evolution of certain cancers up to the metastatic stage. This result is an indicator of the quality of care provided to cancer patients in the department, highlighting the fact that almost all cancer deaths occur at the metastatic stage. At this advanced stage, therapeutic options are limited, despite the availability of a well-equipped technical platform.

The most common palliative treatments were pulpectomy, nephrostomy, palliative endoscopic resection, hormone therapy and symptomatic medical treatment (analgesia, rehydration, vitamin therapy).

This situation is attributable more to the level of tumor progression than to a lack of technical resources. At the metastatic stage, curative options are very limited for cancers in general. However, the lack of technical facilities significantly contributed to darkening the prognosis of our patients who were at a locally advanced stage of their cancer.

5. Conclusion

Cancer emerges as the main cause of mortality in the urology department of CHU Gabriel Touré, with bladder cancer standing out as the main culprit. The majority of cancer patients in the department die in contexts associated with anemia, renal failure and ionic disorders. Delayed diagnosis was observed in almost all patients who died of cancer in the department, limiting therapeutic choices to palliative means.

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